OPERATIONAL ENVIRONMENTAL MANAGEMENT PLAN

Building 4E - Oakdale West Industrial Estate
SSD 22191322

Prepared for:

Goodman Property Services (Aust) Pty Ltd
The Hayesbery
1-11 Hayes Road
Rosebery NSW 2018

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BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Goodman Property Services (Aust) Pty Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
630.30393-R01-v1.0	26 August 2022	Sam McDonald	Alanna Ryan	Alanna Ryan

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1 Introduction

1.1 Development Overview

Goodman Property Services (Aust) Pty Ltd (Goodman) obtained State Significant Development Consent (SSD) 7348 on 13 September 2019 for the staged development of Oakdale West Industrial Estate (Oakdale West) comprising a warehousing and a distribution hub at Kemps Creek in Western Sydney.

SSD 7348 incorporates the approval of a 'Concept Proposal' to guide the future development of the estate and consent for the 'concept Development'. The Stage 1 Development includes construction of the proposed Western North South Link Road (WNSLR – now referred to as Compass Drive), site-wide bulk earthworks, estate wide basins, and lead-in services. It also includes infrastructure and associated services, landscaping, and construction and use approval for Precinct 1 (see **Figure 1** and **Figure 2**).

SSD 7348 has since been modified ten times with the most recent modification (MOD 10) being approved on 17 August 2022.

The Concept Proposal consent did not approve the Stage 5 construction, fit out and use of building 4E. This is subject to a separate Development Application (SSD 22191322) approved by DPE on 29 October 2021. SSD 22191322 was modified (MOD 1) on 14 July 2022 for amendment to the building's elevations and removal of condition B28.

Approved Development Consent SSD 22191322 is available online at this direct link to the NSW Planning Portal.

This Operational Environmental Management Plan (OEMP) has been prepared to specifically address the activities associated with the operation of Building 4E in Precinct 4 under SSD 22191322. It is noted that Building 4E has one tenancy, with a warehouse, workshop and an office (see **Figure 3**).

For the purposes of this document, the development is described in:

- *Oakdale West Industrial Estate Stage 5 Environmental Impact Statement* (EIS) prepared by Keylan Consulting (2021), including all specialist assessments and other appendices;
- *SSD 22191322 MOD 1 - Oakdale West Stage – S.4.55(1) Application To Remove Condition B28* prepared by Goodman (2022), including all specialist assessments and other appendices;
- *SSD 7348 MOD1 - Oakdale West Stage 4 – S.4.55(1A) Application to Modify Architecture Plans and Subdivision Plan*, prepared by Goodman (2021), including appendices;
- *SSD 7348 MOD2 - Oakdale West Industrial Estate – S.4.55(1A) Application to Modify Architecture Plans and Subdivision Plan*, prepared by Goodman (2021), including appendices;
- *Environmental Impact Statement, Oakdale West Estate – State Significant Development Application* (EIS) prepared by Urbis (2017), including all specialist assessments and other appendices;
- *Oakdale West Industrial Estate (SSD 7348) Modification 1* prepared by Urbis (2019), including all specialist assessments and other appendices;
- *Oakdale West Industrial Estate Concept Plan and Stage 1 Modification (MOD 3 SSD 7348) and Stage 2 Development Application (SSD 10397) – Environmental Impact Statement* prepared by GHD (2020), including all specialist assessments and other appendices;

- *Assessment Report Section 4.55(1A) Modification, SSD 7348 Modification 7 – 2 Aldington Road, Kemps Creek* prepared by Keylan Consulting (2021), including all specialist assessments and other appendices;
- *Application to Modify Architecture Plan, SSD 7348 MOD 8, Oakdale West Stage* prepared by Goodman (2021), including Architecture Plans;
- *Modification Application 9, Oakdale West Industrial Estate SSD 7348*, prepared by Keyland Consulting (2021), including Estate Masterplan; and
- *Application to Modify Architecture Plans, SSD 7348 MOD 10, Oakdale West Stage* prepared by Goodman (2022).

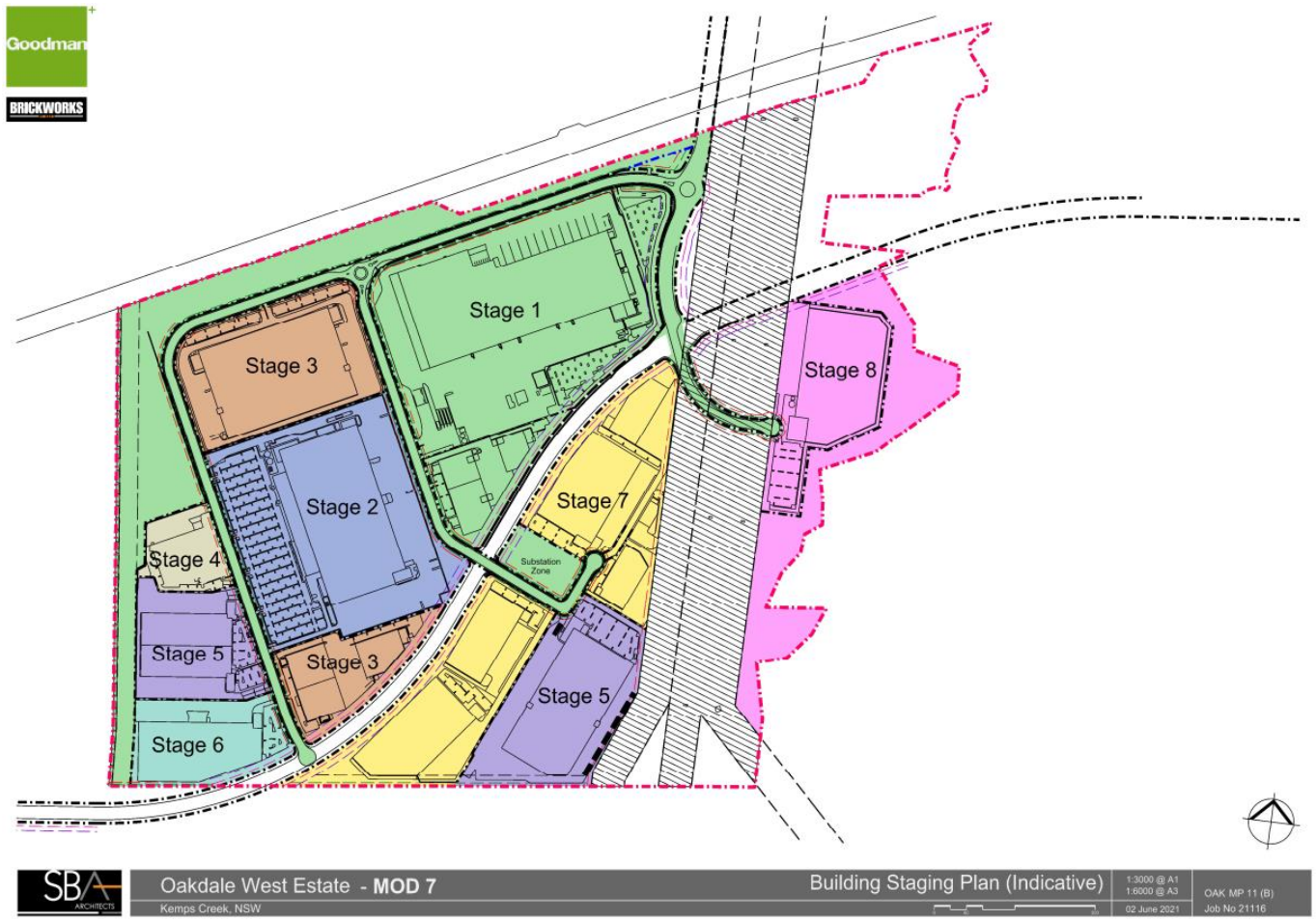


Figure 1 Oakdale West Staging Plan

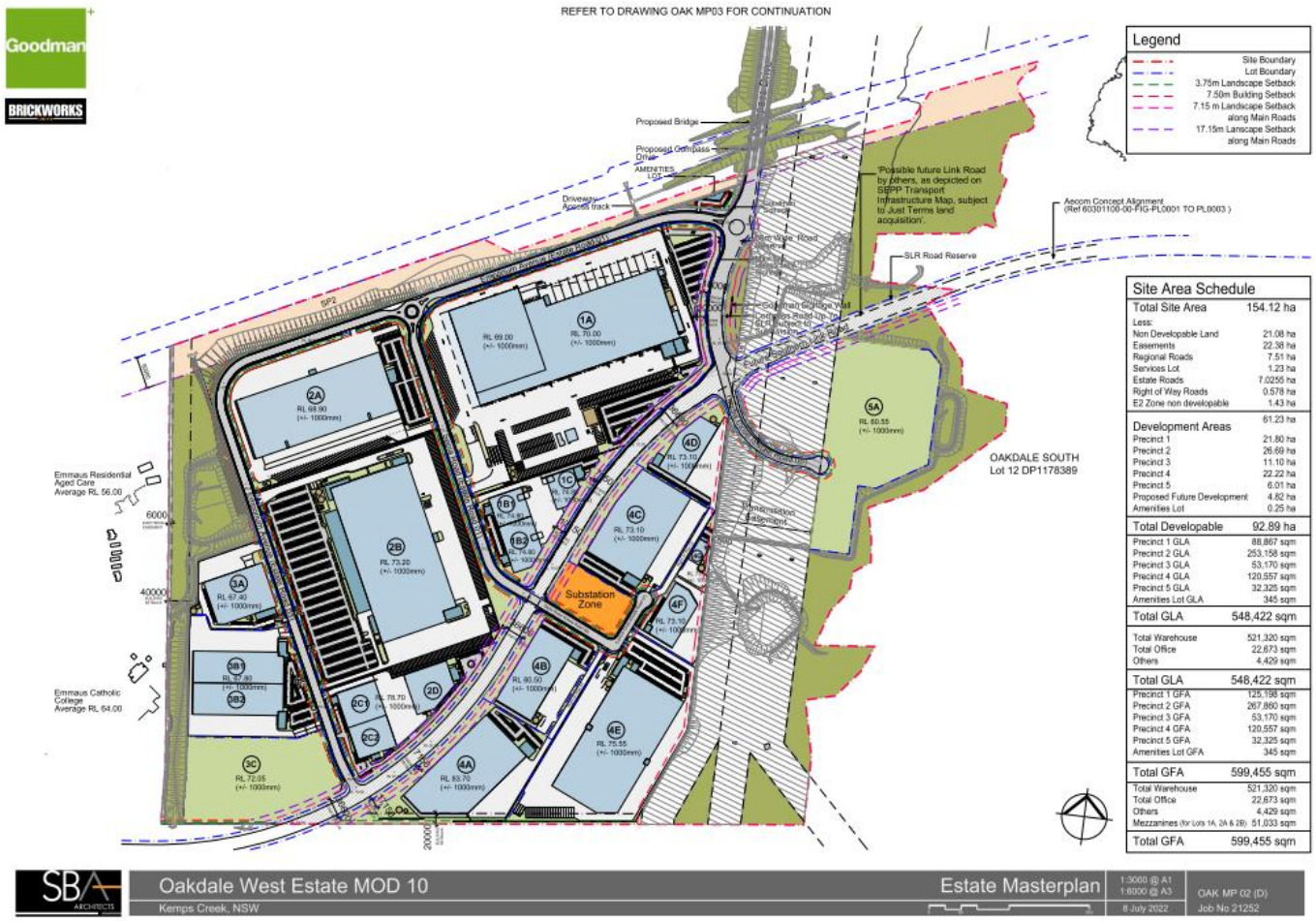


Figure 2 Oakdale West Precinct Plan

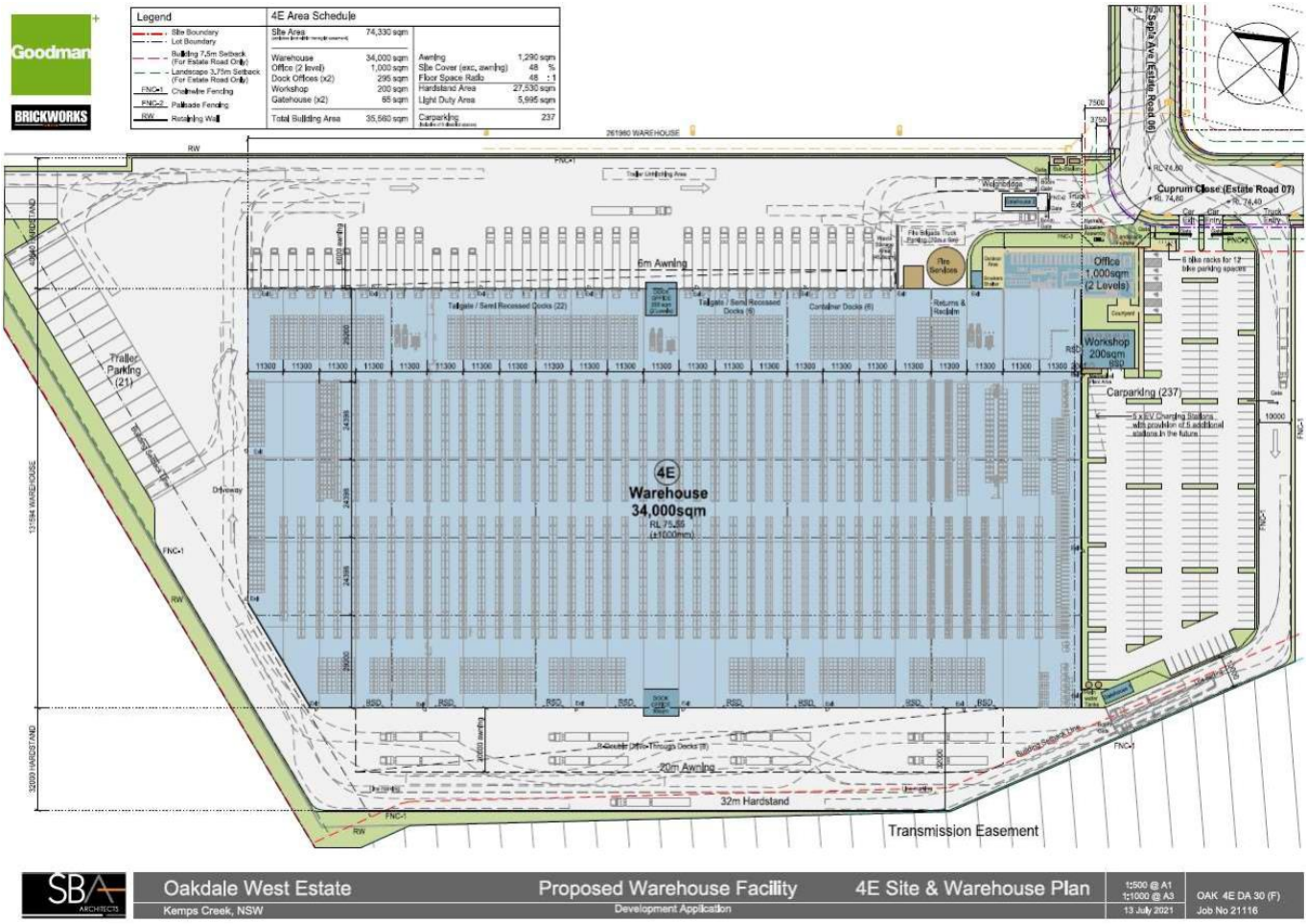


Figure 3 Building 4E Layout Goodman

1.2 OEMP Context

This Operational Environmental Management Plan (OEMP) has been prepared to address the scope and objectives listed below for the operation of Building 4E (see **Figure 3**), and in consideration of *Guideline for the Preparation of Environmental Management Plans* (Department of Infrastructure, Planning and Natural Resources 2004).

Reference should also be made to the *Oakdale West Industrial Estate Operational Environmental Management Plan – Oakdale West Industrial Estate SSD 7348 Mod 9 Update* (SLR 2022) which details management requirements applicable to all developments within the Estate relevant to Stage 1.

This OEMP contains the following key components:

- Environmental management framework, including key contacts, roles and responsibilities, and regulatory requirements;
- Environmental incidents and Non-Compliance management strategy;
- Complaints management strategy;
- Environmental management commitments and responsibilities;
- Monitoring, inspections and reporting requirements;
- Contingency Management Plan; and
  - OWE Community Communication Strategy;
  - 4E Air Quality Management Plan;
  - 4E Operational Traffic Management Plan;
  - 4E Waste Management Plan;
  - 4E Landscape Management Plan;
  - OWE Vegetation Management Plan;
  - 4E Bushfire Emergency Management and Evacuation Plan;
  - 4E Fire Management Plan; and
  - Sustainability Management Plan

This Operational Environmental Management Plan (OEMP) has been prepared to address the scope and objectives listed below for the operation of Building 4E (see **Figure 3**), and in consideration of *Guideline for the Preparation of Environmental Management Plans* (Department of Infrastructure, Planning and Natural Resources 2004).

1.2.1 Scope

This OEMP has been prepared to satisfy statement of commitment for the 'preparation of updated OEMP for OWE Concept Proposal for Stage 5' of approved Development Consent SSD 22191322 in relation to Building 4E. The approved Development Consent conditions within SSD 22191322 and SSD 7348 that define this OEMP Scope are listed below in **Table 1**, along with where these requirements have been addressed within this document.

In addition to this, all conditions of the approved Development Consent from SSD 22191322 and SSD 7348 relevant to this OEMP are attached as **Appendix A** and **Appendix B**, respectively, including reference to where they have been addressed.

Table 1 OEMP Scope – SSD 22191322 and SSD 7348

Condition	Section
SSD 22191322	
C1. Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:	
a) details of: i. the relevant statutory requirements (including any relevant approval, licence or lease conditions); ii. any relevant limits or performance measures and criteria; and iii. the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures.	i. Section 3.3 ii. Section 4 iii. OWE OEMP specialist management plans
b) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;	Section 4
c) a program to monitor and report on the: i. impacts and environmental performance of the development; and ii. effectiveness of the management measures set out pursuant to paragraph (b) above;	i. Section 5 ii. Section 7
d) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;	Section 6
e) a program to investigate and implement ways to improve the environmental performance of the development over time;	Section 5
f) a protocol for managing and reporting any: i. incident and any non-compliance (specifically including any exceedance of the impact assessment criteria and performance criteria); ii. complaint; iii. failure to comply with statutory requirements; and	i. Section 3.5 ii. Section 3.6 iii. Section 3.5
g) a protocol for periodic review of the plan. ***Note:*** *The Planning Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans*	Section 7
SSD 7348	
D130. The Applicant must prepare an Operational Environmental Management Plan (OEMP) in accordance with the requirements of Condition D118 and to the satisfaction of the Planning Secretary.	This Plan

In addition to meeting the specific performance measures and criteria in this consent, all reasonable and feasible measures must be implemented to prevent, and if prevention is not reasonable and feasible, minimise, any material harm to the environment that may result from the operation of the development.

1.2.2 Objectives

The objectives of this OEMP are to guide and assist Goodman and the Tenant in ensuring:

- The Building 4E Operational Environmental Management requirements under approved Development Consent 22191322 are undertaken and adhered to in line with the relevant consent conditions;
- Establish the framework for managing and mitigating the potential for adverse environmental impacts as a result of the operation of Building 4E;
- Clearly and concisely document the commitments made in the relevant assessment reports (as listed in **Section 1.1**), including relevant management plans, that are required to be implemented during operation;
- Demonstrate to DPE how the applicant proposes to meet all of its regulatory obligations including those outlined in the Conditions of the approved Development Consent;
- Clearly and concisely document the conditions imposed by SSD 22191322 and SSD 7348 that are required to be implemented and/or complied with during operation; and
- Assist to establish Building 4E in a manner that avoids (where possible) or minimises impact to the surrounding environment and populace.

It is noted that this OEMP does not address workplace health and safety (WHS) requirements. These are managed in accordance with Goodman's Current Work, Health & Safety Policy.

1.2.3 Preparation

This OEMP has been prepared by SLR Consulting (Australia) Pty Ltd (SLR). SLR provides global environmental and advisory solutions from a network of offices in Asia-Pacific, Europe, North America and Africa. Author qualifications are listed in **Table 1** below:

Table 1 Author Qualifications

Name, Role & Division	Qualifications	Experience
Kate McKinnon Associate Environmental Assessment & Management	MPlan BArts	Kate is and environmental planner with twelve years' experience in engagement and development management and planning. Kate's work has included preparation and project management, preparation and stakeholder engagement for developments ranging from large scale green and brown field subdivisions to commercial / industrial developments including significant involvement in projects in the Western Sydney Employment Area. Kate has represented her clients in community forums, development panels and at the Land and Environment Court. Her expertise also includes the preparation of detailed reports and the negotiation and coordination of advice with respect to government departments and stakeholders.

Name, Role & Division	Qualifications	Experience
Chelsey Zuiderwyk Senior Project Consultant Environmental Assessment & Management	BSc B.Com	Chelsey is a Senior Project Consultant in the SLR Environmental Assessment & Management team with bachelor's degrees in science and commerce, and 10 years' experience in project management and support, most recently in environmental management. Since joining SLR, Chelsey has been involved in delivering a range of projects including Environmental Management Plans, Environmental Risk Assessments, Review of Environmental Factors, Audit preparation, Annual Reviews, Mining Operations Plans and Rehabilitation Cost Estimates. Prior to joining SLR, Chelsey worked in regional and local government across a broad range of projects including infrastructure management, communications, strategic project support and stakeholder engagement with local and state government on environmental, social and infrastructure programs.
Sam McDonald Senior Project Consultant Environmental Assessment & Management	B Env. Sc.	Sam is a Senior Project Consultant with the Environmental Assessment & Management team and has over four years of experience as a project consultant with SLR. Sam graduated with a Bachelor of Environmental Science (majoring in Environmental Sustainability) from the University of Newcastle in 2015. Sam has experience in project management, report writing and auditing. Project experience includes mining, quarrying, infrastructure and intensive agriculture. Sam also has experience in mine closure, environmental impact assessments, environmental management programs, environmental management strategies, management plans, compliance, environmental risk assessments.

1.2.4 Consultation

In accordance with SSD 22191322 and SSD 7348, consultation has been undertaken with the applicable stakeholders which is summarised in **Table 2**, and documentation attached at **Appendix C**.

Table 2 Consultation

Condition	Comment
SSD 22191322	
Notification of Commencement A8. The date of commencement of each of the following phases of the development must be notified to the Planning Secretary in writing, at least one month before that date, or as otherwise agreed with the Planning Secretary: (a) construction; (b) operation; and (c) cessation of operations.	Noted – The Applicant will notify The Department of the commencement of operation as per Condition A8.
Notification of Commencement A9. If the operation of the development is to be staged, the Planning Secretary must be notified in writing, at least one month before the commencement of each stage (or other timeframe agreed with the Planning Secretary), of the date of commencement and the development to be carried out in that stage.	Noted – The Applicant has notified The Department of the commencement of this stage of development as per Condition A9.

Condition	Comment
Evidence of Consultation A10. Where conditions of this consent require consultation with an identified party, the Applicant must: (a) consult with the relevant party prior to submitting the subject document to the Planning Secretary for approval; and (b) provide details of the consultation undertaken including: (i)I the outcome of that consultation, matters resolved and unresolved; and (ii) details of any disagreement remaining between the party consulted and the Applicant and how the Applicant has addressed the matters not resolved.	Evidence of consultation will be provided as required and in accordance with the evidence provisions set out in Condition A10.
Sustainable Travel Plan B10. Prior to the commencement of operation of any part of the development, the Applicant must prepare a Sustainable Travel Plan. The Sustainable Travel Plan must: (a) be prepared in consultation with TfNSW;	Undertaken as part of the preparation of the Green Travel Plan (equivalent to a Sustainable Travel Plan) (refer to Appendix C of the OTMP (attached as Appendix G of this Plan)).
Bushfire Protection B25. Prior to the commencement of operation, the Applicant must prepare a Fire Management Plan (FMP) for the development. The FMP must: be prepared in consultation with the NSW RFS; …	Undertaken as part of the preparation of the Fire management Plan (see Appendix K).

2 Operation Overview

2.1 Location

Oakdale West is legally described as Lot 101 to 103 in DP 1262308 and Lot 105 to 111 DP 1262310, at the far south-western extent of the Western Sydney Employment Area (WSEA) within the Penrith Local Government Area (LGA).

Oakdale West is bound to the north by the Water NSW Pipeline and to the east by the Ropes Creek riparian corridor. Land along the eastern boundary of the site is also affected by a transmission easement associated with Transgrid infrastructure. To the east of the site is Goodman's Oakdale South Estate. Emmaus Catholic College and Emmaus Retirement Village is located to the west of the site. Other boundaries interface with adjoining rural lands used for a mix of rural-residential and agricultural.

As shown in **Figure 2**, Building 4E is within Stage 5 Precinct, in the southern portion of Oakdale West.

2.2 Operational Activities

In accordance with the approved Development Consent SSD 22191322, the site will operate as a warehouse and distribution centre.

2.3 Hours of Operation

The hours of operation are Monday to Sunday, 24 hours a day.

2.4 Site Access

All access to the Estate is provided via Compass Drive. Vehicles will travel along Old Wallgrove Road from the M4 or Lenore Drive, before heading south on Compass Drive and onto the internal estate roads.

Warehouse 4E movements will be facilitated via 3 vehicular access points. It has separate car and truck entry / exit points on Cuprum Close (previously referred to as Estate Road 07). Furthermore, the truck entry and exit points are also separated.

The site has active and public transport services. A Shared Path (cyclists and pedestrians) is provided along the northern side of Lenore Drive and western side of Old Wallgrove Road, providing connections to the regional pedestrian and cycle networks. Compass Drive and the internal roads include a 2.5-metre shared path for both pedestrians and cyclists. Bus service (Route 779) provides direct access to and from St Marys Train Station. Introduction of a direct connection with St Marys Train Station increases the accessibility of the site via public transport services.

A Green Travel Plan has been developed to identify alternative and sustainable modes of transport and to reduce single-occupancy car travel for journeys to and from the Site. Strategies that will be implemented to influence travelling behaviour include travel planning and demand management, promotion of public transport, carpool and electric vehicle use, cycling and walking. Implementation of the Green Travel Plan will be monitored to review efficiencies and identify further opportunities.

2.5 Contact Details

The Goodman Representative will be responsible for all environmental management at Building 4E. Contact details are outlined in **Table 3**

Table 3 Contact Details

Role	Name	Contact Details
Building 4E		
Goodman's Representative	Michael Trotnar – Senior Building Manager	0409 999 447 Michael.Trotnar@goodman.com
Tenant's Representative	T.B.C	T.B.C

2.6 Relevant Companies

2.6.1 Tenant

Building 4E has one tenancy which includes one warehouse, a workshop and one office. The tenant is responsible for the management of various Building and Operational elements as defined within the following tables.

2.6.2 Goodman

In general, Goodman is responsible for the Estate's private infrastructure and overall management of the common vegetated areas of which there a number of key components including Defendable Zones, Bio-retention Basins, landscaped setbacks, Riparian Corridors and development lots including the Amenity Lot.

Goodman is only responsible for the site management of the assets it owns within Oakdale West Estate. It is to be noted that Goodman are not responsible for dedicated roads or the Zone Substation within the Estate once the respective assets ownership is transferred to the relevant utility or authority.

2.6.3 Penrith City Council

Penrith City Council will be responsible for the road network within Oakdale West, as well as the streetscape planting in the verges within the road reserves.

3 Environmental Management Framework

3.1 Goodman Corporate Responsibility and Sustainability Policy

Goodman maintains a *Corporate Responsibility and Sustainability Policy* (CRSP) (GMG 2018) with the primary purpose to:

- Communicate Goodman's commitment to sustainable operating principles endorsed by the Goodman Boards;
- Establish a sustainability mandate which supports the long-term commitment to Goodman's integrated business model;
- Support the adoption of sustainable design principles and innovations within Goodman's development specifications;
- Establish an ongoing commitment to engage with our investors, capital partners, customers, the community and industry peers on issues relating to sustainability; and
- Create a directive to engage with our supply chain to support Goodman in achieving innovative and sustainable outcomes.

Goodman have incorporated the CRSP into the design and construction of the Oakdale West Estate and will continue to be implement it throughout operations as relevant to their ongoing responsibilities.

3.2 Roles and Responsibilities

The key personnel responsible for environmental management at Oakdale West are listed in **Table 4**.

Table 4 Personnel Responsible for Environmental Management

Site	Company and Role	Responsibilities
Oakdale West Estate Infrastructure (Council Owned Roads)	Penrith City Council (Council)	Ensure the dedicated internal Oakdale West Estate Road network is managed in accordance with the requirements noted under the SSD Consent.
Oakdale West Estate Infrastructure (Excluding Council Owned Roads)	Goodman's Representative (Goodman Rep)	Ensure that non Council owned infrastructure is managed in accordance with the requirements noted under the SSD Consent and the OWE OEMP.
Sites / Warehouses	Goodman's Representative (Goodman Rep)	Ensure the Tenant Representatives are made aware of their obligations of the OEMP (as relevant to their respective site) and that management measures are appropriately implemented and maintained. Advise and assist the tenant in the implementation of the OEMP, as required.
Sites / Warehouses	Tenant Representatives (Tenant Rep)	Ensure that the obligations of this OEMP are implemented and communicated to all relevant parties. Implement the Complaints and Incident Handling Procedures, as required.
Sites / Warehouses	Tenants/employees/ contractors (T/E/C)	Ensure familiarity, implementation and compliance with this OEMP and appended management plans; Support the company's commitment to environmental management and compliance; Work in a manner that will not harm the environment or impact on surrounding receptors; Report all environmental incidents and complaints to the Goodman's Representative without delay; and Report any inappropriate operational and/or environmental management practices to the Goodman's Representative without delay.

3.3 Statutory Requirements

3.3.1 SSD 22191322

The consent conditions for SSD 22191322 applicable to the operation of Building 4E are listed in **Appendix A**. (N.B. The administrative conditions and conditions relating to the construction phase have not been included in **Appendix A**, only those conditions specific to site operation have been included).

The operation of Building 4E shall be carried out in accordance with approved Development Consent SSD 22191322 and also in accordance with the documents referenced under Condition A2 of the Consent:

- The EIS ((Keylan Consulting, 2021)) and RTS ((Keylan Consulting, 2021a);
- The development layout plans and drawings attached to the Development Consent as Appendix 1 and Appendix 2;

- the Applicant's Management and Mitigation Measures in Appendix 3; and
- Modifications to SSD 7348 and associated EIS's and assessment reports.
- In accordance with Condition A3 of SSD 22191322, consistent with the requirements of the Development Consent, the Planning Secretary may make written directions to Goodman in relation to:
- (a) the content of any strategy, study, system, plan, program, review, audit, notification, report or correspondence submitted under or otherwise made in relation to this consent, including those that are required to be, and have been, approved by the Planning Secretary; and
- (b) the implementation of any actions or measures contained in any such document referred to in condition A3(a) of the Development Consent.
- In accordance with Condition A4 of SSD 22191322, the conditions of this consent and directions of the Planning Secretary prevail to the extent of any inconsistency, ambiguity or conflict between them and a document listed in condition A2(c) or A2(e). In the event of an inconsistency, ambiguity or conflict between any of the documents listed in condition A2(c) or A2(e), the most recent document prevails to the extent of the inconsistency, ambiguity or conflict. Goodman's Representative will be notified if any inconsistencies are identified.

3.3.2 SSD 7348

The consent conditions for SSD 7348 (as modified) applicable to the operation of Building 4E are listed in **Appendix B**. (N.B. The administrative conditions and conditions relating to the construction phase have not been included in **Appendix B**, only those conditions specific to site operation have been included).

The Concept Proposal shall be carried out in accordance with SSD 7348 (as modified) and also in accordance with the documents referenced under Condition B5 of the Consent:

- EIS and RTS;
- the plans in Appendix 1 and Appendix 2;
- SSD 7348 MOD 1;
- the Applicant's Management and Mitigation Measures in Appendix 7; and
- modifications to this consent.

In accordance with Condition B6 and D4 of the SSD 7348 consent, if there is any inconsistency between the plans and documentation referred to in Condition B5, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of SSD 7348 and directions of the Planning Secretary prevail to the extent of any inconsistency.

3.3.3 Other licences, permits, approvals and consents

In accordance with Condition B4 of the SSD 7348 consent and Condition AN1 or SSD 22191322 consent, all licences, permits, approvals and consents as required by law must be obtained and maintained as required for the development. No condition of this consent removes any obligation to obtain, renew or comply with such licences, permits, approvals and consents.

We note all endeavours will be made to obtain the relevant permit's/licences etc, however we are reliant on the Tenants Representative to provide the information within a timeframe reasonably requested by Goodman's Representative.

All licences, permits, and approvals/consents required for the tenant's specific operational purposes will be obtained and maintained by the Tenants Representative as required post lease approval.

Additional licences, permits, approvals and consents required throughout operation as described in SSD 7348 and SSD 22191322 Consent Conditions, including the documents listed above in **Section 3.3.1** and **3.3.2** are summarised in **Table 5**.

Table 5 Other licences, permits, approvals and consents

Licence, permit, approval or consent	Person Responsible	Timing	References / Notes
Prior to the issuing of an Occupation Certificate, the Applicant must provide the Certifier with documented evidence that the products and systems proposed for use or used in the construction of external walls (including finishes and claddings such as synthetic or aluminium composite panels) comply with the requirements of the BCA.	Goodman	Before the commencement of operation	SSD 22191322 Condition A24 (b)
The Applicant must provide a copy of the documentation given to the Certifier to the Planning Secretary within seven days after the Certifier accepts it.	Goodman	Before the commencement of operation	SSD 22191322 Condition A25
A Compliance Certificate for water and sewerage infrastructure servicing of the site will be obtained.	Goodman	Before the commencement of operation	SSD 22191322 Condition A27
Before the issuing of the Occupation Certificate for the development, work-as-executed drawings signed by a registered surveyor demonstrating that the stormwater drainage and finished ground levels have been constructed as approved, must be submitted to the Principal Certifier.	Goodman	Before the commencement of operation	SSD 22191322 Condition A32
All licences, permits, approvals and consents as required by law must be obtained and maintained as required for the development.	Goodman	As required	SSD 22191322 Condition AN1 SSD 7348 Condition B4
The Applicant must obtain relevant permits under the Heavy Vehicle National Law (NSW) for the use of over- dimensional vehicles on the road network.	Goodman	Before the commencement of operation	SSD 22191322 Condition B7.

3.4 Environmental Training

Prior to the commencement of operation, the Tenant Representative will ensure their Operations Management Framework includes a detailed Training Plan to clearly address the training requirements outlined in the OEMP and appended management plans. The Tenant Representative will provide a copy of this Training Plan to Goodman.

Environmental training responsibilities are summarised in **Table 6** and minimum topics to be covered for environmental training are summarised in **Section 3.4.1** and **3.4.2**.

A register of all environmental training carried out, including dates, names of persons trained, and trainer name and qualification details will be established and maintained for the duration of operation.

Table 6 Training Responsibilities

Person Responsible	Reference / Notes
Goodman Representative	Ensure all Tenant's Representatives and maintenance contractors engaged by Goodman are appropriately inducted and aware of their general obligations under this OEMP
Tenant Representative	- Ensure all other employees and contractors are appropriately inducted and aware of their obligations under the OEMP. - To conduct regular "toolbox talks" to ensure continuing awareness of environmental management expectations and responsibilities as applicable to their operations.

3.4.1 Environmental Induction Training

The environmental induction training will cover all elements of the OEMP and will include, as a minimum, the following:

Table 7 Environmental Induction Training

Inductions and Environmental Training	Reference / Notes
Purpose and objectives of the OEMP	Section 1.2
Obligation to minimise harm to the environment	Section 1.2.1
Hours of operation	Section 2.3
Goodman's Responsibility and Sustainability Policy	Section 3.1
Conditions of any environmental licences, permits and consent approvals	Section 3.3
Appropriate response and management of environmental incidents (for example, a chemical spill) in accordance with the incidents protocol.	Section 3.5
Appropriate response and management of complaints received from the public, government agencies or other stakeholders in accordance with the complaints protocol.	Section 3.6
General site maintenance and management expectations and requirements	Sections 4
Familiarisation with site environmental controls	Sections 4
The environmental management commitments and responsibilities in this OEMP (including appended management plans).	Sections 4 and 5

3.4.2 Toolbox Talks

Toolbox talks or similar will be held to identify environmental issues and controls when works commence in a new area of the site or a new activity, as well as when environmental issues arise on site. The toolbox talk will include but not be limited to:

- A description of the activity and the area;
- Identification of the environmental issues and risks for the area; and
- Outline the mitigations measures for the works and the area (see **Section 4**).

3.5 Incident and Non-Compliance Response and Handling Procedure

3.5.1 Performance Objective

To ensure that any incident and/or non-compliance caused by or relating to site operation is effectively responded to, reported accordingly, and any resulting adverse environment and/or human health impact is promptly prevented or effectively managed.

3.5.2 Definitions

For the purposes of this OEMP, an 'incident' as an occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance. A 'non-compliance' is described as an occurrence, set of circumstances or development that is a breach of SSD 22191322.

Material Harm is defined within SSD 22191322 as harm that:

> *(a) involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or*
>
> *(b) results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment)*

There is the possibility of minor environmental incidents occurring as part of this project. SLR have defined a 'Minor Environmental Incident' as an incident where there has been no potential or actual material harm to the environment (see 'material harm' definition above).

Minor environmental incidents will still be handled under the process outlined in **Figure 4** except there will be no requirement for government notification. All minor or major incidents will be recorded in the Incident Register. A minor incident does not constitute a non-compliance with SSD 22191322.

3.5.3 Responsibility

The Tenant's Representative is responsible for ensuring that the appropriate management response and handling procedures are instigated and carried through in the event of an incident and/or non-compliance. All employees, contractors and subcontractors are to:

- Notify the Tenant's Representative who will notify the Goodman Representative of any hazard or potential hazard that may result in an incident and/or non-compliance, regardless of the nature or scale; and
- Take immediate action (where it is safe to do so) to prevent, stop, contain and/or minimise any adverse impact associated with an incident and/or non-compliance.

The induction and toolbox talks outlined in **Section 3.4** will be used to ensure all site employees, contractors and subcontractors are aware of and understand their obligations for incident and/or non-compliance response.

3.5.4 Register

Records of all incidents and non-compliances will be maintained in Goodman's incident register system. Details of all incidents and complaints will be retained for at least five years after the event to which they relate.

3.5.5 Notification Requirements

In the instance of an incident or non-compliance, the notification protocols outlined in **Table 8** shall be adhered to.

Table 8 Material Harm Incident and Non Compliance Notification

Notification Requirement	Responsible	Timeframe
Incidents		
Upon awareness of an incident, the Tenant's Representative shall be notified of and provided with all relevant information pertaining to the potential or actual incident.	Any person engaged as an employee or undertaking an activity with regard to the operation of Building 4E	Immediately after becoming aware of a potential or actual incident
The Tenant's Representative will notify Goodman's Representative of any incident including all relevant information pertaining to the incident.	Tenant Rep	Immediately after becoming aware of a potential or actual incident
The Goodman's Representative will notify DPE of an incident in writing via the Major Projects Website.	Goodman's Rep	Immediately
An Event Notification Report will be completed and provided to Goodman. This is attached to this OEMP as **Appendix D**.	Tenant Rep	Within 24 hours
Goodman's Representative will provide a formal written notification of an incident to DPE via the Major Projects Website.	Goodman Rep	Within 7 days after becoming aware of incident
Tenant's Representative will provide a written incident report to Goodman Representative.	Tenant Rep	Within 25 calendar days after becoming aware of incident
Goodman's Representative will provide DPE and any relevant public authorities a detailed report on the incident	Goodman Rep	Within 30 days of the incident occurring or as otherwise agreed to by the Planning Secretary
Non-Compliance		
Provide written notification of the non-compliance to the Major Projects website.	Goodman Rep	Within 7 days after becoming aware of non-compliance

Under the POEO Act, "*relevant authority*" means any of the following:

- The appropriate regulatory authority – the Environment Protection Authority (EPA);
- If the EPA is not the appropriate regulatory authority – the local authority for the area in which the pollution incident occurs (i.e. Council);

- NSW Public Health Unit;
- SafeWork NSW; and
- Fire and Rescue NSW.
- Water NSW (if the event has an effect on the Water NSW pipeline corridor).

Table 9 lists the contact details for these authorities. The person reporting the pollution incident will provide the following key details:

- Location of the pollution incident/emergency;
- Nature of the pollution incident/emergency;
- Their name and contact details; and
- Details of any required assistance.

Table 9 Regulatory Authority Contact List

Regulatory Authority / Stakeholder	Key Contact	Contact Details	
Department of Planning, Industry and Environment (DPIE)	Compliance Unit	1300 305 695 or 02 9228 6111 compliance@planning.nsw.gov.au	
Environment Protection Authority (EPA)	Environment Line	131 555 info@environment.nsw.gov.au	
	Head office (Sydney)	02 9995 5000	
Environment, Energy and Science (EES) Group	Main switchboard	1300 361 967 info@environment.nsw.gov.au	
Penrith City Council	Main switchboard	02 4732 777 council@penrith.city	
Water NSW	Main switchboard	1300 662 077 Customer.Helpdesk@waternsw.com.au	
	Incident Notification Number – 24 hours	1800 061 069	
NSW Public Health Unit	Sydney Local Health District	Business hours: 1300 066 055 After hours: 02 9515 6111	
SafeWork NSW	Incident Notification Hotline	131 050 Select Option 3 to report a "Serious Incident or Fatality" – this will result in the incident being recorded and the appropriate person being contacted.	
Emergency Services	NSW Police NSW Fire and Rescue NSW Ambulance Service	131 444 1300 729 579 -	In case of emergency – 000

3.5.5.1 Non-Compliance Notification

A non-compliance notification will identify the development and the application number for it, set out the condition of consent (SSD 22191322) that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.
A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

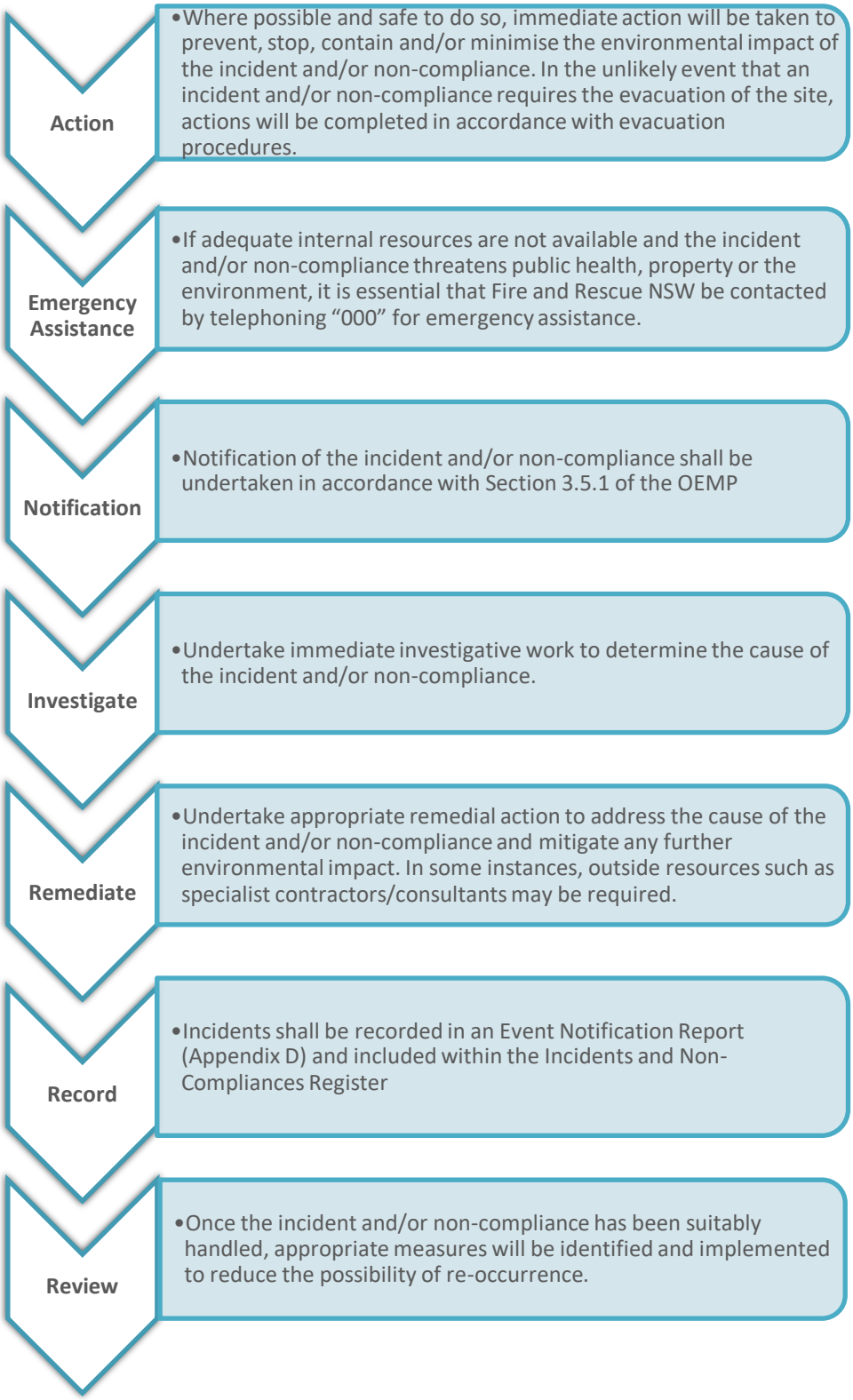


Figure 4 Incidents and Non-Compliance Handling Procedure

3.6 Complaints Response and Handling Procedure

All complaints will be handled in accordance with the *Community Communication Strategy* (CCS) (SLR, 2022) (see **Appendix E**).

All employees who take receipt of a complaint, either verbal or written, are to take note of the name and contact details of the complainant and the nature of the complaint and immediately notify the Tenant's Representative, who will then contact Goodman's Representative to commence proceedings.

The complaints handling procedure shown in **Figure 5** is duplicated from the CCS for quick reference. For further detail please consult the CCS.

3.6.1 Community Enquiries

Relevant contact details, including a phone number for community enquiries, will be included on site signage or are available on Goodman's website oakdaleopportunities.com. All community enquiries should be forwarded to Goodman's Representative (**Section 2.5**).

3.6.2 Dispute Resolution

In the event that a dispute arises between Goodman or the Tenant and a public authority, in relation to an applicable requirement in this consent or relevant matter relating to the operation of Building 4E, either party may refer the matter to the Planning Secretary for resolution. The Planning Secretary's determination of any such dispute will be final and binding on the parties.

In the case of a dispute between the Proponent and a community member/complainant, either party may refer the matter to the DPE and/or relevant regulatory authority for consideration, advice and/or negotiation.

Additional information can be located in the CCS (SLR 2022) attached as **Appendix E**.

3.6.3 Complaints Register

A Complaints Register will be maintained for the duration of operations and will contain the following:

- A copy of the environmental complaint handling procedure contained in **Section 3.6**;
- A separate reference sheet containing the contact details listed in **Table 3**
- Blank hard copies of the Community Correspondence Register, and
- Copies of all completed Community Correspondence Register, which are to be maintained for at least five years after the event to which they relate.

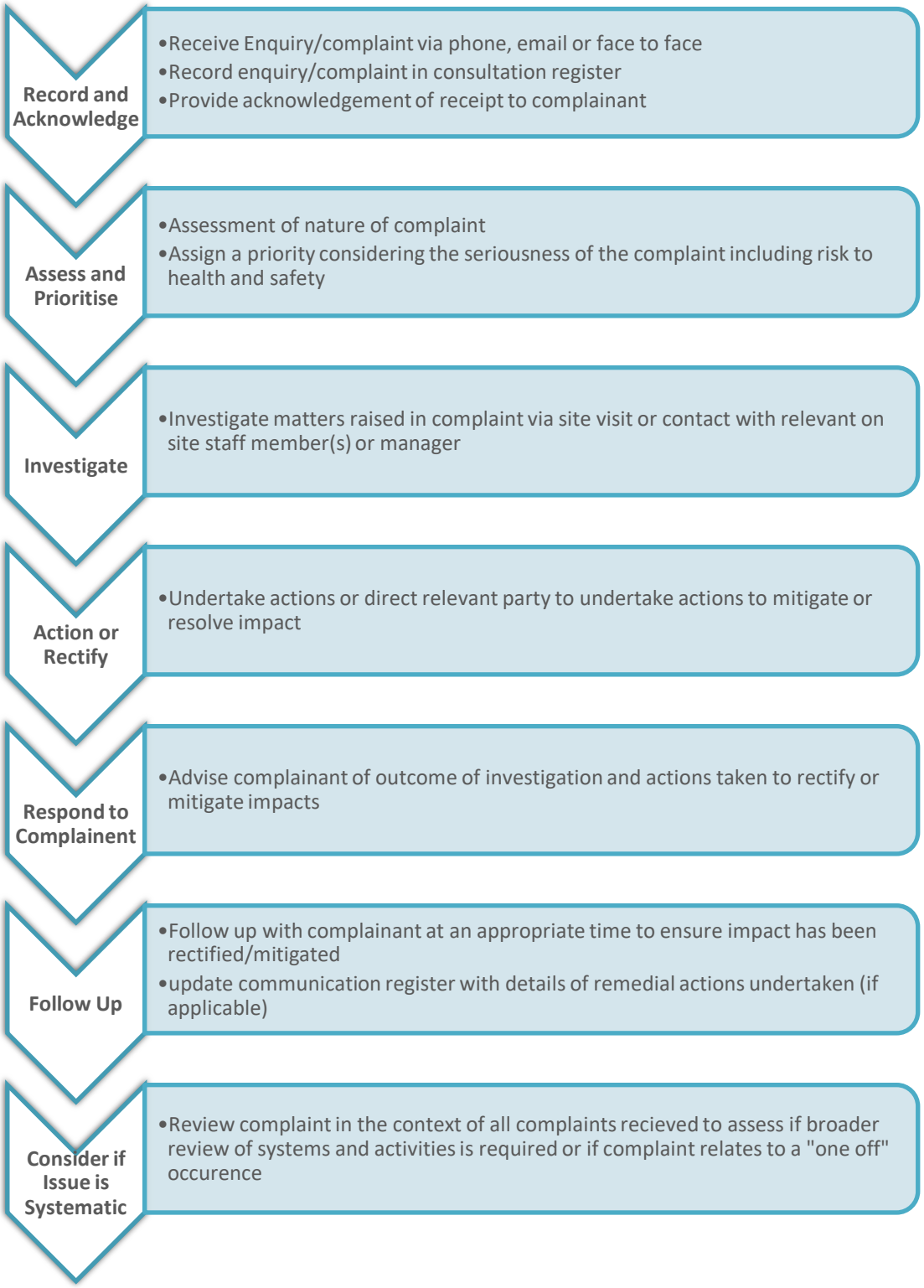


Figure 5 Complaints Handling Procedure

4 Environmental Management Commitments

Environmental aspects with the potential to be impacted by Building 4E are addressed in the following sub-sections. These issues have specific regulatory requirements and/or are considered to have the highest potential to result in a non-compliance with a legislative requirement or generate community complaints.

4.1 General

Table 10 lists the general environmental controls that will be implemented throughout the life of the development to minimise the potential for adverse impacts on the local environmental and surrounding receptors.

Table 10 General Operational Environmental Management Controls

Environmental Management Control	Person Responsible	Timing / Frequency	Reference / Notes
All reasonable and feasible measures will be implemented to prevent, and if prevention is not reasonable and feasible, minimise, any material harm to the environment that may result from construction and operation.	Tenant Rep / Goodman	Ongoing	SSD 22191322 Condition A1
Building 4E will operate in accordance with the reasonable requirements of TransGrid relating to their use of TransGrid Easement.	Tenant Rep	Ongoing	SSD 7348 Condition C13

4.2 Noise

The environmental management controls in **Table 11** will be implemented to minimise the potential for adverse noise emissions from the operation.

Table 11 Operational Environmental Management Controls for Noise

Environmental Management Control	Person Responsible	Timing / Frequency	Reference / Notes
Operational noise will be managed in accordance with the operational noise limits within SSD 22191322 and SSD 7348.	Tenant Rep, T/E/C	Ongoing	SSD 7348 Conditions B18 and B19 SSD 22191322 Condition B3 and B4
All plant and equipment will be maintained and operated in a proper and efficient manner.	Tenant Rep	Ongoing	SSD 22191322 Condition A22
Where practicable, all roller doors will be kept closed during the night-time period.	Tenant Rep, T/E/C	Ongoing	Best Practice
Outdoor fixed plant installed as part of the Base Building will be enclosed where possible.	Goodman Rep	Ongoing	Best Practice
Outdoor fixed plant installed post Practical Completion will be enclosed where possible.	Tenant Rep	Ongoing	Best Practice
Minimise coinciding use of noisy plant items.	Tenant Rep	Ongoing	EIS Section 9 Summary of Mitigation Measures – (Keylan Consulting, 2021)
Shut down intermittently used equipment when not in use.	Tenant Rep	Ongoing	EIS Section 9 Summary of Mitigation Measures – (Keylan Consulting, 2021)
Undertake regular compliance checks on the noise emissions of all plant and machinery.	Tenant Rep	Ongoing	EIS Section 9 Summary of Mitigation Measures – (Keylan Consulting, 2021)
Non-tonal reversing alarms will be used on all items of plant and heavy vehicles.	Tenant Rep	Ongoing	EIS Section 9 Summary of Mitigation Measures – (Keylan Consulting, 2021)
Equipment is oriented away from sensitive receivers.	Tenant Rep	Ongoing	EIS Section 9 Summary of Mitigation Measures – (Keylan Consulting, 2021)

4.3 Air Quality

Air quality will be managed in accordance with the Air Quality Management Plan (AQMP) (SLR, 2022) and attached as **Appendix F**.

The environmental controls in **Table 12** will be implemented to further minimise the potential for adverse air quality impacts associated with operational activities.

Table 12 Environmental Management Controls for Air Quality

Environmental Management Control	Person Responsible	Timing / Frequency	References / Notes
All listed mitigation and management measures outlined in the AQMP will be implemented throughout operation. These mitigation measures cover the following activities: • Refuelling; • Minimisation of Onsite Vehicles Idling Times; • Onsite Vehicle Movements; • Fugitive Dust; • Exhaust Air Discharge; • Staff Awareness and Training; and • Contingency Plan (also replicated in Section 6 of this OEMP).	Tenant Rep	Ongoing	AQMP Section 8.2

4.4 Traffic

Operational traffic will be managed in accordance with the Operational Traffic Management Plan (OTMP) prepared by Ason (2022) and attached as **Appendix G**.

The environmental management controls in **Table 13** will be implemented to further minimise the potential for adverse impact associated with operational traffic.

Table 13 Environmental Management Controls for Traffic

Environmental Management Control	Person Responsible	Timing / Frequency	References / Notes
All listed mitigation and management measures outlined in the OTMP will be implemented throughout operation. These mitigation measures cover the following activities: • Pedestrian Management; • Vehicle Management; • Loading and Unloading Materials; • Service Vehicle Access Rotes; • Temporary or Unplanned Works; • Dangerous Goods; • Driver Code of Conduct; and • Contingency Plan (also replicated in Section 6 of this OEMP).	Goodman Rep, Tenant Rep	Ongoing	OTMP Section 4 to 6
An Operational Traffic and Access Management Plan (OTAMP) will be prepared and submitted to the Planning Secretary prior to commencement of operation of Building 4E.	Goodman	Before the commencement of operation	This commitment in the Oakdale West Estate (SSD 22191322) (Keylan Consulting, 2021) has been addressed within the OTMP attached as Appendix G.

4.5 Soil and Water

The environmental controls in **Table 14** will be implemented to ensure the effective management of soil and water in accordance with the conditions implemented by Development Consent SSD 7348 and Development Consent SSD 22191322.

Table 14 Environmental Management Controls for Soil and Water

Environmental Management Control	Person Responsible	Timing / Frequency	References / Notes
Operation will comply with section 120 of the POEO Act, which prohibits the pollution of waters.	Tenant Rep, T/E/C	Ongoing	SSD 22191322 Condition B13
The stormwater management system will be operated in accordance with Conditions B14 a)-e).	Goodman	Ongoing	SSD 22191322Condition B14
Water storage basins and stormwater infrastructure owned and managed by Goodman will be managed in accordance with the manufacturers specifications.	Goodman	Ongoing	Best practice

4.6 Waste

As required by Condition B30 of SSD 22191322, the Waste Management Plan (WMP) (SLR 2021) prepared as part of the EIS has been updated to be relevant to the operation. A copy of the WMP is attached as **Appendix H**.

The environmental management controls in **Table 15** will be implemented to minimise the potential for adverse waste impacts from the operation.

Table 15 Environmental Management Controls for Waste

Environmental Management Control	Person Responsible	Timing / Frequency	References / Notes
All listed mitigation and management measures outlined in the WMP will be implemented throughout operation. These mitigation measures cover the following activities: • Targets for Resource Recovery; • Waste Streams and Classifications; • Estimated Quantities of Operational Waste; • Waste Storage Area Size; • Waste Storage Room Location; • Waste Storage Area Features; • Waste Servicing; • Waste Avoidance, Reuse and Recycling Measures; and • Communication Strategies.	Goodman Rep, Tenant Rep	Ongoing	WMP Section 6
Recycling of packaging and pallets where possible, including returning to suppliers.	Goodman Rep, Tenant Rep, T/E/C	Ongoing	EIS Section 9 Summary of Mitigation Measures – (Keylan Consulting, 2021)

4.7 Biodiversity

The Vegetation Management Plan (VMP) (Ecologique 2019) has been prepared for operation and is attached as **Appendix J**.

Table 16 outlines the mitigation measures to be implemented during operation to manage any impacts to biodiversity.

Table 16 Environmental Management Controls for Biodiversity

Environmental Management Control	Person Responsible	Timing / Frequency	References / Notes
Implement measures to protect retained native vegetation adjacent to the site during construction and operation.	Goodman Rep, Tenant Rep	During construction and operation.	SSD 22191322 Condition B36
All listed mitigation and management measures outlined in the VMP will be implemented throughout operation. These mitigation measures cover the following activities: • Weed Control; • Soil Amelioration; • Mulching; and • Planting.	Goodman Rep, Tenant Rep	Ongoing	VMP Section 4

4.8 Visual Amenity

The visual amenity and landscaping at Building 4E will be maintained in accordance with the Landscape Management Plan (LMP) (Scape Design 2022) and contained in **Appendix I.**

The environmental controls in **Table 17** will be implemented to minimise the visual impact of the development.

Table 17 Environmental Management Controls for Landscaping and Visual Amenity

Environmental Management Control	Person Responsible	Timing / Frequency	References / Notes
All listed management measures outlined in the LMP will be implemented throughout operation. These management measures focus on the implementation of maintenance works including: • Plant care; • Fertilising; • Spraying; • Erosion control; and • The LMP also includes a Contingency Plan (also replicated in Section 6 of this OEMP).	Goodman Rep, Tenant Rep	Ongoing	LMP Section 5 and 6
Outdoor lighting will comply with AS/NZS 1158.3.1:2005 Pedestrian Area (Category P) Lighting and AS/NZS 4282:2019 Control of Obtrusive Effects of Outdoor Lighting.	Goodman Rep, Tenant Rep	Ongoing	SSD 7348 Condition C6
Illuminated signage will be oriented away from the sensitive receivers on the western and southern Site boundaries.	Goodman Rep, Tenant Rep	Ongoing	SSD 7348 Condition C7
Ensure the lighting associated with the development: • complies with the latest version of AS 4282-2019 - Control of the obtrusive effects of outdoor lighting (Standards Australia, 2019); and • is mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network.	Goodman Rep, Tenant Rep	Ongoing	SSD 22191322 Condition B19

4.9 Hazardous Goods and Contamination

Table 18 lists the management strategies for hazards, risks and emergencies as contained in SSD 7348 and SSD 22191322.

Table 18 Environmental Management Controls for Hazard, Risk and Emergency

Environmental Management Control	Person Responsible	Timing / Frequency	References / Notes
The quantities of dangerous goods stored and handled at the site must be below the threshold quantities listed in the Department of Planning's Hazardous and Offensive Development Application Guidelines – Applying SEPP 33 at all times.	Tenant Rep	Ongoing	SSD 22191322 Condition B21
Chemicals, fuels and oils will be stored in bunded areas in accordance with relevant Australian Standards and/or the *Storing and Handling of Liquids: Environmental Protection – Participants Manual* (Department of Environment and Climate Change 2007).	Tenant Rep	Ongoing	SSD 7348 Condition D110 SSD 22191322 Condition B22
Spill kits will be provided and maintained on site.	Tenant Rep	Ongoing	Best practice
The actions specified on the relevant safety data sheets (SDS) will be implemented in the event of a minor spill/incident of a potentially hazardous material.	Tenant Rep	Ongoing	Best practice
In the event of a major spill, the Incident response actions in Section 3.5 will be implemented.			Section 3.5

4.10 Fire Safety and Emergency

The Bushfire Emergency Management and Evacuation (BEME) (Blackash, 2022) and the Fire Management Plan (FMP) have been prepared for operation and are attached as **Appendix K** and **Appendix L** respectively.

Table 19 lists the management strategies for fire safety and emergency

Table 19 Environmental Management Controls Fire Safety and Emergency

Environmental Management Control	Person Responsible	Timing / Frequency	References / Notes
Maintain asset protection zones as indicated in the Bushfire Hazard Assessment (Blackash Bushfire Consulting, 2020)	Goodman Rep, Tenant Rep	Ongoing	EIS Section 8.11 – Bushfire (Keylan Consulting, 2021)
All listed mitigation and management measures outlined in the BEME will be implemented throughout operation. These mitigation measures cover the following activities: • Emergency Management and Evacuation; • Emergency Management Procedures; • Post Bushfire Event Actions; and Triggers for Action (also replicated in Section 6 of this OEMP).	Goodman Rep, Tenant Rep	Ongoing	BEME Section 6 to 9
All listed mitigation and management measures outlined in the FMP will be implemented throughout operation.	Goodman Rep, Tenant Rep	Ongoing	FMP

4.12 Community

Table 20 lists the management strategies for community communication as contained in SSD 7348 and the Community Communication Strategy (CCS) (SLR 2022) for Oakdale West, which applies to this development, is attached as **Appendix E**.

Table 20 Environmental Management Controls for Community Communication

Environmental Management Control	Person Responsible	Timing / Frequency	References / Notes
All strategies outlined in the CCS will be implemented throughout operation. These include: • Communication, Management and Mitigation Tools; • Complaints Procedure; and • Contingency Management Plan (also replicated in Section 6 of this OEMP).	Goodman Rep, Tenant Rep	Ongoing	CCS Section 5

4.13 Sustainability

Sustainability will be managed in accordance with the Sustainability Management Plan (SLR, 2022) attached as **Appendix N**.

Table 21 lists the management strategies for Sustainability**.**

Table 21 Environmental Management Controls for Sustainability

Environmental Management Control	Person Responsible	Timing / Frequency	References / Notes
Objectives, targets and strategies will be implemented and managed for the following categories in accordance with Table 3 of the SMP 'ESD Assessment Summary': • Design and Management • Façade Performance • Social Sustainability • Minimising Transport • Optimising Indoor Environmental Quality (IEQ) • Minimising Energy Use • Choosing Materials • Minimising Waste • Water Conservation and Reuse • Land Use and Ecology Impact	Goodman Rep, Tenant Rep	Ongoing	Sustainability Management Plan Section 5.1

5 Monitoring, Reporting and Auditing

Table 22 summarises the monitoring requirements for the operation of Building 4E as set out in the approved Development Consent SSD 22191322 and relevant management plans.

Prior to the commencement of operation, the Tenant Representative will ensure their Operations Management Framework includes a detailed Monitoring and Reporting Matrix to clearly document the specific applicable forms, registers or reports that will be used (i.e. Weekly Environmental Inspection Checklist, Complaints Register etc). The Tenant Representative will provide a copy of this matrix to Goodman.

The Tenant Representative will ensure the checklists included in the Operations Management Framework, including the Daily Observations Checklist and Weekly Environmental Checklist, address all relevant monitoring and reporting commitments outlined in the OEMP and appended management plans.

Table 22 Monitoring and Inspections Requirements

Aspect	Monitoring / Inspection Requirement	Person Responsible	Timing / Frequency	References / Notes
Daily				
General	The Daily Observations Checklist will be completed as part of a general environmental site inspection for the relevant environmental controls in the OEMP and specialist management plans requiring daily monitoring. Any required maintenance, process improvements or staff training identified will be undertaken to comply with OEMP commitments.	Tenant Rep	Daily	Best practice
Weekly				
General	The Weekly Environmental Checklist will be completed as part of a general environmental site inspection to ensure all relevant environmental controls listed in this OEMP and specialist management plans are in place. Any required maintenance, process improvements or staff training identified will be undertaken to comply with OEMP commitments.	Tenant Rep	Weekly	Best practice
General	The Tenant Representative will report environmental performance during regular management meetings and/or 'toolbox talks'. Items to be discussed include: • Any environmental incidents that have occurred during the previous period, including the management / corrective actions taken; • Any complaints that have been received during the previous period, including any management / corrective actions taken. • Any required maintenance, process improvements or staff training identified in order to comply with OEMP commitments.	Tenant Rep	Weekly	Section 3.4
Monthly				

Aspect	Monitoring / Inspection Requirement	Person Responsible	Timing / Frequency	References / Notes
Sustainability	The building tuning will be provided by service contractors and overseen by an independent assessor, at least once a month within the Defects Liability Period (DLP) to ensure that services are operating effectively and efficiently. Monthly reports will be provided to the tenant for DLP.	Tenant Rep	Monthly	Sustainability MP Section 7
Half-yearly				
Waste	Visual assessments of bins and bin storage areas will be conducted to ensure waste is being managed to the standards outlined in the WMP.	Tenant Rep	Half-yearly	WMP Section 6.11
Waste	Waste audits are to be conducted on a half-yearly basis to ensure WMP provisions are maintained.	Tenant Rep	Half-yearly	WMP Section 6.8
Waste	A waste audit will be conducted according to the WMP to ensure its provisions are being maintained.	Tenant Rep	Half-yearly	WMP Section 6.8
Sustainability	An energy audit and management review will be undertaken in accordance with the Sustainability Management Plan	Tenant Rep	Half-yearly	Sustainability MP Section 7.1
Annual				
General	This OEMP and all specialist management plans will be reviewed in accordance with Section 7 of this OEMP	Tenant Rep / Goodman Rep	Annually	OEMP Section 7
General	Within six months after the first year of commencement of operation of the development, and in the same month each subsequent year (or such other timing as agreed by the Planning Secretary), the Applicant must submit a Compliance Report to the Planning Secretary reviewing the environmental performance of the development to the satisfaction of the Planning Secretary. Compliance Reports must be prepared in accordance with the Compliance Reporting Post Approval Requirements (Department 2020) and must also: (a) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and (b) describe what measures will be implemented over the next year to improve the environmental performance of the development.	Goodman Rep	Within six months after the first year of commencement of operation of the development and annually thereafter	SSD 22191322 Condition C11
General	Compliance monitoring and reporting will be undertaken in accordance with the Compliance Monitoring and Reporting Program (SLR 2019).	Goodman Rep	Annually	SSD 7348 Condition D139

Aspect	Monitoring / Inspection Requirement	Person Responsible	Timing / Frequency	References / Notes
General	Compliance Reports of the Development will be carried out in accordance with the Compliance Reporting Post Approval Requirements (DPE 2018).	Goodman Rep	Annually	SSD 7348 Condition D140
General	Each Compliance Report will be made publicly available no later than 60 days after submitting it to the DPE and notify the DPE in writing at least 7 days before this is done.	Goodman Rep	Annually	SSD 7348 Condition D141
Sustainability	The Energy Management Plan should be progressively improved and updated on an annual basis, or as required, to reflect changes to the Energy Management System and to promote continual improvement of energy management at the Project Site.	Tenant Rep / Goodman Rep	Annually	Sustainability MP Section 7.1
Event Based				
Incident / Non-Compliance	In the event of an Incident or Non-Compliance, follow the process outlined in Section 3.5 of the OEMP.	Tenant Rep / Goodman Rep	In the event of an Incident or Non-Compliance	OEMP Section 3.5
General	The Applicant must submit a Compliance Report to the Planning Secretary reviewing the environmental performance of the development to the satisfaction of the Planning Secretary. Compliance Reports must be prepared in accordance with the Compliance Reporting Post Approval Requirements (Department 2020) and must also: (a) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and (b) describe what measures will be implemented over the next year to improve the environmental performance of the development.	Goodman Rep	Within six months after the first year of commencement of operation	SSD 22191322 Condition C11
Noise	A noise verification report will be prepared in accordance with Condition D75B of SSD 7348.	Goodman Rep	Within 3 months of commencing operation	SSD 7348 Condition D75B
Waste	Visual assessments of bins and bin storage areas will be conducted to ensure the waste management system is sufficient for the operation	Tenant Rep	Weekly in the first two months of operation	WMP Section 6.11
Landscaping	A final inspection will be undertaken prior to the completion of the Plant Establishment Maintenance Period (PEMP) (Defects Liability Period).	Goodman Rep	Prior to the completion of the PEMP.	LMP Section 5.4

Aspect	Monitoring / Inspection Requirement	Person Responsible	Timing / Frequency	References / Notes
Sustainability	All committed sustainability related measures need to be commissioned and tuned once the project is completed, to ensure all services operate to their full potential as designed.	Goodman Rep	Once the project is completed	Sustainability MP Section 7
Other				
General	All monitoring will be undertaken in accordance with Division 9.4 of Part 9 of the EP&A Act.	Goodman Rep	Ongoing	SSD 7348 D142 SSD 22191322 C13
Air Quality	Air quality reporting and monitoring will be conducted in accordance with Section 10.2 of the AQMP.	Tenant Rep	Ongoing	AQMP Section 10.2
Traffic	Traffic reporting and monitoring will be conducted in accordance with Section 6.1 of the OTMP.	Tenant Rep	Ongoing	OTMP Section 7.1
Waste	Waste reporting and monitoring will be conducted in accordance with Section 6.11 of the WMP.	Tenant Rep	Ongoing	WMP Section 6.11
Biodiversity	Site audits, monitoring and reporting on the progress and achievement of the VMP performance targets shall be undertaken by the Site Superintendent or other representative nominated by Goodman.	Goodman Rep	Ongoing	VMP Section 4.7
Landscaping	Monitoring, maintenance, irrigation and pruning will be undertaken in accordance with Section 6 of the LMP	Goodman Rep	Ongoing	LMP Section 6
Landscaping	A final monitoring report shall be prepared and provide a summary of all works undertaken during the plant establishment period.	Goodman Rep	Prior to handover, minimum of 18 months after the completion of works	LMP Section 5.4
Fire Safety and Emergency	Monitoring and reporting will be undertaken in accordance with the BEMEP.	Tenant Rep	Ongoing	BEMEP
Community	The performance of the Community Communication Strategy will be monitored in accordance with the CCS.	Goodman Rep	Ongoing	CCS Section 6
Sustainability	An energy usage review should be undertaken within the first few months of operation to ensure the Energy Management Plan is sufficient for the development's needs.	Goodman Rep	First few months of operation	Sustainability Management Plan Section 7
General	Compliance monitoring and reporting will be undertaken in accordance with the Compliance Monitoring and Reporting Program (SLR 2019).	Goodman Rep	As required	SSD 7348 Condition D139

Aspect	Monitoring / Inspection Requirement	Person Responsible	Timing / Frequency	References / Notes
General	Compliance Reports of the Development will be carried out in accordance with the Compliance Reporting Post Approval Requirements (DPE 2018).	Goodman Rep	As set out in the DPE guidelines	SSD 7348 Condition D140
General	Regular reporting on environmental performance will be uploaded on the dedicated website as per the reporting arrangements in any plans or programs approved under the conditions of SSD 7348 and SSD 22191322.	Goodman Rep	Ongoing	SSD 7348 Condition D143 SSD 22191322 Condition C14

6 Contingency Management Plan

Table 23 lists the actions to be implemented if inspections, monitoring and/or auditing indicate that the mitigation measures listed in **Table 22** and the specialist management plans are not effective in managing environmental impacts.

Table 23 Contingency Plan

Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
Noise	Trigger	Operational noise volume is in accordance with permissible and programmed volume constraints.	Operational noise volumes are within 90% of the permissible volume constraints.	Operational traffic volumes exceed permissible volume constraints.
	Response	No action. Continue ongoing monitoring activities.	• Review and investigate noisy operational activities, and where appropriate, implement additional remediation measures such as: • Undertake additional noise reviews to determine cause of higher limit noise issues in more detail. • Review OTMP (and other sub-plans) and update where necessary. • Provide additional training to tenants to provide information on lowering noise emissions.	• Condition Amber responses, plus the following additional responses; • Undertake additional noise surveys to review cause in more detail. • Surveys of each tenancy shall be required to allow enforcement of site-specific thresholds. • Review OTMP and update where necessary. • Provide additional training to tenants to provide information on lowering noise emissions. • Notify the planning secretary within 7 business days of becoming aware of a non-compliance.

Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
Traffic Operational Movements	Trigger	Visual monitoring of all traffic movements within the Site does not detect unsafe movement of traffic and risk to persons and property.	Monitoring of all traffic movements within the Site detects unsafe movement of traffic and risk to persons and property.	Monitoring of all traffic movements within the Site identifies several unsafe movements of traffic and risk to persons and property.
	Response	Visual monitoring to continue daily as part of an ongoing process.	• Review needed to address persistent unsafe movements. • Modification of traffic controls to self-enforce appropriate vehicle manoeuvres within the site.	Condition Amber responses, plus the following additional responses; • Direct cessation of unsafe movements. • Notify the planning secretary within 7 business days of becoming aware of a non-compliance.
	Trigger	Following periods of adverse weather conditions (e.g. a significant heavy rain event), internal roads/aisles have been inspected prior to heavy vehicle traffic use and no issues found.	Internal roads / aisles have been inspected following adverse weather conditions and minor issues found (small potholes, dirt / debris, or pooling water).	Internal roads / aisles have been inspected following adverse weather conditions and major issues found (failed road integrity, large diameter potholes, fallen light poles or trees).
	Response	No further action required until next adverse weather event.	Any impediments to access roads will be cleared. Road maintenance teams shall repair any potholes and remove excess water when expected traffic volumes are lowest.	Condition Amber responses, plus the following additional responses; • Install a detour around any unsafe obstacle to ensure safety for all motorists and/or pedestrians.

Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
Traffic Operational Movements	Trigger	Parking occupancy less than provided on-site capacity	Parking bay requirements are within 90% of the provided spaces	Parking requirements exceed parking spaces provided.
	Response	No response required. Continue monitoring program	Review and investigate parking rates and where appropriate, implement additional remediation measures such as: • Undertake additional parking reviews to determine cause of higher limit parking space issues in more detail. • Review OTMP and update where necessary. • Provide additional training to tenants to provide information on lowering parking demands.	Condition Amber responses, plus the following additional responses; • Temporary halting of activities and resuming when conditions have improved. • Provide incentives for carpooling and utilising active transport measures.
	Trigger	No unsafe pedestrian movements identified	Pedestrian behaviour identified to be risky and unsafe.	Site design/operations identified to place pedestrians in unsafe situations and multiple near miss events
	Response	No response required. Continue monitoring program	• Review needed to address persistent unsafe movements. • Modification of traffic controls to self-enforce appropriate vehicle manoeuvres within the site.	Condition Amber responses, plus the following additional responses; • Direct cessation of unsafe movements by amending design of Site. • Notify the planning secretary within 7 business days of becoming aware of a non-compliance.

Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
Traffic Operational Movements	Trigger	Operational traffic volume is in accordance with permissible and programmed volume constraints	Operational traffic volumes are within 90% of the permissible volume constraints	Operational traffic volumes exceed permissible volume constraints
	Response	This operational traffic volume review shall be completed monthly for the first 6 months of operation and bi-annually thereafter.	Review and investigate operational activities, and where appropriate, implement additional remediation measures such as: • Undertake review of the Site's traffic generation in more detail. • Review OTMP and update where necessary. • Provide additional training to tenants.	Condition Amber responses, plus the following additional responses; • Temporary halting of activities and resuming when conditions have improved. • Surveys of accesses shall be required to allow enforcement of site-specific thresholds. • Notify the planning secretary within 7 business days of becoming aware of a non-compliance.

Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
	Trigger	Loading / service bays are within operational constraints	Loading / service bays are within 90% of capacity	Loading / service bays exceed capacity.
	Response	No response required. Continue monitoring program	Review and investigate operational activities, and where appropriate, implement additional remediation measures such as: • Drivers be provided with additional training and an extra copy of the Driver Code of Conduct. • Provision of additional training to the tenants should be provided to ensure the most appropriate schedule can be created.	Condition Amber responses, plus the following additional responses; • Approved traffic thresholds to be enforced for the peak periods • Review OTMP and update where necessary. • Notify the planning secretary within 7 business days of becoming aware of anon-compliance.
Traffic Operational Movements	Trigger	Service bays are not restricted and being utilised as intended.	Vehicles other than service vehicles are stopped within the service area	Vehicles other than service vehicles are consistently parked within the service area
	Response	No response required. Continue monitoring program	Review and investigate operational activities, and where appropriate, implement additional remediation measures such as: • Drivers be provided with additional training and an extra copy of the Driver Code of Conduct. • Provision of additional training to the tenants should be provided to ensure the most appropriate schedule can be created.	Condition Amber responses, plus the following additional responses; • Review OTMP and update where necessary. • Notify the planning secretary within 7 business days of becoming aware of a non-compliance.

Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
	Trigger	No vehicles parked adjacent to TransGrid access	Vehicle stopped adjacent to TransGrid access	Vehicle parked adjacent to, and blocking, TransGrid access
	Response	No response required. Continue monitoring program	• Vehicle and driver to be moved from blocking the access. • Provision of additional training to the tenants should be provided to ensure TransGrid easement is not to be restricted. • Drivers be provided with additional training and an extra copy of the Driver Code of Conduct.	Condition Amber responses, plus the following additional responses; • Review OTMP and update where necessary. • Notify the planning secretary within 7 business days of becoming aware of a non-compliance.

Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
Traffic Queuing	Trigger	No queuing identified at the Site access.	Queuing identified at the Site access.	Queuing identified on the public road as a direct result from activities within the Site.
	Response	No response required. Continue monitoring program.	Review the delivery schedules prepared by the tenant. • Drivers be provided with additional training and an extra copy of the Driver Code of Conduct. • Provision of additional training to the Tenant's representative should be provided to ensure the most appropriate schedule can be created.	Condition Amber responses, plus the following additional responses; • Approved traffic thresholds to be enforced for each sub-tenancy. • Review OTMP and update where necessary. • Notify the planning secretary within 7 business days of becoming aware of a non-compliance.

Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
Traffic Incidents	Trigger	No incidents observed or reported.	Near miss or minor incident occurred within the carriageway of OWE which did not require medical attention (such as tripping on raised footpath).	Major incident occurred within the carriageway of OWE which did not require medical attention (such as being hit by a truck while exiting a Site).
	Response	No action required at this stage, however reinforcement to the Tenant's representative to report all incidents shall continue.	Near miss to be reported to the appropriate Incident to be reported to Site Manager and Estate Coordinator, for immediate remedy.	Condition Amber responses, plus the following additional responses; • Temporary halting of activities and resuming when incident has been remedied. • Incident to be reported to Site Manager and Estate Coordinator. • Review OTMP and update where necessary. • Notify the planning secretary within 7 business days of becoming aware of a non-compliance.
Soil and Water - Infiltration Prevention	Trigger	No water pooling around hardstand surfaces and hardstand surfaces well maintained.	Minor water pooling and/or some degradation of hardstand surfaces	Ongoing minor or major water pooling and/or some degradation of hardstand surfaces
	Response	Continue OEMP implementation.	Remediate as required	A suitably trained person to undertake a review of the area/s. Remediate as soon as practicable.

Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
Waste	Trigger	Monitoring/Inspections/Audits show waste and recycling is managed/segregated as per WMP and best practice	Monitoring/Inspections/Audits show waste and recycling management/segregation could be improved.	Monitoring/Inspections/Audits show waste and recycling management/segregation is poor and needs immediate improvement.
	Response	Continue OEMP implementation.	Undertake additional staff training and re-examine signage.	Undertake additional staff training, re-examine signage, review collection services provided and the WMP.
Biodiversity – Vegetation Management	Trigger	Vegetation is being managed in a stable and healthy condition as per the VMP.	Vegetation management needs minor improvement.	Vegetation is not in a stable and healthy condition and performance measures (Table 4-1 of the VMP) are not being met.
	Response	Continue OEMP implementation	Undertake additional training. Follow the VMP management and maintenance actions.	Suitably qualified personnel engaged to undertake maintenance work. Any defective work is rectified.

Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
Biodiversity - Wildlife protection	Trigger	No unexpected wildlife is encountered in the estate.	Unexpected uninjured wildlife is encountered in the estate.	Unexpected injured/deceased wildlife is encountered in the estate.
	Response	Continue OEMP implementation.	Stop Work Procedure: • Stop Work / Prevent personnel and contractors from entering area where fauna encountered • Tenant's to notify relevant Goodman's Representative • Manager to assess if animal can be encouraged to leave site voluntarily and safely or if WIRES or wildlife carer is required to capture and relocate animal.	Stop Work Procedure: • Stop Work / Prevent personnel and contractors from entering area • Tenant's to notify relevant Goodman's Representative • Goodman's Representative to immediately contact WIRES or other relevant wildlife carer.
Visual Amenity - Irrigation	Trigger	Irrigation system operating at optimum frequency.	Irrigation system yet to be installed.	Irrigation system fails.
	Response	No response required. Continue to monitor.	Provide additional hand watering until system is installed.	Provide additional hand watering until system is repaired. The irrigation system must be fully functional at all times to ensure that all plants, trees and lawns receive adequate water at optimal frequency.

Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
Visual Amenity - Plant failure	Trigger	No significant plant failure is present. Monitoring verifies that there is <5% of plants failing.	Monitoring verifies there is plant failure at a rate between 5-10%.	Monitoring verifies there is plant failure at a rate greater than 10%.
	Response	No response required. Continue to monitor.	If the cause of failure is due to a controllable situation then correct situation prior to replacing plants. All planting areas are to be free of grass and weed. Replace plants with one of similar size and quality and identical species of variety of the ones failed.	If the cause of failure is due to a controllable situation then correct situation prior to replacing plants. All planting areas are to be free of grass and weed. Replace plants with one of similar size and quality and identical species of variety of the ones failed.
Visual Amenity - Revegetation failure	Trigger	Revegetation is growing to desired design surface levels.	Monitoring verifies that weed emergence has occurred.	Monitoring verifies that weed emergence and plant failure has occurred.
	Response	No response required. Continue to monitor.	Refer to LMP for monitoring requirements once problem has been identified. Possible solutions include the removal of weeds as per Section 5.3.7 of the LMP.	Refer to LMP for monitoring requirements once problem has been identified. Possible solutions include removal of weeds and re-seeding of revegetation cover crop as per Section 5.3.7 of the LMP.

Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
Visual Amenity - Slope failure	Trigger	No significant erosion is present that would constitute a safety hazard or compromise the capability of supporting the end land use. Monitoring verifies there are no gully or tunnel erosion features, or rill erosion >200mm deep.	Monitoring verifies there is gully or tunnel erosion features, or rill erosion 200mm deep.	Monitoring verifies there is gully or tunnel erosion features, or rill erosion >200mm deep.
	Response	No response required. Continue to monitor.	A suitably trained person to inspect the site. Investigate opportunities to install water management infrastructure to address erosion. Remediate as appropriate.	Undertake a review of the drainage of the area and provide recommendations to appropriately remediate the erosion. Remediate as soon as practicable.
Bushfire	Trigger	No bushfire or bushfire prone weather.	Bushfire prone weather during summer.	Bushfire in the vicinity of the site.
	Response	Continue OEMP implementation.	Ensure grass is kept short and vegetation is minimal at the site. Weather is to be monitored twice daily for chance of bushfire.	Follow the Triggers for Action table in Section 8 of the BEMEP. Stop work and contact NSW Fire and Rescue on '000'. Evacuate the site as directed by NSW Fire and Rescue.

Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
Community - Submission	Trigger	General feedback/comment (no complaint	Enquiry made by formal or informal channels.	Complaint made by formal or informal channels.
	Response	Acknowledge receipt and record in consultation register. No further response required.	Acknowledge receipt and record in consultation register. Direct enquiry to relevant person for actioning and response within 5 days.	Acknowledge receipt and record in consultation register. Respond to complaint immediately if possible, if not direct enquiry to relevant person for actioning and provide complainant with a follow up verbal response on what action is proposed within two hours during construction works (including night and weekend works) and 24 hours at other times.
Community - Media	Trigger	Positive story in print, online, radio or television.	Neutral or advisory story in print, online, radio or television.	Negative story in print, online, radio or television.
	Response	Record in consultation register and advise Goodman media/marketing team. No further response required	Record in consultation register and advise Goodman media/marketing team. No further response required.	Record in consultation register and advise Goodman Project Team for further action and response. Contact relevant person for actioning and response within 48 hours

Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
Community - Unscheduled Event	Trigger	Event occurring outside of plan or schedule without impact or potential impact.	Event occurring outside of plan or schedule with minor impact or potential impact.	Event occurring outside of plan or schedule with major impact or potential impact.
	Response	No response required. Identify opportunities for improvement to manage potential future events.	Contact relevant person for actioning and response within 48 hours. Acknowledge in consultation register. Identify opportunities for improvement to manage potential future events.	Contact relevant person for actioning and response immediately. Acknowledge in consultation register. Identify opportunities for improvement to manage potential future events.
Community - Political Interest	Trigger	General or non-specific enquiry by Local, State or Federal political representative.	Enquiry or complaint relating to minor issue by Local, State or Federal political representative.	Enquiry or complaint relating to major issue by Local, State or Federal political representative.
	Response	Goodman Project Team to prepare and provide response or assign response task to relevant staff member for comment. Record in consultation register.	Goodman Project Team to prepare and provide response within 48 hours. Record in consultation register.	Goodman Project Team to prepare and provide response within 24 hours. Record in consultation register.

Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
Sustainability	Trigger	Energy and water usage reviews indicate systems are performing efficiently and employees are following energy savings procedures correctly.	Reviews indicate that energy savings procedures are not carried out effectively.	Reviews indicate that excessive water and energy usage is occurring.
	Response	Continue OEMP implementation	Undertake additional staff training, re-examine signage and procedures.	Undertake additional staff training, re-examine signage, review the SMP.

7 Review

Review of the OEMP will be undertaken regularly by Goodman's Representative in and will comprise, as a minimum, the following:

- Identification of areas of opportunity for improved environmental performance;
- Analysis of the causes of non-compliances, including those identified in environment inspections and audits;
- Verification of the effectiveness of corrective and preventative actions; and
- Highlighting any changes in procedures resulting from process improvement.

Condition C5 of SSD 22191322 also states that all strategies, plans and programs required under SSD 22191322 will be reviewed and Planning Secretary notified of the review within three months of:

- the submission of a Compliance Report under condition C11;
- the submission of an incident report under condition C7;
- the approval of any modification of the conditions of this consent; or
- the issue of a direction of the Planning Secretary under Condition A2(b) which requires a review.

This OEMP will also be reviewed and, if necessary, revised in the following circumstances:

- Where there is any change to the scope of the operation activities and/or disturbance footprint;
- Where it is identified that the environmental performance is not meeting the objectives of the OEMP; and/or
- At the request of a relevant regulatory authority.

Notwithstanding the review requirements outlined above, in accordance with the requirements of Condition C1(g) the following is provided as the protocol for periodic review of this OEMP and all management plans required under SSD 22191322.

- All management plans required under SSD 22191322 are to be reviewed every 12 months by Goodman's Environmental Consultant.
- The periodic review is to take account of any required changes to procedures, updates or changes to best practice, any non-compliances in the proceeding 12 month period and whether changes can be made to improve the environmental performance of the development.
- As per Condition C6 of SSD 22191322, revised documents will be sent to DPE within 6 weeks of review. All employees and contractors will be informed of any revisions to the OEMP by the Tenant Representative's toolbox talk during toolbox talks.
- Note: If the Planning Secretary agrees, a strategy, plan or program may be staged or updated without consultation being undertaken with all parties required to be consulted in the relevant conditions of SSD 22191322.

8 References

Ason (2022) *Operational Traffic Management Plan*

Australian Bushfire Protection Planners (ABPP) (2016) *Bushfire Protection Assessment*

Blackash (2022) *Bushfire Emergency Management and Evacuation Plan – Building 4E – Oakdale West Industrial Estate*

Blackash Bushfire Consulting (2020) *Bushfire Hazard Assessment*

Ecologique (2019) *Oakdale West Estate – Vegetation Management Plan*

GHD (2020) *SSD 7348 MOD3 – Oakdale West Industrial Estate Concept Plan and Stage 1 Modification (MOD 3) and Stage 2 Development Application (SSD 10397) – Environmental Impact Statement*

Goodman (2018) *Corporate Responsibility and Sustainability Policy*

Goodman (2021) *SSD 7348 MOD1 - Oakdale West Stage 4 – S.4.55(1A) Application to Modify Architecture Plans and Subdivision Plan*

Goodman (2021) *SSD 7348 MOD2 - Oakdale West Industrial Estate – S.4.55(1A) Application to Modify Architecture Plans and Subdivision Plan*

Goodman (2021) *SSD 7348 MOD8 Oakdale West Stage – S.4.55(1A) Application to Modify Architecture Plans*

Goodman (2021) *SSD 22191322 MOD 1 - Oakdale West Stage – S.4.55(1) Application to Remove Condition B28*

Goodman (2022) *SSD7348 MOD 10, Oakdale West Stage – S.4.55(1a) Application to Modify Architecture Plans*

Keylan Consulting (2021) *SSD 7348 MOD7 – 2 Aldington Road, Kemps Creek - Assessment Report Section 4.55(1A) Modification*

Keylan Consulting (2021) *SSD 22191322 Environmental Impact Statement*

Keylan Consulting (2021) Oakdale West Estate (SSD 22191322) Stage 5 – Response to Request for further information

Keylan Consulting (2021) *SSD7348 MOD9 – Oakdale West Industrial Estate Masterplan*

NSW Rural Fire Service (2019) *Planning for Bushfire Protection*

Scape Design (2022) *Oakdale West Estate, Precinct 4 Building 4E - Landscape Management Plan*

SLR (2021) *Oakdale West Industrial Estate – Lot 4E –Air Quality Management Plan*

SLR (2022) *Oakdale West Estate – Building 4E Waste Management Plan*

SLR (2022) *Oakdale West Estate Concept and Stage 1 - Community Communication Strategy*

SLR (2022) *Oakdale West Industrial Estate Operational Environmental Management Plan – Oakdale West Industrial Estate SSD 7348 Mod 9 Update* (OWE OEMP)

Urbis (2017) *Oakdale West Estate State Significant Development Application – Environmental Impact Statement*

Urbis (2019) *SSD 7348 MOD1 – Oakdale West Industrial Estate*

APPENDIX A

Relevant Approved Development Consent SSD 22191322

CONSOLIDATED CONSENT

Development Consent

Section 4.38 of the *Environmental Planning and Assessment Act 1979*

As delegate of the Minister for Planning and Public Spaces under delegation executed on 26 April 2021, I approve the Development Application referred to in Schedule 1, subject to the conditions specified in Schedule 2.

These conditions are required to:

- prevent, minimise, or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the development.

Chris Ritchie
Director
Industry Assessments

Sydney 29 October 2021 File: SSD-22191322

The Department has prepared a consolidated version of the consent which is intended to include all modifications to the original determination instrument.

The consolidated version of the consent has been prepared by the Department with all due care. This consolidated version is intended to aid the consent holder by combining all consents relating to the original determination instrument but it does not relieve a consent holder of its obligation to be aware of and fully comply with all consent obligations as they are set out in the legal instruments, including the original determination instrument and all subsequent modification instruments.

CONSOLIDATED CONSENT

SCHEDULE 1

Application Number:	SSD-22191322
Applicant:	Goodman Property Services (Aust) Pty Ltd
Consent Authority:	Minister for Planning and Public Spaces
Site:	Lot 111 DP 1262310 2 Aldington Road, Kemps Creek NSW 2178
Development:	Oakdale West Estate Stage 5 Development including construction, subdivision, fit out, operation and use of warehouse building 4E, associated office space, internal roads and parking

CONSOLIDATED CONSENT

SUMMARY OF MODIFICATIONS

Application Number	Determination Date	Decider	Modification Description
SSD-22191322-Mod-1	14 July 2022	Team Leader	Amendment to Building 4E elevations and removal of Condition B28

TABLE OF CONTENTS

DEFINITIONS

Applicant	Goodman Property Services (Aust) Pty Ltd, or any person carrying out any development to which this consent applies
BCA	Building Code of Australia
BC Act	*Biodiversity Conservation Act 2016*
Carrier	Operator of a telecommunication network and/ or associated infrastructure, as defined in section 7 of the *Telecommunications Act 1997* (Cth)
Certifier	A council or an accredited certifier (including principal certifiers) who is authorised under section 6.5 of the EP&A Act to issue Part 6 certificates
CEMP	Construction Environmental Management Plan
Conditions of this consent	Conditions contained in Schedule 2 of this document
Construction	The carrying out of works for the purpose of the development, including detailed earthworks, erection of building 4E, internal fit-out and construction of associated infrastructure permitted by this consent
Council	Penrith City Council
Day	The period from 7 am to 6 pm on Monday to Saturday, and 8 am to 6 pm on Sundays and Public Holidays
Department	NSW Department of Planning, Industry and Environment
Development	The development described in Schedule 1, the EIS and RTS, including construction and operation of a warehouse and associated office space and infrastructure
Development layout	The plans at Appendix 1 of this consent
DPIE	Department of Planning, Industry and Environment
EES	Environment, Energy and Science Group of the Department
EIS	The Environmental Impact Statement titled *Oakdale West Industrial Estate – Stage 5 2 Aldington Road, Kemps Creek*, prepared by Keylan Consulting Pty Ltd dated July 2021, submitted with the application for consent for the development
Environment	As defined in section 1.4 of the EP&A Act
EPA	NSW Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
Evening	The period from 6 pm to 10 pm
Fibre ready facility	As defined in section 372W of the *Telecommunications Act 1997* (Cth)
GLA	Gross lettable area
GFA	Gross floor area
Heritage	Encompasses both Aboriginal and historic heritage including sites that predate European settlement, and a shared history since European settlement
Heritage item	An item as defined under the *Heritage Act 1977,* and assessed as being of local, State and/ or National heritage significance, and/or an Aboriginal Object or Aboriginal Place as defined under the *National Parks and Wildlife Act 1974'*, the World Heritage List, or the National Heritage List or Commonwealth Heritage List under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth), or anything identified as a heritage item under the conditions of this consent
Incident	An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance Note: "material harm" is defined in this consent
Land	Has the same meaning as the definition of the term in section 1.4 of the EP&A Act
Material harm	Is harm that: a) involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or

	b) results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment)
Minister	NSW Minister for Planning and Public Spaces (or delegate)
Mitigation	Activities associated with reducing the impacts of the development prior to or during those impacts occurring
Modification Assessments	The document assessing the environmental impact of a proposed modification of this consent and any other information submitted with the following modification applications made under the EP&A Act: a) SSD-22191322-Mod-1, accompanied by 'Oakdale West Stage 5 – Application to Remove Condition B28, dated 23 May 2022, prepared by Goodman Property Services (Aust) Pty Ltd
Night	The period from 10 pm to 7 am on Monday to Saturday, and 10 pm to 8 am on Sundays and Public Holidays
Non-compliance	An occurrence, set of circumstances or development that is a breach of this consent
Operation	The use of Building 4E for storage and distribution of goods as described in the EIS and RTS
OWE	Oakdale West Estate including the approved Concept Plan for 22 warehouse buildings and associated infrastructure and Stage 1 development including bulk earthworks across the site, construction and operation of 3 warehouses and the Western North-South Link Road, as described in the development consent SSD 7348, approved on 13 September 2019, as modified
Principal Certifier	The certifier appointed as the principal certifier for the building work under section 6.6(1) of the EP&A Act or for the subdivision work under section 6.12(1) of the EP&A Act
Planning Secretary	Secretary of the Department, or delegate
Reasonable	Means applying judgement in arriving at a decision, taking into account: mitigation benefits, costs of mitigation versus benefits provided, community views, and the nature and extent of potential improvements
Registered Aboriginal Parties	Means the Aboriginal persons identified in accordance with the document entitled "*Aboriginal cultural heritage consultation requirements for proponents 2010*" (DECCW)
Rehabilitation	The restoration of land disturbed by the development to a good condition, to ensure it is safe, stable and non-polluting
Response to submissions (RTS)	The Applicant's response to issues raised in submissions received in relation to the application for consent for the development under the EP&A Act and includes the document titled *Oakdale West Estate (SSD 22191322) Stage 5 – Response to Request for further information* prepared by Keylan Consulting Pty Ltd and dated 15 September 2021
Sensitive receivers	A location where people are likely to work, occupy or reside, including a dwelling, school, hospital, office or public recreational area
Site	The land defined in Schedule 1
SLR	Proposed Southern Link Road as shown in the WSEA SEPP and the document titled *Broader WSEA SLRN Options Refinement Report* prepared by AECOM, 2014
TfNSW	Transport for New South Wales, incorporating the former Roads and Maritime Services
Waste	Has the same meaning as the definition of the term in the Dictionary to the POEO Act
WNSLR	Western North-South Link Road as shown in the WSEA SEPP and approved under the OWE development consent SSD 7348
WSEA	Western Sydney Employment Area
WSEA SEPP	State Environmental Planning Policy (Western Sydney Employment Area) 2009
Year	A period of 12 consecutive months

SCHEDULE 2

PART A ADMINISTRATIVE CONDITIONS

OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

A1. In addition to meeting the specific performance measures and criteria in this consent, all reasonable and feasible measures must be implemented to prevent, and if prevention is not reasonable and feasible, minimise, any material harm to the environment that may result from the construction and operation of the development, and any rehabilitation required under this consent.

TERMS OF CONSENT

A2. The development may only be carried out:

(a) in compliance with the conditions of this consent;

(b) in accordance with all written directions of the Planning Secretary;

(c) in accordance with the EIS and RTS;

(d) Modification Assessments;

(e) in accordance with the Development Layout in Appendix 1; and

(f) in accordance with the management and mitigation measures in Appendix 2.

A3. Consistent with the requirements in this consent, the Planning Secretary may make written directions to the Applicant in relation to:

(a) the content of any strategy, study, system, plan, program, review, audit, notification, report or correspondence submitted under or otherwise made in relation to this consent, including those that are required to be, and have been, approved by the Planning Secretary; and

(b) the implementation of any actions or measures contained in any such document referred to in Condition A3(a).

A4. The conditions of this consent and directions of the Planning Secretary prevail to the extent of any inconsistency, ambiguity or conflict between them and a document listed in Condition A2(c) or A2(f). In the event of an inconsistency, ambiguity or conflict between any of the documents listed in Condition A2(c) or A2(f), the most recent document prevails to the extent of the inconsistency, ambiguity or conflict.

LIMITS OF CONSENT

Lapsing

A5. This consent lapses five years after the date from which it operates, unless the development has physically commenced on the land to which the consent applies before that date.

Development Controls

A6. The total area of warehousing and office space at the development must not exceed a maximum gross lettable area of 35,560 square metres.

A7. The development must be consistent with the development controls in the OWE, as shown in **Table 1**.

Table 1: *Development Controls*

Development Aspect	Control
Minimum building setbacks from:	
• Southern Link Road	17.15 m
• Compass Drive	20 m
• Local Estate Roads	7.5 m
• Western site boundary	40 m
• Southern site boundary	20 m (excluding parking areas)
Rear boundary setbacks within the estate	5 m
Side boundary setbacks within the estate	0 m, subject to compliance with fire rating requirements
Height	15 m

Development Aspect	Control
- Building 1A	39 m
- Building 2A	18 m
- Building 2B	28 m
Minimum lot size	5,000 m^2
Minimum frontage	40 m (excluding cul-de-sacs) 35 m minimum lot width at the building line
Site coverage	Maximum of 65 per cent (excluding awnings)

NOTIFICATION OF COMMENCEMENT

A8. The date of commencement of each of the following phases of the development must be notified to the Planning Secretary in writing, at least one month before that date, or as otherwise agreed with the Planning Secretary:

(a) construction;

(b) operation; and

(c) cessation of operations;

A9. If the construction or operation of the development is to be staged, the Planning Secretary must be notified in writing, at least one month before the commencement of each stage (or other timeframe agreed with the Planning Secretary), of the date of commencement and the development to be carried out in that stage.

EVIDENCE OF CONSULTATION

A10. Where conditions of this consent require consultation with an identified party, the Applicant must:

(a) consult with the relevant party prior to submitting the subject document to the Planning Secretary for approval; and

(b) provide details of the consultation undertaken including:

(i) the outcome of that consultation, matters resolved and unresolved; and

(ii) details of any disagreement remaining between the party consulted and the Applicant and how the Applicant has addressed the matters not resolved.

STAGING, COMBINING AND UPDATING STRATEGIES, PLANS OR PROGRAMS

A11. With the approval of the Planning Secretary, the Applicant may:

(a) prepare and submit any strategy, plan or program required by this consent on a staged basis (if a clear description is provided as to the specific stage and scope of the development to which the strategy, plan or program applies, the relationship of the stage to any future stages and the trigger for updating the strategy, plan or program);

(b) combine any strategy, plan or program required by this consent (if a clear relationship is demonstrated between the strategies, plans or programs that are proposed to be combined); and

(c) update any strategy, plan or program required by this consent (to ensure the strategies, plans and programs required under this consent are updated on a regular basis and incorporate additional measures or amendments to improve the environmental performance of the development).

A12. If the Planning Secretary agrees, a strategy, plan or program may be staged or updated without consultation being undertaken with all parties required to be consulted in the relevant condition in this consent.

A13. If approved by the Planning Secretary, updated strategies, plans or programs supersede the previous versions of them and must be implemented in accordance with the condition that requires the strategy, plan or program.

PROTECTION OF PUBLIC INFRASTRUCTURE

A14. Before the commencement of construction of the development, the Applicant must consult with the relevant owner and provider of services that are likely to be affected by the development to make suitable arrangements for access to, diversion, protection and support of the affected infrastructure.

A15. Unless the Applicant and the applicable authority agree otherwise, the Applicant must:

(a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by carrying out the development; and

(b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development.

STRUCTURAL ADEQUACY

A16. All new buildings and structures, and any alterations or additions to existing buildings and structures, that are part of the development, must be constructed in accordance with the relevant requirements of the BCA.

Note:
- *Under Part 6 of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for the proposed building works.*
- *Part 8 of the EP&A Regulation sets out the requirements for the certification of the development.*

SUBDIVISION

A17. Prior to the issuing of a Subdivision Certificates for any stage of the development, detailed work-as-executed drawings shall be prepared and signed by a Registered Surveyor, which show the finished surface levels of the access road, internal roads, drainage and any areas of fill, carried out under this consent. The work-as-executed drawing must be submitted to the Certifier and Council prior to the issue of a Subdivision Certificate.

A18. Prior to the issuing of a Subdivision Certificates for any stage of the development, the Applicant must provide to the Certifier evidence that all matters required to be registered on title, including easements, have been lodged for registration or registered at the Land Registry Services.

A19. Prior to the issuing of a Subdivision Certificates for any stage of the development, a certificate from an electricity and telecommunications provider must be submitted to the Certifier certifying that satisfactory service arrangements to the site have been established.

COMPLIANCE

A20. The Applicant must ensure that all of its employees, contractors (and their sub-contractors) are made aware of, and are instructed to comply with, the conditions of this consent relevant to activities they carry out in respect of the development.

CONTRIBUTIONS TO COUNCIL

A21. Before the issuing of an occupation certificate for any part of the development, a payment of a levy of 1% of the proposed cost of carrying out the development must be paid to Council under section 7.12 of the EP&A Act.

Note: There are approval requirements for imposing a condition under section 7.12 in respect of land within a special contributions area.

OPERATION OF PLANT AND EQUIPMENT

A22. All plant and equipment used on site, or to monitor the performance of the development, must be:

(a) maintained in a proper and efficient condition; and

(b) operated in a proper and efficient manner.

EXTERNAL WALLS AND CLADDING

A23. The external walls of all buildings including additions to existing buildings must comply with the relevant requirements of the BCA.

A24. Prior to the issuing of:

(a) any Construction Certificate relating to the construction of external walls (including the installation of finishes and claddings such as synthetic or aluminium composite panels); and

(b) an Occupation Certificate,

the Applicant must provide the Certifier with documented evidence that the products and systems proposed for use or used in the construction of external walls (including finishes and claddings such as synthetic or aluminium composite panels) comply with the requirements of the BCA.

A25. The Applicant must provide a copy of the documentation given to the Certifier to the Planning Secretary within seven days after the Certifier accepts it.

UTILITIES AND SERVICES

A26. Before the construction of any utility works associated with the development, the Applicant must obtain relevant approvals from service providers.

A27. Before the commencement of operation of the development, the Applicant must obtain a Compliance Certificate for water and sewerage infrastructure servicing of the site under section 73 of the *Sydney Water Act 1994*.

A28. Before the issuing of a Subdivision Works or Construction Certificate for any stage of the development, the Applicant (whether or not a constitutional corporation) is to provide evidence, satisfactory to the Certifier, that arrangements have been made for the provision of communication facilities to the development.

A29. The Applicant must demonstrate that the carrier has confirmed in writing they are satisfied that the fibre ready facilities are fit for purpose.

A30. The Applicant must obtain any other relevant approvals from Endeavour Energy, prior to the commencement of construction.

TRANSGRID EASEMENT

A31. The Applicant must:

(a) provide safe and unobstructed access for TransGrid plant and personnel to access the transmission towers, lines and easement on and adjacent to the site, 24 hours a day, 7 days a week;

(b) comply with the requirements of TransGrid for any works in the TransGrid easement; and

(c) advise TransGrid of any proposed amended or modified encroachment into the easement.

WORK AS EXECUTED PLANS

A32. Before the issuing of the Occupation Certificate for the development, work-as-executed drawings signed by a registered surveyor demonstrating that the stormwater drainage and finished ground levels have been constructed as approved, must be submitted to the Principal Certifier.

APPLICABILITY OF GUIDELINES

A33. References in the conditions of this consent to any guideline, protocol, Australian Standard or policy are to such guidelines, protocols, Standards or policies in the form they are in as at the date of this consent.

A34. However, consistent with the conditions of this consent and without altering any limits or criteria in this consent, the Planning Secretary may, when issuing directions under this consent in respect of ongoing monitoring and management obligations, require compliance with an updated or revised version of such a guideline, protocol, Standard or policy, or a replacement of them.

ADVISORY NOTES

AN1. All licences, permits, approvals and consents as required by law must be obtained and maintained as required for the development. No condition of this consent removes any obligation to obtain, renew or comply with such licences, permits, approvals and consents.

PART B SPECIFIC ENVIRONMENTAL CONDITIONS

NOISE

Hours of Work

B1. The Applicant must comply with the hours detailed in Table 1, unless otherwise agreed in writing by the Planning Secretary.

Table 1 *Hours of Work*

Activity	Day	Time
Construction	Monday – Friday Saturday	7 am to 6 pm 8 am to 1 pm
Operation	Monday – Sunday	24 hours

B2. Works outside of the hours identified in Condition B1 may be undertaken in the following circumstances:

(a) works that are inaudible at the nearest sensitive receivers;

(b) works agreed to in writing by the Planning Secretary;

(c) for the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or

(d) where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm.

Operational Noise Limits

B3. The Applicant must ensure that noise generated by operation of the development does not exceed the noise limits in Table 2.

Table 2 *Noise Limits (dB(A))*

Location	Day $L_{Aeq(15\ minute)}$	Evening $L_{Aeq(15\ minute)}$	Night $L_{Aeq(15\ minute)}$	Night L_{AMax}
N1 Emmaus Village Residential	44	43	41	52
N3 Kemps Creek – nearest residential property	39	39	37	52
N4 & N5 Kemps creek – other residences	39	39	37	52
N9 to N14 Kemps Creek	47	42	42	52
N2 Emmaus Catholic College (school)	**When in use:** 45 $L_{eq(1h)}$			

Note *Noise generated by the development is to be measured in accordance with the relevant procedures and modifications, including certain meteorological conditions, of the Noise Policy for Industry (EPA, 2017). Refer to the plan in Appendix 2 for the location of residential sensitive receivers.*

B4. The noise limits in Table 2 do not apply to receiver N3, N4 and N5 if the Applicant has a Noise Agreement with the relevant landowner to exceed the noise limits, and the Applicant has provided written evidence to the Planning Secretary that an agreement is in place.

Construction Noise Limits

B5. The development must be constructed to achieve the construction noise management levels detailed in *the Interim Construction Noise Guideline* (DECC, 2009) (as may be updated or replaced from time to time). All feasible and reasonable noise mitigation measures must be implemented and any activities that could exceed the construction noise management levels must be identified and managed in accordance with the management and mitigation measures in the Appendix 2.

Road Traffic Noise

B6. Prior to the commencement of construction of the development, the Applicant must prepare a Driver Code of Conduct and induction training for the development to minimise road traffic noise. The Applicant must update the

Driver Code of Conduct and induction training for construction and operation and must implement the Code of Conduct for the life of the development.

TRAFFIC AND ACCESS

Heavy Vehicles

B7. The Applicant must obtain relevant permits under the *Heavy Vehicle National Law (NSW)* for the use of over-dimensional vehicles on the road network.

Parking

B8. The Applicant must provide sufficient parking facilities on-site, including for heavy vehicles and for site personnel, to ensure that traffic associated with the development does not utilise public and residential streets or public parking facilities.

Operating Conditions

B9. The Applicant must ensure:

(a) internal roads, driveways and parking (including grades, turn paths, sight distance requirements, aisle widths, aisle lengths and parking bay dimensions) associated with the development are constructed and maintained in accordance with the latest version of *AS 2890.1:2004 Parking facilities Off-street car parking* (Standards Australia, 2004), *AS 2890.2:2018 Parking facilities Off-street commercial vehicle facilities* (Standards Australia, 2018) and *AS 2890.6.2009 Parking facilities Off-street parking for people with disabilities* (Standards Australia, 2009)

(b) the swept path of the longest vehicle entering and exiting the site, as well as manoeuvrability through the site, is in accordance with the relevant AUSTROADS guidelines;

(c) the development does not result in any vehicles queuing on the public road network;

(d) heavy vehicles and bins associated with the development are not parked on local roads or footpaths in the vicinity of the site;

(e) all vehicles are wholly contained on site before being required to stop;

(f) all loading and unloading of materials is carried out on-site;

(g) all trucks entering or leaving the site with loads have their loads covered and do not track dirt onto the public road network; and

(h) the proposed turning areas in the car park are kept clear of any obstacles, including parked cars, at all times.

Sustainable Travel Plan

B10. Prior to the commencement of operation of any part of the development, the Applicant must prepare a Sustainable Travel Plan. The Sustainable Travel Plan must:

(a) be prepared in consultation with TfNSW;

(b) outline facilities and measures to promote public transport usage, such as car share schemes and employee incentives; and

(c) describe pedestrian and bicycle linkages and end of trip facilities available on-site.

B11. The Applicant must implement the Sustainable Travel Plan throughout operation of the development.

SOILS, WATER QUALITY AND HYDROLOGY

Erosion and Sediment Control

B12. Prior to the commencement of any construction or other surface disturbance for the development, the Applicant must install and maintain suitable erosion and sediment control measures on-site, in accordance with the relevant requirements of the *Managing Urban Stormwater: Soils and Construction - Volume 1: Blue Book* (Landcom, 2004) guideline and the Erosion and Sediment Control Plan included in the CEMP required by Condition C2.

Discharge Limits

B13. The development must comply with section 120 of the POEO Act, which prohibits the pollution of waters, except as expressly provided for in an EPL.

Stormwater Management System

B14. The Applicant must install and operate a stormwater management system for the development that:

(a) is designed by a suitably qualified and experienced person(s);

(b) is generally consistent with the *Civil, Stormwater and Infrastructure Services Report and Flood Impact Assessment: Oakdale West Estate*, prepared by Cardno, dated 27 March 2017;

(c) is in accordance with applicable Australian Standards and Penrith City Council's *Design Guidelines for Engineering Works, Water Sensitive Urban Design Policy December 2013* and *Water Management Development Control Plan*;

(d) ensures peak stormwater flows from the site do not exceed pre-development flows in any downstream areas for all rainfall events up to and including the 1 in 100-year average recurrence interval;

(e) incorporate rainwater harvesting measures to supplement non-potable water demand for the development.

B15. All stormwater drainage infrastructure on the site shall remain under the care, control and ownership of the registered proprietor of the lot.

VISUAL AMENITY

Building Design

B16. The Applicant must construct Building 4E in accordance with the EIS and RTS and as shown on the figures in Appendix 1.

Landscaping

B17. Prior to the commencement of operation of the development, the Applicant must implement the Landscape Plan included in the RTS and shown on the figures in Appendix 1.

B18. The Applicant must maintain the landscaping on the site in accordance with the approved Landscape Plan for the life of the development. If any aspect of the landscaping has not been successful, the Applicant must undertake replanting and rehabilitation works, as reasonably practicable.

Lighting

B19. The Applicant must ensure the lighting associated with the development:

(a) complies with the latest version of AS 4282-2019 - *Control of the obtrusive effects of outdoor lighting* (Standards Australia, 2019); and

(b) is mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network.

Signage and Fencing

B20. All signage and fencing must be erected in accordance with the development plans included in the EIS.

Note: *This condition does not apply to temporary construction and safety related signage and fencing.*

HAZARDS AND RISK

Dangerous Goods

B21. The quantities of dangerous goods stored and handled at the site must be below the threshold quantities listed in the Department of Planning's *Hazardous and Offensive Development Application Guidelines – Applying SEPP 33* at all times.

Bunding

B22. The Applicant must store all chemicals, fuels and oils used on-site in appropriately bunded areas in accordance with the requirements of all relevant Australian Standards, and/or EPA's *Storing and Handling of Liquids: Environmental Protection – Participants Manual* (Department of Environment and Climate Change, 2007).

BUSHFIRE PROTECTION

B23. The Applicant must ensure the development complies with:

(a) the relevant provisions of *Planning for Bushfire Protection, 2019*;

(b) the recommendations of the Bushfire Report prepared by Blackash Bushfire Consulting dated 24 June 2021; and

(c) the relevant sections of Australian Standard AS3959-2018 *Construction of buildings in bush fire-prone areas* or NASH Standard (1.7.14 updated) *National Standard Steel Framed Construction in Bushfire Areas – 2014* as appropriate, and Section 7.5 of *Planning for Bushfire Protection 2019.*

B24. The Applicant must ensure the entire site, including landscaping, is managed as an inner protection area (IPA) in accordance with *Planning for Bushfire Protection 2019*.

B25. Prior to the commencement of operation, the Applicant must prepare a Fire Management Plan (FMP) for the development. The FMP must:

(a) be prepared in consultation with the NSW RFS Cumberland Fire Control Centre;

(b) include 24-hour emergency contact details including alternative telephone contact

(c) include plans of site infrastructure plan, firefighting water supply, site access and internal roads;

(d) include implementation of asset protection zones (APZ) and on-going maintenance;

(e) include location of hazards that will impact on fire fighting operations and procedures to manage identified hazards during firefighting operations; and

(f) any additional matters required by the Cumberland Fire Control Centre (e.g. FMP review and updates)

B26. The Applicant must implement the most recent version of the Fire Management Plan for the duration of the development.

B27. Prior to the commencement of operation, the Applicant must prepare a Bushfire Emergency and Evacuation Management Plan for the development, consistent with the NSW RFS' *A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan* and must include planning for the early relocation of occupants.

~~**FIRE SAFETY**~~

B28. ~~The Applicant must update the Fire Safety Study for the development in accordance with the Department's *Hazardous Industry Planning Advisory Paper (HIPAP) No. 2 – Fire Safety Study Guidelines, January 2011*, and detail the fire prevention and mitigation measures for all credible fire hazards, including grass and bushfires~~.

WASTE MANAGEMENT

Waste Storage

B29. Waste must be secured and maintained within designated waste storage areas at all times and must not leave the site onto neighbouring public or private properties.

Waste Management Plan

B30. The Applicant must implement the Waste Management Plan (WMP) in the EIS for the duration of construction and operation of the development.

Statutory Requirements

B31. All waste materials removed from the site must only be directed to a waste management facility or premises lawfully permitted to accept the materials.

B32. The Applicant must assess and classify all liquid and non-liquid wastes to be taken off site in accordance with the latest version of EPA's *Waste Classification Guidelines Part 1: Classifying Waste* (EPA, 2014) and dispose of all wastes to a facility that may lawfully accept the waste.

B33. Waste generated outside the site must not be received at the site for storage, treatment, processing, reprocessing, or disposal.

AIR QUALITY

Dust Minimisation

B34. The Applicant must take all reasonable steps to minimise dust generated during all works authorised by this consent.

B35. During construction of the development, the Applicant must comply with the dust minimisation measures detailed in the Construction Environmental Management Plan required by Condition C2.

BIODIVERSITY

B36. The Applicant must implement measures to protect retained native vegetation adjacent to the site during construction and operation.

HERITAGE

Unexpected Finds Protocol

B37. If any item or object of Aboriginal heritage significance is identified on site:

(a) all work in the immediate vicinity of the suspected Aboriginal item or object must cease immediately;

(b) a 10 m wide buffer area around the suspected item or object must be cordoned off; and

(c) Heritage NSW must be contacted immediately.

B38. Work in the immediate vicinity of the Aboriginal item or object may only recommence in accordance with the provisions of Part 6 of the *National Parks and Wildlife Act 1974*.

B39. If any archaeological relics are uncovered during the course of the work, then all works must cease immediately in that area. Unexpected finds must be evaluated and recorded in accordance with the requirements of Department of Premier and Cabinet, Heritage Division.

COMMUNITY ENGAGEMENT

B40. The Applicant must consult with the community regularly throughout the development, including consultation with the nearby sensitive receivers identified in Appendix 2 relevant regulatory authorities, Registered Aboriginal Parties and other interested stakeholders. Community engagement shall be undertaken in accordance with the Community Communication Strategy for the OWE.

PART C ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING

ENVIRONMENTAL MANAGEMENT

Management Plan Requirements

C1. Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:

(a) details of:

(i) the relevant statutory requirements (including any relevant approval, licence or lease conditions);

(ii) any relevant limits or performance measures and criteria; and

(iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;

(b) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;

(c) a program to monitor and report on the:

(i) impacts and environmental performance of the development; and

(ii) effectiveness of the management measures set out pursuant to paragraph (c) above;

(d) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;

(e) a program to investigate and implement ways to improve the environmental performance of the development over time;

(f) a protocol for managing and reporting any:

(i) incident and any non-compliance (specifically including any exceedance of the impact assessment criteria and performance criteria);

(ii) complaint;

(iii) failure to comply with statutory requirements; and

(g) a protocol for periodic review of the plan.

Note: *The Planning Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans*

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

C2. The Applicant must prepare a Construction Environmental Management Plan (CEMP) for the development in accordance with the requirements of Condition C1 and to the satisfaction of the Planning Secretary.

C3. As part of the CEMP required under Condition C2 of this consent, the Applicant must include:

(a) measures for managing construction traffic as detailed in Appendix 2;

(b) a Driver Code of Conduct (see Condition B6);

(c) an Erosion and Sediment control Plan (see Condition B12); and

(d) measures to protect retained native vegetation adjacent to the site (see Condition B36).

C4. The Applicant must:

(a) not commence construction of the development until the CEMP is approved by the Planning Secretary; and

(b) carry out the construction of the development in accordance with the CEMP approved by the Planning Secretary and as revised and approved by the Planning Secretary from time to time.

REVISION OF STRATEGIES, PLANS AND PROGRAMS

C5. Within three months of:

(a) the submission of a Compliance Report under Condition C11;

(b) the submission of an incident report under Condition C7;

(c) the approval of any modification of the conditions of this consent; or

(d) the issue of a direction of the Planning Secretary under Condition A2(b) which requires a review,

the strategies, plans and programs required under this consent must be reviewed, and the Planning Secretary must be notified in writing of the outcomes of any review.

C6. If necessary to either improve the environmental performance of the development, cater for a modification or comply with a direction, the strategies, plans and programs required under this consent must be revised, to the satisfaction of the Planning Secretary. Where revisions are required, the revised document must be submitted to

the Planning Secretary for approval within six weeks of the review required under Condition C8, or such other timing as agreed by the Planning Secretary.

Note: *This is to ensure strategies, plans and programs are updated on a regular basis and to incorporate any recommended measures to improve the environmental performance of the development.*

REPORTING AND AUDITING

Incident Notification, Reporting and Response

C7. The Planning Secretary must be notified in writing via the Major Projects website immediately after the Applicant becomes aware of an incident. The notification must identify the development (including the development application number and the name of the development if it has one) and set out the location and nature of the incident. Subsequent notification requirements must be given, and reports submitted in accordance with the requirements set out in Appendix 4.

Non-Compliance Notification

C8. The Planning Secretary must be notified in writing via the Major Projects website within seven days after the Applicant becomes aware of any non-compliance.

C9. A non-compliance notification must identify the development and the application number for it, set out the condition of consent that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

C10. A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

Compliance Reporting

C11. Within six months after the first year of commencement of operation of the development, and in the same month each subsequent year (or such other timing as agreed by the Planning Secretary), the Applicant must submit a Compliance Report to the Planning Secretary reviewing the environmental performance of the development to the satisfaction of the Planning Secretary. Compliance Reports must be prepared in accordance with the Compliance Reporting Post Approval Requirements (Department 2020) and must also:

(a) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and

(b) describe what measures will be implemented over the next year to improve the environmental performance of the development.

C12. The Applicant must make each Compliance Report publicly available no later than 60 days after submitting it to the Planning Secretary and notify the Planning Secretary in writing at least seven days before this is done.

Monitoring and Environmental Audits

C13. Any condition of this consent that requires the carrying out of monitoring or an environmental audit, whether directly or by way of a plan, strategy or program, is taken to be a condition requiring monitoring or an environmental audit under Division 9.4 of Part 9 of the EP&A Act. This includes conditions in respect of incident notification, reporting and response, non-compliance notification, compliance reporting and independent auditing.

Note: *For the purposes of this condition, as set out in the EP&A Act, "monitoring" is monitoring of the development to provide data on compliance with the consent or on the environmental impact of the development, and an "environmental audit" is a periodic or particular documented evaluation of the development to provide information on compliance with the consent or the environmental management or impact of the development.*

ACCESS TO INFORMATION

C14. At least 48 hours before the commencement of construction of the development until the completion of all works under this consent, the Applicant must:

(a) make the following information and documents (as they are obtained or approved) publicly available on its website:

(i) the documents referred to in Condition A2 of this consent;

(ii) all current statutory approvals for the development;

(iii) all approved strategies, plans and programs required under the conditions of this consent;

(iv) regular reporting on the environmental performance of the development in accordance with the reporting requirements in any plans or programs approved under the conditions of this consent;

(v) a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs;

(vi) a summary of the current stage and progress of the development;

(vii) contact details to enquire about the development or to make a complaint;

(viii) a complaints register, updated monthly;

(ix) the Compliance Report of the development;

(x) any other matter required by the Planning Secretary; and

(b) keep such information up to date, to the satisfaction of the Planning Secretary.

APPENDIX 1 DEVELOPMENT LAYOUT PLANS

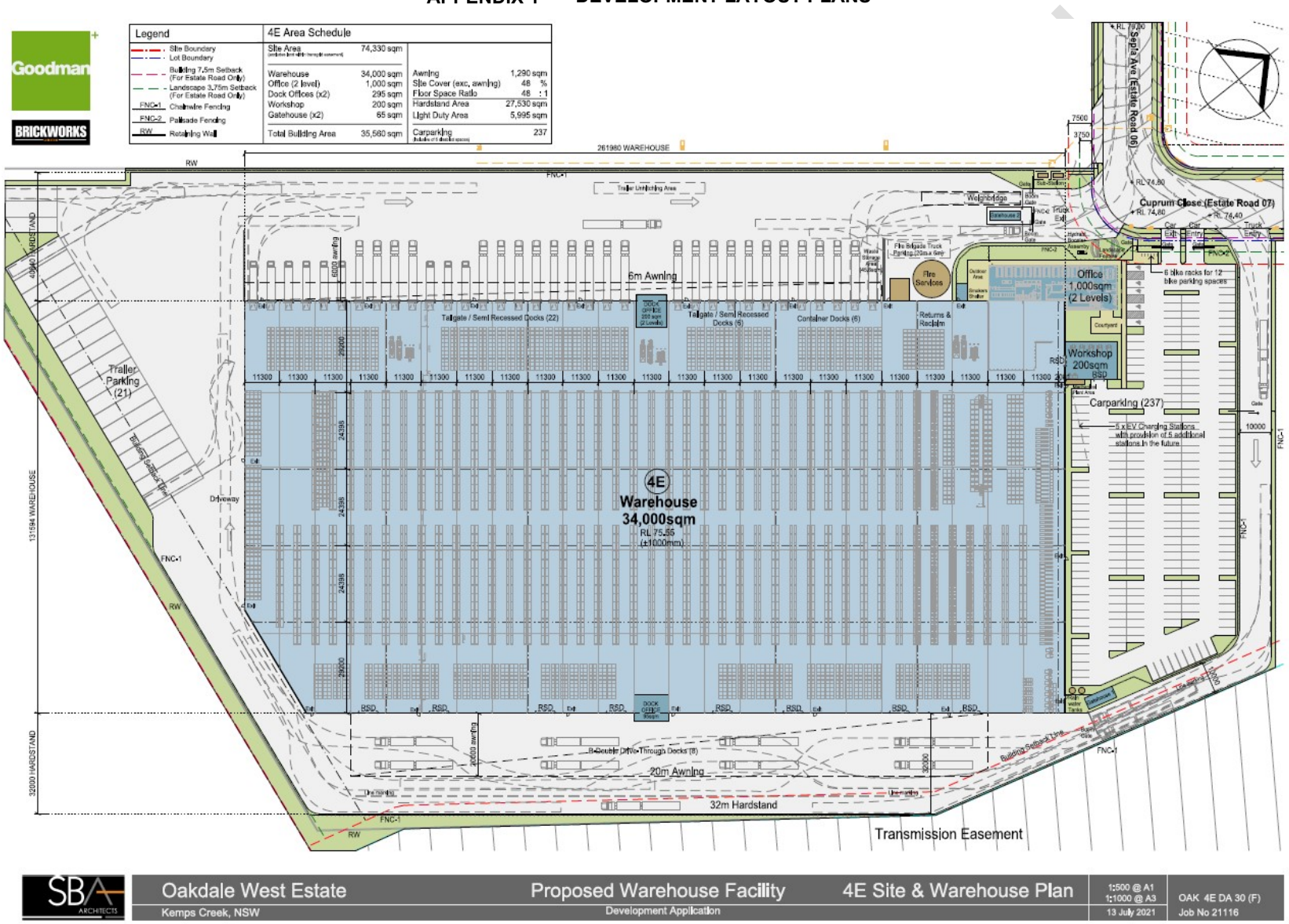


Figure 1: Development Layout

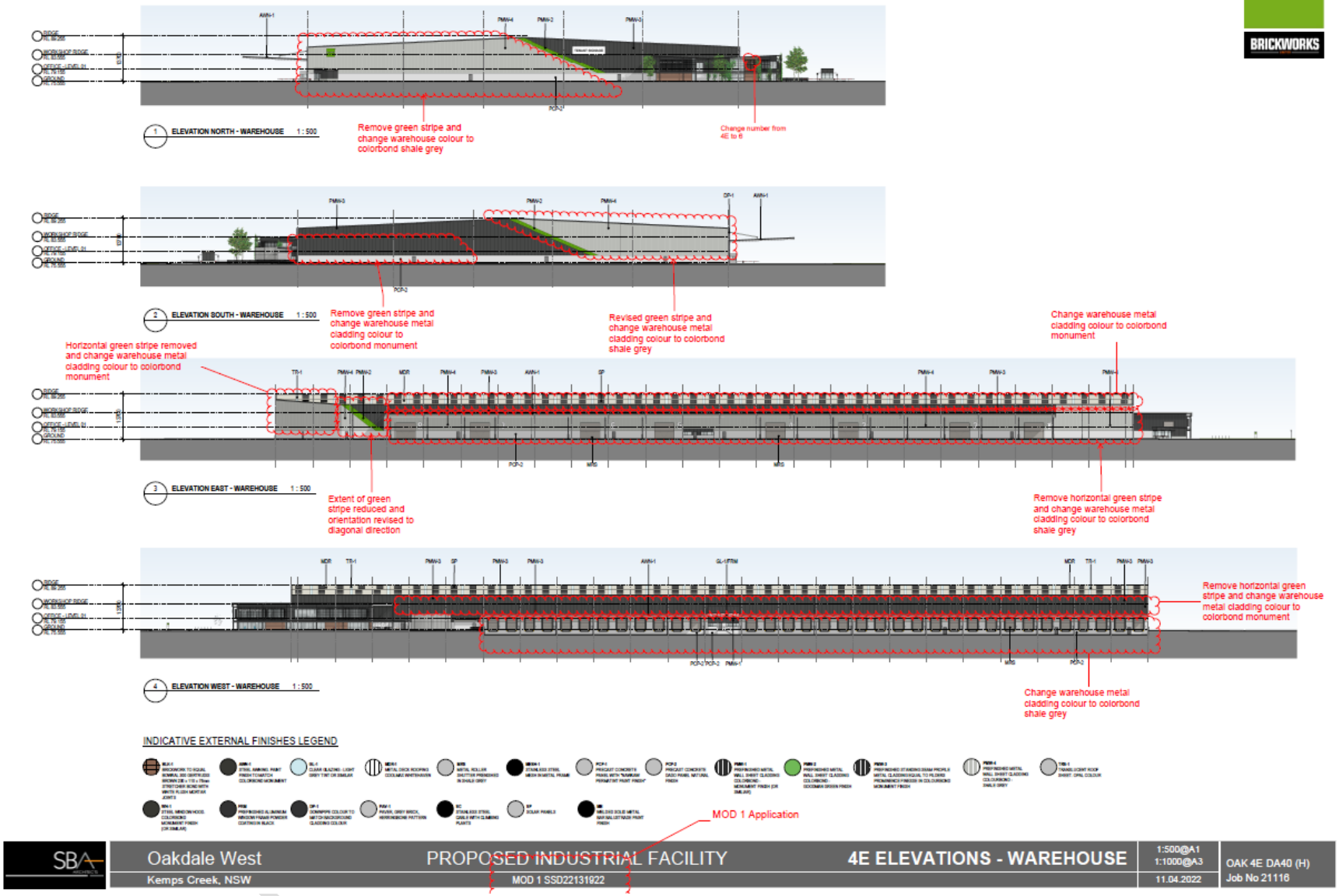


Figure 2: Warehouse Elevations

Figure 3: Landscape Plan - Layout

Figure 4: Landscape Plan - Planting

APPENDIX 2 SENSITIVE RECEIVERS

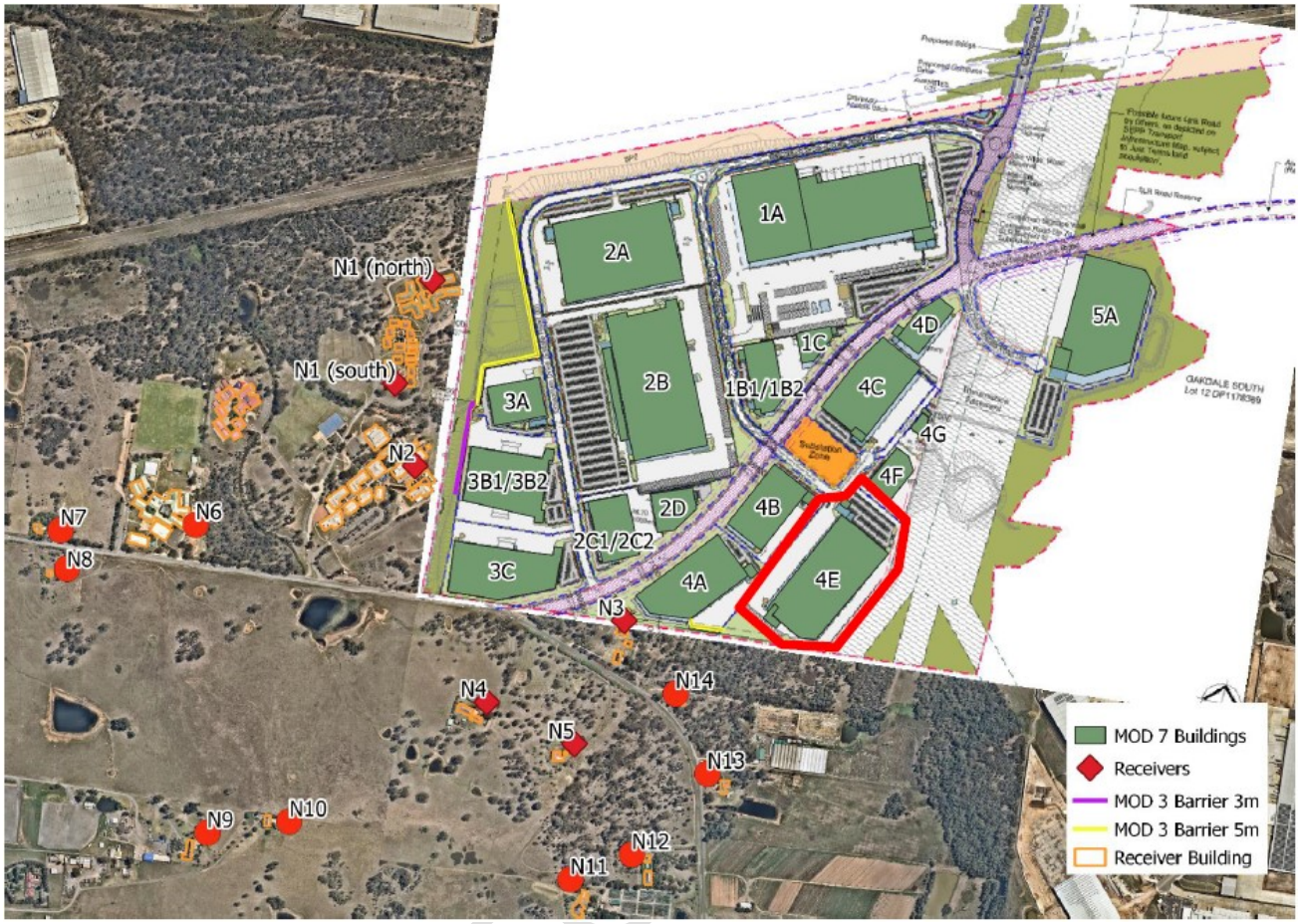


Figure 5: Sensitive Receiver Locations

APPENDIX 3 APPLICANT'S MANAGEMENT AND MITIGATION MEASURES

Issue	Mitigation measures
General	• preparation of updated CEMP for OWE Stage 5 Development • preparation of updated OEMP for OWE Concept Proposal for Stage 5
Visual amenity	• the existing vegetation on the southern boundary will be retained where possible to assist filtering views to the proposed buildings • additional plantings to southern boundary to increase screening of expanses of built form • warehouse has been orientated and articulated to reduce the overall visual impact of the development from surrounding viewpoints • the proposed material palette assists in articulating the built form and providing consistent materials within the OWE • the proposed landscape design is consistent with the OWE landscape masterplan and provides vegetated setbacks to estate roads and within parking areas to provide shade
Traffic and transport	• construction traffic management measures to be described in the CEMP • use of Compass Drive for all construction and future operational traffic • detailed Sustainable Travel Plan to be implemented
Noise and vibration	• minimising coinciding use of noisy plant items • shutting down intermittently used equipment when not in use • regular compliance checks on the noise emissions of all plant and machinery • non-tonal reversing alarms used on all items of plant and heavy vehicles • equipment oriented away from sensitive receivers • pre-construction and ongoing consultation with adjoining sensitive receivers
Soil and water	• CEMP to include erosion and sediment controls consistent with the requirements of Landcom (2004) • A Soil and Water Management Plan will be prepared for Building 4E in accordance with the NSW Department of Housing Publication "Managing Urban Stormwater – Soils and Construction (2004)"
Waste management	• implementation of the Stage 5 Waste Management Plan • recycling of packaging and pallets where possible, including returning to suppliers
Air quality	• CEMP to include standard air quality control measures, contingency plans and response procedures and suitable reporting and performance monitoring procedures • CEMP to include standard odour mitigation measures for construction including keeping excavation surfaces moist, covering excavation faces and/or stockpiles, use of soil vapour extraction systems and regular monitoring of discharges as appropriate
Energy efficiency	• use of a 750 kV photovoltaic solar system • daylight controlled LED lighting • motion sensor LED lights • roof and external wall insulation as per the NCC requirements • high performance glazing to all air-conditioned areas • passive solar design for external outdoor areas • efficient air-conditioning system • power sub-metering to enable continued review of power consumption • selection of endemic and low maintenance landscaping species • 40 kL Rainwater tanks for rainwater harvesting and re-use for landscape irrigation and toilet flushing • low flow fixtures and fittings including taps and shower heads • low VOC paints, carpet and sealant
BCA	• preparation of the Performance Solutions and corresponding fire safety measures during detailed design to ensure compliance with BCA and International Fire Engineering Guidelines
Fire safety	• preparation of Performance Solutions and fire safety measures in the detailed design phase
Bushfire	• establish and maintain asset protection zones as indicated in the BHA • provide fire hydrants in accordance with the BCA • buildings to be constructed in accordance with *AS 3959 Construction of buildings in bushfire-prone areas* and measures outlined in the BHA

APPENDIX 4 INCIDENT NOTIFICATION AND REPORTING REQUIREMENTS

WRITTEN INCIDENT NOTIFICATION REQUIREMENTS

1. A written incident notification addressing the requirements set out below must be submitted to the Planning Secretary via the Major Projects website within seven days after the Applicant becomes aware of an incident. Notification is required to be given under this condition even if the Applicant fails to give the notification required under Condition C7 or, having given such notification, subsequently forms the view that an incident has not occurred.

2. Written notification of an incident must:
   (a) identify the development and application number;
   (b) provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);
   (c) identify how the incident was detected;
   (d) identify when the applicant became aware of the incident;
   (e) identify any actual or potential non-compliance with conditions of consent;
   (f) describe what immediate steps were taken in relation to the incident;
   (g) identify further action(s) that will be taken in relation to the incident; and
   (h) identify a project contact for further communication regarding the incident.

INCIDENT REPORT REQUIREMENTS

3. Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Planning Secretary, the Applicant must provide the Planning Secretary and any relevant public authorities (as determined by the Planning Secretary) with a detailed report on the incident addressing all requirements below, and such further reports as may be requested.

4. The Incident Report must include:
   (a) a summary of the incident;
   (b) outcomes of an incident investigation, including identification of the cause of the incident;
   (c) details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and
   (d) details of any communication with other stakeholders regarding the incident.

APPENDIX B

Relevant Approved Development Consent Conditions - SSD 7348

Development Consent

Section 4.38 of the Environmental Planning and Assessment Act 1979

As delegate of the Minister for Planning and Public Spaces under delegation executed on 11 October 2017, I I approve the Development Application referred to in Schedule 1, subject to the conditions specified in Schedule 2.

These conditions are required to:

- prevent, minimise, or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the development.

Anthea Sargeant
Executive Director
Compliance, Industry and Key Sites

Sydney 2019

The Department has prepared a consolidated version of the consent which is intended to include all modifications to the original determination instrument.

The consolidated version of the consent has been prepared by the Department with all due care. This consolidated version is intended to aid the consent holder by combining all consents relating to the original determination instrument but it does not relieve a consent holder of its obligation to be aware of and fully comply with all consent obligations as they are set out in the legal instruments, including the original determination instrument and all subsequent modification instruments.

SCHEDULE 1

Application Number:	SSD 7348
Applicant:	Goodman Property Services (Aust) Pty Ltd
Consent Authority:	Minister for Planning and Public Spaces
Site:	Lot 26 DP 1269741 Lot 105 DP 1262310 Lot 107 DP 1262310
Development:	A Concept Proposal including: • concept layout of **18** warehouse buildings inclusive of dock offices and ancillary offices providing **556,824** square metres of gross lettable area, built over seven development stages; • concept layout of development lots, internal roads, drainage, landscaping, noise walls, basins and biodiversity offsets; and • development controls. A Stage 1 Development including: • bulk earthworks across all five stages including retaining walls and noise walls; • lead in services including but not limited to drainage, power, sewer, water and telecommunications; • service infrastructure to Precinct 1, including drainage, power, sewer, water and telecommunications; • construction and operation of three warehouse buildings inclusive of dock offices and ancillary offices in Precinct 1 (1A, 1B and 1C) providing **88,867** square metres of gross lettable area; • Western North-South Link Road and associated subdivision, basins and drainage; • estate roads 1, 2, ~~and~~ **6 and 8** and eastern part of road 7; • landscaping of Stage 1, the western boundary, Western North-South Link Road, estate roads 1, 2~~, and~~ **6 and 8** and the eastern part of road 7, detention basins and the amenity lot • subdivision of Stage 1 lots and road infrastructure including the services (substation) lot; • stormwater drainage infrastructure for Lots 2A and 2B and all basins; • temporary works to facilitate construction including but not limited to swales, haul road (construction access), landscaping and basins; ~~and~~

- works including construction of traffic signals at Lenore Drive/Grady Crescent/WNSLR intersection; **and**
- **works within Lot 9 DP1157476 including reconfiguration of car park, relocation of car park access on Lockwood Road, infrastructure, landscaping and all works associated with the WNSLR.**

SSD 7348 – Mod 1

SSD 7348 – Mod 2

SSD 7348 – Mod 3

SSD 7348 – Mod 4

SSD 7348 – Mod 5

SSD 7348 – Mod 6

SSD 7348 – Mod 7

SSD 7348 – Mod 8

SSD 7348 – Mod 9

SSD 7348 – Mod 10

SUMMARY OF MODIFICATIONS

Application Number	Determination Date	Decider	Modification Description
SSD-7348-Mod-1	27 March 2020	Department	Changes to pad levels across the Concept Proposal, amendments to bio-retention basins and changes to the biodiversity offset strategy
SSD-7348-Mod-2	21 April 2020	Department	Changes to Stage 1 pad levels, building layouts and the height of Building 1A
SSD-7348-Mod-3	3 April 2020	Department	Changes to the Concept Proposal layout, Stage 2 area and height of Building 2
SSD-7348-Mod-4	24 March 2020	Department	Include an additional lot for construction works for the WNSLR
SSD-7348-Mod-5	5 November 2020	Department	Increase in SLR road reserve and associated reduction in building and landscaping setbacks, amendments to Precinct 1A layout and car parking spaces, quantities of dangerous goods to be stored in Building 1A, setting up an alternative biodiversity offset site, and extension to required completion date for the noise barrier
SSD-7348-Mod-6	10 March 2021	Department	Changes to Concept for Precincts 1 and 2, Increase height of Building 2A, Reduce floor area and amend design of Buildings 1B and 1C, Remove speed limits, Construct Road 8 in Stage 1, Increase Ropes Creek vegetation management area
SSD-7348-Mod-7	7 October 2021	Director	Changes to Precincts 3 and 4 including earthworks, retaining walls, building layouts in Precinct 4 and estate road 7
SSD-7348-Mod-8	10 September 2021	Department	Amendments to architectural plans for Stage 1 Buildings 1A, 1B and 1C.
SSD-7348-Mod-9	8 December 2021	Department	Amendments to the layout of Buildings 2A, 2C and 2D and increased height of Building 2C
SSD-7348-Mod-10	XX August 2022	Department	Modification to: • update Precinct 1 signage plans, including façade signage.

TABLE OF CONTENTS

DEFINITIONS

Applicant	Goodman Property Services (Aust) Pty Ltd, or any person carrying out any development to which this consent applies
Biodiversity Covenant	A restriction on the use of land forming part of the Erskine Park Biodiversity Corridor, as shown on **Figure** in **Appendix 6**
Building 1A	**Warehouse building 1A including high-bay (39 metres) and low-bay (27 metres) components, located on Lot 1A as described in the EIS and RtS for MOD 2**
Bulk earthworks	As described in the EIS and RtS
Certifying Authority	A person who is authorised by or under section 6.17 of the EP&A Act to issue Part 6 certificates
CEMP	Construction Environmental Management Plan
CAQMP	Construction Air Quality Management Plan
Concept Proposal	Concept layout of 22 warehouse buildings and ancillary offices built over five development stages, as described in the EIS and RtS
Conditions of this consent	Conditions contained in Schedules B to D of this document
Consent Authority	The relevant consent authority for development in accordance with the EP&A Act
Construction	The demolition and removal of buildings or works, the carrying out of works for the purpose of the development, including bulk earthworks, and erection of buildings and other infrastructure permitted by this consent
Council	Penrith City Council
CTMP	Construction Traffic Management Plan
Day	The period from 7 am to 6 pm on Monday to Saturday, and 8 am to 6 pm on Sundays and Public Holidays
Demolition	The deconstruction and removal of buildings, sheds and other structures on the site
Department	NSW Department of Planning, Industry and Environment
Development	The development described in the EIS and RtS, including construction and operation of 18 warehouse buildings, offices and associated infrastructure, as modified by the conditions of this consent and shown on the plans in **Appendix 1**, **Appendix 2** and **Appendix 3 and as modified by SSD 7348 MOD 1, SSD 7348 MOD 2, SSD 7348 MOD 3, SSD 7348 MOD 4, SSD 7348 MOD 5, SSD 7348 MOD 6, SSD 7348 MOD 8, SSD-7348-MOD-9 and SSD-7348-MOD-10.**
DA	Development Application submitted in accordance with the EP&A Act
EIS	The Environmental Impact Statement titled *Oakdale West Estate*, prepared by Urbis dated November 2017, submitted with the application for consent for the development, including any additional information provided by the Applicant in support of the application
ENM	Excavated Natural Material
Environment	Includes all aspects of the surroundings of humans, whether affecting any human as an individual or in his or her social groupings
Environmental Representative Protocol	The document of the same title published by the Department
EPA	NSW Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cth)

EPL	Environment Protection Licence under the POEO Act
Erskine Park Biodiversity Corridor	The land described in the *Biodiversity Management Plan Erskine Park Employment Area*, HLA-Envirosciences, 2006 and shown on **Figure** in **Appendix 6**
Evening	The period from 6 pm to 10 pm
Feasible	Feasible relates to engineering considerations and what is practical to build
FFMP	Flora and Fauna Management Plan
Fibre ready facility	As defined in Section 372W of the *Telecommunications Act 1997*
GLA	Gross lettable area
GFA	Gross floor area
Heritage	Encompasses both Aboriginal and historic heritage including sites that predate European settlement, and a shared history since European settlement
Heritage item	An item as defined under the *Heritage Act 1977* (NSW), and assessed as being of local, State and/ or National heritage significance, and/or an Aboriginal Object or Aboriginal Place as defined under the *National Parks and Wildlife Act 1974* (NSW), the World Heritage List, or the National Heritage List or Commonwealth Heritage List under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth), or anything identified as a heritage item under the conditions of this consent
Incident	An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance *Note: "material harm" is defined in this consent*
Land	Has the same meaning as the definition of the term in section 1.4 of the EP&A Act
Landscape Bund	Landscaping along the western boundary of the Site, included as part of Stage 1 works as described in the EIS and RTS and shown on Error! Reference source not found.**4** in **Appendix 2**
LMP	Landscape Management Plan
Material harm	Is harm that: a) involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or b) results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment)
Minister	NSW Minister for Planning and Public Spaces (or delegate)
Mitigation	Activities associated with reducing the impacts of the development prior to or during those impacts occurring
Monitoring	Any monitoring required under this consent must be undertaken in accordance with section 9.40 of the EP&A Act
NCC	National Construction Code
Night	The period from 10 pm to 7 am on Monday to Saturday, and 10 pm to 8 am on Sundays and Public Holidays
Non-compliance	An occurrence, set of circumstances or development that is a breach of this consent
NRAR	NSW Natural Resources Asset Regulator
OEH	(former) NSW Office of Environment and Heritage (now Biodiversity and Conservation of the Department)
OEMP	Operational Environmental Management Plan

Operation	The use of warehouse buildings for storage and distribution of goods upon completion of construction
Penrith DCP	Penrith Development Control Plan 2014
Planning Agreement	Planning Agreement titled *Oakdale West Estate Planning Agreement*, between the Minister for Planning and Public Spaces, Goodman Property Services (Aust) Pty Ltd and BGMG 11 Pty Limited as trustee for the BGMG 1 Oakdale West Trust, executed on 5 August 2019 and included in **Appendix 4**
PCA	Principal Certifying Authority in accordance with the EP&A Act
Planning Secretary	Planning Secretary under the EP&A Act, or nominee
POEO Act	*Protection of the Environment Operations Act 1997* (NSW)
Roads Authority	As defined in Dictionary of the *Roads Act 1993* (NSW)
Reasonable	Means applying judgement in arriving at a decision, taking into account: mitigation benefits, costs of mitigation versus benefits provided, community views, and the nature and extent of potential improvements.
Registered Aboriginal Parties	Means the Aboriginal persons identified in accordance with the document entitled *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW)
Rehabilitation	The restoration of land disturbed by the development to a good condition, to ensure it is safe, stable and non-polluting
Relevant Roads Authority	The authority responsible for ownership and maintenance of the applicable road
RMS	(former) NSW Roads and Maritime Services (now TfNSW)
RtS	The Response to Submissions titled *Oakdale West Estate SSDA 15_7348 Response to Submissions* prepared by Urbis dated 8 May 2018 and document titled *Oakdale West Estate SSDA 15_7348 Response to Matters Raised by the Department of Planning*, prepared by Urbis dated 12 October 2018
Sensitive receivers	A location where people are likely to work, occupy or reside, including a dwelling, school, hospital, office or public recreational area
Site	The land defined in **Appendix 1**
SLR	(proposed) Southern Link Road as shown in the WSEA SEPP and the Broader WSEA SLRN Options Refinement Report prepared by AECOM, 2014
SSD 7348 MOD 1	**The section 4.55(1A) modification application prepared by Goodman Property Services (Aust) Pty Ltd titled 'Section 4.55(1A) Modification Application (SSD 7348 MOD 1) Oakdale West Estate – Amendments to Concept Plan and Stage 1 development', dated 16 December 2019.**
SSD 7348 MOD 2	**The section 4.55(2) modification application prepared by Goodman Property Services (Aust) Pty Ltd titled 'Section 4.55(2) Modification Application (SSD 7348 MOD 2) Oakdale West Estate – Amendments to Concept Plan and Stage 1 development', dated 12 December 2019.**
SSD 7348 MOD 3	**The section 4.55(1A) modification application prepared by Goodman Property Services (Aust) Pty Ltd titled 'Oakdale West Industrial Estate Concept Plan and Stage 1 Modification (SSD 7348 MOD 1), dated January 2020.**
SSD 7348 MOD 4	**The section 4.55(1A) modification application prepared by Goodman Property Services (Aust) Pty Ltd titled 'mod 4, SSD 7348 – S4.55(1A) Application to Modify the Consent to Include Works on Lot 9 DP 1157476, dated 17 February 2020.**
SSD 7348 MOD 5	**The section 4.55(1A) modification application prepared by Urbis, titled Oakdale West Estate SSD 7348, Section 4.55(1A) Modification No. 5 Environmental Assessment Report, dated 23 July 2020**

SSD 7348 MOD 6	**The section 4.55(1A) modification application prepared by Keylan Consulting Pty Ltd, titled 'Assessment Report Section 4.55(1A) Modification, SSD 7348 Modification 6', dated 10 February 2021.**
SSD 7348 MOD 7	**The Section 4.55(1A) modification application prepared by Keylan Consulting Pty Ltd, titled 'Assessment Report Section 4.55(1A) Modification, SSD 7348 Modifcation 7', dated July 2021**
SSD 7348 MOD 8	**The section 4.55(1A) modification application prepared by Goodman Property Services (Aust) Pty Ltd, titled 'SSD 7348 MOD 8 Oakdale West Stage – S.4.55(1A) Application to Modify Architecture Plans', dated 9 July 2021.**
SSD 7348 MOD 9	**The Section 4.55(1A) modification application prepared by Goodman Property Services (Aust) Pty Ltd, titled 'Oakdale West Industrial Estate SSD 7348 – Modification Application 9', dated 11 November 2021**
SSD 7348 MOD 10	**The Section 4.55(1A) modification application prepared by Goodman Property Services (Aust) Pty Ltd, titled 'SSD7348 MOD 10, Oakdale West Stage – s.4.55(1A) Application to Modify Architecture Plans', dated 4 July 2022.**
Stage	Each component or Stage of works to deliver the Concept Proposal, as shown on **Figure 2** in **Appendix 1**, or as amended by an approved Staging Plan under this consent
Stage 1	Bulk earthworks across the Site, construction and operation of three warehouse buildings (1A, 1B and 1C), the WNSLR and associated infrastructure and construction of the landscape bund along the western boundary of the Site, as described in the EIS and RTS and shown on the plans in **Appendix 2** and **Appendix 3**
TfNSW	Transport for New South Wales
VENM	Virgin Excavated Natural Material
Vicinity of the site	Bakers Lane, Kemps Creek
WAD	Works Authorisation Deed issued by TfNSW (former RMS)
Waste	Has the same meaning as the definition of the term in the Dictionary to the POEO Act
Water Pipelines	Two Sydney drinking water pipelines located on land owned by Water NSW along the northern boundary of the Site
WMP	Waste Management Plan
WNSLR	Western North-South Link Road as shown in the WSEA SEPP and the plans in **Appendix 3**
WSEA	Western Sydney Employment Area
WSEA SEPP	State Environmental Planning Policy (Western Sydney Employment Area) 2009
WSFL	Western Sydney Freight Line corridor as shown in TfNSW Western Sydney Freight Line Corridor Identification – Consultation, March 2018
Year	A period of 12 consecutive months

SCHEDULE B CONDITIONS FOR THE CONCEPT PROPOSAL

FUTURE DEVELOPMENT APPLICATIONS

B1. In accordance with section 4.22 of the EP&A Act, each stage of the Concept Proposal (excluding Stage 1) is to be subject to future development applications (DAs). Future DAs are to be consistent with this development consent.

B2. To avoid any doubt, this Concept Proposal consent does not permit the construction or operation of any Development, except for the Stage 1 DA covered by **Schedule D**.

B3. This Concept Proposal consent does not approve the building layouts shown on **Lots 3A, 3B, 3C, 3D, 3E, 3F, 3G and 4A** on **Figure 1** in **Appendix 1**. The location of the buildings on these lots must be assessed by separate DAs, and must satisfy the interface requirements of Conditions C3 and C4.

STATUTORY REQUIREMENTS

B4. The Applicant shall ensure that all licences, permits, and approvals/consents are obtained as required by law and maintained as required throughout the life of the Concept Proposal. No condition of this consent removes the obligation for the Applicant to obtain, renew or comply with such licences, permits or approvals/consents.

TERMS OF CONSENT

B5. The Applicant shall carry out the Concept Proposal in accordance with the:

(a) EIS and RtS;

(b) the plans in **Appendix 1** and **Appendix 2**;

(c) **SSD 7348 MOD 1;**

(d) the Applicant's Management and Mitigation Measures in **Appendix 7**; and

(e) **modifications to this consent.**

B6. If there is any inconsistency between the plans and documents referred to above, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this consent shall prevail to the extent of any inconsistency.

B7. The Applicant shall comply with any reasonable requirement(s) of the Planning Secretary arising from the Department's assessment of:

(a) any reports, plans or correspondence that are submitted in accordance with this consent; and

(b) the implementation of any actions or measures contained within these reports, plans or correspondence.

LIMITS OF CONSENT

B8. This consent lapses five (5) years after the date from which it operates, unless any Stage of the Development has physically commenced on the land to which the consent applies before that date.

B9. The following limits apply to the Concept Proposal:

(a) the maximum GLA for the land uses in the Development shall not exceed the limits in **Table 1**;

(b) a minimum 60 metre (m) wide corridor along the northern Site boundary shall not be developed and shall be maintained and preserved for the future WSFL corridor, in accordance with the requirements of TfNSW;

(c) the building layouts and footprints shown on **Lots 3A, 3B, 3C, 3D, 3E, 3F, 3G and 4A** on **Figure 1** in **Appendix 1**, are not approved. The position, layouts and footprints of the buildings on these lots must be assessed by separate DAs, and must satisfy the interface requirements of Conditions C3 and C4;

(d) **any rooftop mechanical plant on buildings on Lots 2C, 2D, 2E, 3A, 3B, 3C, 3D, 3E, 4A, 4B and 4E are not to be operated during the night-time period;**

(e) **forklifts are not to operate during the night-time period on Lots 2C, 2D, 2E, 3B, 3C, 3D, 3E, 4A and 5A; and**

~~(f) vehicles associated with the Development shall adhere to the following speed limits when using estate roads within the Development:~~
~~(i) 25 kilometres per hour for heavy vehicles; and~~
~~(ii) 40 kilometres per hour for light vehicles.~~

(g) **all traffic associate with operation of the Development shall use the West North South Link Road, and the future SLR, to access the site and shall not use Bakers Lane or Aldington Road**

Table 1: *GLA Maximum for Concept Proposal*

Land Use	Maximum GLA square metres (m^2)
Total Warehousing	529,625
Total Office	22,770
Other	4,429
Total GLA	**556,824**

Notes: *Other includes but is not limited to the skybridge, gatehouse, dangerous goods store and energy complex in Building 1A.*

B10. The Applicant shall ensure the Concept Proposal is consistent with the development controls in **Table 2**:

Table 2: *Development Controls*

Development Aspect	Control
Minimum building setbacks from:	
• Southern Link Road	**17.15 m**
• Western North-South Link Road	20 m
• Local estate Roads	7.5 m
• Western site boundary	40 m
• Southern site boundary	20 m (excluding parking areas)
Rear boundary setbacks within the estate	5 m
Side boundary setbacks within the estate	0 m, subject to compliance with fire rating requirements
Height	15 m
- **Building 1A**	**39 m**
- **Building 2A**	**18 m**
- **Building 2B**	**28 m**
- **Building 2C**	**22.2 m**
Minimum lot size	5,000 m^2
Minimum frontage	40 m (excluding cul-de-sacs) 35 m minimum lot width at the building line
Site coverage	Maximum of 65 per cent (excluding awnings)

B11. Notwithstanding the controls listed in **Table 2** in Condition B10, no warehouse building in the Concept Proposal, except **Building 1A in Precinct 1 and** Buildings 2A, **2B and 2C in Precinct 2,** shall exceed a ridgeline height of 13.7 m, excluding roof mounted mechanical plant and solar panels.

B12. The Applicant shall lodge the proposed revisions to the *Penrith Development Control Plan 2014* (Penrith DCP), in accordance with **Table 2** in Condition B10, with Council within 6 months of the date of this consent.

B13. The Applicant shall ensure the Concept Proposal provides car parking in accordance with the following rates:

(a) 1 space per 300 m^2 of warehouse GFA;

(h) 1 space per 40 m^2 of office GFA; and

(i) 2 spaces for disability parking for every 100 car parking spaces.

B14. The Applicant shall provide bicycle racks, and amenity and change room facilities for cyclists in accordance with *Planning Guidelines for Walking and Cycling* (December 2004, NSW Department of Infrastructure, Planning and Natural Resources and the Roads and Traffic Authority).

STAGING PLAN

B15. Prior to the commencement of construction of any stage of the Concept Proposal, the Applicant shall prepare a Staging Plan for the Development, to the satisfaction of the Planning Secretary. The plan shall:

(a) be prepared in consultation with Council, utility and service providers and other relevant stakeholders;

(b) describe how the implementation of the Concept Proposal, would be staged to ensure it is carried out in an orderly and economic way and minimises construction impacts on adjacent sensitive receivers;

(c) show the likely sequence of DAs that will be lodged to develop the Site, with the estimated timing for each Stage and identification of any overlapping construction and operational activities;

(d) include concept design for the staged delivery of landscaping, focusing on early implementation of screen planting to minimise the visual impact of subsequent development stages; and

(e) include conceptual design for the provision of services, utilities and infrastructure to the Site.

B16. The Applicant must:

(a) not commence construction of any stage of the Development until the Staging Plan required by Condition B15 is approved by the Planning Secretary; and

(b) implement the most recent version of the Staging Plan approved by the Planning Secretary.

B17. The Planning Secretary may require the Applicant to address certain matters identified in the Staging Plan. The Applicant must comply with any such requirements of the Planning Secretary given as part of the Staging Plan approval.

***Notes**:*

- *The Applicant may amend the Staging Plan as desired, with the approval of the Planning Secretary.*
- *The Staging Plan is intended to broadly describe the development sequence for the Site and the delivery of infrastructure for all stages. It is not required to provide detailed design for latter Stages.*

NOISE LIMITS

B18. The Applicant shall ensure the Development does not exceed the noise limits in **Table 3** at the receiver locations N1, N2, N3, N4 and N5 shown on the plan in **Appendix 5**.

Table 3: *Noise Limits dB(A)*

Location	Day	Evening	Night	
	$L_{Aeq\ (15\ minute)}$	$L_{Aeq\ (15\ minute)}$	$L_{Aeq\ (15\ minute)}$	L_{AMax}
N1 Emmaus Village Residential	44	43	41	**52**
N3 Kemps Creek – nearest residential property	39	39	37	**52**
N4 & N5 Kemps Creek – other residences	39	39	37	**52**
N9 to N14	47	42	42	52
N2 Emmaus Catholic College (school)	**When in use**: **45** $_{Leq\ (1h)}$			

Notes:

1. ***Noise generated by the development is to be measured in accordance with the relevant procedures and modifications, including certain meteorological conditions, of the Noise Policy for Industry (EPA, 2017). Refer to the plan in Appendix 2 for the location of residential sensitive receivers.***
2. ~~***or background + 5 dB, whichever is higher.***~~

B19. The noise limits in **Table 3** do not apply to receiver N3, **N4 and N5** if the Applicant has a Noise Agreement with the relevant landowner to exceed the noise limits, and the Applicant has provided written evidence to the Planning Secretary that an agreement is in place.

BUSHFIRE PROTECTION

B20. The Applicant shall ensure the Development complies with:

(a) **the relevant provisions of *Planning for Bushfire Protection 2019*;**

(b) the construction standards and asset protection zone requirements recommended in the Oakdale Industrial Estate - West Bushfire Protection Assessment, prepared by Australian Bushfire Protection Planners Pty Ltd, dated September 2016 **and updated 13 January 2020, and the SSD–7348 (MOD 6) Bushfire Hazard Assessment prepared by Blackash Bushfire Consulting, dated 12 November 2020 and SSD-7348 (MOD 7) Bushfire Hazard Assessment prepared by Blackash Bushfire Consulting, dated 27 May 2021;** and

(c) *AS2419.1 – 2005 Fire Hydrant Installations* for firefighting water supply.

TRANSGRID EASEMENT

B21. The Applicant must:

(a) provide safe and unobstructed access for TransGrid plant and personnel to access the transmission towers, lines and easement on the Site, 24 hours a day, 7 days a week;

(b) comply with the requirements of TransGrid for any works in the TransGrid easement; and

(c) advise TransGrid of any proposed amended or modified encroachment into the easement.

ENDEAVOUR ENERGY

B22. The Applicant must comply with the requirements of Endeavour Energy for the provision of land for a new zone substation as shown on the plans in the RtS.

WATER NSW

B23. The Applicant must:

(a) provide safe and unobstructed access for Water NSW plant and personnel to access the water pipelines corridor adjacent the Site, 24 hours a day, 7 days a week;

(b) comply with the requirements of Water NSW for any works adjacent to or over, the water pipelines corridor; and

(c) advise Water NSW of any proposed amended or modified encroachment into the water pipelines corridor.

AMENITIES LOT

B24. The amenities lot located north of Estate Road 1, as shown on the plans in **Appendix 1**, must only provide for small-scale local services such as commercial, retail, community facilities and landscaping that service or support the needs of local employment-generating uses.

SCHEDULE C CONDITIONS FOR FUTURE DEVELOPMENT APPLICATIONS

DEVELOPMENT CONTRIBUTIONS

C1. Future DAs shall identify whether any Development Contributions Plan made by Council (under Section 7.11 of the EP&A Act) applies to that stage of the Concept Proposal (excluding Stage 1).

C2. Prior to the issue of a Construction Certificate for any stage of the Development, the Applicant shall pay contributions to Council in accordance with the relevant Development Contributions Plan identified in accordance with Condition C1.

INTERFACE WITH RESIDENTIAL AREAS

C3. Future DAs for warehouses on **lots 3A, 3B, 3C, 3D, 3E, 3F, 3G and 4A** shall be accompanied by an Urban Design Assessment. The assessment must:

(a) be prepared by an independent urban design consultant;

(b) be prepared in consultation with Council and the Emmaus Catholic College;

(c) detail the key objectives for the interface with the sensitive receivers on the western and southern Site boundaries, including consideration of optimal uses and operational hours;

(d) determine the optimal building location and setbacks on the western and southern boundaries, noting the design controls in Condition B10 are the minimum setback requirements;

(e) present the optimal design for the building layouts along the western and southern site boundaries with detailed justification for the preferred option;

(f) identify appropriate orientations and architectural treatments for the facades facing sensitive receivers; and

(g) incorporate noise mitigation into the layout and design of buildings, internal roads, loading docks and parking areas to ensure the Development can meet the noise limits in Condition **Error! Reference source not found.**.

C4. Prior to the commencement of construction of warehouses or office buildings on lots **3A, 3B, 3C, 3D, 3E, 3F, 3G and 4A,** the Applicant must obtain approval from the Consent Authority for the preferred design option, including uses, building and loading dock layouts, setbacks, façade treatments and colours.

VISUAL AMENITY

Landscaping

C5. Future DAs shall be accompanied by a Landscape Assessment. The assessment must:

(a) be prepared by a qualified landscape design consultant;

(b) be prepared in consultation with Council;

(c) describe how the landscaping for the relevant Stage of the Development is consistent with the Staging Plan approved in accordance with Condition B15;

(d) describes the landscaping works to be completed as part of the relevant Stage of the Development and details a program for monitoring the success of landscaping works over time;

(e) assesses the condition of and adequacy of landscaping completed as part of earlier Stages of the Development, in providing visual screening for adjacent sensitive receivers; and

(f) details any additional landscaping or rehabilitation works required to ensure the visual impacts of the Development are minimised for the adjacent sensitive receivers.

Outdoor Lighting

C6. Future DAs must ensure compliance with *AS/NZS 1158.3.1:2005 Pedestrian Area (Category P) Lighting* and *AS/NZS 4282:2019 Control of Obtrusive Effects of Outdoor Lighting*.

Signage

C7. Future DAs must ensure illuminated signage is oriented away from the sensitive receivers on the western and southern Site boundaries.

Reflectivity

C8. The visible light reflectivity from materials used on the façades and roofs of the warehouses and office buildings shall be designed to minimise glare. A report demonstrating compliance with these requirements must be submitted to the satisfaction of the Certifying Authority for each future warehouse and office building prior to the issue of the relevant Construction Certificate.

TRANSPORT, ACCESS AND PARKING

C9. Future DAs shall be accompanied by a transport, access and parking assessment. The assessment must:

(a) assess the impacts on the safety and capacity of the surrounding road network and access points during construction and operation of the relevant Stage;

(b) demonstrate internal roads and car parking complies with relevant Australian Standards and the car parking rates in Condition B13;

(c) detail the scope and timing of any required road upgrades to service the relevant Stage; and

(d) detail measures to promote non-car travel modes, including a Sustainable Travel Plan identifying pedestrian and cyclist facilities to service the relevant Stage of the Development.

NOISE AND VIBRATION

C10. Future DAs shall be accompanied by a noise and vibration impact assessment. The assessment must:

(a) identify the noise and vibration impacts during construction and operation;

(b) demonstrate compliance with the noise limits in Condition **Error! Reference source not found.**;

(c) provide an analysis of all external plant and equipment, including but not limited to, forklifts, air conditioners and refrigeration systems;

(d) incorporate noise mitigation measures, such as increased building setbacks, building insulation, noise barriers, layout of truck loading areas or source controls, to demonstrate the noise limits in Condition B18 can be achieved;

(e) detail the timing to construct the noise walls shown in **Appendix 5**, to ensure noise from operation of the Development does not exceed the noise limits in Condition B18**Error! Reference source not found.**; and

(f) recommend mitigation and management measures to be implemented to minimise noise during construction.

STORMWATER MANAGEMENT

C11. Future DAs shall demonstrate the design of the warehouses, offices and hardstand areas are consistent with (or the latest revision of) the:

(a) *Civil, Stormwater and Infrastructure Services Report*, prepared by At&L, dated October 2018; and

(b) *Flood Impact Assessment: Oakdale West Estate*, prepared by Cardno, dated 27 March 2017.

BUSHFIRE PROTECTION

C12. The Applicant shall ensure future DAs comply with:

(a) the relevant provisions of *Planning for Bushfire Protection 2019*;

(b) the construction standards and asset protection zone requirements recommended in the Oakdale Industrial Estate - West Bushfire Protection Assessment, prepared by Australian

Bushfire Protection Planners Pty Ltd, dated September 2016 **and updated 13 January 2020, and the SSD–7348 (MOD 6) Bushfire Hazard Assessment prepared by Blackash Bushfire Consulting, dated 12 November 2020 and SSD-7348 (MOD 7) Bushfire Hazard Assessment prepared by Blackash Bushfire Consulting, dated 27 May 2021;** and

(c) *AS2419.1 – 2005 Fire Hydrant Installations* for firefighting water supply.

TRANSGRID EASEMENT

C13. The Applicant must consult with TransGrid, prior to lodging DAs for Stages 4 and 5 of the Development as shown on **Figure 2** in **Appendix 1**, and any other Stage or road infrastructure that may affect the TransGrid easement. The Applicant must design, construct and operate each Stage of the development in accordance with the reasonable requirements of TransGrid relating to their use of the TransGrid easement.

C14. The Applicant must consult with TransGrid, prior to lodging DAs for buildings in Stage 5 adjacent to Ropes Creek, to identify and implement any required flood management measures within the transmission line easement.

ENDEAVOUR ENERGY

C15. The Applicant must obtain relevant approvals from Endeavour Energy, prior to the construction of any utility works to service each Stage of the Development.

WATER NSW

C16. The Applicant must consult with Water NSW, prior to lodging DAs for works on Lot 2A adjoining the water pipelines corridor, to identify and implement any requirements of Water NSW for protection of the water pipelines corridor.

WASTE

C17. Future DAs shall include a Waste Management Plan prepared in accordance with the *NSW Waste Classification Guidelines* (DECCW, 2009).

CONSTRUCTION MANAGEMENT

C18. A Construction Environmental Management Plan (CEMP) shall be submitted to the Consent Authority for each stage of the Concept Proposal prior to the commencement of construction of the relevant stage. The CEMP must:

(a) be prepared by a suitably qualified and experienced environmental consultant, or the Environmental Representative appointed for Stage 1 of the Development;

(b) be prepared in consultation with relevant Government agencies, infrastructure and utility providers, including but not limited to, TransGrid, Endeavour Energy, Water NSW and TfNSW, where relevant for each stage;

(c) detail the construction activities to be undertaken in the relevant Stage of the Development;

(d) include detailed procedures for managing the environmental impacts of construction, including stormwater, erosion and sediment controls, dust, noise and traffic management; and

(e) detail the roles and responsibilities for environmental management on the Site.

COMMUNITY COMMUNICATION STRATEGY

C19. No later than one month before the commencement of construction of any stage of the Development, a Community Communication Strategy (CCS) must be prepared and submitted to the Planning Secretary for approval.

The CCS is to provide mechanisms to facilitate communication between the Applicant, Council and the community (including adjoining affected landowners, schools, businesses, and others directly impacted by Stage 1), during design, construction and operation. The CCS must:

(a) assign a central contact person to keep the nearby sensitive receivers regularly informed throughout the Development;

(b) detail the mechanisms for regularly consulting with the local community throughout the Development, such as holding regular meetings to inform the community of the progress of the development and report on environmental monitoring results;

(c) detail a procedure for consulting with nearby sensitive receivers to schedule high noise generating works, vibration intensive activities or manage traffic disruptions;

(d) include contact details for key community groups, relevant regulatory authorities, Registered Aboriginal Parties and other interested stakeholders; and

(e) include a complaints procedure for recording, responding to and managing complaints, including:

  (i) email, contact telephone number and postal addresses for receiving complaints;

  (ii) advertising the contact details for complaints before and during operation, via the local newspaper and through onsite signage;

  (iii) a complaints register to record the date, time and nature of the complaint, details of the complainant and any actions taken to address the complaint; and

  (iv) procedures for the resolution of any disputes that may arise during the course of the Development.

C20. The Applicant must:

(a) not commence construction of the relevant stage of the Concept Proposal until the CCS required under Condition C19 has been approved by the Planning Secretary; and

(b) implement the CCS for each stage of the Concept Proposal and following the completion of operation of the Development.

SCHEDULE D CONDITIONS FOR STAGE 1 DA

PART 1 – GENERAL CONDITIONS

OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

D1. In addition to meeting the specific performance measures and criteria in this consent, all reasonable and feasible measures must be implemented to prevent, and if prevention is not reasonable and feasible, minimise, any material harm to the environment that may result from the construction and operation of Stage 1 development, and any rehabilitation required under this consent.

TERMS OF CONSENT

D2. Stage 1 of the Development may only be carried out:

(a) in compliance with the conditions of this consent;

(b) in accordance with all written directions of the Planning Secretary;

(c) in accordance with the EIS and RTS;

(d) in accordance with the plans in **Appendix 2** and **Appendix 3**;

(e) **in accordance with SSD 7348 MOD 1;**

(f) in accordance with the Applicant's Management and Mitigation Measures in **Appendix 7**; and

(g) **in accordance with modifications to this consent.**

D3. Consistent with the requirements in this consent, the Planning Secretary may make written directions to the Applicant in relation to:

(a) the content of any strategy, study, system, plan, program, review, audit, notification, report or correspondence submitted under or otherwise made in relation to this consent, including those that are required to be, and have been, approved by the Planning Secretary; and

(b) the implementation of any actions or measures contained in any such document referred to in Condition D3(a).

D4. The conditions of this consent and directions of the Planning Secretary prevail to the extent of any inconsistency, ambiguity or conflict between them and a document listed in Condition D2(c). In the event of an inconsistency, ambiguity or conflict between any of the documents listed in Condition D2(c), the most recent document prevails to the extent of the inconsistency, ambiguity or conflict.

LIMITS OF CONSENT

D5. This consent lapses five (5) years after the date from which it operates, unless Stage 1 has physically commenced on the land to which the consent applies before that date.

D6. The following limits apply to Stage 1:

(a) the maximum GLA for the land uses shall not exceed the limits in **Table 4**; and

(b) a minimum 60 m wide corridor along the northern Site boundary shall not be developed and shall be maintained and preserved for the future WSFL corridor, in accordance with the requirements of TfNSW.

(c) **all construction traffic associated with the Stage 1 warehouse buildings (Buildings 1A, 1B and 1C) must use the West North South Link Road to access the site.**

Table 4: GLA Maximum for Stage 1

Land Use	Maximum GLA (m^2)
Total Warehousing	**81,286**
Total Office	**4,151**

Other	**4,004**
Total GLA	**89,440**

Note: Other includes, but is not limited to, the skybridge, gatehouse, dangerous goods store and energy complex in Building 1A

D7. The Applicant shall ensure Stage 1 is consistent with the development controls in **Table 2**: **Development Controls** in Condition B10.

NOTIFICATION OF COMMENCEMENT

D8. The date of commencement of each of the following phases of Stage 1 must be notified to the Department in writing, at least one month before that date, or otherwise agreed with the Planning Secretary:

(a) construction; and

(b) operation.

D9. If the construction or operation of Stage 1 is to be delivered in sub-stages, the Department must be notified in writing at least one month before the commencement of each sub-stage, of the date of commencement and the works to be carried out in that sub-stage.

EVIDENCE OF CONSULTATION

D10. Where conditions of this consent require consultation with an identified party, the Applicant must:

(a) consult with the relevant party prior to submitting the subject document to the Planning Secretary for approval; and

(b) provide details of the consultation undertaken including:

i. the outcome of that consultation, matters resolved and unresolved; and

ii. details of any disagreement remaining between the party consulted and the Applicant and how the Applicant has addressed the matters not resolved.

STAGING, COMBINING AND UPDATING STRATEGIES, PLANS OR PROGRAMS

D11. With the approval of the Planning Secretary, the Applicant may:

(a) prepare and submit any strategy, plan or program required by this consent on a staged basis (if a clear description is provided as to the specific stage and scope of the development to which the strategy, plan or program applies, the relationship of the stage to any future stages and the trigger for updating the strategy, plan or program);

(b) combine any strategy, plan or program required by this consent (if a clear relationship is demonstrated between the strategies, plans or programs that are proposed to be combined); and

(c) update any strategy, plan or program required by this consent (to ensure the strategies, plans and programs required under this consent are updated on a regular basis and incorporate additional measures or amendments to improve the environmental performance of the development).

D12. If the Planning Secretary agrees, a strategy, plan or program may be staged or updated without consultation being undertaken with all parties required to be consulted in the relevant condition in this consent.

D13. If approved by the Planning Secretary, updated strategies, plans or programs supersede the previous versions of them and must be implemented in accordance with the condition that requires the strategy, plan or program.

PROTECTION OF PUBLIC INFRASTRUCTURE

D14. Before the commencement of construction of Stage 1, the Applicant must:

(a) consult with the relevant owner and provider of services that are likely to be affected, to make suitable arrangements for access to, diversion, protection and support of the affected infrastructure;

(b) prepare a dilapidation report identifying the condition of all public infrastructure in the vicinity of the Site (including roads, gutters and footpaths); and

(c) submit a copy of the dilapidation report to the Planning Secretary and Council.

D15. Unless the Applicant and the applicable authority agree otherwise, the Applicant must:

(a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by carrying out Stage 1; and

(b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of Stage 1.

PROTECTION OF WATER NSW INFRASTRUCTURE

D16. Before the commencement of construction of Stage 1, the Applicant must:

(a) prepare a dilapidation report identifying the condition of all infrastructure within the water pipelines corridor, in the vicinity of the WNSLR bridge crossing;

(b) implement all practical measures to protect this infrastructure, as required by Water NSW; and

(c) repair, or pay the full costs associated with repairing, any water supply infrastructure that is damaged by carrying out Stage 1.

DEMOLITION

D17. All demolition must be carried out in accordance with *Australian Standard AS 2601-2001 The Demolition of Structures* (Standards Australia, 2001).

STRUCTURAL ADEQUACY

D18. All new buildings and structures, and any alterations or additions to existing buildings and structures, that are part of the development, must be constructed in accordance with the relevant requirements of the National Construction Code (NCC).

Notes:

- *Under Part 6 of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for the proposed building works.*
- *Part 8 of the EP&A Regulation sets out the requirements for the certification of the development.*

COMPLIANCE

D19. The Applicant must ensure that all of its employees, contractors (and their sub-contractors) are made aware of, and are instructed to comply with, the conditions of this consent relevant to activities they carry out in respect of Stage 1.

DEVELOPER CONTRIBUTIONS

Planning Agreement

D20. The Applicant shall provide all monetary contributions and/or works-in-kind contributions under Subdivision 2 of Division 7.1 of Part 7 of the EP&A Act, in accordance with the Planning Agreement entered into between the Minister for Planning, Goodman Property Services (Aust) Pty Ltd (the developer) and BGMG 11 Pty Limited as trustee for the BGMG 1 Oakdale West Trust (the landowner) executed on 5 August 2019 and as attached in **Appendix 4**.

OPERATION OF PLANT AND EQUIPMENT

D21. All plant and equipment used on site, or to monitor the performance of Stage 1 must be:

(a) maintained in a proper and efficient condition; and

(b) operated in a proper and efficient manner.

EASEMENTS

D22. Within 12 months of commencing operation of Stage 1, or a timing otherwise agreed with Council, an easement under section 88A and/or restriction or public positive covenant under section 88E

of the *Conveyancing Act 1919* (NSW) naming the Council as the prescribed authority, which can only be revoked, varied or modified with the consent of the Council, and provides for a drainage outlet swale from bio-retention basin 1, must be registered on title of Lot 19 DP 1250578.

EXTERNAL WALLS AND CLADDING

D23. The external walls of all buildings including additions to existing buildings must comply with the relevant requirements of the NCC.

D24. Before the issue of a Construction Certificate and an Occupation Certificate, the Applicant must provide the Certifying Authority with documented evidence that the products and systems proposed for use or used in the construction of external walls including finishes and claddings such as synthetic or aluminium composite panels comply with the requirements of the NCC.

D25. The Applicant must provide a copy of the documentation given to the Certifying Authority to the Planning Secretary within seven days after the Certifying Authority accepts it.

UTILITIES AND SERVICES

D26. Before the construction of any utility works associated with Stage 1, the Applicant must obtain relevant approvals from service providers.

D27. Before the commencement of operation of Stage 1, the Applicant must obtain a Compliance Certificate for water and sewerage infrastructure servicing Stage 1, under section 73 of the *Sydney Water Act 1994* (NSW).

D28. Before the issue of a Subdivision or Construction Certificate for Stage 1, the Applicant (whether or not a constitutional corporation) is to provide evidence, satisfactory to the Certifying Authority, that arrangements have been made for the provision of communication facilities to Stage 1.

D29. The Applicant must demonstrate that the carrier has confirmed in writing they are satisfied that the fibre ready facilities are fit for purpose.

TRANSGRID EASEMENT

D30. The Applicant must:

(a) provide safe and unobstructed access for TransGrid plant and personnel to access the transmission towers, lines and easement on the Site, 24 hours a day, 7 days a week;

(b) comply with the requirements of TransGrid for any works in the TransGrid easement on the Site; and

(c) advise TransGrid of any proposed amended or modified encroachment into the easement.

WATER NSW

D31. The Applicant must:

(a) comply with the requirements of Water NSW for any works adjacent to, or over, the water pipelines corridor;

(b) consult with Water NSW during detailed design of Stage 1 works near the corridor including:

(i) design of drainage upgrade works within the corridor;

(ii) batters and access tracks;

(iii) final bridge design for the WNSLR;

(c) obtain from Water NSW, an access consent and construction licence to work within the water pipelines corridor, prior to the commencement of construction;

(d) consult with Water NSW during preparation of the CEMP, in accordance with Condition D119, and attend a site visit with Water NSW personnel, prior to finalising the CEMP, to mark the exact works area for the WNSLR bridge crossing; and

(e) notify any incidents that affect or could affect the water pipelines corridor to Water NSW on the 24-hour Incident Notification Number **1800 061 069**, as a matter of urgency.

WORKS-AS-EXECUTED PLANS

D32. Before the issue of the final Occupation Certificate for Stage 1, works-as-executed drawings signed by a registered surveyor demonstrating that the stormwater drainage and finished ground levels have been constructed as approved, must be submitted to the PCA.

APPLICABILITY OF GUIDELINES

D33. References in the conditions of this consent to any guideline, protocol, Australian Standard or policy are to such guidelines, protocols, Standards or policies in the form they are in as at the date of this consent.

D34. However, consistent with the conditions of this consent and without altering any limits or criteria in this consent, the Planning Secretary may, when issuing directions under this consent in respect of ongoing monitoring and management obligations, require compliance with an updated or revised version of such a guideline, protocol, Standard or policy, or a replacement of them.

ADVISORY NOTES

AN1. All licences, permits, approvals and consents as required by law must be obtained and maintained as required for Stage 1. No condition of this consent removes any obligation to obtain, renew or comply with such licences, permits, approvals and consents.

PART 2 – ENVIRONMENTAL PERFORMANCE CONDITIONS

VISUAL AMENITY

Landscape Management Plan

D35. Prior to the commencement of construction of Stage 1, the Applicant must prepare a Landscape Management Plan (LMP), to the satisfaction of the Planning Secretary. The plan must form part of the CEMP in accordance with Condition D119 and the OEMP in accordance with Condition D130 and must:

(a) be prepared in consultation with Council;

(b) detail procedures for the retention of existing native vegetation in the north-western corner of the Site and protection of this vegetation from construction impacts;

(c) include visual impact mitigation measures for construction including but not limited to:

(i) the location of site sheds, compounds and machinery parking areas, avoiding the western and southern site boundaries, or other locations highly visible from adjacent residential properties;

(ii) ~~**procedures for progressive grassing of exposed soil, as soon as reasonably practicable after disturbance, focusing on areas where building construction will occur at a later stage;**~~ ***The contractor shall employ the use of a dust supressing polymer agent ideally with a green tint to reduce the visual impact of the exposed building pads & to assist in reducing the dust generated on site.***

(d) detail the works required to construct the landscape bund along the western boundary of the Site, as shown on Error! Reference source not found.**4** in **Appendix 2**, including provision for the landscaping to incorporate mature trees (no less than 75 litre pot size);

(e) include a schedule of works which prioritises the construction of the landscape bund along the western boundary of the Site, as shown on **Figure 4** in **Appendix 2**.

(f) include a program for implementing the landscape bund as soon as reasonably practicable, and no later than prior to operation of Stage 1;

(g) describe the integration of landscaping with fixed elements, including retaining walls and noise walls;

(h) describe the monitoring and maintenance procedures to ensure the success of the landscaping works over the life of the Development; and

(i) **update the LEMP to include modifications to the western bund, bio-retention basin 2/3 and the noise wall approved under MOD 3.**

D36. The Applicant must:

(a) not commence construction of Stage 1 until the LMP is approved by the Planning Secretary.

(b) must implement the most recent version of the LMP approved by the Planning Secretary; and

(c) include the monitoring and maintenance procedures contained in the LMP within the OEMP required in accordance with Condition D130.

Landscaping

D37. The Applicant must complete the landscape bund along the western boundary of the Site as shown on **Figure 4** in **Appendix 2** within six months of commencing any construction including bulk earthworks.

D38. The Applicant must maintain all landscaping implemented as part of Stage 1, as shown on Error! Reference source not found.**4** in **Appendix 2**, for the duration of the Development. If the monitoring carried out as part of Condition D35 indicates that any aspect of the landscaping has not been successful, the Applicant must undertake re-planting and rehabilitation works, as soon as reasonably practicable.

Setbacks

D39. The Applicant must ensure building services including tanks are integrated into the building design and landscaped areas to reduce visibility from public areas, unless otherwise required by an authority or Australian Standard, to be located within the front boundary setback.

Lighting and Security Cameras

D40. The Applicant must ensure the lighting associated with Stage 1:

(a) complies with the latest version of AS 4282-1997 - *Control of the obtrusive effects of outdoor lighting* (Standards Australia, 1997); and

(b) is mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network.

D41. The Applicant must ensure any security cameras installed as part of Stage 1 are directed away from adjacent private properties.

Reflectivity

D42. The visible light reflectivity from building materials used in the facades and roofs of the warehouses and offices must be designed to minimise glare. A report demonstrating compliance with these requirements is to be submitted to the satisfaction of the Certifying Authority prior to the issue of the relevant Construction Certificate.

Signage and Fencing

D43. **All signage and fencing must be erected in accordance with the plans at Appendix 1 and Appendix 2, as modified.**

Note: *This condition does not apply to temporary construction and safety related signage and fencing.*

D43A. Prior to construction of any signage for Stage 1, the Applicant must consult with Council on the final signage strategy.

D44. All fencing along building frontages must be located behind the landscape setbacks and not along the front boundary. The fencing must be a maximum height of 2.1 metre and be an open style.

D44A. Notwithstanding the controls listed in Condition D44, the Applicant may construct a 2.4 m high boundary fence between Lots 1A and 1B/1C.

D45. The Applicant must:

(a) remove existing rural fencing along the water pipelines corridor adjacent the site and dispose to an appropriate waste facility licensed to accept the waste;

(b) install and maintain temporary security fencing along the water pipelines corridor adjacent the site, for the duration of construction, or until a permanent fence is installed;

(c) install permanent 2.4-metre-high fencing along the water pipelines corridor adjacent the site, including the approaches to the WNSLR bridge over the water pipelines corridor and above retaining walls, unless otherwise agreed with Water NSW;

(d) install concrete barriers or barrier guard rails (including barriers leading up to bridge structure) to the WNSLR where there is potential for large vehicles to drive over retaining walls and into the water pipelines corridor. Barriers must be rated to withstand impact from B-Double size vehicles; and

(e) install cranked throw screens on both sides of the WNSLR bridge crossing the Water NSW water pipeline corridor.

D45A. Prior to construction of Building 1A, the Applicant must submit a final architectural design for Building 1A detailing building articulation, colour schemes and signage. The Applicant must not commence construction of Building 1A until the final architectural design is approved by the Planning Secretary.

WESTERN NORTH-SOUTH LINK ROAD (WNSLR)

General Requirements

D46. The Applicant must design and construct the WNSLR in accordance with the requirements of:

(a) Council, the PCA and any approval issued under section 138 of the *Roads Act 1993* including the Works Authorisation Deed (WAD);

(b) TfNSW for the bridge crossing of the future WSFL; and

(c) Water NSW for the bridge crossing of the water pipelines corridor.

D47. The Applicant must design and construct the intersections of the WNSLR with Estate Road 1 and Lockwood Road to the satisfaction of the relevant roads authority.

D47A. Prior to the commencement of construction of car park access for Lot 9, DP1157476 (57-87 Lockwood Road, Erskine Park NSW 2759), the Applicant must submit a Section 138 Application (including payment of fees together with any applicable bonds) to Penrith City Council for obtaining a *Roads Act 1993* approval. The Section 138 Application may include but is not limited to the following works:

- **vehicular crossings (including kerb reinstatement of redundant vehicular crossings);**
- **road opening for utilities and stormwater (including stormwater connection to Council infrastructure); and**
- **road occupancy or road closures.**

All works shall be carried out in accordance with the *Roads Act 1993* approval, the development consent including the stamped approved plans, and Penrith City Council's specifications.

Note: contact Penrith City Council's City Works Department on (02) 4732 7777 for further information regarding the application process.

Works at Lenore Drive/Grady Crescent/WNSLR Intersection

D48. Prior to the commencement of construction of the Lenore Drive/Grady Crescent/WNSLR intersection (the intersection), the Applicant must finalise the detailed design, including a Traffic Signal Plan, for the intersection works. The detailed design must:

(a) cut back the median further with a taper in Grady Crescent to accommodate the dual B-Double swept paths turning from WNSLR onto Lenore Drive; and

(b) include an angled pedestrian crossing on the south-eastern corner of the intersection so that pedestrians are not confused by the pedestrian lantern on the opposite side of the intersection.

D49. The Applicant must enter into a WAD for works at the intersection with TfNSW (former RMS). The WAD must be executed prior to the submission of the detailed design required under condition D48 to TfNSW for approval.

D50. The Applicant must design the proposed traffic control light at the intersection in accordance with Austroads guidelines, RMS Signal Design Manual and Australian Codes of Practice. The traffic control light design must be endorsed by a suitably qualified practitioner whose qualification has been approved by TfNSW (former RMS).

D51. The Applicant must submit the certified copies of the traffic signal design plans to TfNSW (former RMS) for approval prior to the issue of a Construction Certificate.

D52. The Applicant must submit a request to TfNSW (former RMS) Network Operations Team to obtain relevant approvals to remove the signalised pedestrian crossing on the eastern leg of the intersection.

D53. The Applicant must carry out all public utility adjustment/relocation works necessary for the intersection works as required by relevant public utility authorities and/or their agents.

D54. The Applicant must make a ten (10) year maintenance contribution for the intersection to TfNSW (former RMS).

D55. The intersection works must be carried out at no cost to TfNSW (former RMS).

Pre-Construction

D56. Prior to the commencement of construction of the WNSLR, the Applicant must:

(a) obtain the written consent of the Minister for Planning and Public Spaces under the Biodiversity Covenant, to construct the WNSLR over the Erskine Park Biodiversity Corridor; and

(b) provide evidence to the satisfaction of the Planning Secretary, demonstrating the design of the WNSLR and bridge crossings have been agreed with the relevant roads authority, Council, TfNSW and Water NSW.

Consultation

D57. The Applicant must develop a schedule for consultation with and approval by TfNSW for the construction of the bridge foundations over the future WSFL, including geotechnical and structural certification as required by TfNSW. The schedule must form part of the CEMP required by Condition D119.

D58. The Applicant must develop a schedule for consultation with and approval by Water NSW for the construction of the bridge over the water pipelines corridor. This schedule must form part of the CEMP required by Condition D119.

Pre-Operation

D59. Prior to operation of any Stage of the Development, the Applicant must complete construction of the WNSLR to the satisfaction of the relevant roads authority and the PCA.

D60. Prior to the commencement of operation of the WNSLR, the Applicant must provide works-as-executed drawings to Water NSW for the WNSLR bridge. The drawings must clearly show any changes to the bridge design or the works adjacent to the water pipelines corridor.

D61. Prior to the commencement of operation of the WNSLR, the Applicant must design and construct a stormwater management system for the WNSLR. The system must:

(a) be designed by a suitably qualified and experienced person(s);

(b) be generally in accordance with the conceptual design in the RtS;

(c) ensure that the system capacity has been designed in accordance with AUSTROADS guidelines;

(d) achieve the pollutant reduction targets specified in RMS's *Water Sensitive Urban Design (WSUD) Guidelines* (March 2016) and Council's *Water Sensitive Urban Design (WSUD) Policy* (December 2013); and

(e) ensure the outlet structures are designed in accordance with NRAR's *Guidelines for Controlled Activities on Waterfront Land* (May 2018).

Dedication of Infrastructure and Land

D62. Prior to the completion of construction of the WNSLR, the Applicant must consult with Water NSW regarding land subdivision and stratum arrangements for the acquisition and dedication of Water NSW land to Council for the WNSLR bridge.

D63. Following completion of construction of the WNSLR to the satisfaction of the relevant roads authority, the Applicant must dedicate the WNSLR and its associated land owned by Water NSW and BGMG 11 Pty Limited as trustee for the BGMG 1 Oakdale West Trust, to the relevant roads authority in accordance with the requirements of the Planning Agreement.

D64. The Applicant shall retain care, control and ownership of bio-retention basin no. 1 associated with the WNSLR.

TRANSPORT, ACCESS AND PARKING

Construction Traffic Management Plan

D65. Prior to the commencement of construction of Stage 1, the Applicant must prepare a Construction Traffic Management Plan (CTMP) to the satisfaction of the Planning Secretary. The CTMP must form part of the CEMP required by Condition D119 and must:

(a) be prepared by a suitably qualified and experienced person(s);

(b) be prepared in consultation with Council, Mamre Anglican School, Emmaus Catholic College, Emmaus Catholic Care Village and Trinity Catholic Primary School;

(c) detail specific measures to manage construction traffic to avoid school drop off and pick up times (Monday to Friday 8 am – 9.30 am and 2.30 pm – 4 pm) and Higher School Certificate exam periods, including any temporary infrastructure arrangements and traffic safety measures;

(d) detail the measures to be implemented to ensure road safety and network efficiency during construction, including scheduling deliveries of heavy plant and equipment outside of peak periods, or during school holidays where possible;

(e) detail heavy vehicle routes, access and parking arrangements;

(f) include a Driver Code of Conduct to:

i. minimise the impacts of construction on the local and regional road network;

ii. minimise conflicts with other road users including the students, staff, visitors and residents of the neighbouring schools and aged care village;

iii. minimise road traffic noise, both on Bakers Lane and from construction vehicles on Site; and

iv. ensure truck drivers use specified routes and adhere to the speed restrictions on Bakers Lane;

(g) include a program to monitor the effectiveness of these measures;

(h) detail procedures for early notification to residents and the community (including local schools), of any potential disruptions to routes; and

(i) **update the CTMP to include modifications to construction traffic management approved under MOD 2 and MOD 3.**

D66. The Applicant must:

(a) not commence construction of Stage 1 until the CTMP required by Condition D65 is approved by the Planning Secretary; and

(b) implement the most recent version of the CTMP approved by the Planning Secretary for the duration of construction.

Estate Roads and Intersections

D67. The Applicant must design and construct the internal estate roads and intersections to accommodate the turning path of a B-Double, to the satisfaction of the Relevant Roads Authority.

D68. Following the issue of a Subdivision Certificate, the estate roads shall be dedicated to the Relevant Roads Authority. Prior to any dedication, the Applicant shall ensure construction of the estate roads has been completed to the satisfaction of the Relevant Roads Authority and measures (such as a performance bond) are in place for any prescribed maintenance period, to the satisfaction of the Relevant Roads Authority.

Operating Conditions

D69. The Applicant must ensure:

(a) internal roads, driveways and parking (including grades, turn paths, sight distance requirements, aisle widths, aisle lengths and parking bay dimensions) are constructed and maintained in accordance with the latest version of *AS 2890.1:2004 Parking facilities Off-*

street car parking (Standards Australia, 2004) and *AS 2890.2:2002 Parking facilities Off-street commercial vehicle facilities* (Standards Australia, 2002);

(b) **parking for Stage 1 is provided in accordance with the EIS and RtS for MOD 5;**

(c) the swept path of the longest vehicle entering and exiting the site, as well as manoeuvrability through the site, is in accordance with the relevant Austroads guidelines;

(d) Stage 1 does not result in any vehicles queuing on the public road network;

(e) heavy vehicles associated with Stage 1 are not parked on local roads or footpaths in the vicinity of the Site;

(f) all vehicles are wholly contained on site before being required to stop;

(g) all loading and unloading of materials are carried out on Site;

(h) all trucks entering or leaving the Site with loads have their loads covered and do not track dirt onto the public road network; and

(i) the proposed turning areas in the car parks are kept clear of any obstacles, including parked cars, at all times.

Operational Traffic Management Plan

D69A The Applicant must prepare an Operational Traffic Management Plan (OTMP) for Stage 1. The OTMP must form part of the OEMP required by condition D130 and must:

(a) be prepared by a suitably qualified and experienced expert, in consultation with Council and TfNSW;

(b) detail the numbers and frequency of truck movements, sizes of trucks, vehicle routes and hours of operation;

(c) include measures to maintain road safety and network efficiency;

(d) detail measures to minimise traffic noise, including procedures for receiving and addressing complaints from the community about Stage 1 related traffic and noise;

(e) include a Driver's Code of Conduct that addresses:

(i) travelling speeds and adherence to site-specific speed limits;

(ii) procedures to ensure drivers adhere to designated heavy vehicle routes; and

(iii) procedures to ensure drivers implement safe driving practices.

D69B The Applicant must:

(a) not commence operation of Stage 1 until the OTMP required by condition D69A is approved by the Planning Secretary; and

(b) implement the most recent version of the OTMP approved by the Planning Secretary for the duration of operation.

NOISE

Hours of Work

D70. The Applicant must comply with the hours detailed in **Table 5**, unless otherwise agreed in writing by the Planning Secretary.

Table 5: *Hours of Work*

Activity	Day	Time
Construction	Monday – Friday Saturday	7 am to 6 pm 8 am to 1 pm
Operation	Monday – Sunday (including public holidays)	24 hours

D71. Works outside of the hours identified in Condition D70 may be undertaken in the following circumstances:

(a) works that are inaudible at the nearest sensitive receivers;

(b) works agreed to in writing by the Planning Secretary;

(c) for the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or

(d) where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm.

Construction Noise Limits

D72. Stage 1 must be constructed with the aim of achieving the construction noise management levels detailed in the *Interim Construction Noise Guideline* (DECC, 2009) (as may be updated or replaced from time to time). All feasible and reasonable noise mitigation measures must be implemented and any activities that could exceed the construction noise management levels must be identified and managed in accordance with the Construction Noise and Vibration Management Plan required by Condition D73.

Construction Noise and Vibration Management Plan

D73. The Applicant must prepare a Construction Noise and Vibration Management Plan (CNVMP) for Stage 1, to the satisfaction of the Planning Secretary. The CNVMP must form part of a CEMP in accordance with Condition D119 and must:

(a) be prepared by a suitably qualified and experienced noise expert;

(b) describe procedures for achieving the noise management levels in EPA's *Interim Construction Noise Guideline* (DECC, 2009) (as may be updated or replaced from time to time);

(c) describe the measures to be implemented to manage high noise generating works such as piling, in close proximity to sensitive receivers;

(d) include strategies to minimise impacts to sensitive receivers, including, where practicable, starting noisy equipment away from sensitive receivers and implementing respite periods;

(e) include strategies that have been developed with the sensitive receivers identified in **Appendix 5** for managing high noise generating works;

(f) describe the community consultation undertaken to develop the strategies in Condition D73(e);

(g) include a monitoring program that:

(i) includes a protocol for determining exceedances of the relevant conditions in this approval;

(ii) evaluates and reports on the effectiveness of the noise and vibration management measures;

(iii) include procedures to relocate, modify, mitigate or stop work to ensure compliance with relevant criteria; and

(h) include a complaints management system that would be implemented for the duration of Stage 1.

D74. The Applicant must:

(a) not commence construction of Stage 1 until the CNVMP required by Condition D73 is approved by the Planning Secretary; and

(b) implement the most recent version of the CNVMP approved by the Planning Secretary for the duration of construction.

Operational Noise Limits

D75. The Applicant shall undertake operation of Stage 1 in a manner that ensures the Development complies with the noise limits for the Concept Proposal in Condition **Error! Reference source not found.** of this consent.

Noise Barrier

D75A The Applicant must install the noise barriers located on the western boundary, as shown on Figure 6 in Appendix 5, to the satisfaction of the Planning Secretary. The noise barriers must be completed no later than 30 November 2020, unless otherwise agreed by the Planning Secretary.

Noise Verification

D75(b). A Noise Verification Report must be prepared by a suitably qualified and experienced acoustic consultant and submitted to the satisfaction of the Planning Secretary at the following stages of the development:

(a) **within three months of commencing operation of any buildings on the site; and**

(b) **two years after commencing operation of any buildings on the site.**

D75(c). The Noise Verification Reports required by Condition D75(b) must include:

(a) **an analysis of compliance with the noise limits in Condition B18, undertaken in accordance with the *NSW Noise Policy for Industry* (EPA 2017) and Australian Standard AS 1055:2018 Acoustics – Description and measurement of environmental noise (Australian Standards 2018);**

(b) **a detailed maximum noise level event assessment undertaken in accordance with the *NSW Noise Policy for Industry* (EPA 2017);**

(c) **an assessment of the performance and effectiveness of applied noise mitigation measures, including the noise barrier; and**

(d) **identification of additional noise control measures to be implemented to address any exceedances of the limits in Condition B18 and details of when these measures would be implemented and how their effectiveness would be measured and reported to the Planning Secretary.**

VIBRATION

Vibration Criteria

D76. Vibration caused by construction works on the site, as measured at any residence or structure outside the site, must be limited to:

(e) for structural damage, the latest version of *DIN 4150-3 (1992-02) Structural vibration - Effects of vibration on structures* (German Institute for Standardisation, 1999); and

(f) for human exposure, the acceptable vibration values set out in the *Environmental Noise Management Assessing Vibration: a technical guideline* (DEC, 2006) (as may be updated or replaced from time to time).

D77. Vibratory compactors must not be used closer than 30 metres from residential buildings unless vibration monitoring confirms compliance with the vibration criteria specified in Condition D76.

D78. The limits in Conditions D76 and D77 apply unless otherwise outlined in a CNVMP, approved as part of the CEMP required by Condition D119 of this consent.

SOILS & WATER

Imported Soil

D79. The Applicant must prepare a Fill Importation Protocol for Stage 1. The protocol must form part of the CEMP required by Condition D119 and must detail the measures to:

(a) ensure only VENM, ENM, or other material approved in writing by EPA is brought onto the site;

(b) keep accurate records of the volume and type of fill to be used; and

(c) make these records available to the Department upon request.

Erosion and Sediment Control

D80. The Applicant must prepare an Erosion and Sediment Control Plan for Stage 1, including the WNSLR, to the satisfaction of the Planning Secretary. The Plan must form part of a CEMP in accordance with Condition D119 and must:

(a) be prepared by a suitably qualified and experienced person(s);

(b) be generally consistent with the Erosion and Sediment Control Plans in the RTS and those prepared by the contractor for each sequence of the works, as approved by the PCA;

(c) include detailed erosion and sediment controls developed in accordance with the relevant requirements of *Managing Urban Stormwater: Soils and Construction - Volume 1: Blue Book* (Landcom, 2004) guideline; and

(d) include procedures for maintaining erosion and sediment controls in efficient working order for the duration of construction, to ensure Stage 1 complies with Condition D82.

D81. Prior to the commencement of bulk earthworks as part of Stage 1, the Applicant must implement erosion and sediment controls identified by Condition D80 and maintain those controls throughout bulk earthworks and construction, to ensure stormwater flows do not increase in any downstream areas. The Environmental Representative, appointed in accordance with Condition D123, shall make a written statement to the Planning Secretary confirming the erosion and sediment controls are operational, prior to the commencement of bulk earthworks and other construction activities required for Stage 1.

Discharge Limits

D82. Stage 1 must comply with section 120 of the POEO Act, which prohibits the pollution of waters.

Stormwater Management System

D83. The Applicant must design, construct and operate a stormwater management system for Stage 1 that:

(a) is designed by a suitably qualified and experienced person(s);

(b) is generally in accordance with the conceptual design in the RtS;

(c) is in accordance with applicable Australian Standards;

(d) ensures the system capacity is designed in accordance with *Australian Rainfall and Runoff* (Engineers Australia, 2016), *Managing Urban Stormwater: Council Handbook* (EPA, 1997) and *Stormwater Drainage Specifications for Building Development* (Penrith Council, May 2018);

(e) ensures peak stormwater flows from the Site do not exceed pre-development flows in any downstream areas for all rainfall events up to and including the 1 in 100-year average recurrence interval (ARI);

(f) ensures peak stormwater flows from the Site do not exceed existing flows in the Water NSW drainage lines and water pipelines corridor; and

(g) achieves the pollutant reduction targets specified in Council's *Water Sensitive Urban Design (WSUD) Policy,* (December 2013).

D84. All stormwater drainage infrastructure on the Site, including bio-retention basins, shall remain under the care, control and ownership of the registered proprietor of the lots.

D85. The Applicant shall create a drainage easement for the outlet swales from the bio-retention basins on the site, in accordance with the requirements of Council and Condition D22.

Groundwater

D86. If groundwater is intersected during construction of Stage 1, the Applicant must:

(a) obtain the necessary water licences or approvals from NRAR; and

(b) develop a Groundwater Management Plan (GMP) for the testing, dewatering, storage, movement and treatment of groundwater, to the satisfaction of NRAR.

Waterfront Land

D87. The Applicant must carry out all works on or adjacent to waterfront land in accordance with the Department of Industry *Guidelines for Controlled Activities on Waterfront Lands 2012*.

BIODIVERSITY

Flora and Fauna Management Plan

D88. The Applicant must prepare a **Terrestrial and Aquatic** Flora and Fauna Management Plan (FFMP) for Stage 1, to the satisfaction of the Planning Secretary. The Plan must form part of a CEMP in accordance with Condition D119 and must:

(a) be prepared by a suitably qualified and experienced person(s);

(b) describe procedures to manage impacts on biodiversity values during earthworks, clearing and dam decommissioning;

(c) include procedures for clearing marking and protecting the areas of vegetation to be retained on the Site, including the mature vegetation in the north-western corner and the ~~**Biodiversity Offset Area, established in accordance with Condition D91 adjacent to Ropes Creek; and *Ripari***~~**an Corridor adjacent to Ropes Creek in accordance with the Vegetation Management Plan (VMP) prepared under Condition D91*;***

(d) detail the specific erosion and sediment controls to protect the retained vegetation.

D89. The Applicant must:

(a) not commence bulk earthworks until the FFMP required by Condition D88 is approved by the Planning Secretary; and

(b) implement the most recent version of the FFMP approved by the Planning Secretary for the duration of bulk earthworks and construction.

Offsets for Stage 1

D90. Within 12 months of the date of this development consent, or as otherwise agreed with the Planning Secretary, the Applicant must retire ~~**172**~~ **173** ecosystem credits to offset the removal of ~~**4.41**~~ **4.36** hectares of native vegetation on the Site.

Note: *If the Applicant seeks a variation to the offset rules, the Applicant must demonstrate that reasonable steps have been taken to find like-for-like offsets in accordance with Section 10.5.4.2 of the FBA and Appendix A of the OEH's NSW Biodiversity Offsets Policy for Major Projects 2014.*

In accordance with Principle 3 of the OEH's NSW Biodiversity Offsets Policy for Major Projects 2014, the Policy does not allow variations to the offset rules to be applied to 'threatened species and ecological communities that are considered nationally significant (listed under the Environmental Protection and Biodiversity Conservation Act 1999)'. These must be offset in a like for like manner.

~~D91. **The Applicant shall establish a Biodiversity Offset Area on the Site, consistent with the area described in the RtS, in accordance with a Biodiversity Stewardship Agreement with the Biodiversity Conservation Trust.**~~

Vegetation Management Plan

D91. **Within 12 months of the date of this development consent, or as otherwise agreed with the Planning Secretary, the Applicant must prepare and implement a Vegetation Management Plan (VMP) for the restoration and rehabilitation of 4.2 ha of Riparian Corridor adjacent to Ropes Creek to meet the objectives of the *Water Management Act 2000*.**

~~**Biodiversity Management Action Plan**~~

~~D92. **The Applicant must maintain the Biodiversity Offset Area on the Site in accordance with a Biodiversity Management Action Plan approved by the Biodiversity Conservation Trust.**~~

Offsets for the WNSLR

D93. Within 12 months of the date of this development consent, or as otherwise agreed with the Planning Secretary, the Applicant must:

(a) offset 0.42 ha of vegetation lost in the Erskine Park Biodiversity Corridor as a result of the WNSLR by carrying out planting within the area shown in green edging on **Figure** in **Appendix 6**; and

(b) plant the area shown in green edging on **Figure** of **Appendix 6** with species similar to those identified for zone 4a, on the south-eastern side of Ropes Creek, in the Biodiversity Management Plan Erskine Park Employment Area (HLA-Envirosciences, 2 May 2006).

D94. The Applicant shall monitor and maintain the planting for a period of six months to ensure a minimum 85% survival rate of the planting.

D95. The Applicant must notify the Planning Ministerial Corporation at least one month before the completion of planting to enable the Planning Ministerial Corporation to arrange ongoing maintenance.

Snake Management Measures

D96. Prior to construction of Stage 1, the Applicant must implement snake management measures to limit, to the extent practicable, movement of snakes from the Site into the adjacent school and retirement village on the western boundary of the Site. The measures shall be detailed in the CEMP required by Condition D119 and shall include, but not be limited to, provision of alternative snake habitat on Site, fencing along the western boundary and installation of snake deterrents.

BUSHFIRE PROTECTION

D97. The Applicant shall ensure Stage 1 complies with:

(a) **the relevant provisions of *Planning for Bushfire Protection 2019*;**

(b) the construction standards and asset protection zone requirements recommended in the Oakdale Industrial Estate - West Bushfire Protection Assessment, prepared by Australian Bushfire Protection Planners Pty Ltd, dated September 2016, **and updated 13 January 2020, and the SSD–7348 (MOD 6) Bushfire Hazard Assessment prepared by Blackash Bushfire Consulting, dated 12 November 2020**; and

(c) *AS2419.1 – 2005 Fire Hydrant Installations* for firefighting water supply.

AIR QUALITY

Dust Minimisation

D98. The Applicant must take all reasonable steps to minimise dust generated during all works authorised by this consent.

D99. During construction of Stage 1, the Applicant must ensure that:

(a) exposed surfaces and stockpiles are suppressed by regular watering;

(b) all trucks entering or leaving the Site with loads have their loads covered;

(c) trucks associated with Stage 1 do not track dirt onto the public road network;

(d) public roads used by these trucks are kept clean; and

(e) land stabilisation works are carried out progressively on site to minimise exposed surfaces.

Construction Air Quality Management Plan

D100. Prior to the commencement of construction of Stage 1, the Applicant must prepare a Construction Air Quality Management Plan (CAQMP) to the satisfaction of the Planning Secretary. The CAQMP must form part of the CEMP required by Condition D119 and must:

(a) be prepared by a suitably qualified and experienced person(s);

(b) detail and rank all emissions from all construction activities, including particulate emissions;

(c) describe a program that is capable of evaluating the performance of the construction and determining compliance with key performance indicators;

(d) identify the control measures that will be implemented for each emission source; and

(e) nominate the following for each of the proposed controls:

(i) key performance indicator;

(ii) monitoring method;

(iii) location, frequency and duration of monitoring;

(iv) record keeping;

(v) complaints register;

(vi) response procedures; and

(vii) compliance monitoring.

D101. The Applicant must:

(a) not commence construction of Stage 1 until the CAQMP required by Condition D100 is approved by the Planning Secretary; and

(b) implement the most recent version of the CAQMP approved by the Planning Secretary for the duration of construction.

Odour Management

D102. The Applicant must ensure Stage 1 does not cause or permit the emission of any offensive odour, as defined in the POEO Act.

ABORIGINAL HERITAGE

Statutory Requirements

D103. Prior to the commencement of construction of Stage 1, the Applicant must register identified Aboriginal items or objects on the OEH's Aboriginal Heritage Information Management System (AHIMS) Aboriginal Sites Register.

Archaeological Test Excavation

D104. Prior to the commencement of construction of Stage 1, the Applicant must undertake archaeological test excavation in the identified area of archaeological sensitivity adjacent to Ropes Creek and the ridgeline immediately to the west, that would be impacted by Stage 1. The test excavation must:

(a) be undertaken in accordance with a methodology developed in consultation with registered Aboriginal parties;

(b) be undertaken in accordance with the requirements of the Heritage and Community Engagement, Department of Premier and Cabinet (former NSW OEH Heritage Division); and

(c) include a report detailing any further work, including archaeological salvage and monitoring, conducted in the presence of Aboriginal stakeholders.

D105. The Applicant must not commence construction of Stage 1 until the Archaeological Test Excavation Report is provided to the Heritage and Community Engagement, Department of Premier and Cabinet (former NSW OEH Heritage Division) and the Planning Secretary.

Unexpected Finds Protocol

D106. If any item or object of Aboriginal heritage significance is identified on Site:

(a) all work in the immediate vicinity of the suspected Aboriginal item or object must cease immediately;

(b) a 10 m wide buffer area around the suspected item or object must be cordoned off; and

(c) the Biodiversity and Conservation Division of the Department must be contacted immediately.

D107. Work in the immediate vicinity of the Aboriginal item or object may only recommence in accordance with the provisions of Part 6 of the *National Parks and Wildlife Act 1974* (NSW).

HISTORIC HERITAGE

Unexpected Finds Protocol

D108. If any archaeological relics are uncovered during construction of Stage 1, then all works in the immediate vicinity of the relic must cease immediately. Unexpected finds must be evaluated and recorded in accordance the requirements of Department of Premier and Cabinet, Heritage (former NSW OEH Heritage Division).

HAZARDS AND RISK

Dangerous Goods

D109. The storage of dangerous goods in Building 1A must not exceed the quantities provided in Table 6.

***Table 6**: Maximum storage quantities of dangerous goods*

Class	Description	Packing Group	Quantity (kg)
1.4	Explosives	n/a	20,000
2.1	Flammable gas (LPG)	n/a	4125 (7,500 L)
2.1	Flammable gas (LPG) – kitchen	n/a	247.5 (450 L)
2.1	Flammable gas (aerosols)	n/a	70,000
2.2	Non-flammable, non-toxic gas (aerosols)	n/a	25,000
3	Flammable liquids	II & III	300,000
4.1	Flammable solids	III	24,000
5.1	Oxidising agents	III	25,000
6.1	Toxic substances	III	45,000
8	Corrosive substances	II & III	60,000
9	Miscellaneous Dangerous Goods	III	105,000

D109A

Pre-Construction

(a) The Applicant must prepare the studies set out under section (b) and (c) below (the pre-construction studies). Construction, other than of preliminary works that are outside the scope of the hazard studies, must not commence until study recommendations have been considered and, where appropriate, acted upon. The Applicant must submit the studies to the Planning Secretary no later than one month prior to the commencement of construction of Building 1A (other than preliminary works), or within such further period as the Planning Secretary may agree.

(b) A Fire Safety Study for Building 1A. This study must cover the relevant aspects of the Department of Planning's Hazardous Industry Planning Advisory Paper No. 2, 'Fire Safety Study Guidelines' and the New South Wales Government's 'Best Practice Guidelines for Contaminated Water Retention and Treatment Systems'. The study must meet the requirements of Fire and Rescue NSW.

(c) A Final Hazard Analysis (FHA) of Building 1A, consistent with the Department of Planning's Hazardous Industry Planning Advisory Paper No. 6, 'Hazard Analysis'. The FHA must report:

- **layout of dangerous goods storage area for specific dangerous goods classes; firewall and fire safety requirement between the dangerous goods storage and Energy Complex 2;**
- **implementation of all recommendations of the Preliminary Hazard Analysis prepared by RiskCon Engineering dated 24 October 2019**
- **compliance with all relevant standards.**

Pre-Commissioning

(a) Prior to commissioning Building 1A, the Applicant must develop and implement the plans and systems set out under subsection (b) to (c) below. The Applicant must

submit to the Planning Secretary documentation describing the plans and systems no later than two months prior to the commencement of commissioning of Building 1A, or within such further period as the Planning Secretary may agree.

(b) A comprehensive Emergency Plan and detailed emergency procedures for Building 1A. This plan must include detailed procedures for the safety of all people outside of the project who may be at risk from the project. The plan must be consistent with the Department of Planning's Hazardous Industry Planning Advisory Paper No. 1, 'Emergency Planning'.

(c) A document setting out a comprehensive Safety Management System, covering all on-site operations and associated transport activities involving hazardous materials. The document must clearly specify all safety related procedures, responsibilities and policies, along with details of mechanisms for ensuring adherence to the procedures. The Safety Management System must be consistent with the Department of Planning's Hazardous Industry Planning Advisory Paper No. 9, 'Safety Management'. Records must be kept on-site and shall be available for inspection by the Planning Secretary upon request.

Pre-startup

Hazard Audit

(a) Twelve months after the commencement of operation of Building 1A and every five years thereafter, or at such intervals as the Planning Secretary may agree, the Applicant must carry out a comprehensive Hazard Audit of Building 1A and within one month of each audit submit a report to the Planning Secretary.

The audits must be carried out at the Applicant's expense by a qualified person or team, independent of the development, and must be consistent with the Department of Planning's Hazardous Industry Planning Advisory Paper No. 5, 'Hazard Audit Guidelines'.

D109B The Applicant must not store more than 1.1 million kilograms of combustible liquid commodities at warehouse Building 1A.

Bunding

D110. The Applicant must store all chemicals, fuels and oils used on Site in appropriately bunded areas in accordance with the requirements of all relevant Australian Standards, and/or EPA's *Storing and Handling of Liquids: Environmental Protection – Participants Manual* (Department of Environment and Climate Change, 2007).

WASTE MANAGEMENT

Waste Storage

D111. Waste must be secured and maintained within designated waste storage areas at all times and must not leave the Site onto neighbouring public or private properties.

Waste Management Plan

D112. The Applicant must implement the Waste Management Plan (WMP) in the EIS for the duration of construction and operation of Stage 1.

Statutory Requirements

D113. The Applicant must assess and classify all liquid and non-liquid wastes to be taken off Site in accordance with the latest version of EPA's *Waste Classification Guidelines Part 1: Classifying Waste* (EPA, 2014) and dispose of all wastes to a facility that may lawfully accept the waste.

D114. Waste generated outside the Site must not be received at the Site for storage, treatment, processing, reprocessing, or disposal.

Pests, Vermin and Noxious Weed Management

D115. The Applicant must:

(a) implement suitable measures to manage pests, vermin and declared noxious weeds on the Site; and

(b) inspect the Site on a regular basis to ensure that these measures are working effectively, and that pests, vermin or noxious weeds are not present on Site in sufficient numbers to pose an environmental hazard or cause the loss of amenity in the surrounding area.

Note: *For the purposes of this condition, noxious weeds are those species subject to an order declared under the Biosecurity Act 2015 (NSW).*

CONTAMINATION

D116. Prior to the commencement of construction of Stage 1, the Applicant must prepare an unexpected finds protocol to ensure that potentially contaminated material is appropriately managed. The procedure must form part of the CEMP in accordance with Condition D119 and must ensure any material identified as contaminated is disposed offsite, with the disposal location and results of testing submitted to the Planning Secretary, prior to its removal from the Site.

COMMUNITY ENGAGEMENT

D117. The Applicant must consult with the community regularly throughout Stage 1, including consultation with the nearby sensitive receivers identified in **Appendix 5**, relevant regulatory authorities, Registered Aboriginal Parties and other interested stakeholders. Community engagement shall be undertaken in accordance with the Community Communication Strategy approved in accordance with Condition C19.

PART 3 – ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING

MANAGEMENT PLAN REQUIREMENTS

D118. Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:

(a) details of:

(i) the relevant statutory requirements (including any relevant approval, licence or lease conditions);

(ii) any relevant limits or performance measures and criteria; and

(iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, Stage 1 or any management measures;

(b) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;

(c) a program to monitor and report on the:

(i) impacts and environmental performance of Stage 1; and

(ii) effectiveness of the management measures set out pursuant to paragraph (b) above;

(d) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;

(e) a program to investigate and implement ways to improve the environmental performance of Stage 1 over time;

(f) a protocol for managing and reporting any:

(i) incident and any non-compliance (specifically including any exceedance of the impact assessment criteria and performance criteria);

(ii) complaint;

(iii) failure to comply with statutory requirements; and

(g) a protocol for periodic review of the plan.

Note: *The Planning Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.*

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

D119. The Applicant must prepare a Construction Environmental Management Plan (CEMP) for Stage 1, including the WNSLR, in accordance with the requirements of Condition D118 and to the satisfaction of the Planning Secretary. The Applicant may prepare separate CEMPs for the Stage 1 works and the WNSLR, addressing all relevant requirements of this consent.

D120. Prior to finalising the CEMP, the Applicant must consult with TfNSW (including the former RMS), Council and Water NSW. The Applicant must also attend a site visit with Water NSW personnel to mark the exact works area for the WNSLR bridge crossing.

D121. As part of the CEMP required under Condition D119 of this consent, the Applicant must include:

(a) detailed procedures for managing bulk earthworks to avoid adverse water quality impacts on Ropes Creek, including, but not limited to:

(i) any staging of earthworks to minimise disturbed areas;

(ii) limits on the areal extent of earthworks;

(iii) progressive grassing of exposed areas, as soon as reasonably practicable, focusing on areas where building construction will occur at a later stage;

(b) Landscape Management Plan (LMP) (see Condition D35);

(c) Construction Traffic Management Plan (CTMP) (see Condition D65);

(d) Consultation Schedule for TfNSW and Water NSW (see Conditions D57 and D58);

(e) Construction Noise and Vibration Management Plan (CNVMP) (see Condition D73);

(f) Fill Importation Protocol (see Condition D79) and Erosion and Sediment Control Plan (see Condition D80);

(g) Flora and Fauna Management Plan (FFMP) (see Condition D88);

(h) Snake Management Measures (see Condition D96);

(i) Construction Air Quality Management Plan (CAQMP) (see Condition D100);

(j) Unexpected Finds Protocol (see Conditions D106 and D108);

(k) Unexpected Contamination Protocol (see Condition D116); and

(l) a Community Consultation and Complaints Handling Procedure.

D122. The Applicant must:

(a) not commence construction of Stage 1 until the CEMP is approved by the Planning Secretary; and

(b) carry out the construction of Stage 1 in accordance with the CEMP approved by the Planning Secretary and as revised and approved by the Planning Secretary from time to time.

ENVIRONMENTAL REPRESENTATIVE

D123. The Applicant must engage an Environmental Representative (ER) to oversee construction of Stage 1. Construction of Stage 1 must not commence until an ER has been approved by the Planning Secretary and engaged by the Applicant.

D124. The Planning Secretary's approval of an ER must be sought no later than one month before the commencement of construction of Stage 1, or within another timeframe agreed with the Planning Secretary.

D125. The proposed ER must be a suitably qualified and experienced person who was not involved in the preparation of the EIS or RtS and is independent from the design and construction personnel for Stage 1.

D126. The Applicant may engage more than one ER for Stage 1, in which case the functions to be exercised by an ER under the terms of this approval may be carried out by any ER that is approved by the Planning Secretary for the purposes of Stage 1.

D127. For the duration of construction of Stage 1, or as agreed with the Planning Secretary, the approved ER must:

(a) receive and respond to communication from the Planning Secretary in relation to the environmental performance of Stage 1;

(b) consider and inform the Planning Secretary on matters specified in the terms of this consent;

(c) consider and recommend to the Applicant any improvements that may be made to work practices to avoid or minimise adverse impact to the environment and to the community;

(d) review the CEMP identified in Condition D119 and any other documents that are identified by the Planning Secretary, to ensure they are consistent with requirements in or under this consent, and if so:

(i) make a written statement to this effect before submission of such documents to the Planning Secretary (if those documents are required to be approved by the Planning Secretary); or

(ii) make a written statement to this effect before the implementation of such documents (if those documents are required to be submitted to the Planning Secretary/Department for information or are not required to be submitted to the Planning Secretary/Department);

(e) regularly monitor the implementation of the CEMP, and any other documents identified by the Planning Secretary, to ensure implementation is being carried out in accordance with the document and the terms of this consent;

(f) as may be requested by the Planning Secretary, help plan, attend or undertake audits of Stage 1 commissioned by the Department including scoping audits, programming audits, briefings, and site visits;

(g) as may be requested by the Planning Secretary, assist the Department in the resolution of community complaints;

(h) prepare and submit to the Planning Secretary and other relevant regulatory agencies, for information, an **Environmental Representative Monthly Report** providing the information set out in the Environmental Representative Protocol under the heading "Environmental Representative Monthly Reports." The **Environmental Representative Monthly Report** must be submitted within seven calendar days following the end of each month for the duration of the ER's engagement, or as otherwise agreed with the Planning Secretary.

D128. The Applicant must provide the ER with all documentation requested by the ER in order for the ER to perform their functions specified in Condition D127 (including preparation of the ER monthly report), as well as:

(a) the complaints register; and

(b) a copy of any assessment carried out by the Applicant of whether proposed work is consistent with the consent (which must be provided to the ER before the commencement of the subject work).

D129. The Planning Secretary may at any time commission an audit of an ER's exercise of its functions under Condition D142. The Applicant must:

(a) facilitate and assist the Planning Secretary in any such audit; and

(b) make it a term of their engagement of an ER that the ER facilitate and assist the Planning Secretary in any such audit.

OPERATIONAL ENVIRONMENTAL MANAGEMENT PLAN

D130. The Applicant must prepare an Operational Environmental Management Plan (OEMP) in accordance with the requirements of Condition D118 and to the satisfaction of the Planning Secretary.

D131. As part of the OEMP required under Condition D130 of this consent, the Applicant must include the following:

(a) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of operation of Stage 1;

(b) describe the procedures that would be implemented to:

(i) keep the local community and relevant agencies informed about the operation and environmental performance of Stage 1;

(ii) receive, handle, respond to, and record complaints;

(iii) resolve any disputes that may arise;

(iv) respond to any non-compliance;

(v) respond to emergencies; and

(c) include the following environmental management plans:

(i) Landscape Management Plan (LMP) (see Condition D35);

(ii) Flora and Fauna Management Plan (FFMP) (see Condition D88);

(iii) Waste Management Plan (WMP) (see Condition D112).

D132. The Applicant must:

(a) not commence operation until the OEMP is approved by the Planning Secretary; and

(b) operate Stage 1 in accordance with the OEMP approved by the Planning Secretary (and as revised and approved by the Planning Secretary from time to time).

REVISION OF STRATEGIES, PLANS AND PROGRAMS

D133. Within three months of:

(a) the submission of a Compliance Report under Condition D141;

(b) the submission of an Environmental Representative Monthly Report under Condition D127;

(c) the submission of an incident report under Condition D135;

(d) the approval of any modification of the conditions of this consent; or

(e) the issue of a direction of the Planning Secretary under Condition D2(b) which requires a review,

the strategies, plans and programs required under this consent must be reviewed.

D134. If necessary, to either improve the environmental performance of Stage 1, cater for a modification or comply with a direction, the strategies, plans and programs required under this consent must be revised, to the satisfaction of the Planning Secretary. Where revisions are required, the revised document must be submitted to the Planning Secretary for approval within six weeks of the review.

Note: *This is to ensure strategies, plans and programs are updated on a regular basis and to incorporate any recommended measures to improve the environmental performance of Stage 1.*

REPORTING AND AUDITING

Incident Notification, Reporting and Response

D135. The Department must be notified in writing to compliance@planning.nsw.gov.au immediately after the Applicant becomes aware of an incident. The notification must identify the development (including the development application number and the name of the development if it has one) and set out the location and nature of the incident. Subsequent notification requirements must be given, and reports submitted in accordance with the requirements set out in **Appendix 8**.

Non-Compliance Notification

D136. The Department must be notified in writing to compliance@planning.nsw.gov.au within seven (7) days after the Applicant becomes aware of any non-compliance.

D137. A non-compliance notification must identify the development and the application number for it, set out the condition of consent that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

D138. A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

Compliance Reporting

D139. No later than 6 weeks before the date notified for the commencement of construction, a Compliance Monitoring and Reporting Program prepared in accordance with the Compliance Reporting Post Approval Requirements (Department 2018) must be submitted to the Department.

D140. Compliance Reports of the Development must be carried out in accordance with the Compliance Reporting Post Approval Requirements (Department 2018).

D141. The Applicant must make each Compliance Report publicly available no later than 60 days after submitting it to the Department and notify the Department in writing at least 7 days before this is done.

Monitoring and Environmental Audits

D142. Any condition of this consent that requires the carrying out of monitoring or an environmental audit, whether directly or by way of a plan, strategy or program, is taken to be a condition requiring monitoring or an environmental audit under Division 9.4 of Part 9 of the EP&A Act. This includes conditions in respect of incident notification, reporting and response, non-compliance notification, compliance reporting and independent auditing.

Note: *For the purposes of this condition, as set out in the EP&A Act, "monitoring" is monitoring of the development to provide data on compliance with the consent or on the environmental impact of the development, and an "environmental audit" is a periodic or particular documented evaluation of the development to provide information on compliance with the consent or the environmental management or impact of the development.*

ACCESS TO INFORMATION

D143. At least 48 hours before the commencement of construction until the completion of all works under this consent, the Applicant must:

(a) make the following information and documents (as they are obtained or approved) publicly available on its website:

(i) the documents referred to in Condition D2 of this consent;

(ii) all current statutory approvals for the Development;

(iii) all approved strategies, plans and programs required under the conditions of this consent;

(iv) the proposed staging plans for the Development if the construction, operation or decommissioning of the Development is to be staged;

(v) regular reporting on the environmental performance of the Development in accordance with the reporting requirements in any plans or programs approved under the conditions of this consent;

(vi) a comprehensive summary of the monitoring results of the Development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs;

(vii) a summary of the current stage and progress of the Development;

(viii) contact details to enquire about the Development or to make a complaint;

(ix) a complaints register, updated monthly;

(x) the Compliance Report of the Development;

(xi) audit reports prepared as part of any monitoring or environmental audit of the Development and the Applicant's response to the recommendations in any audit report;

(xii) any other matter required by the Planning Secretary; and

(b) keep such information up to date, to the satisfaction of the Planning Secretary.

APPENDIX 1 CONCEPT PROPOSAL

Table 7: Schedule of Approved Plans – Concept Proposal

Architectural Plans prepared by SBA Architects			
Drawing	**Title**	**Issue**	**Date**
OAK MP 02	**Estate Masterplan**	**D**	**22 November 2021**
OAK MP 03	Western North South Link Road	B	30 July 2020
OAK MP 05	Precinct 1 Plan	F	30 July 2020
OAK MP 06	Precinct Plan	C	24 November 2020
OAK MP 07	Indicative Ultimate Lot Layout	C	2 June 2021
OAK MP 08	Site Analysis Plan	B	30 July 2020
OAK MP 11	Building Staging Plan (Indicative)	B	2 June 2021
OAK MP 12	Signage Precinct 1 Plan	F	2 August 2022
OAK MP 13	Fire Protection Plan	F	25 November 2020

Landscape Plans prepared by Scape Design Landscape Architecture			
Drawing	**Title**	**Issue**	**Date**
L.SK.000	Cover Sheet	B	8/01/21
L.SK.100	Landscape Master Plan – OWE MOD 6	B	8/01/21
L.SK.101	Street Trees & Planting Masterplan	B	8/01/21
L.SK.102	Planting Schedule – OWE MOD 5	B	8/01/21
L.SK.200	Landscape Sections – OWE MOD 5	A	26/10/20
L.SK.00 – 07, 105, 106, 200, 201 and 202	**Landscape Drawing Set – OWE Lots 2A, 2C and 2D**	**-**	**23/11/21**

B1. **Civil Plans prepared by AT&L**			
Drawing	**Title**	**Issue**	**Date**
15-272-C0000	Cover Sheet	A11	4-6-21
15-272-C0001	General Arrangement Master Plan	A15	4-6-21
15-272-C0002	Existing Site Plan	A14	4-6-21
15-272-C0003	Precinct Plan	A15	4-6-21
15-272-C0004	Stage 1 SSD Approval Extents Sheet 1 of 2	A18	4-6-21
15-272-C0005	Stage 1 SSD Approval Extents Sheet 2 of 2	A13	4-6-21
15-272-C0006	Cut/Fill Plan	A13	4-6-21
15-272-C0007	Stormwater Drainage Catchment Plan (Pre-Developed)	A11	4-6-21
15-272-C0008	Stormwater Drainage Catchment Plan (Developed)	A11	4-6-21
15-272-C0009	Erosion and Sediment Control Master Plan	A14	4-6-21
15-272-C0010	Typical Sections Sheet 1	A13	4-6-21

15-272-C0011	Typical Sections Sheet 2	A11	4-6-21
15-272-C0012	Typical Sections Sheet 3	A12	4-6-21
15-272-C0013	Typical Sections Sheet 4	A10	4-6-21
15-272-C0014	Typical Sections Sheet 5	A1	4-6-21
15-272-C0020	Western North-South Link Road General Arrangement Plan	A12	4-6-21
15-272-C0021	Western North-South Link Road Stormwater Drainage Catchment Plan (Pre-Developed)	A11	4-6-21
15-272-C0022	Western North-South Link Road Stormwater Drainage Catchment Plan (Developed)	A11	4-6-21
15-272-C0023	Western North-South Link Road Proposed Land Acquisition Plan	A15	4-6-21
15-272-C1003	Precinct General Arrangement Plan	A18	4-6-21
15-272-C1004	Typical Site Sections Sheet 1 of 6	A14	4-6-21
15-272-C1005	Typical Site Sections Sheet 2 of 6	A13	4-6-21

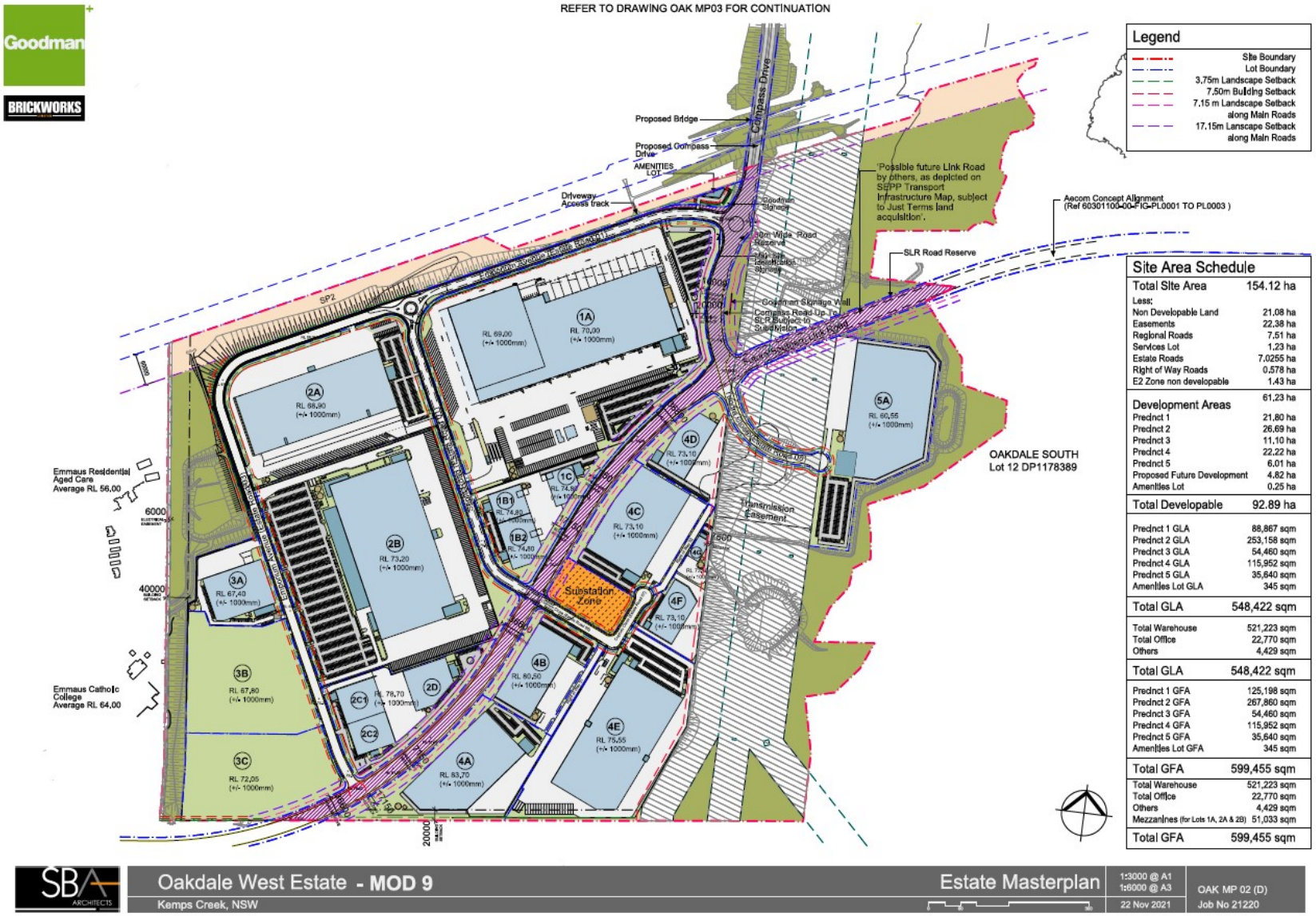


Figure 1: Concept Proposal Layout (MOD 9)

Figure 2: *Staging Plan (MOD 7)*

APPENDIX 2 STAGE 1 DA PLANS

Table 8: Schedule of Approved Plans – Stage 1 DA

Architectural Plans prepared by SBA Architects		
Drawing	**Title**	**Date**
OAK MP 04 (Z)	SSDA Stage 1 Development – Precinct 1	21 Sept 2018
OAK MP 05 (Z)	Precinct 1 Plan	21 Sept 2018
OAK MP 12 (12)	Signage Precinct 1 Plan	21 Sept 2018
Building 1A plans prepared by SBA Architects		
OAK 1A DA 10 (H)	Site Plan/Floor Plan	04 May 2018
OAK 1A DA 11 (C)	Roof Plan	03 April 2017
OAK 1A DA 12 (C)	Office Plan – Ground Floor	06 Sept 2016
OAK 1A DA 13 (c)	Office Plan – First Floor	06 Sept 2016
OAK 1A DA 14 (C)	Elevations Office	06 Sept 2016
OAK 1A DA 15 (C)	Elevations 1A	03 April 2017
OAK 1A DA 16 (D)	Sections	4 May 2018
Building 1B plans prepared by SBA Architects		
OAK 1B DA 20 (F)	Site Plan/Floor Plan	17 April 2018
OAK 1B DA 21 (C)	Roof Plan	06 Sept 2016
OAK 1B DA 22 (B)	Office Plan	06 Sept 2016
OAK 1B DA 24 (B)	Elevations Office	06 Sept 2016
OAK 1B DA 25(B)	Elevations 1B	06 Sept 2016
OAK 1B DA 26 (B)	Sections	06 Sept 2016
Building 1C plans prepared by SBA Architects		
OAK 1C DA 30 (H)	Site Plan/Floor Plan	17 April 2018
OAK 1C DA 31 (C)	Roof Plan	03 April 2017
OAK 1C DA 32 (B)	Office Plan – Ground Floor	06 Sept 2016
OAK 1C DA 33 (B)	Office Plan – First Floor	06 Sept 2016
OAK 1C DA 34 (B)	Elevations Office	06 Sept 2016
OAK 1C DA 35 (C)	Elevations Sheet 1	03 April 2017
OAK 1C DA 36 (C)	Elevations Sheet 2	03 Sept 2017
OAK 1C DA 37 (C)	Sections	03 April 2017

Landscape Plans prepared by Site Image Landscape Architects			
Drawing	**Title**	**Issue**	**Date**
ELW-101	-	G	11.10.2018
ELW-102	-	G	11.10.2018
ELW-103	-	G	11.10.2018
ELW-104	-	G	11.10.2018
ELW-105	-	G	11.10.2018
ELW-106	-	G	11.10.2018
ELW-107	-	G	11.10.2018
ELW-108	-	G	11.10.2018
ELW-109	-	G	11.10.2018
ELW-110	-	G	11.10.2018
ELW-111	-	G	11.10.2018
ELW-112	-	G	11.10.2018
ELW-113	-	G	11.10.2018
ELW-114	-	G	11.10.2018
WNSLR-101	-	G	11.10.2018
WNSLR-102	-	G	11.10.2018
ELW-502	Plant Schedule	G	11.10.2018
OLW-001	Precinct 1 Landscape Plan	G	11.10.2018
OLW-501	Planting Palette	G	11-10-2018

Civil Plans prepared by AT&L			
Drawing	Title	Issue	Date
15-272-C0004	Stage 1 SSD Approval Extents Sheet 1 of 2	A5 A7	11-10-18 24-07-19
15-272-C0005	Stage 1 SSD Approval Extents Sheet 2 of 2	A4 A6	21-09-18 24-07-19
15-272-C0020	Western North-South Link Road General Arrangement Plan	A3 A5	21-09-18 24-07-19
15-272-C0021	Western North-South Link Road Stormwater Drainage Catchment Plan (Pre-Developed)	A5	24-07-19
15-272-C0022	Western North-South Link Road Stormwater Drainage Catchment Plan (Developed)	A3 A5	21-09-18 19-07-19
15-272-C0023	Western North-South Link Road Proposed Land Acquisition Plan	A8	24-07-19
15-272-C1000	Cover Sheet	A6	24-07-19
15-272-C1001	Drawing List	A6	24-07-19
15-272-C1002	General Notes	A6	24-07-19
15-272-C1003	Precinct General Arrangement Plan	A8	24-07-19
15-272-C1004	Typical Site Sections Sheet 1 of 6	A4 A8	21-09-18 20-03-20
15-272-C1005	Typical Site Sections Sheet 2 of 6	A4 A6	21-09-18 24-07-19
15-272-C1006	Typical Site Sections Sheet 3 of 6	A4 A8	21-09-18 20-03-20
15-272-C1007	Typical Site Sections Sheet 4 of 6	A3 A5	21-09-18 24-07-19
15-272-C1008	Typical Site Sections Sheet 5 of 6	A3 A6	11-10-18 20-03-20
15-272-C1009	Typical Site Sections Sheet 6 of 6	A4 A6	28-09-18 20-03-20
15-272-C1010	Typical Road Sections	A3 A5	21-09-18 24-07-19
15-272-C1011	Contour Plan	A5	20-03-20
15-272-C1014	Bulk Earthworks Cut/Fill Plan	A6	20-03-20
15-272-C1015	Earthworks and Stormwater Drainage Plan Sheet 1 of 20	A3 A5	21-09-18 24-07-19
15-272-C1016	Earthworks and Stormwater Drainage Plan Sheet 2 of 20	A3 A5	21-09-18 24-07-19
15-272-C1017	Earthworks and Stormwater Drainage Plan Sheet 3 of 20	A3 A5	21-09-18 24-07-19
15-272-C1018	Earthworks and Stormwater Drainage Plan Sheet 4 of 20	A3 A5	21-09-18 24-07-19
15-272-C1019	Earthworks and Stormwater Drainage Plan Sheet 5 of 20	A3 A5	21-09-18 24-07-19
15-272-C1020	Earthworks and Stormwater Drainage Plan Sheet 6 of 20	A3 A5	21-09-18 24-07-19
15-272-C1021	Earthworks and Stormwater Drainage Plan Sheet 7 of 20	A3 A5	21-09-18 24-07-19
15-272-C1022	Earthworks and Stormwater Drainage Plan Sheet 8 of 20	A3 A5	21-09-18 24-07-19
15-272-C1023	Earthworks and Stormwater Drainage Plan Sheet 9 of 20	A3 A5	21-09-18 24-07-19
15-272-C1024	Earthworks and Stormwater Drainage Plan Sheet 10 of 20	A3 A5	21-09-18 24-07-19
15-272-C1025	Earthworks and Stormwater Drainage Plan Sheet 11 of 20	A3 A5	21-09-18 24-07-19
15-272-C1026	Earthworks and Stormwater Drainage Plan Sheet 12 of 20	A3 A5	21-09-18 24-07-19

~~15-272-C1027~~	~~Earthworks and Stormwater Drainage Plan Sheet 13 of 20~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1028~~	~~Earthworks and Stormwater Drainage Plan Sheet 14 of 20~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1029~~	~~Earthworks and Stormwater Drainage Plan Sheet 15 of 20~~	~~A4~~ ~~A6~~	~~04-10-18~~ ~~24-07-19~~
~~15-272-C1030~~	~~Earthworks and Stormwater Drainage Plan Sheet 16 of 20~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1031~~	~~Earthworks and Stormwater Drainage Plan Sheet 17 of 20~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1032~~	~~Earthworks and Stormwater Drainage Plan Sheet 18 of 20~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1033~~	~~Earthworks and Stormwater Drainage Plan Sheet 19 of 20~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1034~~	~~Earthworks and Stormwater Drainage Plan Sheet 20 of 20~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1040~~	~~Roadworks and Stormwater Drainage Plan Sheet 1 of 10~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1041~~	~~Roadworks and Stormwater Drainage Plan Sheet 2 of 10~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1042~~	~~Roadworks and Stormwater Drainage Plan Sheet 3 of 10~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1043~~	~~Roadworks and Stormwater Drainage Plan Sheet 4 of 10~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1044~~	~~Roadworks and Stormwater Drainage Plan Sheet 5 of 10~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1045~~	~~Roadworks and Stormwater Drainage Plan Sheet 6 of 10~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1046~~	~~Roadworks and Stormwater Drainage Plan Sheet 7 of 10~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1047~~	~~Roadworks and Stormwater Drainage Plan Sheet 8 of 10~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1048~~	~~Roadworks and Stormwater Drainage Plan Sheet 9 of 10~~	~~A2~~ ~~A4~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1049~~	~~Roadworks and Stormwater Drainage Plan Sheet 10 of 10~~	~~A2~~ ~~A4~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1050~~	~~Road and Longitudinal Sections Sheet 1 of 5~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1051~~	~~Road and Longitudinal Sections Sheet 2 of 5~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1052~~	~~Road and Longitudinal Sections Sheet 3 of 5~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1053~~	~~Road and Longitudinal Sections Sheet 4 of 5~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1054~~	~~Road and Longitudinal Sections Sheet 5 of 5~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1058~~	~~Western Boundary Layout and Sections~~	~~A4~~	~~24-07-19~~
~~15-272-C1059~~	~~Southern Boundary Layout and Sections~~	~~A4~~	~~24-07-19~~
~~15-272-C1062~~	~~Bio-Retention Basin No. 3 Detail Plan Sheet 1 of 2~~ ~~Bio-Retention Basin 2 and 3 Detail Plan Sheet 1 of 2~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1063~~	~~Bio-Retention Basin No. 3 Detail Plan Sheet 2 of 2~~ ~~Bio-Retention Basin 2 and 3 Detail Plan Sheet 2 of 2~~	~~A2~~ ~~A4~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1064~~	~~Bio-Retention Basin No. 5 Detail Plan Sheet 1 of 2~~ ~~Bio-Retention Basin 4 Detail Plan Sheet 1 of 2~~	~~A1~~ ~~A3~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1065~~	~~Bio-Retention Basin No. 5 Detail Plan Sheet 2 of 2~~ ~~Bio-Retention Basin 4 Detail Plan Sheet 2 of 2~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1066~~	~~Bio-Retention Basin No. 6 Detail Plan~~ ~~Bio-Retention Basin 5 Detail Plan~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~

~~15-272-C1068~~	~~Stormwater Drainage Catchment Plan (Pre-developed)~~	~~A4~~	~~24-07-19~~
~~15-272-C1069~~	~~Stormwater Drainage Catchment Plan (Post-developed)~~	~~A4~~	~~24-07-19~~
~~15-272-C1070~~	~~Retaining Wall General Arrangement Plan~~	~~A4~~ ~~A6~~	~~11-10-18~~ ~~24-07-19~~
~~15-272-C1071~~	~~Retaining Wall Profiles Sheet 1 of 7~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1072~~	~~Retaining Wall Profiles Sheet 2 of 7~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1073~~	~~Retaining Wall Profiles Sheet 3 of 7~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1074~~	~~Retaining Wall Profiles Sheet 4 of 7~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1075~~	~~Retaining Wall Profiles Sheet 5 of 7~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1076~~	~~Retaining Wall Profiles Sheet 6 of 7~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C1077~~	~~Retaining Wall Profiles Sheet 7 of 7~~	~~A2~~ ~~A4~~	~~21-09-18~~ ~~24-07-19~~
~~12-272-C1080~~	~~Stage 1 Services and Utilities Coordination Plan Sheet 1 of 6~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~12-272-C1081~~	~~Stage 1 Services and Utilities Coordination Plan Sheet 2 of 6~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~12-272-C1082~~	~~Stage 1 Services and Utilities Coordination Plan Sheet 3 of 6~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~12-272-C1083~~	~~Stage 1 Services and Utilities Coordination Plan Sheet 4 of 6~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~12-272-C1084~~	~~Stage 1 Services and Utilities Coordination Plan Sheet 5 of 6~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~12-272-C1085~~	~~Stage 1 Services and Utilities Coordination Plan Sheet 6 of 6~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~12-272-C1086~~	~~Existing Transgrid Overhead Electrical Cables Plan~~	~~A5~~	~~24-07-19~~
~~12-272-C1087~~	~~Existing Transgrid Overhead Electrical Cables and Longitudinal Sections~~	~~A5~~	~~24-07-19~~
~~12-272-C1088~~	~~Existing Transgrid Overhead Electrical Cables Typical Sections Sheet 1 of 2~~	~~A5~~	~~24-07-19~~
~~12-272-C1089~~	~~Existing Transgrid Overhead Electrical Cables Typical Sections Sheet 2 of 2~~	~~A5~~	~~24-07-19~~
~~12-272-C1090~~	~~Erosion and Sediment Control Plan Sheet 1 of 7~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~12-272-C1091~~	~~Erosion and Sediment Control Plan Sheet 2 of 7~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~12-272-C1092~~	~~Erosion and Sediment Control Plan Sheet 3 of 7~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~12-272-C1093~~	~~Erosion and Sediment Control Plan Sheet 4 of 7~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~12-272-C1094~~	~~Erosion and Sediment Control Plan Sheet 5 of 7~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~12-272-C1095~~	~~Erosion and Sediment Control Plan Sheet 6 of 7~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~12-272-C1096~~	~~Erosion and Sediment Control Plan Sheet 7 of 7~~	~~A3~~ ~~A5~~	~~21-09-18~~ ~~24-07-19~~
~~12-272-C1097~~	~~Erosion and Sediment Control Details~~	~~A1~~ ~~A4~~	~~21-09-18~~ ~~24-07-19~~
~~15-272-C2003~~	~~General Arrangement Plan~~	~~A3~~	~~21-09-18~~
~~15-272-C2010~~	~~Siteworks and Stormwater Drainage Plan Sheet 1 of 15~~	~~A3~~	~~21-09-18~~
~~15-272-C2011~~	~~Siteworks and Stormwater Drainage Plan Sheet 2 of 15~~	~~A3~~	~~21-09-18~~
~~15-272-C2012~~	~~Siteworks and Stormwater Drainage Plan Sheet 3 of 15~~	~~A3~~	~~21-09-18~~
~~15-272-C2013~~	~~Siteworks and Stormwater Drainage Plan Sheet 4 of 15~~	~~A3~~	~~21-09-18~~
~~15-272-C2014~~	~~Siteworks and Stormwater Drainage Plan Sheet 5 of 15~~	~~A3~~	~~21-09-18~~

~~15-272-C2015~~	~~Siteworks and Stormwater Drainage Plan Sheet 6 of 15~~	~~A3~~	~~21-09-18~~
~~15-272-C2016~~	~~Siteworks and Stormwater Drainage Plan Sheet 7 of 15~~	~~A3~~	~~21-09-18~~
~~15-272-C2017~~	~~Siteworks and Stormwater Drainage Plan Sheet 8 of 15~~	~~A3~~	~~21-09-18~~
~~15-272-C2018~~	~~Siteworks and Stormwater Drainage Plan Sheet 9 of 15~~	~~A3~~	~~21-09-18~~
~~15-272-C2019~~	~~Siteworks and Stormwater Drainage Plan Sheet 10 of 15~~	~~A3~~	~~21-09-18~~
~~15-272-C2020~~	~~Siteworks and Stormwater Drainage Plan Sheet 11 of 15~~	~~A3~~	~~21-09-18~~
~~15-272-C2021~~	~~Siteworks and Stormwater Drainage Plan Sheet 12 of 15~~	~~A3~~	~~21-09-18~~
~~15-272-C2022~~	~~Siteworks and Stormwater Drainage Plan Sheet 13 of 15~~	~~A3~~	~~21-09-18~~
~~15-272-C2023~~	~~Siteworks and Stormwater Drainage Plan Sheet 14 of 15~~	~~A3~~	~~21-09-18~~
~~15-272-C2024~~	~~Siteworks and Stormwater Drainage Plan Sheet 15 of 15~~	~~A3~~	~~21-09-18~~
~~15-272-C2030~~	~~Pavement Plan~~	~~A3~~	~~21-09-18~~
~~15-272-C3003~~	~~General Arrangement Plan~~	~~A3~~	~~21-09-18~~
~~15-272-C3010~~	~~Typical Road Sections~~	~~A3~~	~~21-09-18~~
~~15-272-C3020~~	~~Roadworks Plan and Longitudinal Section Sheet 1 of 5~~	~~A3~~	~~21-09-18~~
~~15-272-C3021~~	~~Roadworks Plan and Longitudinal Section Sheet 2 of 5~~	~~A3~~	~~21-09-18~~
~~15-272-C3022~~	~~Roadworks Plan and Longitudinal Section Sheet 3 of 5~~	~~A3~~	~~21-09-18~~
~~15-272-C3023~~	~~Roadworks Plan and Longitudinal Section Sheet 4 of 5~~	~~A3~~	~~21-09-18~~
~~15-272-C3024~~	~~Roadworks Plan and Longitudinal Section Sheet 5 of 5~~	~~A3~~	~~21-09-18~~
~~15-272-C3030~~	~~Road Longitudinal Sections~~	~~A3~~	~~21-09-18~~
~~15-272-C3040~~	~~Bridge Elevation and Typical Section~~	~~A4~~	~~04-10-18~~
~~15-272-C3050~~	~~Stormwater Drainage Plan Sheet 1 of 5~~	~~A3~~	~~21-09-18~~
~~15-272-C3051~~	~~Stormwater Drainage Plan Sheet 2 of 5~~	~~A3~~	~~21-09-18~~
~~15-272-C3052~~	~~Stormwater Drainage Plan Sheet 3 of 5~~	~~A3~~	~~21-09-18~~
~~15-272-C3053~~	~~Stormwater Drainage Plan Sheet 4 of 5~~	~~A3~~	~~21-09-18~~
~~15-272-C3054~~	~~Stormwater Drainage Plan Sheet 5 of 5~~	~~A3~~	~~21-09-18~~
~~15-272-C3058~~	~~Stormwater Drainage Catchment Plan (Post-Developed)~~	~~A2~~	~~21-09-18~~
~~15-272-C3060~~	~~Bio-Retention Basin NO. 1 Detail Plan~~	~~A3~~	~~21-09-18~~
~~15-272-C3070~~	~~Pavement Plan Sheet 1 of 5~~	~~A3~~	~~21-09-18~~
~~15-272-C3071~~	~~Pavement Plan Sheet 2 of 5~~	~~A3~~	~~21-09-18~~
~~15-272-C3072~~	~~Pavement Plan Sheet 3 of 5~~	~~A3~~	~~21-09-18~~
~~15-272-C3073~~	~~Pavement Plan Sheet 4 of 5~~	~~A3~~	~~21-09-18~~
~~15-272-C3074~~	~~Pavement Plan Sheet 5 of 5~~	~~A2~~	~~21-09-18~~
~~15-272-C3080~~	~~Retaining Wall Plan and Elevation~~	~~A1~~	~~21-09-18~~
~~15-272-C3081~~	~~Retaining Wall Sections Sheet 1 of 4~~	~~A1~~	~~21-09-18~~
~~15-272-C3082~~	~~Retaining Wall Sections Sheet 2 of 4~~	~~A1~~	~~21-09-18~~
~~15-272-C3083~~	~~Retaining Wall Sections Sheet 3 of 4~~	~~A1~~	~~21-09-18~~
~~15-272-C3084~~	~~Retaining Wall Sections Sheet 4 of 4~~	~~A1~~	~~21-09-18~~

Civil Plans prepared by AT&L			
Drawing	**Title**	**Issue**	**Date**
15-272-C5006	Typical Road Sections Sheet 1	3	31-01-20
15-272-C5018	Bulk Earthworks Cut/Fill Plan Sheet 1	2	31-01-20
15-272-C5021	Roadworks Plan Sheet 1	4	06-02-20
15-272-C5022	Roadworks Plan Sheet 2	4	31-01-20
15-272-C5033	Carpark Adjustment Siteworks Plans	4	31-01-20
15-272-C5057	Stormwater Drainage Plan Sheet 1	2	31-01-20
15-272-C5063	Subsurface Drainage Plan Sheet 1	2	31-01-20
15-272-C5101	Pavement Plan Sheet 1	3	31-01-20
15-272-C5121	Services and Utilities Coordination Plan Sheet 1	3	06-02-20
15-272-C5122	Services and Utilities Coordination Plan Sheet 2	4	06-02-20
15-272-C5131	Road Furniture Plan Sheet 1	3	31-01-20

Landscape Plans prepared by Scape Design Landscape Architecture			
Drawing	**Title**	**Issue**	**Date**
L.CD.101	Western North South Link Road Landscape Plan Sheet 1	S	14/2/20

L.CD.301	Western North South Link Road Planting & Revegetation Schedule	Q	31/1/20

Table 8A: Schedule of Approved Plans – Stage 1 Development

Architectural Plans prepared by SBA Architects			
Drawing	Title	Issue	Date
OAK-1A-DA-10	Proposed Industrial Facility – Building 1A Site Plan	F	23 June 2021
OAK-1A-DA-11	Proposed Industrial Facility – Building 1A Roof Plan	A	13 July 2020
OAK-1A-DA-12	Proposed Industrial Facility – Building 1A Office Ground Floor Plan	Q	23 June 2021
OAK-1A-DA-13	Proposed Industrial Facility – Building 1A Office First Floor Plan	Q	23 June 2021
OAK-1A-DA-13A	Proposed Industrial Facility – Building 1A Office Second Floor Plan	L	23 June 2021
OAK-1A-DA-14	Proposed Industrial Facility – Building 1A Office Elevations	R	1 February 2022
OAK-1A-DA-15	Proposed Industrial Facility – Building 1A Warehouse Elevations	S	1 February 2022
OAK-1A-DA-18	Proposed Industrial Facility – Building 1A Warehouse Plan	B	28 July 2020
OAK-1A-DA-18A	Proposed Industrial Facility – Building 1A Mezzanine Plan – 1	B	28 July 2020
OAK-1A-DA-18B	Proposed Industrial Facility – Building 1A Mezzanine Plan – 2	B	28 July 2020
OAK-1A-DA-18C	Proposed Industrial Facility – Building 1A Mezzanine Plan – 3	B	28 July 2020
OAK-1A-DA-18D	Proposed Industrial Facility – Building 1A Mezzanine Plan – 4	B	28 July 2020
OAK-1A-DA-18E	Proposed Industrial Facility – Building 1A Mezzanine Plan – 5	B	28 July 2020
OAK-1A-DA-18F	Proposed Industrial Facility – Building 1A Mezzanine Plan – 6	B	28 July 2020
OAK-1A-DA-19	Skybridge Sections & Elevations – Building 1A	M	1 February 2022
OAK-1A-DA-25	Proposed Industrial Facility – Building 1A Energy Complex – 1	A	13 July 2020
OAK-1A-DA-28	Proposed Industrial Facility – Building 1A Stage 2 – Site Plan	E	29 July 2020
OAK-1A-DA-29	Proposed Industrial Facility - – Building 1A – Stage 2 - Elevations	M	1 February 2022
OAK-DA-DA00	Proposed Industrial Facility - Building 1B/1C - Cover page	C	9 June 2021
OAK-DA-DA01	Proposed Industrial Facility - Building 1B/1C – Perspectives – 1B1/1B2	C	9 June 2021
OAK-DA-DA02	Proposed Industrial Facility - Building 1B/1C – Perspectives – Office 1C	C	9 June 2021
OAK-DA-DA30	Proposed Industrial Facility - Building 1B/1C – Site Plan	F	9 June 2021
OAK-DA-DA31	Proposed Industrial Facility - Building 1B/1C – Roof Plan	F	9 June 2021
OAK-DA-DA32	Proposed Industrial Facility - Building 1B/1C – Office Plans 1B1	E	9 June 2021

OAK-DA-DA33	Proposed Industrial Facility - Building 1B/1C – Office Plans 1B2	F	9 June 2021
OAK-DA-DA33A	Proposed Industrial Facility - Building 1B/1C – Office Plans 1C	F	9 June 2021
OAK-DA-DA34	Proposed Industrial Facility - Building 1B/1C – Elevations – Office 1B	E	9 June 2021
OAK-DA-D34A	Proposed Industrial Facility - Building 1B/1C – Elevations – Office 1C	E	9 June 2021
OAK-DA-DA35	Proposed Industrial Facility - Building 1B/1C – Elevations – Warehouse 1B	E	9 June 2021
OAK-DA-DA36	Proposed Industrial Facility - Building 1B/1C – Elevations – Warehouse 1C	E	9 June 2021
OAK-DA-DA37	Proposed Industrial Facility - Building 1B/1C – Sections - Warehouse	E	9 June 2021
OAK 1B1C DA 40	Proposed Industrial Facility – Proposed 1B & 1C – Signage Plan	D	9 June 2021

Landscape Plans prepared by Scape Design Landscape Architecture			
Drawing	**Title**	**Revision**	**Date**
L.SK.00	Cover Sheet	S	17/7/20
L.SK.01	Landscape Master Plan	P	17/7/20
L.SK.02	Planting Plan	M	17/7/20
L.SK.03	Planting Schedule	M	8/7/20
L.SK.04	Character & Materials	N	8/7/20
L.SK.100	Landscape – Plan – Sheet 1	N	17/7/20
L.SK.101	Landscape – Plan – Sheet 2	N	17/7/20
L.SK.102	Landscape – Plan – Sheet 3	O	17/7/20
L.SK.103	Landscape – Plan – Sheet 4	O	17/7/20
L.SK.104	Landscape – Plan – Sheet 5	O	17/7/20
L.SK.105	Landscape – Detailed Plan – Sheet 1	M	17/7/20
L.SK.106	Landscape – Detailed Plan – Sheet 2	M	17/7/20
L.SK.200	Landscape – Sections – Sheet 1	K	8/7/20
L.SK.201	Landscape – Sections – Sheet 2	K	8/7/20
L.SK.202	Landscape – Sections – Sheet 3	K	17/7/20
L.SK.203	Landscape – Sections – Sheet 4	L	17/7/20
L.SK.204	Carpark Details	H	17/7/20

Civil Plans prepared by AT&L			
Drawing	**Title**	**Revision**	**Date**
15-272-C1000	Cover Sheet	A10	20-10-20
15-272-C1001	Drawing List	A10	20-10-20
15-272-C1002	General Notes	A10	20-10-20
15-272-C1003	Precinct General Arrangement Plan	A16	20-10-20
15-272-C1004	Typical Site Sections Sheet 1 of 6	A12	20-10-20
15-272-C1005	Typical Site Sections Sheet 2 of 6	A11	20-10-20
15-272-C1006	Typical Site Sections Sheet 3 of 6	A11	20-10-20
15-272-C1007	Typical Site Sections Sheet 4 of 6	A9	20-10-20
15-272-C1008	Typical Site Sections Sheet 5 of 6	A9	20-10-20
15-272-C1009	Typical Site Sections Sheet 6 of 6	A11	20-10-20
15-272-C1010	Typical Road Sections	A9	20-10-20
15-272-C1011	Contour Plan	A12	20-10-20
15-272-C1014	Bulk Earthworks Cut/Fill Plan	A13	20-10-20

15-272-C1015	Earthworks and Stormwater Drainage Plan Sheet 1 of 20	A10	20-10-20
15-272-C1016	Earthworks and Stormwater Drainage Plan Sheet 2 of 20	A10	20-10-20
15-272-C1017	Earthworks and Stormwater Drainage Plan Sheet 3 of 20	A10	20-10-20
15-272-C1018	Earthworks and Stormwater Drainage Plan Sheet 4 of 20	A10	20-10-20
15-272-C1019	Earthworks and Stormwater Drainage Plan Sheet 5 of 20	A10	20-10-20
15-272-C1020	Earthworks and Stormwater Drainage Plan Sheet 6 of 20	A10	20-10-20
15-272-C1021	Earthworks and Stormwater Drainage Plan Sheet 7 of 20	A10	20-10-20
15-272-C1022	Earthworks and Stormwater Drainage Plan Sheet 8 of 20	A10	20-10-20
15-272-C1023	Earthworks and Stormwater Drainage Plan Sheet 9 of 20	A12	20-10-20
15-272-C1024	Earthworks and Stormwater Drainage Plan Sheet 10 of 20	A12	20-10-20
15-272-C1025	Earthworks and Stormwater Drainage Plan Sheet 11 of 20	A10	20-10-20
15-272-C1026	Earthworks and Stormwater Drainage Plan Sheet 12 of 20	A10	20-10-20
15-272-C1027	Earthworks and Stormwater Drainage Plan Sheet 13 of 20	A10	20-10-20
15-272-C1028	Earthworks and Stormwater Drainage Plan Sheet 14 of 20	A10	20-10-20
15-272-C1029	Earthworks and Stormwater Drainage Plan Sheet 15 of 20	A12	20-10-20
15-272-C1030	Earthworks and Stormwater Drainage Plan Sheet 16 of 20	A12	20-10-20
15-272-C1031	Earthworks and Stormwater Drainage Plan Sheet 17 of 20	A10	20-10-20
15-272-C1032	Earthworks and Stormwater Drainage Plan Sheet 18 of 20	A10	20-10-20
15-272-C1033	Earthworks and Stormwater Drainage Plan Sheet 19 of 20	A10	20-10-20
15-272-C1034	Earthworks and Stormwater Drainage Plan Sheet 20 of 20	A10	20-10-20
15-272-C1040	Roadworks and Stormwater Drainage Plan Sheet 1 of 18	A11	20-10-20
15-272-C1041	Roadworks and Stormwater Drainage Plan Sheet 2 of 18	A12	20-10-20
15-272-C1042	Roadworks and Stormwater Drainage Plan Sheet 3 of 18	A11	20-10-20
15-272-C1043	Roadworks and Stormwater Drainage Plan Sheet 4 of 18	A10	20-10-20
15-272-C1044	Roadworks and Stormwater Drainage Plan Sheet 5 of 18	A10	20-10-20
15-272-C1045	Roadworks and Stormwater Drainage Plan Sheet 6 of 18	A10	20-10-20
15-272-C1046	Roadworks and Stormwater Drainage Plan Sheet 7 of 18	A10	20-10-20
15-272-C1047	Roadworks and Stormwater Drainage Plan Sheet 8 of 18	A10	20-10-20
15-272-C1048	Roadworks and Stormwater Drainage Plan Sheet 9 of 18	A9	20-10-20
15-272-C1049	Roadworks and Stormwater Drainage Plan Sheet 10 of 18	A4	20-10-20
15-272-C1050	Roadworks and Stormwater Drainage Plan Sheet 11 of 18	A4	20-10-20
15-272-C1051	Roadworks and Stormwater Drainage Plan Sheet 12 of 18	A4	20-10-20
15-272-C1052	Roadworks and Stormwater Drainage Plan Sheet 13 of 18	A4	20-10-20
15-272-C1053	Roadworks and Stormwater Drainage Plan Sheet 14 of 18	A4	20-10-20
15-272-C1054	Roadworks and Stormwater Drainage Plan Sheet 15 of 18	A4	20-10-20
15-272-C1055	Roadworks and Stormwater Drainage Plan Sheet 16 of 18	A4	20-10-20
15-272-C1056	Roadworks and Stormwater Drainage Plan Sheet 17 of 18	A1	20-10-20
15-272-C1057	Roadworks and Stormwater Drainage Plan Sheet 18 of 18	A1	20-10-20
15-272-C1060	Road Longitudinal Sections Sheet 1 of 7	A10	20-10-20
15-272-C1061	Road Longitudinal Sections Sheet 2 of 7	A10	20-10-20
15-272-C1062	Road Longitudinal Sections Sheet 3 of 7	A10	20-10-20
15-272-C1063	Road Longitudinal Sections Sheet 4 of 7	A10	20-10-20
15-272-C1064	Road Longitudinal Sections Sheet 5 of 7	A10	20-10-20
15-272-C1065	Road Longitudinal Sections Sheet 6 of 7	A4	20-10-20
15-272-C1066	Road Longitudinal Sections Sheet 7 of 7	A1	20-10-20
15-272-C1070	Western Boundary Layout and Sections	A11	20-10-20
15-272-C1071	Southern Boundary Layout and Sections	A9	20-10-20
15-272-C1080	Bio-Retention Basin 2 and 3 Detail Plan Sheet 1 of 2	A10	20-10-20
15-272-C1081	Bio-Retention Basin 2 and 3 Detail Plan Sheet 2 of 2	A9	20-10-20
15-272-C1082	Bio-Retention Basin 4 Detail Plan Sheet 1 of 2	A8	20-10-20
15-272-C1083	Bio-Retention Basin 4 Detail Plan Sheet 2 of 2	A10	20-10-20
15-272-C1084	Bio-Retention Basin 5 Detail Plan	A10	20-10-20
15-272-C1086	Stormwater Drainage Catchment Plan (Pre-developed)	A9	20-10-20
15-272-C1087	Stormwater Drainage Catchment Plan (Post-developed)	A9	20-10-20
15-272-C1090	Retaining Wall General Arrangement Plan	A13	20-10-20
15-272-C1091	Retaining Wall Profiles Sheet 1 of 9	A11	20-10-20
15-272-C1092	Retaining Wall Profiles Sheet 2 of 9	A10	20-10-20
15-272-C1093	Retaining Wall Profiles Sheet 3 of 9	A10	20-10-20

15-272-C1094	Retaining Wall Profiles Sheet 4 of 9	A10	20-10-20
15-272-C1095	Retaining Wall Profiles Sheet 5 of 9	A12	20-10-20
15-272-C1096	Retaining Wall Profiles Sheet 6 of 9	A11	20-10-20
15-272-C1097	Retaining Wall Profiles Sheet 7 of 9	A9	20-10-20
15-272-C1098	Retaining Wall Profiles Sheet 8 of 9	A9	20-10-20
15-272-C1099	Retaining Wall Profiles Sheet 9 of 9	A1	20-10-20
15-272-C1110	Stage 1 Services and Utilities Coordination Plan Sheet 1 of 6	A9	20-10-20
15-272-C1111	Stage 1 Services and Utilities Coordination Plan Sheet 2 of 6	A10	20-10-20
15-272-C1112	Stage 1 Services and Utilities Coordination Plan Sheet 3 of 6	A10	20-10-20
15-272-C1113	Stage 1 Services and Utilities Coordination Plan Sheet 4 of 6	A12	20-10-20
15-272-C1114	Stage 1 Services and Utilities Coordination Plan Sheet 5 of 6	A10	20-10-20
15-272-C1115	Stage 1 Services and Utilities Coordination Plan Sheet 6 of 6	A9	20-10-20
15-272-C1120	Existing Transgrid Overhead Electrical Cables Plan	A10	20-10-20
15-272-C1121	Existing Transgrid Overhead Electrical Cables and Longitudinal Sections	A9	20-10-20
15-272-C1122	Existing Transgrid Overhead Electrical Cables Typical Sections Sheet 1 of 2	A9	20-10-20
15-272-C1123	Existing Transgrid Overhead Electrical Cables Typical Sections Sheet 2 of 2	A9	20-10-20
15-272-C1130	Erosion and Sediment Control Plan Sheet 1 of 7	A10	20-10-20
15-272-C1131	Erosion and Sediment Control Plan Sheet 2 of 7	A10	20-10-20
15-272-C1132	Erosion and Sediment Control Plan Sheet 3 of 7	A10	20-10-20
15-272-C1133	Erosion and Sediment Control Plan Sheet 4 of 7	A11	20-10-20
15-272-C1134	Erosion and Sediment Control Plan Sheet 5 of 7	A10	20-10-20
15-272-C1135	Erosion and Sediment Control Plan Sheet 6 of 7	A9	20-10-20
15-272-C1136	Erosion and Sediment Control Plan Sheet 7 of 7	A9	20-10-20
15-272-C1137	Erosion and Sediment Control Details	A7	20-10-20
15-272-C2000	Cover Sheet	A9	20-07-20
15-272-C2001	Drawing List	A9	20-07-20
15-272-C2002	General Notes	A9	20-07-20
15-272-C2003	General Arrangement Plan	A14	05-01-21
15-272-C2010	Siteworks and Stormwater Drainage Plan Sheet 1 of 14	A10	20-07-20
15-272-C2011	Siteworks and Stormwater Drainage Plan Sheet 2 of 14	A10	20-07-20
15-272-C2012	Siteworks and Stormwater Drainage Plan Sheet 3 of 14	A11	20-07-20
15-272-C2013	Siteworks and Stormwater Drainage Plan Sheet 4 of 14	A11	20-07-20
15-272-C2014	Siteworks and Stormwater Drainage Plan Sheet 5 of 14	A10	20-07-20
15-272-C2015	Siteworks and Stormwater Drainage Plan Sheet 6 of 14	A10	20-07-20
15-272-C2016	Siteworks and Stormwater Drainage Plan Sheet 7 of 14	A11	20-07-20
15-272-C2017	Siteworks and Stormwater Drainage Plan Sheet 8 of 14	A11	20-07-20
15-272-C2018	Siteworks and Stormwater Drainage Plan Sheet 9 of 14	A11	20-07-20
15-272-C2019	Siteworks and Stormwater Drainage Plan Sheet 10 of 14	A11	20-07-20
15-272-C2020	Siteworks and Stormwater Drainage Plan Sheet 11 of 14	A12	20-07-20
15-272-C2021	Siteworks and Stormwater Drainage Plan Sheet 12 of 14	A13	05-01-21
15-272-C2022	Siteworks and Stormwater Drainage Plan Sheet 13 of 14	A13	05-01-21
15-272-C2023	Siteworks and Stormwater Drainage Plan Sheet 14 of 14	A12	04-11-20
15-272-C2030	Pavement Plan	A14	05-01-21

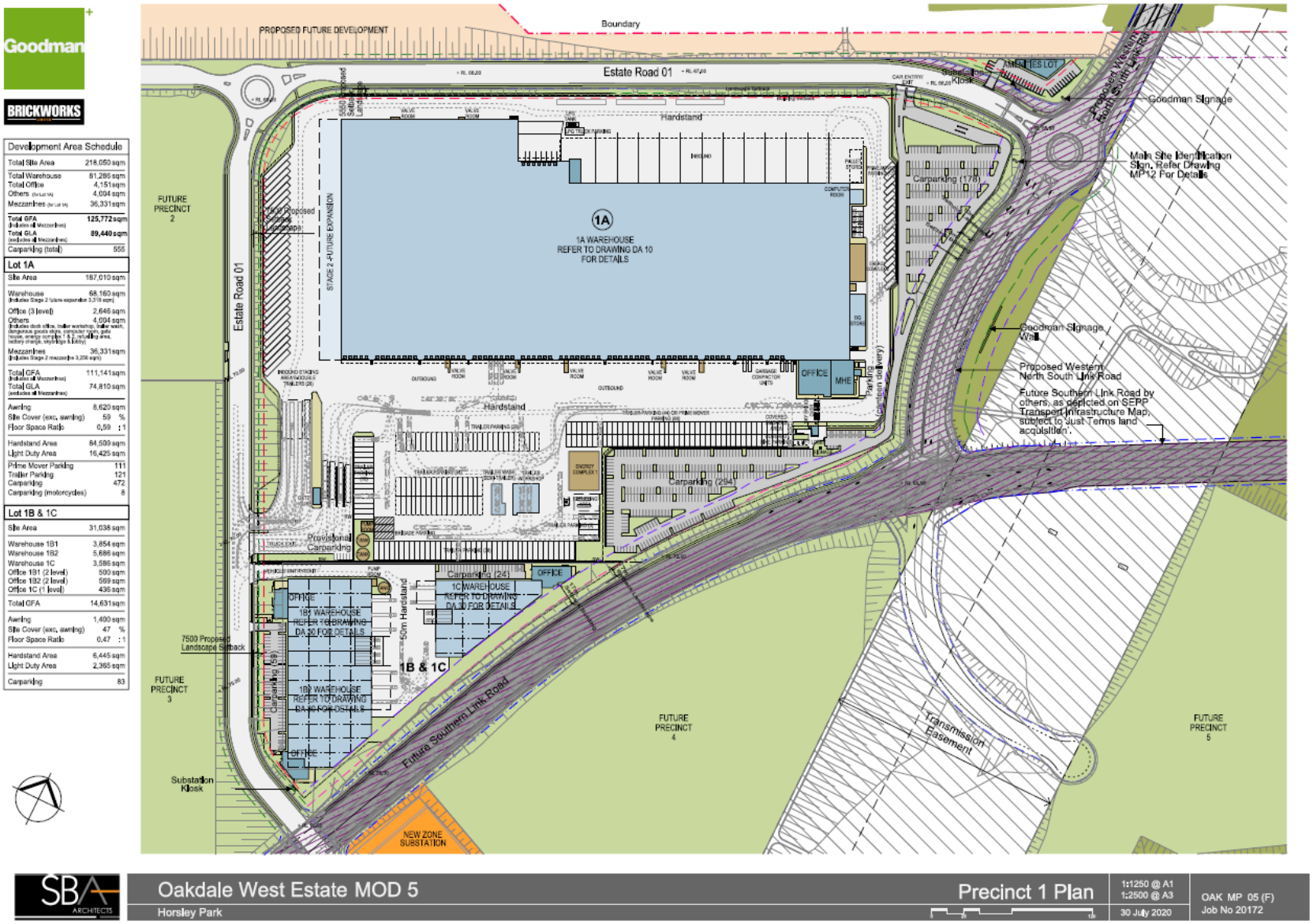


Figure 3: Stage 1 DA Layout

Figure 4: Stage 1 Landscape Plan

APPENDIX 3 WNSLR PLANS

Figure 5: WNSLR

APPENDIX 4 PLANNING AGREEMENT

APPENDIX 5 NOISE RECEIVER LOCATIONS

Figure 6: Sensitive Noise Receivers and Noise Wall Locations

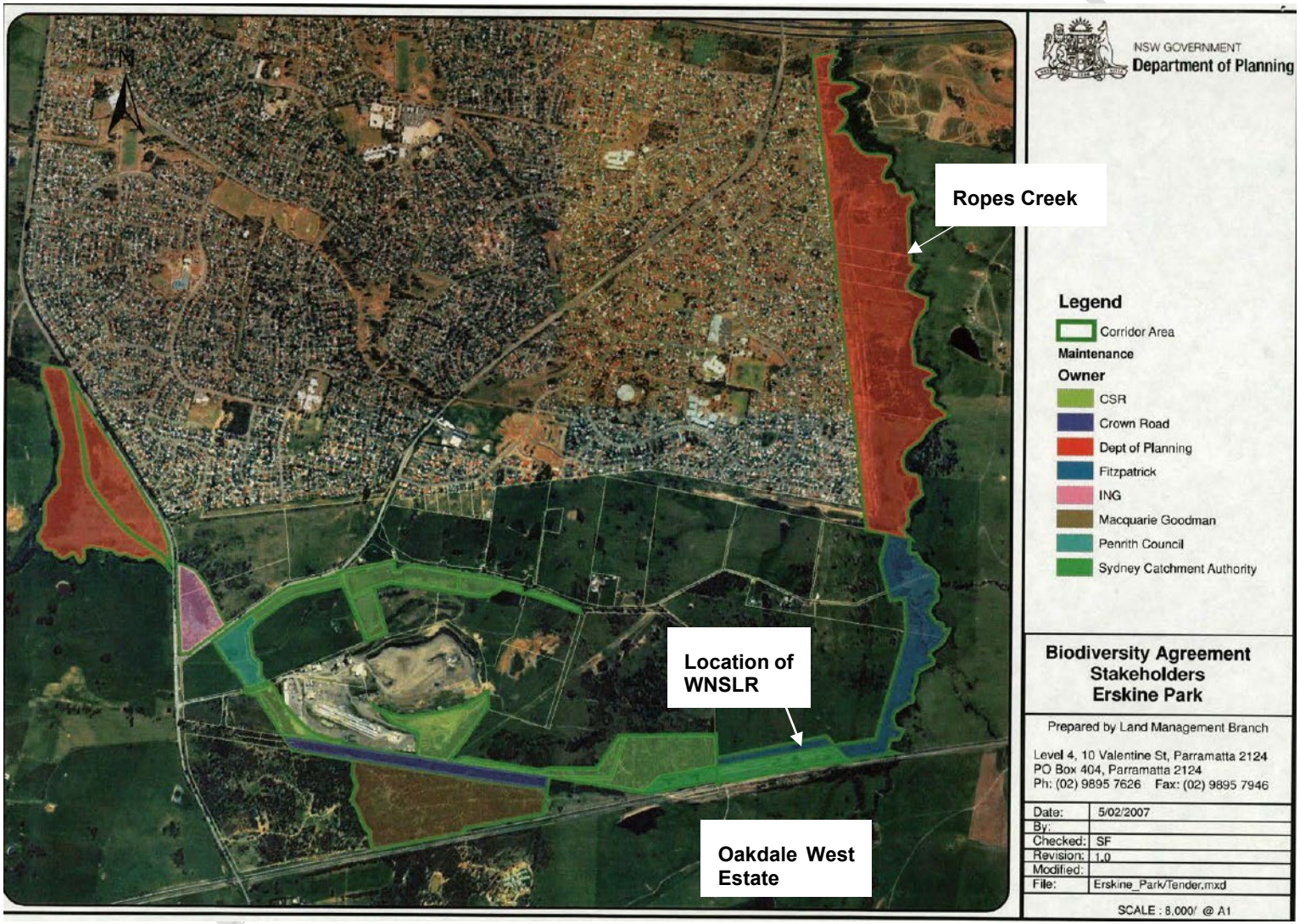


Figure 7: Erskine Park Biodiversity Corridor Land

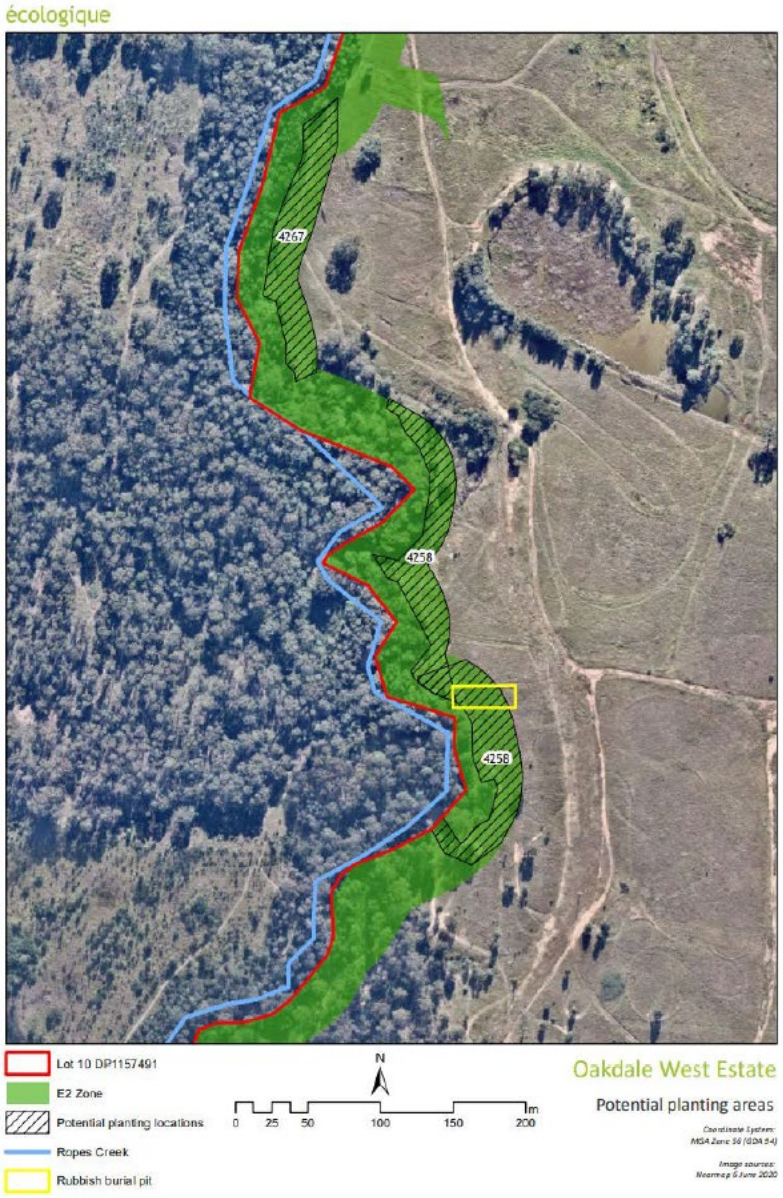


Figure 8: Offsets for WNSLR – Planting Area

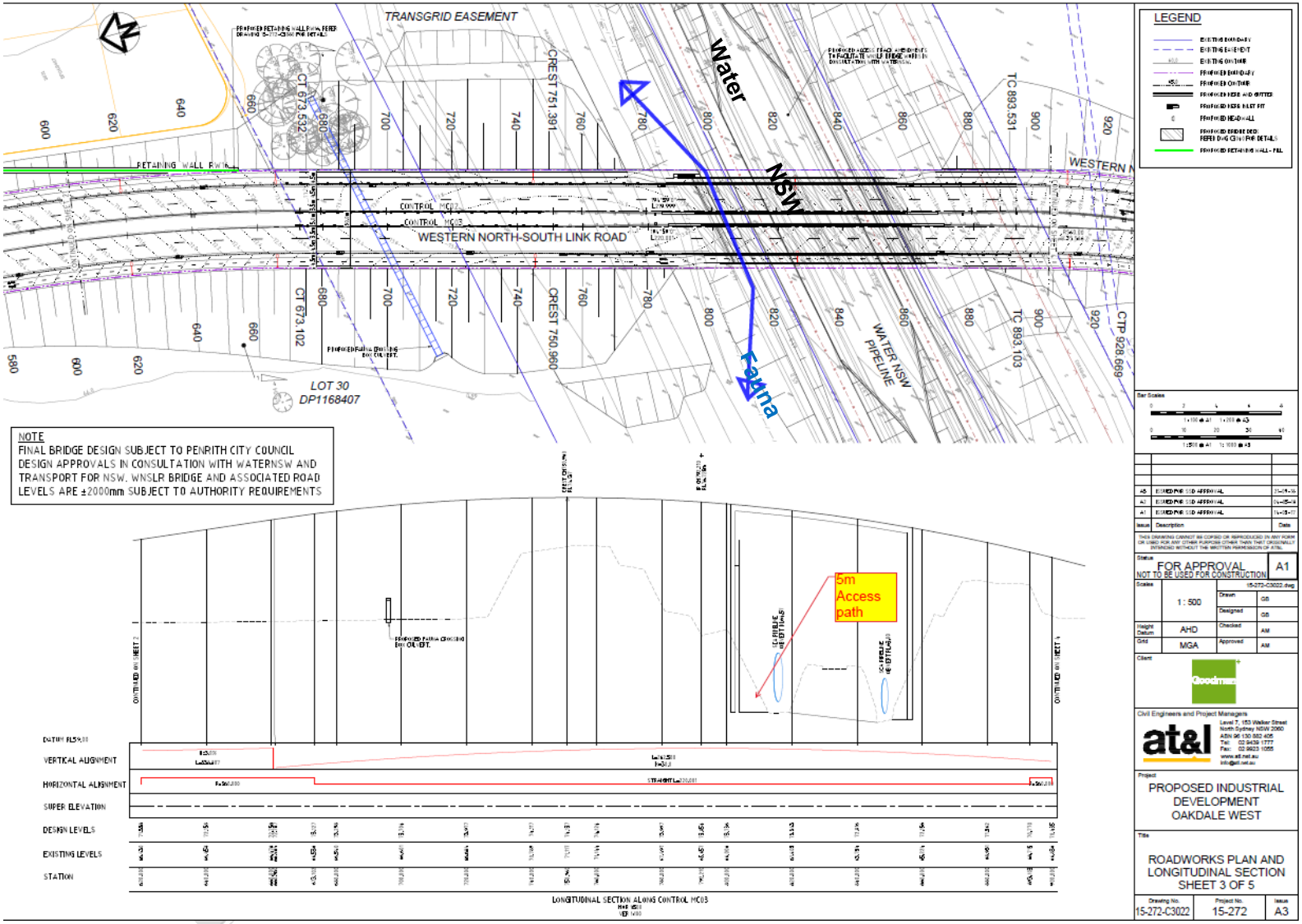


Figure 9: Fauna Passage under WNSLR

Figure 50: Offsets for Stage 1 - Biodiversity Offset Area (MOD 6)

SUMMARY OF MITIGATION MEASURES

The collective measures required to mitigate the impacts associated with the proposed works are detailed in the table below.

Table 6: Applicant's Mitigation Measures

Issue	SSDA Component	Mitigation and Management
Construction Management		
General Construction Management	Stage 1 Development	• A CEMP to be prepared for the OWE Stage 1 Development capturing standard and specific management and mitigation measures as described in the SSDA, EIS and supporting technical documents.
Operational Management		
General Operational Management	Concept Proposal Stage 1 Precinct Development	• An OEMP to be prepared for the OWE capturing standard and specific operational management and mitigation measures as described in the SSDA, EIS and supporting technical documents.
Transport		
Construction Traffic	Stage 1 Development	• Preparation of a CTMP to form part of the CEMP addressing issues such as: – Truck haul routes, delivery schedules and curfews; – Protocols for the management of construction traffic moving onto and off the site.
Urban Design and Visual		
Site Layout and Design	Concept Proposal	• Future development of the OWE to proceed in accordance with the approved Development Concept Proposal and DCP.
Development Controls	Concept Proposal	• Design and development controls to be established for the OWE in the form of a DCP to guide future development on the site.
Visual Impact	Concept Proposal/Stage 1 Development	• Design and development controls to be established for the OWE in the form of a DCP to guide future development on the site. • Landscaping of key interfaces including the western boundary to minimise visual impact.
Soils and Water		
Water Usage	Stage 1 Development	• Rainwater tanks to be provided for each development site with size determined in accordance with Penrith Council DCP requirements. • Irrigation and toilet flushing for development to be plumbed to rainwater tanks. • Consideration to be given to other possible rainwater reuse opportunities such as for truck washing. • Measures and considerations for the minimisation of water use during construction and operation to be incorporated into CEMP and OEMP as relevant.

Issue	SSDA Component	Mitigation and Management
Soils	Stage 1 Development	• Mitigation measures inherent to the civil design of the proposal. • Sedimentation and erosion control measures are proposed as detailed in the Civil Design and Infrastructure Package and Traffic and Transport Impact Assessment.
Salinity	Stage 1 Development	• A Salinity Management Plan has been prepared for the proposed development. • Management measures described in the Salinity Management Plan to be adopted in the CEMP and OEMP as relevant.
Contamination	Stage 1 Development	• Identified areas of potential contamination to be subject to further investigation prior to the development of affected land.
Earthworks	Stage 1 Development	• Civil design achieves appropriate site levels with minimal impact upon hydrology. • Import of fill to be managed in accordance with CEMP. • Erosion and sediment controls included in the SSDA package.
Mineral Resources	Concept Proposal	• No mitigation required provided that mining activities under the existing mining lease applying to land to the east of the site (ref. ML1636) would not be constrained by the OWE development.
Surface Water	Stage 1 Development	• Stormwater issues addressed through design measures incorporated into proposed development. • Stormwater management system designed to meet the requirements of Penrith Council's Engineering Works and WSUD guidelines and relevant NOW guidelines. • Detailed on-lot stormwater for future stages of the OWE to be designed and assessed under future applications.
Groundwater	Stage 1 Development	• Methods and management of any required dewatering required during construction works to be detailed in the CEMP.
Flooding	Stage 1 Development	• OSD designed to ensure that development does not increase stormwater peak flows in downstream areas for events up to and including 1:100-year ARI. • OSD designed to mitigate post-development flows to pre-development flows for peak ARI events. • Finished floor levels to have minimum 500mm freeboard to 100-year overland flows. • Flood impacts on TransGrid easement would be mitigated through minor compensatory earthworks on the floodplain to convey locally diverted flows. These works are detailed in the civil drawings included in the SSDA package.
Water Quality	Stage 1 Development	• Erosion and sediment controls as detailed in SSDA package to be implemented through CEMP. • Stormwater to be treated to compliant levels prior to discharge. • Gross Pollutant Trap (GPT) to be installed within each development site on the final downstream stormwater pit prior to discharge.

Issue	SSDA Component	Mitigation and Management

		• WSUD measures adopted to achieve target reductions for the OWE:
		  85% Total Suspended Solids
		  60% Total Phosphorus
		  45% Total Nitrogen
		  90% Gross Pollutants

Infrastructure		
Capacity and Upgrades	Concept Proposal	• Management of issues in respect of infrastructure capacity and upgrades is in the form of design responses described in Section 4.0 of the EIS.
Delivery and Staging	Concept Proposal/Stage 1 Development	• Management of issues in respect of infrastructure capacity and upgrades is in the form of design responses described in Section 4.0 of the EIS. • Staging of development of the OWE would be aligned with infrastructure and services delivery.
TransGrid Easement	Concept Proposal/Stage 1 Development	• Further consultation would be undertaken with TransGrid in relation to potential impacts and required mitigation.
Other Environmental Issues		
Flora and Fauna	Concept Proposal Stage 1 Development	• Preparation of a Flora and Fauna Management Plan for the site to inform the CEMP and OEMP as relevant to manage potential impacts to biodiversity during construction and operation. • Retained areas of native vegetation, including the Ropes Creek riparian corridor, will be rehabilitated and/or restored in accordance with the Vegetation Management Plan. • Other areas of the site including road batters, embankments and bio-retention basins will be planted with native plant species and turf species as specified in the Landscape Planting Schedule. • Ongoing maintenance and management of these areas in accordance with the provisions of both the Vegetation Management Plan and Landscape Management Plan.
Waterways and Riparian Lands		• Restoration and ongoing management of Ropes riparian corridor to be in accordance with the Vegetation ~~Biodiversity~~ Management ~~Action~~ Plan

APPENDIX 8 INCIDENT NOTIFICATION AND REPORTING REQUIREMENTS

WRITTEN INCIDENT NOTIFICATION REQUIREMENTS

1. A written incident notification addressing the requirements set out below must be emailed to the Department at the following address: compliance@planning.nsw.gov.au within seven days after the Applicant becomes aware of an incident. Notification is required to be given under this condition even if the Applicant fails to give the notification required under Condition D135 or, having given such notification, subsequently forms the view that an incident has not occurred.
2. Written notification of an incident must:
   a. identify the development and application number;
   b. provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);
   c. identify how the incident was detected;
   d. identify when the Applicant became aware of the incident;
   e. identify any actual or potential non-compliance with conditions of consent;
   f. describe what immediate steps were taken in relation to the incident;
   g. identify further action(s) that will be taken in relation to the incident; and
   h. identify a project contact for further communication regarding the incident.

INCIDENT REPORT REQUIREMENTS

3. Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Planning Secretary, the Applicant must provide the Planning Secretary and any relevant public authorities (as determined by the Planning Secretary) with a detailed report on the incident addressing all requirements below, and such further reports as may be requested.
4. The Incident Report must include:
   a. a summary of the incident;
   b. outcomes of an incident investigation, including identification of the cause of the incident;
   c. details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and
   d. details of any communication with other stakeholders regarding the incident.

APPENDIX C

Consultation

Samuel McDonald

From: Justin Pinson <Justin.Pinson@rfs.nsw.gov.au>
Sent: Friday, 26 August 2022 1:04 PM
To: Corey Shackleton
Subject: RE: Oakdale West Estate - Bushfire Compliance

Good afternoon Corey,

In regards to the Fire Management Plan for Building 4E Oakdale West, thank you for the phone call

In reference to the below conditions

F. I am happy to confirm that you have consulted with the Cumberland District

Regards

Justin

Justin Pinson |**2IC | Macarthur / Cumberland** |Operational Officer L3| **Dip V.E.T Dip T.D.D**
NSW RURAL FIRE SERVICE
M 0421 095 455 E
Justin.Pinson@rfs.nsw.gov.au
www.rfs.nsw.gov.au |
www.facebook.com/nswrfs |
www.twitter.com/nswrfs
PREPARE. ACT. SURVIVE.

As you may be aware, I left the NSW RFS a couple of years ago and went to the 'dark side' as a consultant.

I have been involved with a new industrial development at Kemps Creek which is known as the Oakdale West Industrial Estate. As part of the approvals for the new warehouses, there are several conditions relating to bushfire, all of which are very typical, although there is one which I need your assistance. The condition reads (see extract):

B25. Prior to the commencement of operation, the Applicant must prepare a Fire Management Plan (FMP) for the development. The FMP must:
- (a) be prepared in consultation with the NSW RFS;
- (b) include 24-hour emergency contact details including alternative telephone contact
- (c) include plans of site infrastructure plan, firefighting water supply, site access and internal roads;
- (d) include implementation of asset protection zones (APZ) and on-going maintenance;
- (e) include location of hazards that will impact on firefighting operations and procedures to manage identified hazards during firefighting operations; and
- (f) any additional matters required by the RFS Fire Control Centre (e.g. FMP review and updates)

As part of the approval, I have prepared a Bushfire Emergency Management and Evacuation Plan (very standard and typical) and now also prepared a simple Fire Management Plan (one-pager).

To satisfy the consent, I need to consult with yourself (or someone from the Cumberland Fire Control Centre). There's nothing requiring your approval, but your review and advice would be great.

What would be the best way to do this? Is it easiest to send you the FMP or is their someone else who would be better placed?

Really sorry to bother you with this, it's a strange condition and somewhat pointless, but we do need to satisfy it. This condition has been applied to several the warehouses in the estate, so if we can get a simple process for this one, it may save us all some pain in the future.

Feel free to give me a buzz if you have any questions, otherwise ill await your advice.

Many thanks

Regards

Corey Shackleton
Principal Bushfire & Resilience | Blackash Bushfire Consulting
FPAA BPAD Level 3 - 34603
M: 0418412118 | E: corey.shackleton@blackash.com.au | W: blackash.com.au

Twitter Instagram Facebook Pinterest

APPENDIX D

Event Notification

EVENT NOTIFICATION REPORT

Plant Vehicle Property	Non work Related Motor Vehicle Accidents	Service Strike	Environmental	Injury	Break-in Theft	Conduct
☐	☐	☐	☐	☐	☐	☐

Date & Time Event Occurred	Event Reported by	Notification Form Completed by	Date Completed
Project Team	**Names**	**Project Name**	**WHS Site Representative**
Project Manager			
Site Supervisor			
Engineers			
Leading Hand/s			

1. DETAILS					
Event Description (Describe event using key words)					
Event first reported to		**Date reported**		**Time reported**	
Event details (below) Details specific names, dates, times, equipment, organisation/s, etc.					
What activity was being undertaken? Who was involved, time & duration of activity in progress					
Location on site					
INSERT OR ATTACH MAP / SKETCH & PHOTOS TO NOTIFICATION (Show location in relations to site and key areas – intersections, plant, activity, services, pot hole locations, survey pegs, chainages)					

2. PERSONS INVOLVED / & or near VICINITY					
Names of Directly involved & Witnesses	**Organisation**	**Position Tile**	**Capacity of involvement (Direct / in-direct witness)**	**Contact No.**	**Statement Taken**
					Y ☐
					Y ☐
					Y ☐
					Y ☐

3. IMMEDIATE ACTION TAKEN Tick items to signify the action taken immediately following the event occurring						
☐	Secure area / isolate	☐	Subcontractor Workers retained on site	☐	Medical Centre Ambulance	Other:
☐	Contacted Emergency services	☐	Photos of scene / area	☐	Spill control	
☐	Notified asset owner	☐	D & A testing	☐	Statements	

6. EXTERNAL NOTIFICATIONS made at time of Event Occurrence					
Agency	**Notified**	**Date / time notified**	**Agency**	**Notified**	**Date / time notified**
SafeWork NSW (WHS Co-ord responsible)	☐		**Subcontractor** PM responsible	☐	
EPA / DPIE (ER responsible)	☐		**Police / Fire / Amb**	☐	
Asset Owner PM responsible	☐		**Police Event No.** (if applicable)	☐	
Client (Org) PM responsible	☐		**Other** (Name)	☐	

7. FACTORS CONTRIBUTING TO THE INCIDENT							
Environment				**Equipment / materials**			
☐	Noise	☐	Surface gradient / conditions	☐	Tampering of plant / equipment	☐	Plant or equipment failure
☐	Lighting	☐	Dust / fume	☐	Inadequate maintenance	☐	Material / equipment too heavy / awkward
☐	Vibration	☐	Slip / trip hazard	☐	Inadequate guarding	☐	Plant or equipment unsuitable
☐	Weather	☐	Time / production pressures	☐	Other:		
Work systems				**People**			
☐	Hazard no identified	☐	No / inadequate risk assessment conducted	☐	No / Not followed Procedure	☐	Drugs / alcohol
☐	Hazard not reported	☐	No / inadequate controls implemented	☐	Fatigue	☐	Stress/ Pressures
☐	No/inadequate safe work procedure	☐	Inadequate training / supervision	☐	Change of routine	☐	Distraction / personal issues / stress
☐	Inadequate planning	☐	Other:	☐	Lack of communication	☐	Other:

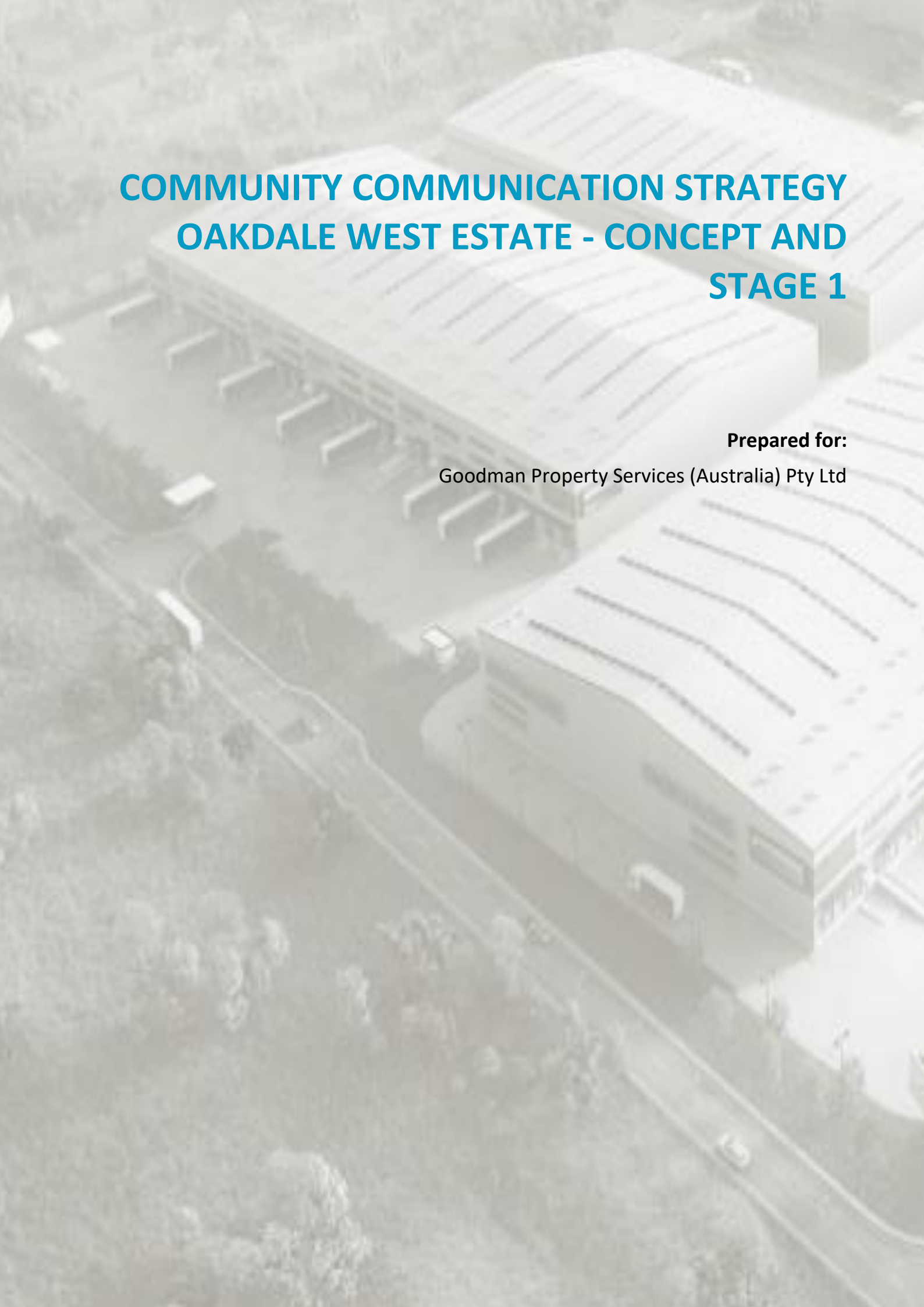
Comment on selection		

8. CORRECTIVE ACTIONS				
Actions	**Assigned to**	**Completion date**	**Date complete**	**Verified by**

9. PM AND ER TO COMPLETE					
Matter has been reviewed, recorded, and correctly notified?				Yes ☐	No ☐
PM Signature:		ER Signature:			
Date:		Date:			

APPENDIX E

Community Communication Strategy



COMMUNITY COMMUNICATION STRATEGY OAKDALE WEST ESTATE - CONCEPT AND STAGE 1

Prepared for:

Goodman Property Services (Australia) Pty Ltd

PREPARED BY

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BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Goodman Property Services (Australia) Pty Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
660.20005.00000-R01-v7.0	22 April 2022	Chelsey Zuiderwyk	Adam Williams	Adam Williams
660.20005.00000-R01-v6.0	11 November 2019	Kate McKinnon	Samantha Hayes	Dan Thompson

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DOCUMENT REFERENCES

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FIGURES

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1 Introduction

1.1 Background

This Community Communication Strategy (CCS) has been prepared on behalf of Goodman Property Services (Australia) Pty Ltd (Goodman) for the Oakdale West Estate (OWE) Concept and Stage 1 development (State Significant Development [SSD] application 7348).

This CCS has been prepared in accordance with Condition C19 and supporting conditions within the Development Consent, identifying relevant stakeholders, key issues and the communication methods. Specifically, it details how Goodman and their contractors will engage with relevant stakeholders and the community. The CCS integrates with the Construction Environmental Management Plan (CEMP) and associated suite of documents to provide a comprehensive guide and benchmark for the construction process that aligns with the Development Consent conditions.

1.2 Purpose

The OWE project has been assessed and determined under Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The CCS includes the following key aspects:

- Identification of stakeholders to be consulted with during the CCS implementation including adjacent landowners and residents, key stakeholders, relevant agencies and the wider community.
- The tools and actions to be undertaken throughout the construction program to disseminate information to the identified stakeholders, providing opportunities for comment.
- Enquiry and Complaint management protocols.
- Monitoring and feedback mechanisms.

The CCS will be updated as the project progresses to account for variations in the construction program and methodology, along with changes in stakeholder situation that impacts on stakeholder interests, with these articulated through the feedback mechanisms.

SSD 7348 contained the following conditions of relevance to this CCS used to benchmark the contents:

- C19 & C20 – Community Communication Strategy
- D37 – Landscaping
- D71 – Hours of Work
- D117 – Ongoing Community Engagement
- D118 - Management Plan Requirements
- D127 & D128 – Environmental Representative
- D133 – Document Review
- D143 – Access to Information

The details of these conditions are identified within **Table 1** below, along with a cross reference to the relevant section of this CCS.

The approved development includes the construction of the Western North-South Link Road (WNSLR). This road is to be constructed to Roads and Maritime Service (RMS) specifications, to the satisfaction of Penrith City Council (as the Nominated Road Authority). Details of these specifications as they relate to community consultation and communication are identified within **Table 2**, including cross reference to the relevant section of this CCS.

Table 1 Relevant Conditions of Consent

Condition Number	Condition Detail	Report Reference
C19 – Community Communication Strategy	No later than one month before the commencement of construction of any stage of the Development, a Community Communication Strategy (CCS) must be prepared and submitted to the Planning Secretary for approval. The CCS is to provide mechanisms to facilitate communication between the Applicant, Council and the community (including adjoining affected landowners, schools, businesses, and others directly impacted by Stage 1), during design, construction and operation. The CCS must: a) assign a central contact person to keep the nearby sensitive receivers regularly informed throughout the Development; b) detail the mechanisms for regularly consulting with the local community throughout the Development, such as holding regular meetings to inform the community of the progress of the development and report on environmental monitoring results; c) detail a procedure for consulting with nearby sensitive receivers to schedule high noise generating works, vibration intensive activities or manage traffic disruptions; d) include contact details for key community groups, relevant regulatory authorities, Registered Aboriginal Parties and other interested stakeholders; and e) include a complaints procedure for recording, responding to and managing complaints, including: i. email, contact telephone number and postal addresses for receiving complaints; ii. advertising the contact details for complaints before and during operation, via the local newspaper and through onsite signage; iii. a complaint register to record the date, time and nature of the complaint, details of the complainant and any actions taken to address the complaint; and iv. procedures for the resolution of any disputes that may arise during the course of the Development.	This CCS Document a) Section 4 b) Section 5 c) Sections 5 & 6 d) Section 2.2 e) Section 5.4
C20 – Community Communication Strategy	The Applicant must: a) not commence construction of the relevant stage of the Concept Proposal until the CCS required under Condition C19 has been approved by the Planning Secretary; and b) implement the CCS for each stage of the Concept Proposal and following the completion of operation of the Development.	a) Section 1.2 b) Sections 5 & 6
D37 – Landscaping	The Applicant must complete the landscape bund along the western boundary of the Site as shown on Figure 5 in Appendix 2 within six months of commencing any construction including bulk earthworks.	Section 2.2.1 Appendix A

Condition Number	Condition Detail	Report Reference
D71 – Hours of Work	Works outside of the hours identified in Condition D70 may be undertaken in the following circumstances: a) works that are inaudible at the nearest sensitive receivers; b) works agreed to in writing by the Planning Secretary; c) for the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or d) where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm.	Section 5.3.2
D117 – Ongoing Community Engagement	The Applicant must consult with the community regularly throughout Stage 1, including consultation with the nearby sensitive receivers identified in Appendix 5, relevant regulatory authorities, Registered Aboriginal Parties and other interested stakeholders. Community engagement shall be undertaken in accordance with the Community Communication Strategy approved in accordance with Condition C19.	Sections 5 & 6
D118 – Management Plan Requirements	Management plans required under this consent must be prepared in accordance with relevant guidelines, and include: e) details of: i. the relevant statutory requirements (including any relevant approval, licence or lease conditions); ii. any relevant limits or performance measures and criteria; and iii. the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, Stage 1 or any management measures; f) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria; g) a program to monitor and report on the: i. impacts and environmental performance of Stage 1; and ii. effectiveness of the management measures set out pursuant to paragraph (b) above; h) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible; i) a program to investigate and implement ways to improve the environmental performance of Stage 1 over time; j) a protocol for managing and reporting any: i. incident and any non-compliance (specifically including any exceedance of the impact assessment criteria and performance criteria); ii. complaint; iii. failure to comply with statutory requirements; and k) a protocol for periodic review of the plan. Note: The Planning Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.	a) Refer to Project CEMPs (SLR, 2019a & SLR 2019b) b) Sections 3.2, 5.3 and 5.4 c) Section 6 d) Section 5.4.4 e) Section 6 f) Section 5.4 g) Section 6

Condition Number	Condition Detail	Report Reference
D127 - Environmental Representative	For the duration of construction of Stage 1, or as agreed with the Planning Secretary, the approved ER must: (a) receive and respond to communication from the Planning Secretary in relation to the environmental performance of Stage 1; (b) consider and inform the Planning Secretary on matters specified in the terms of this consent; (c) consider and recommend to the Applicant any improvements that may be made to work practices to avoid or minimise adverse impact to the environment and to the community; (d) review the CEMP identified in Condition D119 and any other documents that are identified by the Planning Secretary, to ensure they are consistent with requirements in or under this consent, and if so: (i) make a written statement to this effect before submission of such documents to the Planning Secretary (if those documents are required to be approved by the Planning Secretary); or (ii) make a written statement to this effect before the implementation of such documents (if those documents are required to be submitted to the Planning Secretary/Department for information or are not required to be submitted to the Planning Secretary/Department); (e) regularly monitor the implementation of the CEMP, and any other documents identified by the Planning Secretary, to ensure implementation is being carried out in accordance with the document and the terms of this consent; (f) as may be requested by the Planning Secretary, help plan, attend or undertake audits of Stage 1 commissioned by the Department including scoping audits, programming audits, briefings, and site visits; (g) as may be requested by the Planning Secretary, assist the Department in the resolution of community complaints; (h) prepare and submit to the Planning Secretary and other relevant regulatory agencies, for information, an Environmental Representative Monthly Report providing the information set out in the Environmental Representative Protocol under the heading “Environmental Representative Monthly Reports.” The Environmental Representative Monthly Report must be submitted within seven calendar days following the end of each month for the duration of the ER’s engagement, or as otherwise agreed with the Planning Secretary.	Section 6.2
D128 - Environmental Representative	The Applicant must provide the ER with all documentation requested by the ER in order for the ER to perform their functions specified in Condition D127 (including preparation of the ER monthly report), as well as: (a) the complaints register; and (b) a copy of any assessment carried out by the Applicant of whether proposed work is consistent with the consent (which must be provided to the ER before the commencement of the subject work).	Section 6.2

Condition Number	Condition Detail	Report Reference
D133 Revision of Strategies, Plans and Programs	Within three months of: (a) the submission of a Compliance Report under Condition D141; (b) the submission of an Environmental Representative Monthly Report under Condition D127; (c) the submission of an incident report under Condition D135; (d) the approval of any modification of the conditions of this consent; or (e) the issue of a direction of the Planning Secretary under Condition D2(b) which requires a review the strategies, plans and programs required under this consent must be reviewed.	Section 6.2
D143 – Access to Information	At least 48 hours before the commencement of construction until the completion of all works under this consent, the Applicant must: a) make the following information and documents (as they are obtained or approved) publicly available on its website: i. the documents referred to in Condition D2 of this consent; ii. all current statutory approvals for the Development; iii. all approved strategies, plans and programs required under the conditions of this consent; iv. the proposed staging plans for the Development if the construction, operation or decommissioning of the Development is to be staged; v. regular reporting on the environmental performance of the Development in accordance with the reporting requirements in any plans or programs approved under the conditions of this consent; vi. a comprehensive summary of the monitoring results of the Development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs; vii. a summary of the current stage and progress of the Development; viii. contact details to enquire about the Development or to make a complaint; ix. a complaint register, updated monthly; x. the Compliance Report of the Development; xi. audit reports prepared as part of any monitoring or environmental audit of the Development and the Applicant's response to the recommendations in any audit report; xii. any other matter required by the Planning Secretary; and b) keep such information up to date, to the satisfaction of the Planning Secretary.	Section 5.3.1

It is a requirement of the RMS that communications and community liaison are undertaken in accordance with the RMS QA Specification G36 – Environmental Protection. All relevant requirements within the specification are included in **Table 2** below.

Table 2 Relevant RMS Specifications

Specification Number	Relevant Specification Detail	Report Reference
3.3 - Resources, Responsibilities and Authority	Communications and Community Liaison Representative Appoint a Communications and Community Liaison Representative (CCLR) to lead and manage the community involvement activities, including liaison with property owners and key stakeholders. This person is your representative for the requirements of RMS G36 Clause 3.7. The CCLR must have relevant qualifications with a minimum of 5 years' communications and community liaison experience, preferably in infrastructure development and delivery. The CCLR must be flexible and willing to work outside of normal working hours when required, such as nights and weekends. The CCLR is to be the primary daily contact to the public handling of enquiries/complaints management/interface issues. The CCLR must be available for contact by local residents and the community at all reasonable times to answer any questions and to address any concerns in relation to your construction activities. The CCLR must have up-to-date information on: • emerging stakeholders; • planned construction activities; • planned traffic arrangements, including any temporary traffic switches; • current landowner discussions with members of your staff; • planned community and stakeholder consultations; • complaints or enquiries received; • duties and accountabilities of your staff; and, • commitments to stakeholders made by you or Goodman. The CCLR is to handle document management administration and systems/contact database management and maintenance. The CCLR is to liaise with property owners to co-ordinate access and to deal with specific property related issues arising from the upgrade works. The CCLR is to lead in the development and delivery of communication and community engagement strategies and plans. The CCLR is to facilitate meetings, forums and arranging interviews to address concerns from community. The CCLR is to provide advice and participate with the project teams to improve and enhance the delivery of communication services to the community. The CCLR is to build, maintain collaborative and consultative working relationships with internal and external stakeholders. The CCLR is to possess excellent writing and digital media skills including writing and editing copy for printed and electronic material, internal and external materials such as letters, web brochures and public facing reports, and video and photography for promotional use, etc. The CCLR is to possess a current motor vehicle driver's licence. The CCLR must be available for contact by local residents, key stakeholders and community representatives to answer queries and provide more information or feedback.	Section 4

Specification Number	Relevant Specification Detail	Report Reference
3.7 - Communications	Describe in the CEMP the processes for external and internal communication in relation to the environmental aspects of the work under the Contract. Make all staff and subcontractors working on the Site aware of these external and internal communications procedures and ensure they are properly trained in their application.	Refer to Project CEMPs (SLR, 2019a & SLR 2019b) Section 5.3
3.7.1 - Liaison with EPA and/ or other Government Agencies	The CEMP must identify at least two persons (together with their contact telephone numbers) who will be available to be contacted by the EPA and/ or Other Government Agencies on a 24 hour basis and who have authority to take immediate action to shut down any activity, or to effect any pollution control measure, as directed by an authorised officer of the EPA and/ or Other Government Agencies. Immediately notify Goodman of any visit to the Site by the EPA and/ or Other Government Agencies. Prepare a report for each occasion when the Site is visited by the EPA and/ or Other Government Agencies, notifying Goodman of the purpose and outcome of the EPA and/ or Other Government Agencies visit, and of all actions taken by you in response to the EPA and/ or Other Government Agencies visit. Submit this report to Goodman within one working day of the EPA and/ or Other Government Agencies site visit.	Section 4
3.7.2 - Community Liaison and/or Notification 3.7.2.1 New or Changed Construction Activities	Notify local residents and other stakeholders about any new or changed construction activities including changes to bus stop locations and / or timetables which will affect access to their properties/ premises at least five 5 working days before commencing work affecting residents. Such notification must state the nature of the work, why it is necessary, the expected duration, details of any changes to the traffic arrangements or property access and the name and 24 hour contact telephone number of your representative who can respond to any resident/stakeholder concerns. Address any concerns raised by residents in accordance with the complaints procedure as required under Clause 3.7.3 and in accordance with any licence or approval held by you.	Section 5.3.2
3.7.2.2 - Extended Working Hours – No Environmental Protection Licence	Following approval from Goodman on each instance to extend working hours, inform affected residents by letter of the location, nature, scope and duration of the proposed work outside normal working hours, not less than 1 week and not more than 2 weeks, before commencing such work. Include the name and contact telephone number of your representative so that residents can contact him over any concerns about extended working hours and any other information required by any licence or approval held by you. Refer to Practice Note vii of RMS publication “Environmental Noise Management Manual” when preparing the letter and notifying the affected residents.	Section 5.3.2

Specification Number	Relevant Specification Detail	Report Reference
3.7.3 - Complaints and Enquiries Management	As part of your CEMP, prepare and implement a Construction Complaints and Enquiries Management procedure prior to the commencement of construction. You must follow the Construction Complaints and Enquiries Management procedure for the duration of construction. You must ensure your Construction Complaints and Enquiries Management procedure is consistent with AS 4269 "Complaints Handling". This must include: a) an advertised 24 hour contact telephone number listed with a telephone company and include a contact name; b) a postal address to which written complaints and enquiries can be sent; c) an email address to which electronic complaints and enquiries can be sent; d) a procedure to receive, record, track and respond to complaints and enquiries within a specified timeframe. When a complaint or enquiry cannot be responded to immediately, a follow-up verbal response on what action is proposed must be provided to the complainant/enquirer within two hours during night-time works and 24 hours at other times; e) a process for the provision of a written response to the complainant/enquirer within ten (10) days, if the complaint or enquiry cannot be resolved by the initial or follow-up verbal response; f) a mediation system for complaints unresolved through the above system. Within one working day of receiving a complaint about any environmental or other issue which has the capacity to damage Goodman's reputation, including any pollution incidents, arising from the Work Under the Contract, submit a written report to Goodman detailing the complaint and the action taken to remedy the problem. A final report together with your proposed measures to prevent the recurrence of such incidents must be submitted to Goodman within 5 working days. Keep a register of all complaints or enquiries, which must include the following details: (a) date and time of complaint or enquiry; (b) method by which the complaint or enquiry was made (telephone, letter, meeting, etc); (c) name, address, contact telephone number of complainant (if no such details were provided, a note to that effect); (d) nature of complaint or enquiry; (e) action taken in response including follow up contact with the complainant.; (f) any monitoring to confirm that the complaint or enquiry has been satisfactorily resolved; (g) if no action was taken, the reasons why no action was taken by you.	Section 5.4

<table>
<tr><th>Specification Number</th><th>Relevant Specification Detail</th><th>Report Reference</th></tr>
<tr><td>3.7.4 - Notification to communities and stakeholders</td><td>Notify Goodman in advance of the following construction activities:
<table>
<tr><th>Activity</th><th>Notification required</th></tr>
<tr><td>Work at night (any time between 6pm and 7am)</td><td>2 weeks where possible, a minimum of 1 week</td></tr>
<tr><td>Work on weekends (including public holidays)</td><td>2 weeks where possible, a minimum of 1 week</td></tr>
<tr><td>Major changes to configuration of road traffic</td><td>At least 4 weeks</td></tr>
<tr><td>Impacts on pedestrians and/or bicyclists</td><td>At least 4 weeks</td></tr>
<tr><td>Commencement, rescheduling or completion of key construction activities</td><td>At least 4 weeks for commencement and completion, 24 hours’ notice for rescheduling</td></tr>
<tr><td>Commencement or rescheduling of property adjustment work</td><td>At least 2 weeks (4 weeks for businesses)</td></tr>
<tr><td>Alteration to property access arrangements</td><td>At least 4 weeks</td></tr>
<tr><td>Other activities not identified above which may impact on the community stakeholders</td><td>At least 24 hours</td></tr>
<tr><td>Any form of community protest on site</td><td>Immediately</td></tr>
</table>
In your communications with the community, you must comply with the requirements of the Privacy and Personal Information Protection Act 1998 (NSW).
You must not make any undertakings on behalf of Goodman without the prior written approval of Goodman. Comply with the distribution for various notification types as follow:
<table>
<tr><th>Notification Type</th><th>Submission to Goodman</th><th>Distribution</th></tr>
<tr><td>Out of Hours Works / Night Works
(refer to clause 3.7.2.3)</td><td>Draft a notification letter at least 24 hours prior to the works being carried out</td><td>2 weeks where possible, a minimum of 1 week prior to the works being carried out</td></tr>
<tr><td>Traffic Conditions</td><td>Draft letter at least 4 weeks prior to the traffic conditions changing</td><td>At least 5 business days prior to the traffic conditions changing if deemed necessary by Goodman</td></tr>
<tr><td>Individual private properties regarding property adjustments or</td><td>Draft letter at least 4 weeks prior to</td><td>At least 2 weeks prior to the works being</td></tr>
</table></td><td>Sections 5.3.2</td></tr>
</table>

Specification Number	Relevant Specification Detail			Report Reference
	changes to access (refer to clause 3.7.2.1)	the works being carried out	carried out of access changes	
	Access for bridgeworks over the Water NSW pipelines	Final draft of notification at least 4 weeks prior to be works being carried out	At least 4 weeks prior to the works being carried out	
	Individual businesses regarding property adjustments or changes to access (refer to clause 3.7.2.1)	Draft letter at least 4 weeks prior to the works being carried out	At least 4 weeks prior to the works being carried out of access changes	

1.3 Community Communications Strategy Scope

The CCS applies to works undertaken by Goodman and their engaged contractors.

Stage 1 comprises two components with separate contractors engaged for each:

- Bulk earthworks across the site, civil infrastructure and landscaping; and construction of warehousing within Precinct 1 (Stage 1).
- Construction of the WNSLR including a signalised intersection with Lenore Drive, roundabout with Lockwood Road and roundabout with the new internal Estate Road No. 1, earthworks, civil works, utility works, property adjustments and landscaping. A haul road will be constructed through Oakdale West (referred to as the Construction Access Road) as part of the WNSLR construction to provide access to the WNSLR corridor.

Stages 2 to 8 will continue to engage contractors for the construction of each building (see **Figure 4**).

The CCS applies to all stages of development and separate CEMPs have been prepared to address each component of Stage 1, and separate CEMPs will continue to be prepared for the construction of each building in Stages 2 to 8. All CEMPs reference this CCS and will be serviced by the same project website and phone number to provide a simplified and consistent communications process across the project.

For the operation of these developments, an estate-wide OEMP has been prepared, as well as individual OEMPs for each building. All OEMPs reference the CCS and also include additional information within the OEMP to ensure Condition C19(e) of SSD 7348 is clearly addressed for operation.

1.4 Project Description

1.4.1 State Significant Development Approvals

SSD 7348 was approved on 13 September 2019, granting approval for the Stage 1 Development and Concept Approval for the Oakdale West Industrial Estate at Kemps Creek. The development, as approved under SSD 7348 and approved modifications are included in **Table 3** below.

Table 3 Approved Development and Modifications

Application Number	Development Description
SSD 7348	A Concept Proposal including: • concept layout of 22 warehouse buildings inclusive of dock offices and ancillary offices providing 476,000 square metres of gross lettable area, built over five development stages; • concept layout of development lots, internal roads, drainage, landscaping, noise walls, basins and biodiversity offsets; and • development controls A Stage 1 Development including: • bulk earthworks across all five stages including retaining walls and noise walls; • lead in services including but not limited to drainage, power, sewer, water and • telecommunications; • service infrastructure to Precinct 1, including drainage, power, sewer, water and telecommunications; • construction and operation of three warehouse buildings inclusive of dock offices and ancillary offices in Precinct 1 (1A, 1B and 1C) providing 118,000 square metres of gross lettable area; • Western North-South Link Road and associated subdivision, basins and drainage; • estate roads 1, 2 and 6 and eastern part of road 7; • landscaping of Stage 1, the western boundary, Western North-South Link • Road, estate roads 1, 2 and 6 and the eastern part of road 7, detention basins and the amenity lot • subdivision of Stage 1 lots and road • infrastructure including the services (substation) lot; • stormwater drainage infrastructure for Lots 2A and 2B and all basins; • temporary works to facilitate construction • including but not limited to swales, haul road (construction access), landscaping and basins; and • works including construction of traffic signals at Lenore Drive/Grady Crescent/WNSLR intersection.
SSD 7348 MOD 1	Minor amendments to pad levels, stormwater changes and refinement of the infrastructure design of OWE has resulted in the need for minor amendments to the approved masterplan layout and necessitates minor modifications to SSD 7348.
SSD 7348 MOD 2	Modifications to the Oakdale West Estate approved concept plan and Stage 1 development, including master plan layout, increase in gross floor area and expansion of Building 1A (Warehouse building 1A including high-bay (39m) and low-bay (28m) components), changes to internal roads, civil design and building pad levels.
SSD 7348 MOD 3	Amendments to the Concept Proposal: • the OWE layout and staging • precinct boundaries • reconfigure estate road layout • basic design and infrastructure (including building height, basins, noise wall, pad levels and GLA) • civil strategy and servicing strategy • development standards applicable to the site including a height increase for Building 2B from 15 m to 28m and applicable noise limits for the development. Amendment to the Stage 1 Development:

Application Number	Development Description
	• construction of estate road 03, roundabout, retaining wall, noise wall, basins and infrastructure • subdivision of estate roads • extension to noise wall • change to pad levels, bulk earthworks and landscaping and construction hours.
SSD 7348 MOD 4	Inclusion of an additional lot (Lot 9 DP 1157476) in the subject site and carrying out works in the additional lot to facilitate development of the WNSLR
SSD 7348 MOD 5	Concept Approval • Update Condition B10 to reflect the 17m building setback to the Southern Link Road • Update Masterplan Landscape Plan reference to reflect the widened road reserve for the Southern Link Road. Stage 1 Approval • Update Architectural, Civil, and Landscaping plans to reflect the proposed design changes on Lot 1. • Change incorrect figure reference in Condition D75A from Figure 7 to Figure 6. • Change in correct figure reference in Condition D75C from Figure 7B to Figure 7 and update this condition D75 C to reflect the revised noise barrier completion date. • Update Condition D93 to reflect revised location for biodiversity planting
SSD 7348 MOD 6	Amendments to the approved Concept Plan and Stage 1 development including changes in Precincts 2A, 2C, 2D, 2E layouts, increase in building height control for Precinct 2A, and inclusion of construction Estate Road 8 as part of Stage 1 development.
SSD 7348 MOD 7	Changes to Precincts 3 and 4 including earthworks, retaining walls, building layouts in Precinct 4 and estate road 7.
SSD 7348 MOD 8	Amendments to architectural plans for Stage 1 Buildings 1A, 1B and 1C.
SSD 7348 MOD 9	Amendments to the layout of Buildings 2A, 2C and 2D and increased height of Building 2C

Further project details are located in the Environmental Impact Statement, Oakdale West Estate, State Significant Development Application (EIS) (Urbis, 2017) and Response to Submissions (RTS) and SSD 7348 Modification Reports, available on the Major Projects Portal.

Table 4 below identifies the site layout, which is a 'Master Plan' to guide the staged development of Oakdale West and core development controls that will form the basis for design and assessment of future development applications for the site. **Figure 2** shows further detail of the WNSLR plans for the estate.

1.4.2 Site works

The site works for the estate will be undertaken by two contractors, with specific areas of responsibility. Areas of responsibility comprise the bulk earth works, civil infrastructure and services, along with the Stage 1 built form development. A second contractor is engaged for the WNSLR connection north to Lenore Drive and haul road civil works through to the south west corner of the site:

The project involves construction activities including:

- Site establishment.
- Clearing and stripping.
- Site construction access.
- Demolition of existing buildings.
- Sediment erosion control works.
- Bulk earthworks and haulage of materials.
- Signage and fencing.
- Construction of civil infrastructure including access roads, bridge, drainage, retaining walls and utilities.
- Building construction and landscaping within Stage 1.

Contractors will continue to be engaged separately for the construction of each building for Stages 2 to 8 (see **Figure 3**).

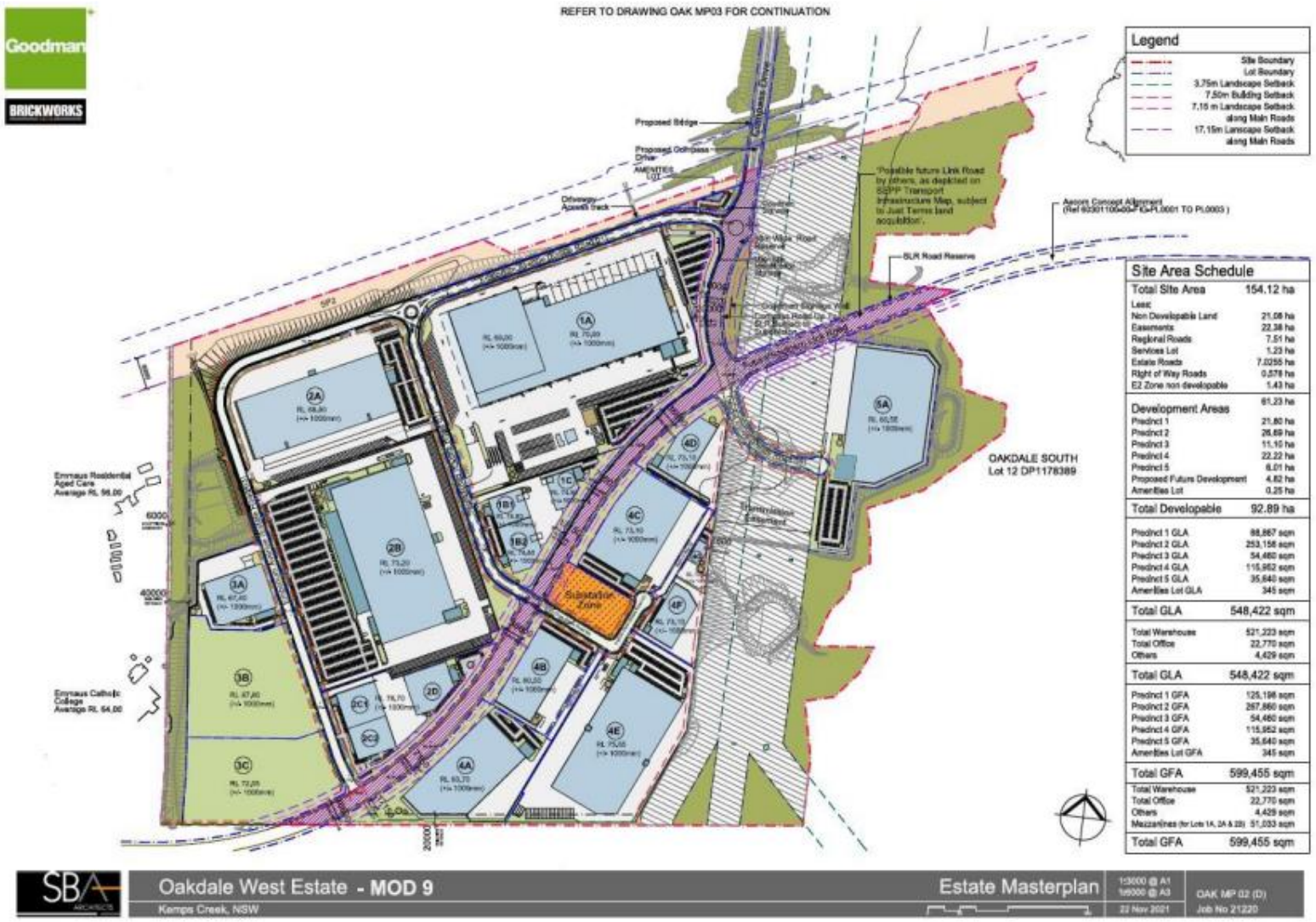

Figure 1 Oakdale West Site Layout

Figure 2 WNSLR Plans

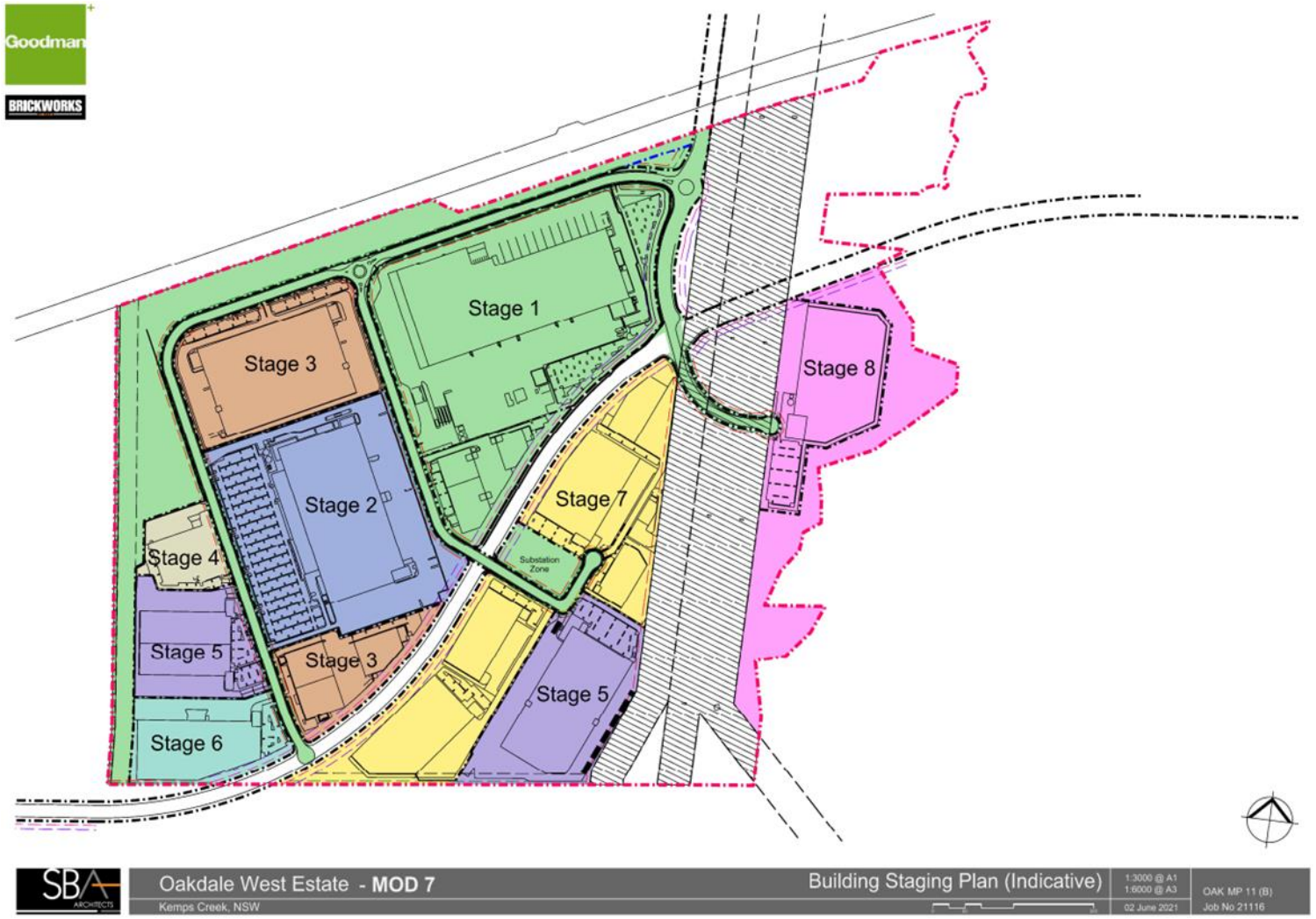

Figure 3 Oakdale West Staging Plan

2 Stakeholder Identification

2.1 Community Overview

The site comprises historic agricultural land identified within the Western Sydney Employment Area (WSEA). The site is located across two Australian Bureau of Statistics (ABS) geographical boundaries, with Erskine Park to the north and Kemps Creek to the south. The ABS data below has been used to inform the communications methodology, with appropriate media and language used to reflect the statistical data.

2.1.1 Erskine Park

Erskine Park has a population of 6,436 accommodated in 2,016 dwellings. The median age is 34 compared to a State median of 38. The top ancestry response is Australian, followed by English, Irish, Scottish then Filipino, with languages other than English spoken at home comprising Arabic (2.6%), Tagalog (2.4%), Filipino (1.4%), then Hindi (1.2%).

17.7% of the Erskine Park population completed Year 12 compared to 15.3% for the State, with 66% of the population employed full time compared to a State average of 59.2%. Management comprised the highest percentage of employment, equating to 19.5%, with a median weekly income of $781, compared to $664 for the State.

2.1.2 Kemps Creek

Kemps Creek has a population of 2,268 accommodated in 700 dwellings. The median age is 41 compared to a State median of 38. The top ancestry response is Italian, followed by Australian, English, Lebanese then Maltese, with languages other than English spoken at home comprising Italian (10.1%), Arabic (6.4%), Cantonese (4.3%), then Assyrian Neo-Aramaic (3%).

14.2% of the Kemps Creek population completed Year 12 compared to 15.3% for the State, with 58.4% of the population employed full time compared to a State average of 59.2%. Clerical and Administrative Workers comprised the highest percentage of employment, equating to 20%, with a median weekly income of $588, compared to $664 for the State.

2.2 Key Stakeholders

The site is located in close proximity to sensitive receivers to the west comprising a Catholic School, Anglican School and Age Care facility, along with a number of dwellings to the south. The northern and eastern boundaries comprise environmental corridors and infrastructure. Goodman and their representatives carried out extensive consultation with the community and stakeholders during the development of the EIS (Urbis, 2017). Previously identified stakeholders are categorised in **Table 4** below.

Table 4 Key Stakeholders

Stakeholder Agency/Authority	Interests/Issues
Directly affected stakeholders	Adjacent and directly affected properties, businesses and schools including: • Residential property – 20 Aldington Road • Emmaus Catholic College • Trinity Catholic Primary School • Emmaus Retirement Village • Mamre Anglican School • Catholic Healthcare Emmaus Village • Little Smarties Early Learning Centre
Local Councils	• Penrith City Council
State Government Departments and Offices	• NSW EPA • NSW Heritage Office • NSW Biodiversity and Conservation Division, Department of Planning Industry and Environment • NSW Department of Industry • Roads and Maritime Service • Transport for NSW • NSW Rural Fire Service • WaterNSW • National Resources Asset Regulator
Utility and Service Providers	• TransGrid • Endeavour Energy • WaterNSW • Sydney Water • Jemena • NBN • Telstra
Other Interested Parties	• Registered Aboriginal Parties

Contact details for the key stakeholders listed in **Table 4** above are included in **Appendix B & C**.

2.2.1 Properties receiving adjustments or architectural treatment and mitigating works

It is proposed to provide window glazing treatments to assist in acoustic attenuation to dwellings located at 20 Aldington Road, Kemps Creek.

A landscape bund is to be formed along the Western boundary of the development site to create an acoustic barrier to properties to the West. The location of the landscape bund is shown at **Appendix A**. The landscape bund shall be completed within 6 months of the commencement of any construction work, including bulk earthworks.

3 Key Issues Affecting Stakeholders

3.1 Previous Consultation

Goodman and their representatives have previously undertaken consultation with the community and stakeholders during the development of the project. Details of this consultation were included in the EIS (Urbis, 2017).

A total of 15 submissions were received, including one submission from a Local Council, three submissions from utilities providers, nine submissions from government authorities and two submissions from nearby properties and businesses. In response to the issues raised, Goodman revised several plans and consultant reports, which informed a Response to Submissions Report (Urbis, 2018a).

A further 10 submissions following these revisions were received and further modification to proposed plans and consultant reports were made, with a Supplementary Response to Submissions Report (Supplementary RTS) (Urbis, 2018b) prepared to the satisfaction of the determining authority.

For more information, refer to the Department of Planning and Environment's Major Project Assessments webpage at:

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=7348v

3.2 Potential Issues and Strategies

Goodman are committed to ongoing proactive consultation with the community and stakeholders while understanding the importance of addressing potential issues and minimising construction related impacts. **Table 5** outlines project issues that are likely or known to be of interest or concern to the community and stakeholders. The table also details communications related measures and strategies that Goodman will undertake to manage and mitigate impacts. The CEMP identifies management and mitigation measures to address those matters extending beyond consultation.

Table 5 Issue Identification and Mitigation

Potential Issue	Potential Key Impacts	Mitigation Strategy
Noise, Vibration and Dust	Truck, machinery and light vehicle movements within, to and from the site, along with civil works have potential to result in negative impacts associated with noise, vibration and dust.	Sensitive receivers and affected stakeholders will be consulted prior to actions likely to generate high levels of noise or vibration in accordance with Section 5.4.2 of this strategy. Up to date information on current and proposed works will be accessible to stakeholders and the wider public on the project web page. Additionally, should any works be likely to generate impacts beyond those identified within the approval's documentation consultation would be undertaken with the applicable managing agency. The CEMP, along with the supporting Dust, Noise and Vibration management plans contain specific measures to manage these impacts. These management plans have been informed by commitments contained within the SSD approvals package, EPA standards and guidelines.
Stormwater, Sediment Control, Erosion, Water Quality	High rainfall events could result in localised flooding. Construction could result in impacts to local water quality, associated with sediment laden runoff.	Surrounding sensitive receivers will be consulted with in relation to adjacent works regarding flooding and water quality issues, with these items discussed at regular meetings, or as they arise via the construction hotline, in accordance with Section 5.4.2 of this Strategy. The CEMP, along with the supporting Soil and Water Management Plan and Water Quality Monitoring Program identify specific mechanisms to manage and mitigate these impacts in accordance with the relevant Penrith City Council standards and commitments within the SSD approvals package.
Construction Traffic	A temporary increase in traffic movements may be experienced associated with the import of fill material, the movement of construction machinery to and from the site and the movement of workers light vehicles.	Sensitive receivers will be notified prior to actions likely to cause traffic disruption in accordance with Section 5.4.2 of this strategy. The CEMP and supporting Construction Traffic Management Plan and Fill Importation Plan identify specific mechanisms to manage and mitigate these impacts.

Potential Issue	Potential Key Impacts	Mitigation Strategy
Local Infrastructure, Utilities and Services	Temporary interruption to existing services including surrounding roads may be required to allow for road connections and the extension of services to the site.	Affected receivers would be notified of possible service disruption via letter box drop and regular meetings, with these disruptions minimised where possible through implementation of the designs identified within the SSD approvals package, measures identified within the CEMP and subsequent engagement with utility providers.
Visual Amenity and Privacy	Visual impacts of earthwork and construction activities, along with potential impacts on the privacy of adjacent sensitive receivers.	Potentially affected receivers would be advised of works with the potential for impact via letter box drop and with these items discussed at regular meetings, or as they arise via the construction hotline, in accordance with Section 5.4.2 of this Strategy. The CEMP identifies specific mechanisms to manage and mitigate these impacts.
Removal of Flora and Fauna	The project approval requires the removal of native and exotic flora and fauna to facilitate the development, with the associated potential for impacts on safety of immediately adjacent receivers, along with biodiversity and visual amenity.	Potentially affected receivers are likely to comprise those receivers immediately adjacent, who are to be advised of works with the potential for impact via letter box drop and regular meetings, or as they arise via the construction hotline, in accordance with Section 5.4.2 of this Strategy. The CEMP, along with the supporting Flora and Fauna Management Plan identify specific mechanisms to manage and mitigate these impacts.
Out of Hours Work	The identified impacts could be magnified due to the works being carried out while surrounding receivers are more likely to be home in the early morning/evening, or asleep, with correspondingly lower background noise levels.	Out of hours works to only be undertaken where necessary and subject to endorsement from the applicable managing agency. Should out of hours work with the potential for impact be proposed the potentially affected receivers would be advised via letter box drop and/ or regular meetings in accordance with Section 5.4.2 of this Strategy.
Aboriginal Heritage	There is the potential for encountering items of Aboriginal Heritage during excavation.	Monitoring of works by appropriately qualified personnel, along with the implementation of an unexpected finds protocol in consultation with Aboriginal Stakeholders and Heritage Division of the Department of Planning, Industry and Environment would be put in place, as discussed within Section 5.4.2 of this document. The CEMP, along with the supporting Unexpected Finds Protocol (Heritage) identify specific mechanisms to manage and mitigate these impacts. .

Potential Issue	Potential Key Impacts	Mitigation Strategy
Misinformation and Misunderstanding	Lack of project awareness within the wider community may result in complaints being raised by those unaware of the extent of the approval, with these complaints not directed through the appropriate project hotline. Unauthorised release of project information by the project team to the media, stakeholders or the community has potential to impact on project perception in the community.	The CCS includes measures at Section 5.4.2 to provide regular updates in plain language, supported by imagery to stakeholders and the wider community through public and private media. Contact details including the hotline details will be provided on site, the project web page and in all information issued.
Emergency Event	Unforeseen emergency with the potential to impact on the community either directly, or indirectly through out of hours activities that may generate additional traffic or noise.	The CCS includes measures at Section 5.4.2 to provide updates in emergency events, with the CEMP and Emergency Management Plan identifying specific mechanisms to manage and mitigate these impacts.

4 Communications and Community Liaison Representative

Goodman have appointed a Communications and Community Liaison Representative (CCLR) who will provide the community and stakeholders with a single point of contact for both components of the project, responsible for receiving and disseminating information requests and complaints, along with addressing any interface issues. The CCLR will also facilitate property access should it be required.

The CCLR will be available for contact by local residents and the community at all reasonable times to answer any questions and address any concerns relating to the project. The CCLR will have up-to-date information on:

- Emerging stakeholders.
- Planned construction activities.
- Planned traffic arrangements, including any temporary traffic switches.
- Current landowner discussions with members of staff.
- Planned community and stakeholder consultation.
- Complaints or enquiries received.
- Duties and accountabilities of staff.
- Commitments to stakeholders made by Goodman.

The CCLR will be supported by a community consultation team with the following responsibilities:

- Development and delivery of communications strategies, including meeting/workshop facilitation.
- Maintenance of the community and stakeholder consultation register.
- Property owner liaison to address property specific issues.
- Preparation of material and facilitating group and public meetings, workshops and forums for the works.
- Liaison with the construction team to identify items of potential community interest within the upcoming construction program.
- Identifying opportunities for improvement, monitoring community feedback and reporting back to the community via updates to the project web page and at regular community meetings.

The CCLR details are:

- Kiera Plumridge – Senior Consultant

  kplumridge@slrconsulting.com; 1300 002 887
- Kate McKinnon – Associate – SLR

  kmckinnon@slrconsulting.com; 1300 002 887

5 Community and Stakeholder Engagement

5.1 Objectives

The key objectives of the strategy are to meet the requirements of condition C19 of SSD7348 and:

- Keep the local community and key stakeholders informed of the commencement and progress of works relating to the OWE project.
- Ensure that enquires and complaints received from the community or key stakeholders are addressed and responded to in a timely and effective manner.
- Inform nearby sensitive receivers in advance of potential disturbances and events likely to cause impact.
- Be good neighbours and members of the local community throughout the duration of the project's lifespan.
- Providing an open two communications channel to allow ongoing, iterative engagement.
- Seek opportunities for improvement throughout the project.

5.2 Approach

Goodman are committed to delivering Community and Stakeholder Engagement outcomes utilising the following principles at the core of their approach:

- **Clarity –** Communication and engagement will be delivered in a clear and easy to understand manner to ensure the project and all associated works are fully understood by the community and stakeholders.
- **Proactivity –** Consultation and notice shall be given prior to the commencement of works or the undertaking of potentially impactful activities.
- **Transparency –** Communication and engagement will be undertaken in an open and transparent fashion, with information shared between the community and the project team.
- **Accessibility –** Information relating to the project will be accessible via a broad range of mediums and will be made readily available to the community and stakeholders. Several avenues of contact shall be provided for the purposes of enquiry or complaint.

In their communications and consultation with the community and key stakeholders, Goodman and their representatives will comply at all times with the requirements of the *Privacy and Personal Information Protection Act 1998 (NSW)* and the *Privacy Act 1988 (Cth)*.

5.3 Communication, Management and Mitigation Tools

A range of tools and techniques will be used to inform and engage with the community and stakeholders regarding the project. **Table 6** below provides an overview of the mechanisms to be utilised to regularly inform and consult with the local community and key stakeholders and measures to mitigate potential issues throughout the development.

Table 6 Communication Management and Mitigation Tools

Tool/ Technique	Description	Person Responsible	Audience	Frequency/timing	Specifications
Community Consultation Meetings	Informal meetings, providing a project update and opportunity for the community and stakeholders to discuss recent experiences and upcoming construction activities.	CCLR and Community Consultation Team	The wider community and key stakeholders.	Meetings would initially be held quarterly, with the frequency then subject to the level of interest and the construction program.	Project updated including a review of any complaints received and remedial actions, followed by informal discussion with stakeholders and the community.
Community Workshops/Forums	An initial community workshop/forum to be held to identify the overarching construction program and communications protocols, with the event advertised via local newspaper and letter box drop.	CCLR and Community Consultation Team	The wider community and key stakeholders.	Prior to commencement of construction.	The first portion of the workshop is formal, identifying the project program, key personnel and the communications protocol. The second portion is informal with time for stakeholders and the community to ask questions and discuss any concerns.
Consultation Register	Recording community and stakeholder interactions, along with associated remedial actions as required.	CCLR and Community Consultation Team	The wider community and key stakeholders.	Project duration.	The consultation register satisfies the requirements of Condition C19 of SSD7348, and Specification 3.7.3 of the RMS G36 Specifications requiring a Complaints Register. The register will be continually updated to record community engagement, including information provided by Goodman, feedback received, and remedial action undertaken where required.

Tool/ Technique	Description	Person Responsible	Audience	Frequency/timing	Specifications
Environmental Review Group Meeting	Meeting of key environmental stakeholders	Environmental Representative	All environmental stakeholders	As required for the project duration	The Environmental Review Group will be briefed on upcoming project tasks with key environmental implications, along with complaints and enquiries received
Individual Community Meetings	Meetings with stakeholders as required to discuss a specific item.	CCLR and Community Consultation Team	The wider community and key stakeholders.	As required.	Details and format subject to the meetings context, with a record of the discussion included in the consultation register and actioned as required.
Newspaper Advertisement	Newspaper Advertisement(s) to be published in The Western Weekender and Mt Druitt – St Marys Standard identifying the project hotline number and web page address.	CCLR and Community Consultation Team	The wider community and key stakeholders.	Prior to the commencement of the initial construction activities on the site and throughout the project prior to known key intrusive events.	An advertisement will be published advising of the commencement date of construction, a brief overview of the project and key contact details for enquires and complaints including the hotline, webpage and email address. Further advertisements will be published where intrusive events are scheduled advising of the nature and date(s) and time(s) of the event and key contact details for enquiries and complaints.
Notification Letterbox Drop	Letters would be provided to specific receivers identified as being potentially affected by construction. This could be undertaken in tandem with door knocking.	CCLR and Community Consultation Team	Residents of the immediate area.	As required for the project duration.	Letter box drop details to be recorded in the consultation register. Timing of construction activity to be identified along with relevant contact details.
On Site Signage	Project information details.	CCLR and Community Consultation Team	Visitors to the site and residents of the immediate area.	Project duration.	Contain key project contact details including the hotline and web page, along with relevant project and safety information.

Tool/ Technique	Description	Person Responsible	Audience	Frequency/timing	Specifications
Online Feedback Forms	Simple form allowing rapid ad hoc feedback.	CCLR and Community Consultation Team	The wider community and key stakeholders.	Project duration.	Form available on the Oakdale project web page, with feedback provided to be incorporated into the consultation register and actioned as required.
Project Information and Complaints Number	Project hotline available for 24 hours recording of project feedback.	CCLR and Community Consultation Team	The wider community and key stakeholders.	Project duration.	Hotline number located on site signage, the web page and all project information material. Feedback provided to be incorporated into the consultation register and actioned as required.
Staff and Visitor Induction and Training	Project information details.	Site Forman and Management Staff	Staff and visitors to the site.	Project duration.	Key project safety information, contact details, emergency procedures and site information.
Toolbox and Prestart Meetings for WNSLR and Stage 1 Infrastructure Works	Project information details.	Site Forman and Management Staff	Staff and visitors to the site.	Project duration.	Task specific safety information, emergency procedures and relevant project updates. All staff and subcontractors to be made aware of external and internal communications procedures
Text Message and Email Alerts	Text messages providing prompt updates	CCLR and Community Consultation Team	Residents of the immediate area.	As required for the project duration.	Text Messages and email alerts will provide important information at short notice to potentially affected receivers. Text message and email details to be recorded in the consultation register.

Tool/ Technique	Description	Person Responsible	Audience	Frequency/timing	Specifications
Website	A web page is established at: oakdaleopportunities.com	CCLR and Community Consultation Team	The wider community and key stakeholders.	Project duration.	Website address and phone number located on site signage and all project information material. Web page to provide contact details including hotline, email address and enquiry form, as well as project updates, along with environmental performance monitoring. Refer to Section 5.3.1 below for further details.

5.3.1 Project Website

Goodman has established a website for the project (oakdaleopportunities.com). The website was established prior to the commencement of works and will be maintained during the delivery of the project until the completion of all works.

The following information will be updated monthly or more frequently when necessary and made available on the website as required by SSD 7348 Condition D143:

- A copy of the documents listed in Condition D2 of the SSD Consent (SSD 7348).
- All current statutory approvals for the Development.
- All approved strategies, plans and programs required under conditions of the SSD Consent (SSD 7348).
- The proposed staging plans for the Development if the construction, operation or decommissioning of the Development is to be staged.
- A comprehensive summary of the monitoring results of the Development, reported in accordance with the specifications in any conditions of the SSD Consent (SSD 7348), or any approved plans and programs.
- A summary of the current stage and progress of the Development.
- Contact details (including email address, phone number and postal address) to enquire about the Development or to make a complaint.
- A complaints register, updated monthly and details of the complaints handling protocol for the project.
- The Compliance Report of the Development.
- Audit reports prepared as part of any monitoring or environmental audit of the Development and the Applicant's response to the recommendations in any audit report.
- Any other matter required by the Planning Secretary.

5.3.2 WNSLR Works Liaison and Notification Requirements

Where works relate to the construction of the WNSLR, the RMS QA Specification G36 – Environmental Protection sets out a number of specifications and measures addressing notification to the community and affected stakeholders. In order to comply with these requirements, Goodman shall undertake the following activities:

- Goodman shall notify local residents and other stakeholders about any new or changed construction activities including changes to bus stop locations and / or timetables, which will affect access to their properties/ premises at least five 5 working days before commencing work affecting residents.
- Such notification will state the nature of the work, why it is necessary, the expected duration, details of any changes to the traffic arrangements or property access and the name and 24-hour contact telephone number of the CCLR who can respond to any resident/stakeholder concerns.
- Any complaints shall be addressed in accordance with the complaint's procedure outlined in Section 5.4 of this strategy.
- Where extended working hours are proposed, the contractor shall inform Goodman who will subsequently inform residents of the proposed work outside normal working hours in accordance with the requirements outlined in this strategy. Written approval from the Planning Secretary will be sought for out of hours work.

- Within one working day of receiving a complaint about any environmental or other issue which has the capacity to damage Goodman's reputation, including any pollution incidents, arising from the Work Under the Contract, a written report to Goodman shall be submitted detailing the complaint and the action taken to remedy the problem. A final report together with proposed measures to prevent the recurrence of such incidents shall be submitted to the Goodman within 5 working days.

The contractor shall adhere to set timeframes for notification of Goodman and distribution of notice to the community and stakeholders for activities related to the WNSLR. This commitment is outlined in **Table 7** and **Table 8** below:

Table 7 Notification Requirements for Goodman prior to Construction Activities

Activity	Notification required
Work at night (any time between 6pm and 7am)	2 weeks where possible, a minimum of 1 week
Work on weekends (including public holidays)	2 weeks where possible, a minimum of 1 week
Major changes to configuration of road traffic	At least 4 weeks
Impacts on pedestrians and/or bicyclists	At least 4 weeks
Commencement, rescheduling or completion of key construction activities	At least 4 weeks for commencement and completion, 24 hours' notice for rescheduling
Commencement or rescheduling of property adjustment work	At least 2 weeks (four weeks for businesses)
Alteration to property access arrangements	At least 4 weeks
Other activities not identified above which may impact on the community stakeholders	At least 24 hours
Any form of community protest on site	Immediately

Table 8 Notification Requirements for works

Notification Type	Submission to Goodman	Distribution to Community and Stakeholders
Out of Hours Works / Night Works	Draft a notification letter at least 24 hours prior to the works being carried out	2 weeks where possible, a minimum of 1 week prior to the works being carried out
Traffic Conditions	Draft letter at least 4 weeks prior to the traffic conditions changing	At least 5 business days prior to the traffic conditions changing if deemed necessary by Goodman
Individual private properties regarding property adjustments or changes to access	Draft letter at least 4 weeks prior to the works being carried out	At least 2 weeks prior to the works being carried out of access changes
Access for bridgeworks over the Water NSW pipelines	Final draft of notification at least 4 weeks prior to be works being carried out	At least 4 weeks prior to the works being carried out
Individual businesses regarding property adjustments or changes to access	Draft letter at least 4 weeks prior to the works being carried out	At least 4 weeks prior to the works being carried out of access changes

5.3.3 Communication with Sensitive Receivers' Procedure

During the course of works the CCLR will consult with nearby sensitive receivers listed below when necessary to advise of and/or schedule events and activities with the potential to cause impact such as high noise generating works, vibration intensive activities or traffic management disruptions.

The CCLR shall also consult with sensitive receivers to arrange respite period offerings where high-noise works are predicted to exceed 75dBA for residential receivers and 65dBA for schools and the retirement village. Respite offers will also be considered for high vibration works where the works are undertaken within the human comfort minimum working distances for all sensitive receivers.

Sensitive receivers are considered to include adjacent and directly affected properties, businesses and schools including:

- Residential properties located along Aldington Road (As shown in **Appendix A)**.
- Emmaus Catholic Primary School and High School and Retirement Village on Bakers Lane.

Where development works have the potential to impact on sensitive receivers or respite offerings are proposed the CCLR will implement the sensitive receiver procedure outlined in **Table 9** below:

Table 9 Sensitive Receiver Procedure

Potential Impact or Issue	Method of Contact/Consultation	Timeframe
High noise generating work	Email, Text Message or Letterbox drop – notifying of expected commencement, duration and affected hours	No less than 24 hours prior to the activity
Vibration intensive activity	Email, Text Message or Letterbox drop – notifying of expected commencement, duration and affected hours	No less than 24 hours prior to the activity
Traffic management disruption	Email, Text Message or Letterbox drop – notifying of expected commencement, duration and affected hours Variable Message Signs	No less than 24 hours prior to the activity
Respite offerings	Email or phone calls will be undertaken to determine whether respite is required and appropriate scheduling and duration for respite periods	No less than 24 hours prior to the activity

5.4 Complaints Procedure

Goodman are committed to the timely and effective management of enquiries and complaints relating to construction activities for the OWE. To this end, the following complaints procedure shown in **Figure 4** will be adhered to, enabling the receipt and recording of enquiries and complaints, along with the methods of response and resolution of issues raised.

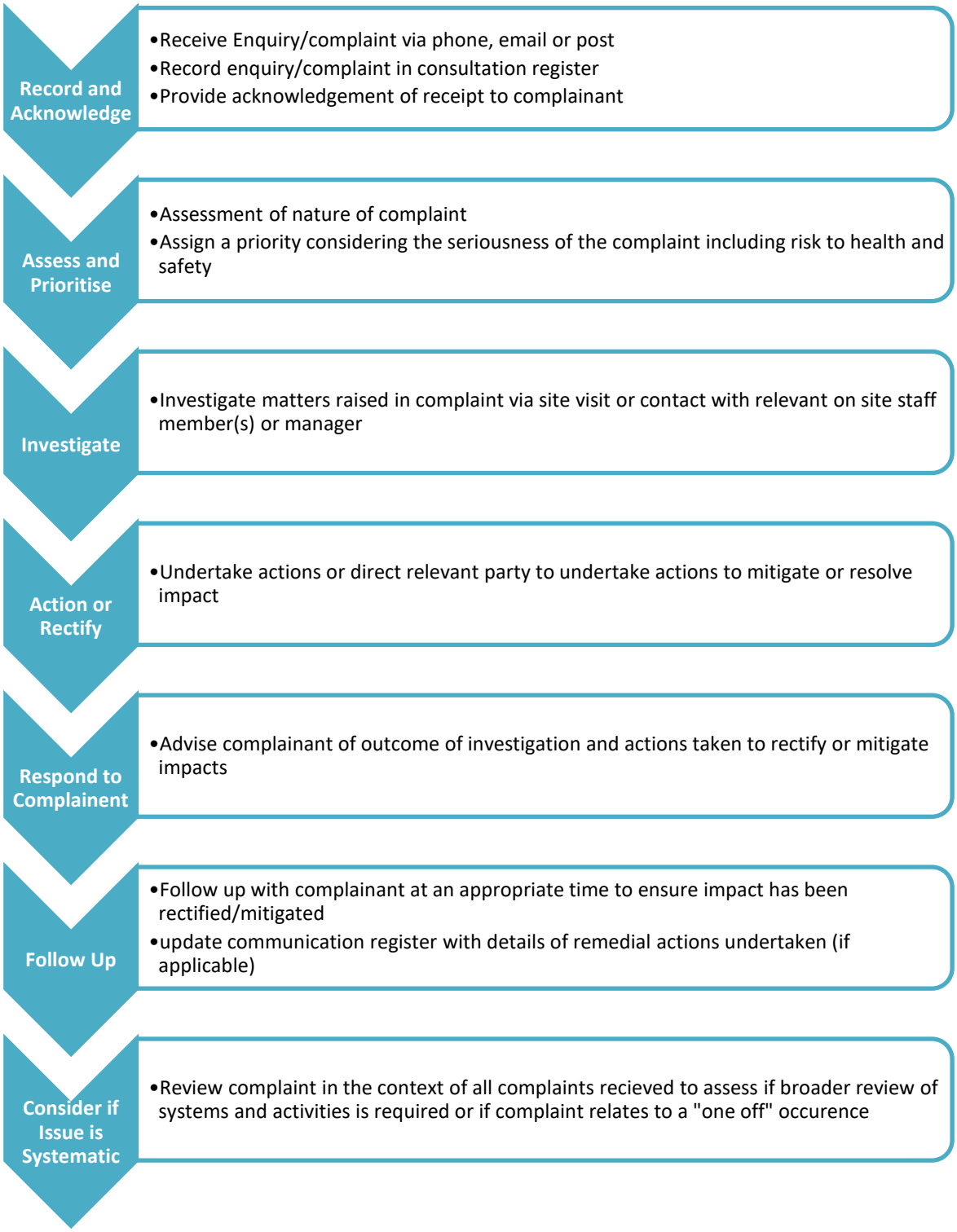

Figure 4 Complaints Handling Procedure

5.4.1 Protocol for Receiving and Recording Enquiries and Complaints

Goodman have established a project email and postal address for the receipt of enquiries and complaints relating to the development. The email and postal accounts will be regularly monitored to receive and respond to customer feedback and enquiries. The community information line (1300002887) is to be established from the commencement of works. The CCLR and community consultation team will manage the information line from the commencement of the project until the completion of works. Where calls are received during hours of construction work (including out of hours works) all calls will be answered by the CCLR. Where calls are received outside of hours of construction works the caller will be invited to leave a message. All approaches from the community and stakeholders will be registered in the project's consultation register. The facilities established for receiving enquiries and complaints about the project during construction are shown in **Table 10**.

Table 10 Enquires and Complaints Facilities

Facility	Purpose	Detail
Community Information Line	A contact phone number and associated contact name for questions/enquiries and the lodgement of complaints relating to the development.	1300 002 887
Email Address	An email address accessible via email and online enquiry form for questions/enquiries and the lodgement of complaints relating to the development.	community.oakdalewest@goodman.com
Postal Address	A postal address for the receipt of questions/enquiries and the lodgement of complaints relating to the development.	Level 17, 60 Castlereagh Street, Sydney, NSW 2000
In person verbal	Verbal enquiries and complaints can be made formally during community meetings or may be made informally where staff interact with members of the public in informal settings.	Verbal in person comments and submissions

Goodman have established a consultation register to record all complaints and enquiries received by the above means. The consultation register will be maintained on a regular basis and used to inform discussion at monthly community consultation and project team meetings. The consultation register shall include the following details for all complaints or enquiries received:

- Date and time of complaint or enquiry.
- Method by which the complaint or enquiry was made.
- Name, address, contact telephone number of complainant (if no such details were provided, a note to that effect).
- Nature of complaint or enquiry.
- Action taken in response including follow up contact with the complainant.
- Any monitoring to confirm that the complaint or enquiry has been satisfactorily resolved.
- If no action was taken, the reasons why no action was taken by you.

An excerpt of the consultation register is included at **Appendix B**.

5.4.2 Protocol for Responding to and Resolving Enquiries and Complaints

Where a complaint or enquiry is received the CCLR will attempt to provide an immediate response if possible, via phone or email. Where a complaint or enquiry cannot be responded to immediately the CCLR will assess and prioritise the submission and provide the complainant or enquirer with a follow up verbal response on what action is proposed within two hours during construction works (including night and weekend works) and 24 hours at other times. Where a complaint or enquiry cannot be resolved by the initial or follow-up verbal response, a written response will be provided to the complainant or enquirer within ten days.

In the event of a complaint, the CCLR will assess whether the complaint is founded or unfounded and if necessary, delegate the remediation of the issue to the project manager for action or to the relevant project engineer. The CCLR will oversee the rectification of the issue and respond to the complainant once the issue has been resolved.

In the event of an enquiry, the CCLR will endeavour to provide an immediate response where they are in possession of the relevant information. Where more specific or detailed information is required, the CCLR will liaise with the project manager or relevant project engineer to obtain the information required to respond to the enquiry and provide this information to the enquiring party once in hand.

Where the above protocol is unsuccessful in resolving complaints, mediation may be undertaken at the discretion of Goodman to facilitate negotiation between affected parties. This shall be performed by an independent person (mediator) appointed by Goodman.

5.4.3 Unreasonable Complainant Conduct

The NSW Ombudsman provides guidelines which define unreasonable complaint conduct as:

"…any behaviour by a current or former complainant which, because of its nature or frequency, raises substantial health, safety, resource or equity issues for the parties to a complaint."

Whilst it is not envisioned that the project will attract complainants that exhibit this behaviour, where a complainant is seen to potentially have a negative impact on the CCLR or support team's health, safety, resourcing or equity of service, Goodman shall adhere to the procedures and practices outlined within the NSW Ombudsman's "*Managing Unreasonable Complainant Conduct Practice Manual 2nd Edition"*.

5.4.4 Contingency Management Plan

In accordance with Condition D118(d) of the SSD 7348 consent, a contingency management plan has been developed to outline the management of unpredicted impacts and their consequences. Details of these events, their severity and response are detailed in **Table 11** below:

Table 11 Contingency Management Plan

Key Element	Trigger/ Response	Condition Green	Condition Amber	Condition Red
Submission	Trigger	General feedback/comment (no complaint or query).	Enquiry made by formal or informal channels.	Complaint made by formal or informal channels.
	Response	Acknowledge receipt and record in consultation register. No further response required.	Acknowledge receipt and record in consultation register. Direct enquiry to relevant person for actioning and response within 5 days.	Acknowledge receipt and record in consultation register. Respond to complaint immediately if possible, if not direct enquiry to relevant person for actioning and provide complainant with a follow up verbal response on what action is proposed within two hours during construction works (including night and weekend works) and 24 hours at other times.
Media	Trigger	Positive story in print, online, radio or television.	Neutral or advisory story in print, online, radio or television.	Negative story in print, online, radio or television.
	Response	Record in consultation register and advise Goodman media/marketing team. No further response required.	Record in consultation register and advise Goodman media/marketing team. No further response required.	Record in consultation register and advise Goodman Project Team for further action and response. Contact relevant person for actioning and response within 48 hours
Unscheduled Event	Trigger	Event occurring outside of plan or schedule without impact or potential impact.	Event occurring outside of plan or schedule with minor impact or potential impact.	Event occurring outside of plan or schedule with major impact or potential impact.

Key Element	Trigger/ Response	Condition Green	Condition Amber	Condition Red
	Response	No response required. Identify opportunities for improvement to manage potential future events.	Contact relevant person for actioning and response within 48 hours. Acknowledge in consultation register. Identify opportunities for improvement to manage potential future events.	Contact relevant person for actioning and response immediately. Acknowledge in consultation register. Identify opportunities for improvement to manage potential future events.
Political Interest	Trigger	General or non-specific enquiry by Local, State or Federal political representative.	Enquiry or complaint relating to minor issue by Local, State or Federal political representative.	Enquiry or complaint relating to major issue by Local, State or Federal political representative.
	Response	Community consultation team in conjunction with Goodman Project Team to prepare and provide response or assign response task to relevant staff member for comment. Record in consultation register.	Community consultation team in conjunction with Goodman Project Team to prepare and provide response within 48 hours. Record in consultation register.	Community consultation team in conjunction with Goodman Project Team to prepare and provide response within 24 hours. Record in consultation register.

6 Monitoring, Reporting and Evaluation

Monitoring, Reporting and Evaluation will be undertaken to measure the effectiveness of community consultation, stakeholder engagement and responses to complaints and enquiries. Opportunities for improvement will be sought on a continuous basis, with an annual review of the CCS undertaken to formalise these incremental improvements.

6.1 Monitoring

The performance of this strategy will be monitored monthly based upon an assessment of the following data:

- Total number of monthly complaints.
- Review of number of monthly complaints relating to lack of consultation/misinformation/confusion.
- Review of number of monthly enquiries relating to information previously disseminated to the community through other channels.
- Monthly review of enquiries or complaints of a similar nature or theme indicative of underlying systematic issues with the project or communication strategy.
- Response timeframes, including initial acknowledgement and the response to enquiries or remediation of issue(s).

The parameters of monitoring and performance criteria are outlined in **Table 12** below.

Table 12 Summary of Monitoring Data

Monitoring Parameter	Rationale	Performance Criteria	Monitoring Frequency
Total number of complaints	The number of complaints received in total is indicative of the community's satisfaction with the project.	A reduction in number of complaints, baseline determined by number of complaints received in preceding months.	Monthly
Number of complaints relating to lack of consultation/misinformation/ confusion	Number of complaints relating to lack of consultation/ misinformation/ confusion is indicative of the effectiveness and clarity of communication tools utilized.	A reduction in number of complaints, baseline determined by number of complaints received in preceding month.	Monthly
Number of enquiries relating to information previously disseminated	Number of enquiries relating to information previously disseminated is indicative to the effectiveness of the delivery of information.	A reduction in number of enquiries, baseline determined by number of enquiries received in preceding month.	Monthly
Number of complaints/enquiries within defined categories based on theme or subject	A large number of complaints or enquiries relating to a single issue may be indicative of a systematic issue to be addressed as a priority.	A reduction in number of complaints, baseline determined by number of complaints received in preceding month.	Monthly

Monitoring Parameter	Rationale	Performance Criteria	Monitoring Frequency
Response timeframes	Response to enquiries and complaints should be timely to ensure effective responsiveness and rectification of issues and to encourage trust within the community.	Enquiries and complaints acknowledged within 48 hours. Urgent enquiries and complaints responded to within 48 hours of receipt, non-urgent enquiries and complaints responded to within 5 days.	Monthly

6.2 Reporting

Reporting shall be undertaken annually, with a monthly summary of results provided to the approved Environmental Representative (ER) in accordance with Conditions D127(e) and D128 of SSD77348 and the broader project team during monthly project team meetings. The monthly community consultation summary will be made publicly available on the project web page and shall include:

- A summary of community consultation activities undertaken within the preceding month.
- A summary of community consultation activities proposed within the following month.
- A summary of all enquiries and complaints received within the preceding month, including details of response and/or remediation activities.

Within three months of the submission of documentation identified by Condition D133 this CCS would be reviewed for compatibility.

6.3 Evaluation

Where performance criteria are not being satisfied, review of this strategy and its implementation will be undertaken by the Community Consultation Team and changes to the strategy may be made to rectify the short fall. Where systematic issues are identified associated with construction activities, the project manager will be advised and immediate rectification of the issue will be requested.

7 References

- NSW Ombudsman (2012) *Managing Unreasonable Complainant Conduct Practice Manual 2nd Edition*
- SLR Consulting Australia (2019) *Construction Environmental Management Plan*
- Urbis (2017) *Environmental Impact Statement – Oakdale West Estate (State Significant Development Application Ref 7348)*
- Urbis (2018) *Response to Submissions (A)*
- Urbis (2018) *Response to Submissions (B)*

APPENDIX A

Sensitive Receiver Map


N1 (north)
N1 (south)
N2
N6
N7
N8
N3
N4
N5
N14
N13
N9
N10
N12
N11
1A
2A
2B
1C
4D
5A
3A
1B1/1B2
4C
4G
3B1/3B2
4F
2D
4B
2C1/2C2
3C
4A
4E
MOD 7 Buildings
Receivers
MOD 3 Barrier 3m
MOD 3 Barrier 5m
Receiver Building

APPENDIX B

Key Stakeholder Contact Details

Contact Name/Organisation	Contact Details
The Residents – 20 Aldington Road	
Emmaus Catholic College	Harvey Anchique - Business Manager P: (02) 9670 8300 F: (02) 9834 3403 M: 0428 063 119 E: hanchique@parra.catholic.edu.au
Trinity Catholic Primary School	Catherine Hey - Principal, chey@parra.catholic.edu.au, 02 8856 6200
Mamre Anglican School	Cathie Graydon – Principal (02)98341881, cathie.graydon@mamre.nsw.edu.au Marijana Motrivic, Business Manager 02, 8073 6908 marijana.mitrovic@mamre.nsw.edu.au,
Catholic Healthcare Emmaus Village	James Byrne Building Services Manager, M. 0434604370, jbyrne@chcs.com.au Kate Todd, Emmaus Village, ktodd@chcs.com.au, Home, 02 8804 0200
Little Smarties Learning Centre	61 2 9834 2155 kempscreek@littlesmarties.com.au
Penrith City Council	61 2 4732 7777 council@penrith.city
NSW EPA	131 555 info@epa.nsw.gov.au
NSW Biodiversity and Conservation Division, Department of Planning Industry and Environment	61 2 9995 5000 info@environment.nsw.gov.au
NSW Department of Industry	61 2 9338 6600
Roads and Maritime Service	13 22 13
Transport for NSW	61 2 8202 2200
NSW Rural Fire Service	61 2 8741 5555 webmaster@rfs.nsw.gov.au
WaterNSW	1300 662 077 Customer.Helpdesk@waternsw.com.au
National Resources Asset Regulator	61 2 9338 6600
TransGrid	61 2 9284 3000
Endeavour Energy	131 081
Sydney water	13 20 92
Jemena	1300 536 362
NBN	1300 687 626
Telstra	13 22 00
Registered Aboriginal Parties	See Appendix C

APPENDIX C

Registered Aboriginal Parties

Name	Organisation	Address	Suburb	State	Postcode	Email	Phone	Notes
Caroline Hickey	A1 Indigenous Services					cazadirect@live.com	Mobile: 0411 650 057	
Andrew Williams	Aboriginal Archaeology Service Inc.	PO Box 6283	Rouse Hill	NSW	2155	AAS.info@bigpond.com	Mobile: 0490 126 040	
Amanda Hickey	Amanda Hickey Cultural Services	41 Dempsey St	Emu Heights	NSW	2750	amandahickey@live.com.au	Mobile: 0434 480 588	
Karia Lea Bond	Badu	11 Jeffery Pl	Morya	NSW	2537	baduchts@gmail.com	Mobile: 0476 381 207	
Seli Storer	Biamanga					biamangachts@gmail.com		
Richard Andy	Bidawal CHTS					bidawalchts@gmail.com		
Simalene Cariage	Bilinga					bilingachts@gmail.com		OR Wandai Kirkbright???
Jennifer Beale	Butucarbin Aboriginal Corporation	28 - 30 Pringle Road	Hebersham	NSW	2770	koori@ozemail.com.au	Office: (02) 9832 7167, Mobile: 0409 924 409	Website: http://www.butucarbin.org.au/, postal address: PO Box E18 Emerton NSW 2770
Marylin Carroll-Johnson	Corroborree Aboriginal Corporation	PO Box 3340	Rouse Hill	NSW	2155	corroboreecorp@bigpond.com.au	Mobile: 0415 911 159	Contact details for Steve Johnson
Corey Smith	Cullendulla					cullendullachts@gmail.com		
Gordon Morton	Darug Aboriginal Cultural Heritage Assessments	Unit 9, 6 Chapman Ave	Chatswood	NSW	2067		Office: (02) 9410 3665, Mobile: 0422 865 831	
Des Dyer	Darug Aboriginal Landcare	18A Perigee Close	Doonside	NSW	2767	desmond4552@hotmail.com	Mobile: 0408 360 814	Site officer: 0402 942 572
Justine Coplin	Darug Custodian Aboriginal Corporation	PO Box 81	WINDSOR	NSW	2756	justinecoplin@optusnet.com.au	(02) 4577 5181 Office: (02) 4577 5181,	
Leanne Watson	Darug Custodian Aboriginal Corporation	PO Box 81	Windsor	NSW	2758	mulgokiwi@bigpond.com	Mobile: 0415 770 163	
Jamie Workman	Darug Land Observations PTY LTD	PO Box 571	Plumpton	NSW	2761	daruglandobservations@gmail.com	Mobile: 0420 591 138	
Gordon Workman	Darug Land Observations PTY LTD	PO Box 571	Plumpton	NSW	2761	gordow51@bigpond.net.au	Mobile: 0415 663 763	Deceased
John Reilly	Darug Tribal Aboriginal Corporation	PO Box 441	Blacktown	NSW	2148	Jmreilly228@gmail.com	Office: (02) 9622 4081	
Steve Randall	Deerubbin Local Aboriginal Land Council	2/9 Tindale St	Penrith	NSW	2750	SRandall@deerubbin.org.au	Office: (02) 4724 5600	
Andrew Bond	Dharug CHTS					dharugchts@gmail.com		
Ricky Fields	Dhinawan-Dhigaraa Culture and Heritage PTY LTD	19 Moomi St	Lalor Park	NSW	2147	Dhinawan2@yahoo.com.au	Mobile: 0402 942 572	
Athol Smith	Dhinawan-Dhigaraa Culture and Heritage PTY LTD	16 Yantara Place	Woodcroft	NSW	2767	Dhinawan2@yahoo.com.au	Mobile: 0499 665 715	
Lilly Carroll	Didge Ngunawal					didgengunawalclan@yahoo.com.au	Mobile: 0450 616 404	
Paul Boyd	Didge Ngunawal					didgengunawalclan@yahoo.com.au	Mobile: 0426 823 944	
Keith Nye	Djiringanj CHTS					djiringanjchts@gmail.com		
Lenard Nye	Elouera CHTS					elouerachts@gmail.com		
Kahu Brennan	Eora					eorachts@gmail.com		
Kim Carriage	Gangangarra					gangangarra@gmail.com		
Basil Smith	Goobah Developments	66 Grantham Rd	Batehaven	NSW	2536	goobahchts@gmail.com	Mobile: 0405 995 725	
Wendy Smith	Gulaga					gulagachts@gmail.com		
Christopher Payne	Gundungurra Tribal Technical Services	9/15/22 Burns Rd	Leumeah	NSW	2560	chrispayne776@gmail.com	Mobile: 0466 975 437	
David Bell	Gundungurra Tribal Technical Services	67 Dickens Rd	Ambarvale	NSW	2560	gundungurratectribsevices@gmail.com	Mobile: 0450 124 891	
Larry Hoskins	Gundungurra Tribal Technical Services	2/3 Colville Pl	Rosemeadow	NSW	2560	gundungurratectribsevices@gmail.com	Mobile: 0478 009 879	
Pimmy Johnson Bell	Gundungurra Tribal Technical Services	67 Dickens Rd	Ambarvale	NSW	2560	gundungurratectribsevices@gmail.com	Mobile: 0425 066 100	
Sam Wickman	Gundungurra Tribal Technical Services					gundungurratectribsevices@gmail.com		
Teangi Mereki Foster	Gundungurra Tribal Technical Services	1/6 Central Ave	Oak Flats	NSW	2529	gundungurratectribsevices@gmail.com	Mobile: 0420 978 969	
Cherie Carroll Turrise	Gunjeewong Cultural Heritage Aboriginal Corporation	1 Bellvue Place	Portland	NSW	2847	julieschroder5@live.com.au	Office: (02) 6355 4110	
Lisa Green	Gunninderra Aboriginal Corporation	PO Box 3340	Rouse Hill	NSW	2155	ginninderra.corp@gmail.com	Mobile: 0404 297 224	Contact: Krystle Carroll
Darlene Hoskins-McKenzie	Gunyuu CHTS					gunyuuchts@gmail.com		
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Joanne Anne Stewart	Jerringong					jerringong@gmail.com	Mobile: 0422 800 184	
Phil Kahn	Kamilaroi-Yankuntjatjara Working Group	78 Forbes St	Emu Plains	NSW	2750	philipkhan.acn@live.com.au	Mobile: 0434 545 982	
Vicki Slater	Kawul Cultural Services	89 Pyramid St	Emu Plains	NSW	2750	vicki.slater@hotmail.com		
	Kuringgai CHTS					kuringgaichts@gmail.com		
Shaun Carroll	Merrigarn Indigenous Corporation	GPO Box 158	Canberra City	ACT	2601	merrigarn@yahoo.com.au	Mobile: 0435 040 842	
Aaron Broad	Minnamunnung	1 Waratah Ave	Albion Park	NSW	2527	nundagurri@gmail.com	Mobile: 0402 526 888	
Kaya Dawn Bell	Munyunga					munyungachts@gmail.com		
Roxanne Smith	Murramarang					murramarangchts@gmail.com		
Darleen Johnson	Murri Bidgee Mullangari Aboriginal Corporation	PO Box 246	Seven Hills	NSW	2147	murrabidgeemullangari@yahoo.com.au	Mobile: 0490 051 102	
	Murrin CHTS					murrinchts@gmail.com		
levi McKenzie-Kirkbright	Murrumbul					murrumbul@gmail.com		Or Levi McKenzie-Kirkbright?????
Newton Bond	Ngarigo CHTS					ngarigochts@gmail.com		
Edward Stewart	Ngunawal					ngunawalchts@gmail.com		
Newton Carriage	Nundagurri					nundagurri@gmail.com		
Pemulwuy Johnson	Pemulwuy CHTS	14 Top Place	Mount Annan	NSW	2567	pemulwuyd@gmail.com	Mobile: 0425 066 100	
Tony Williams	Rane Consulting	1 Pyrenees Way	Beaumont Hills	NSW	2155	ajw1901@bigpond.com	Office: (02) 8824 6991	
	Thaiaira CHTS					thauairachts@gmail.com		
John Carriage	Tharawal CHTS					tharawalchts@gmail.com		Changed Violet to John as he was elected chairman in May 2018
Danny Franks	Tocomwall	PO Box 76	Caringbah	NSW	1495	danny@tocomwall.com.au	Mobile: 0415 226 725	
Hika Te Kowhai	Walbunja					walbunja@gmail.com	Mobile: 0402 730 612	
	Walgalu CHTS					walgaluchts@gmail.com		
William Bond	Wandandian					wandandianchts@gmail.com		
Aaron Slater	Warrigal Cultural Services					Warrigal_c.s@hotmail.com	Mobile: 0421 355 890	Changed William to Aaron
Steven Hickey	Widescope Indigenous Group	73 Russell St	Emu Plains	NSW	2750	widescope.group@live.com	Mobile: 0425 230 693	
Hayley Bell	Wingikara					wingikarachts@gmail.com		
Lee-Roy James Boota	Wullung	54 Blackwood St	Gerringong	NSW	2534	wullunglb@gmail.com	Mobile: 0403 703 942	
Kerrie Slater	Wurrumay Consultant					wurrumay@hotmail.com		
Robert ParsonS	Yerramurra					yerramurra@gmail.com		

APPENDIX D

Complaints Register

Date	Time	Responsible Party	In/Out	Initial Communication Method/Tool	Contact Name/ Organisation	Contact Details	Documentation Location (if applicable)	Communication Type: Complaint/ Enquiry/ Communication	Summary of Issues/ Details	Action Taken	Further Action/ Monitoring to Confirm Resolution

ASIA PACIFIC OFFICES

BRISBANE
Level 2, 15 Astor Terrace
Spring Hill QLD 4000
Australia
T: +61 7 3858 4800
F: +61 7 3858 4801

CANBERRA
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Australia
T: +61 2 6287 0800
F: +61 2 9427 8200

DARWIN
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F: +61 2 9427 8200

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Lane Cove NSW 2066
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Townsville South QLD 4810
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UoW Innovation Campus
North Wollongong NSW 2500
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New Zealand
T: +64 27 441 7849

NELSON
6/A Cambridge Street
Richmond, Nelson 7020
New Zealand
T: +64 274 898 628

APPENDIX F

Air Quality Management Plan

OAKDALE WEST INDUSTRIAL ESTATE - LOT 4E

Air Quality Management Plan
SSD 22191322

Prepared for:

Goodman Property Services (Aust) Pty Ltd
The Hayesbery
1-11 Hayes Road
Rosebery NSW 2018

SLR Ref: 630.30396-R02
Version No: -v1.0
August 2022

PREPARED BY

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North Sydney NSW 2060 Australia

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E: sydney@slrconsulting.com www.slrconsulting.com

BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Goodman Property Services (Aust) Pty Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
630.30396-R02-v1.0	26 August 2022	Varun Marwaha, Sahar Bagheri	Kirsten Lawrence	Kirsten Lawrence

CONTENTS

CONTENTS

DOCUMENT REFERENCES

TABLES

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FIGURES

APPENDICES

1 Introduction

SLR Consulting Australia Pty Ltd (SLR) has been commissioned by Goodman Property Services (Aust) Pty Ltd (Goodman) to prepare an Air Quality Management Plan (AQMP) for the construction and operation of Warehouse 4E within the Oakdale West Estate (OWE), a regional warehouse and distribution hub, located at 18 Aldington Rd, Kemps Creek (the Development Site) within the Penrith Local Government Area (LGA).

Whilst Development Consent SSD 7348 has been granted for the OWE 'Concept Proposal' and 'Stage 1 Development', this report is specifically for the construction and operation of Lot 4E. The development of Lot 4E was approved on 29 October 2021 under SSD 22191322.

The aim of this AQMP is to address potential air quality impacts on nearby sensitive receivers during the construction and operation of Warehouse 4E.

1.1 Development Overview

The OWE is a proposed regional warehouse and distribution hub, located at Kemps Creek within the Penrith LGA and forms part of the broader Oakdale Industrial Precinct located within the Western Sydney Employment Area (WSEA).

The OWE is bound to the north by the Water NSW Pipeline and to the east by the Ropes Creek riparian corridor. Land along the eastern boundary of the site is also affected by a transmission easement associated with Transgrid infrastructure. To the east of the site is Goodman's Oakdale South Estate. Emmaus Catholic College and Emmaus Retirement Village are located to the west of the site. Other boundaries interface with adjoining rural lands accommodating a mix of rural-residential and agricultural uses (see **Figure 1**).

The Development Consent for the OWE was granted for the OWE 'Concept Proposal', 'Stage 1 Development' and all subsequent development stages. The Concept Proposal essentially comprises a 'Master Plan' to guide the staged development of OWE and core development controls that will form the basis for design and assessment of future development applications for the site. It includes:

- Establishing primary site access, road layouts (including internal road network and connections to the external road network), developable and non-developable lands, biodiversity offsets, indicative development stages and development controls for the future development of the site;
- Stage 1 Development of the Estate including:
  - Estate Works, including site preparation, bulk earthworks and retaining walls, catchment level stormwater infrastructure, trunk services connections and utility infrastructure, roads and access infrastructure associated with Stage 1 and subdivision in Stage 1 development works;
  - Precinct Development, including construction, fit out and use of warehouse buildings within Precinct 1, detailed earthworks, on lot stormwater, services and utility infrastructure and construction of industrial/warehouse buildings;
  - Construction of a new regional road known as the Western North South Link Road (WNSLR) connecting to Lenore Drive to provide the primary access to the site; and
  - Western boundary landscaping.

This AQMP has been prepared for Lot 4E, located in Precinct 4 of the OWE as shown in **Figure 2**.

For the purposes of this document, the development is described in *Environmental Impact Statement, Oakdale West Estate - State Significant Development Application* (EIS) prepared by Urbis (2017), including all specialist assessments and other appendices.

Figure 1 Regional Locality

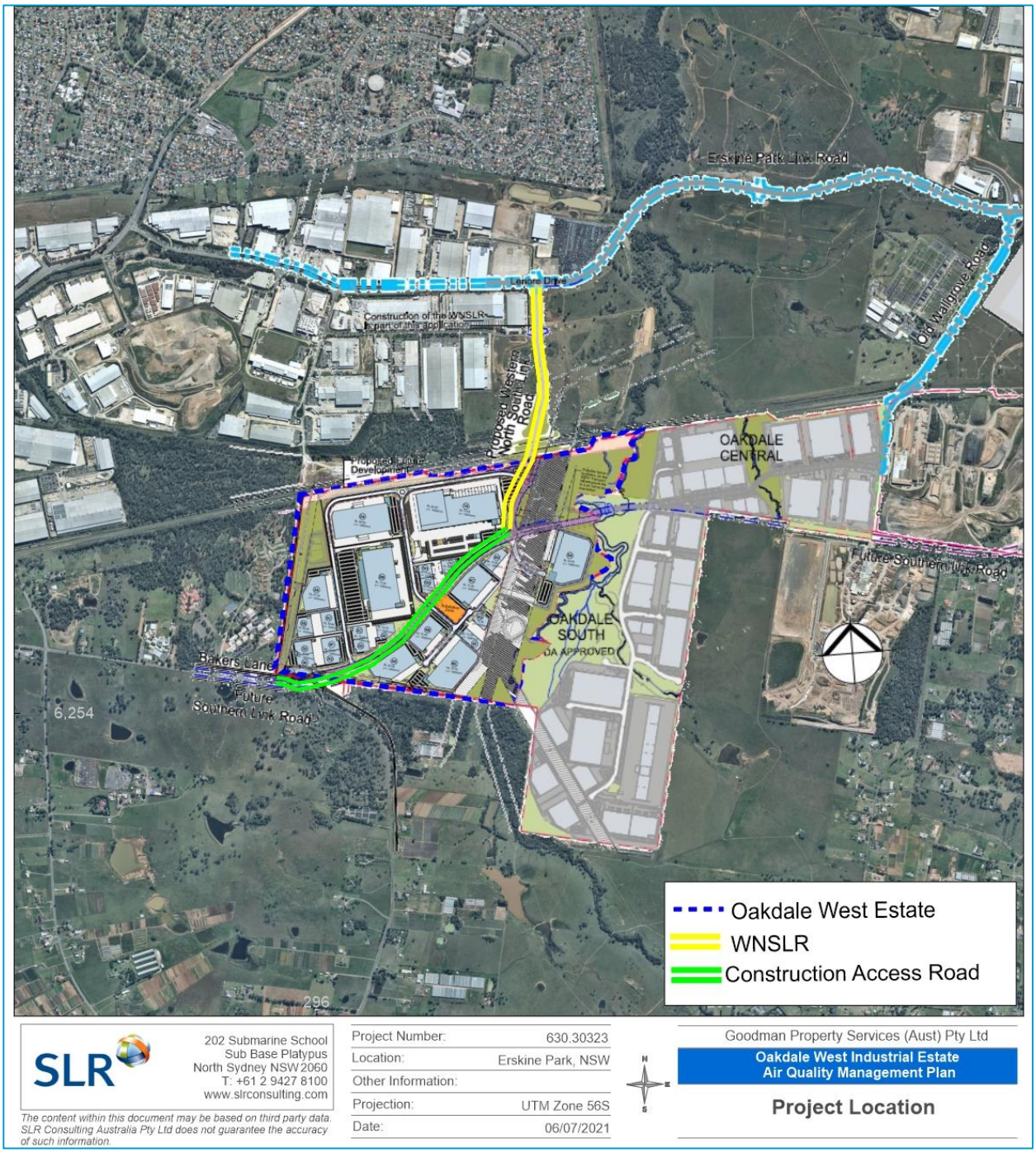
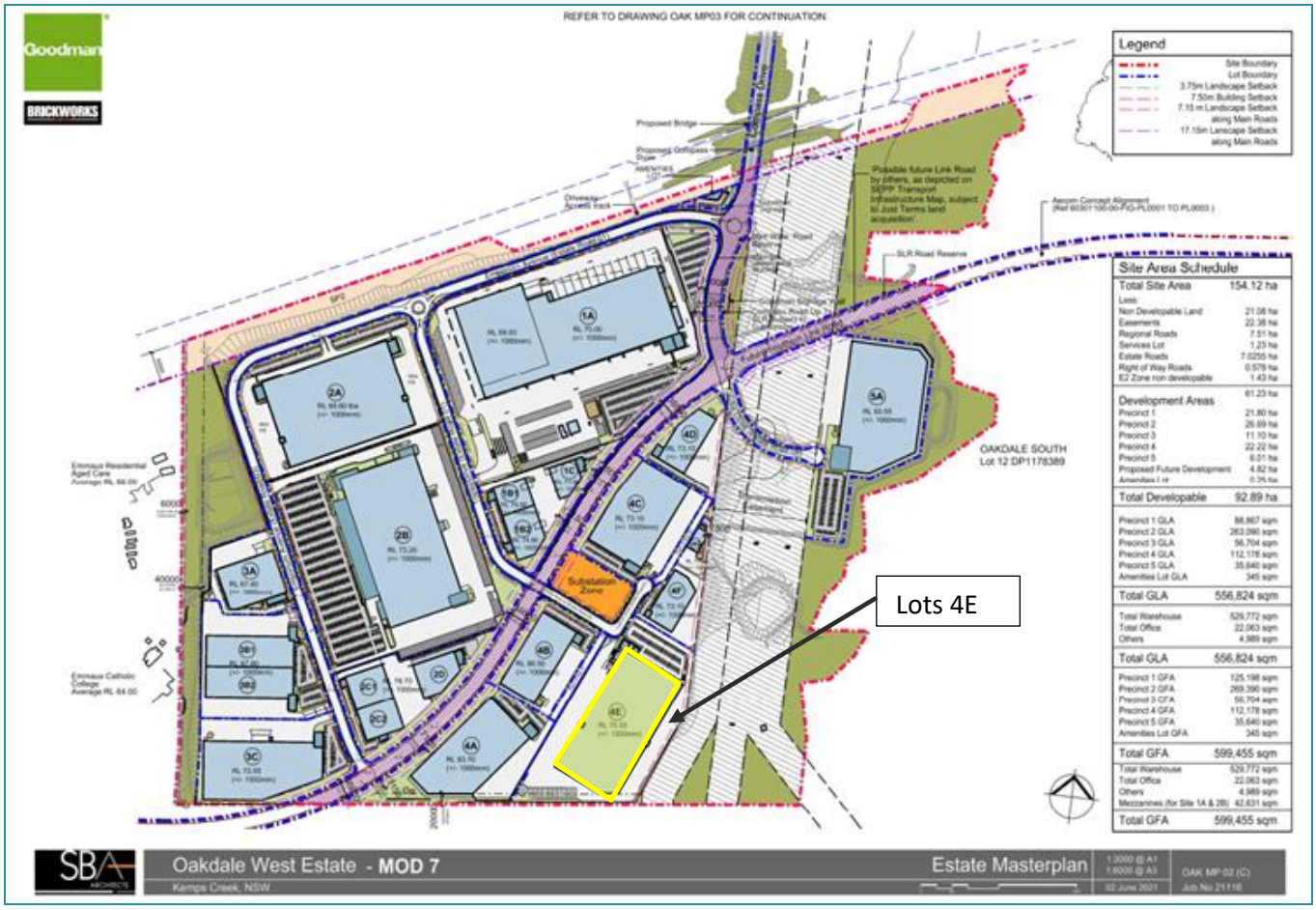


Figure 2 Oakdale West Masterplan



1.2 Objectives of the AQMP

The objectives of this OAQMP are as follows:

- Maintain acceptable levels of amenity for surrounding residents during construction and operational activities in Lot 4E;
- Ensure compliance with relevant ambient air quality criteria for particulate matter at surrounding receptor locations;
- Maintain an effective response mechanism to deal with issues and complaints relating to air emissions from the construction works and operational activities ;
- Outline roles and responsibilities in relation to the management of dust emissions during construction and operation ; and
- Promote environmental awareness among employees and subcontractors.

2 Statutory Requirements

The Development Consent requirements stipulated for Lot 4E under SSD 7348 and SSD 22131922, and where they have been addressed in this AQMP, are shown in **Table 1** and **Table 2** respectively.

Table 1 Assessment against SSD 7348 Conditions

Conditions	Response / Section Reference
Condition D98 (Dust Minimisation)	
The Applicant must take all reasonable steps to minimise dust generated during all works authorised by this consent.	**Section 8**
Condition D99 (Dust Minimisation)	
During construction of Stage 1, the Applicant must ensure that: (a) exposed surfaces and stockpiles are suppressed by regular watering and or other dust suppression methods; (b) all trucks entering or leaving the Site with loads have their loads covered; (c) trucks associated with Stage 1 do not track dirt onto the public road network; (d) public roads used by these trucks are kept clean; and (e) land stabilisation works are carried out progressively on site to minimise exposed surfaces.	**Section 8**
Condition D100 (Construction Air Quality Management Plan)	
(a) be prepared by a suitably qualified and experienced person(s)	2-page CV of the author is attached in **Appendix E**
(b) detail and rank all emissions from all construction activities, including particulate emissions	**Section 4** and **Section 7**
(c) describe a program that is capable of evaluating the performance of the construction and determining compliance with key performance indicators	**Section 10**
(d) identify the control measures that will be implemented for each emission source	**Section 8**
(e) nominate the following for each of the proposed controls: - key performance indicator - monitoring method - location, frequency and duration of monitoring - record keeping - complaints register - response procedures - compliance monitoring	**Section 8** and **Section 10**
Condition D118 (Management Plan Requirements)	
(a) details of: i. the relevant statutory requirements (including any relevant approval, licence or lease conditions); ii. any relevant limits or performance measures and criteria; and iii. the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, Stage 1 or any management measures;	**Section 5.2**

Conditions	Response / Section Reference
(b) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;	**Section 8**
(c) a program to monitor and report on the: i. impacts and environmental performance of Stage 1; and ii. effectiveness of the management measures set out pursuant to paragraph (b) above;	**Section 10**
(d) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;	**Section 11**
(e) a program to investigate and implement ways to improve the environmental performance of Stage 1 over time;	**Section 10** and **Section 13**
(f) a protocol for managing and reporting any: i. incident and any non-compliance (specifically including any exceedance of the impact assessment criteria and performance criteria); ii. complaint; iii. failure to comply with statutory requirements; and	**Section 9** and **Appendix D** See overarching CEMP
(g) a protocol for periodic review of the plan.	**Section 13**

Table 2 Assessment against SSD 22131922 Conditions

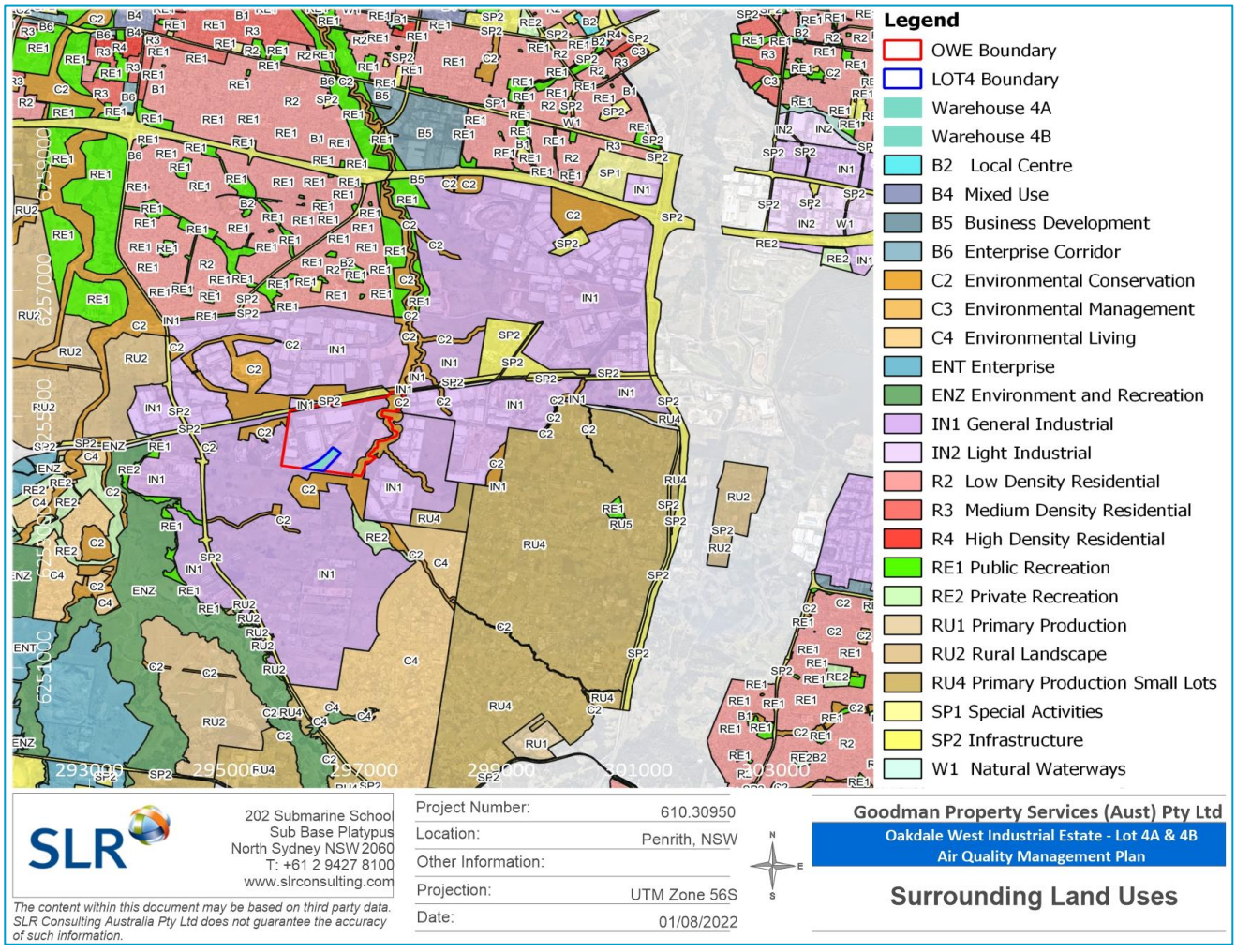
Conditions	Response / Section Reference
Condition B34 (Dust Minimisation)	
The Applicant must take all reasonable steps to minimise dust generated during all works authorised by this consent.	**Section 8**
Condition B35 (Dust Minimisation)	
During construction of the development, the Applicant must comply with the dust minimisation measures detailed in the Construction Environmental Management Plan required by Condition C2.	**Section 8**

3 Project Overview

3.1 Surrounding Land Uses

As shown in **Figure 3**, the area surrounding the OWE includes land uses such as industrial warehouses and factories, several of which have been identified as having the potential to be considered sources of air emissions. The nearest residential receptors to the OWE boundary is located approximately 50 metres (m) south on Aldington Road, Erskine Park, however Precinct 4 is located on the east side of the OWE and is bordered by Oakdale South Estate (ie commercial buildings).

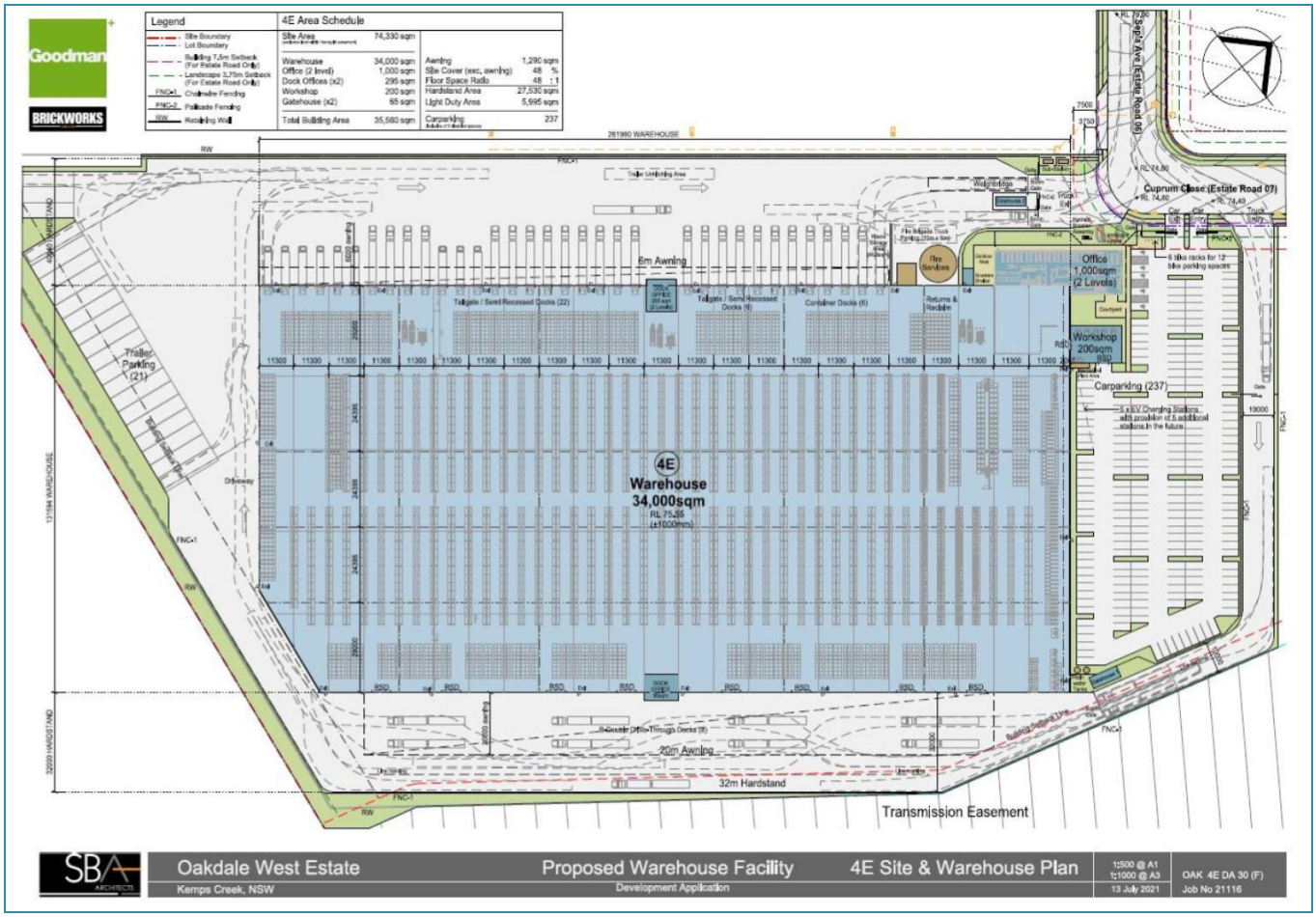
Figure 3 Surrounding Land Uses



3.2 Lot 4E Layout

Lot 4E layout is shown in **Figure 4**.

Figure 4 Lot 4E Layout



3.3 Construction Activities

Construction will include the works to be undertaken on Lot 4E at Precinct 4.

No vegetation clearing, bulk earthworks or supporting infrastructure will be required as part of this Project as this has been approved and undertaken as part of Stage 1 in accordance with SSD 7348.

All construction works will be undertaken in accordance with the Approved Development Consent SSD 22191322.

3.3.1 Construction Hours

Construction hours will be in accordance with Conditions B1 and B2 of Development Consent SSD 22131922, which are reproduced below:

> *B1. The Applicant must comply with the hours detailed in Table 1, unless otherwise agreed in writing by the Planning Secretary.*

Table 1: Hours of Work

Activity	Day	Time
Construction	Monday – Friday Saturday	7 am to 6 pm 8 am to 1 pm

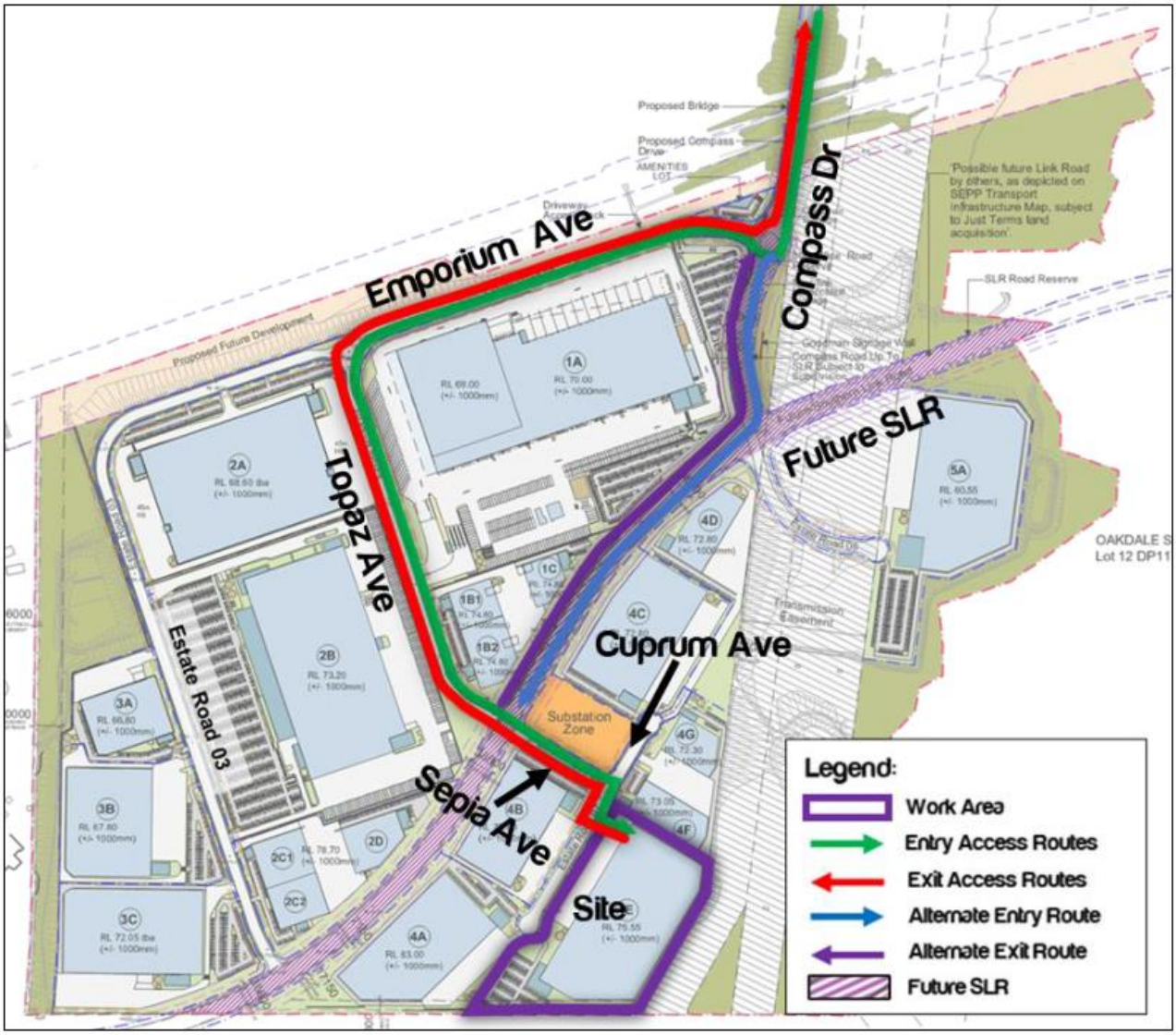
> *B2. Works outside of the hours identified in Condition B1 may be undertaken in the following circumstances:*
>
> *a) works that are inaudible at the nearest sensitive receivers;*
>
> *b) works agreed to in writing by the Planning Secretary;*
>
> *c) for the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or*
>
> *d) where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm.*

The construction hours will be provided to all staff and contractors in the induction. The movements of staff and contractors will be recorded for this project.

3.3.2 Construction Site Access

Once within the OWE, the Site has three proposed vehicular access points. It has separate car and truck entry / exit points on Cuprum Close (previously referred to as Estate Road 07). Furthermore, the truck entry and exit points are also separated, as shown in **Figure 5**.

Figure 5 Construction Site Access



3.3.3 Construction Contact Details

Table 3 lists the key contacts during the construction of Lot 4E.

Table 3 Construction Contact List

Role	Name	Company	Contact Details
Project Principal	Ben Milner	Goodman	0410 557 543 Ben.milner@goodman.com
Contractor's Project Manager	Daniel Lipari	Qanstruct	0411 414 096 dlipari@qanstruct.com.au
Environmental Representative	Carl Vincent	ERSED	0424 203 046 carl.vincent@ersed.com.au
Communications and Community Liaison Representative	Dan Thompson	SLR	0428 060 995 dthompson@slrconsulting.com

3.4 Operational Activities

The site will operate as a warehouse and distribution centre.

3.4.1 Hours of Operation

The hours of operation are Monday to Sunday, 24 hours a day.

3.4.2 Site Access

All access to the Estate is provided via Compass Drive. Vehicles will travel along Old Wallgrove Road from the M4 or Lenore Drive, before heading south on Compass Drive and onto the internal estate roads.

Warehouse 4E movements will be facilitated via three vehicular access points. It has separate car and truck entry / exit points on Cuprum Close (previously referred to as Estate Road 07). Furthermore, the truck entry and exit points are also separated.

The site has limited active and public transport services. A Shared Path (cyclists and pedestrians) is provided along the northern side of Lenore Drive and western side of Old Wallgrove Road, providing connections to the regional pedestrian and cycle networks. Compass Drive and the internal roads include a 2.5-m shared path for both pedestrians and cyclists. Bus service (Route 779) provides direct access to and from St Marys train station. Introduction of a direct connection with St Marys train station will increase the accessibility of the site via public transport services.

A Green Travel Plan has been developed to identify alternative and sustainable modes of transport and to reduce single-occupancy car travel for journeys to and from the Site. Strategies that will be implemented to influence travelling behaviour include travel planning and demand management, promotion of public transport, carpool and electric vehicle use, cycling and walking. Implementation of the Green Travel Plan will be monitored to review efficiencies and identify further opportunities.

3.4.3 Contact Details

The Goodman Representative will be responsible for all environmental management at Building 4E. Contact details are outlined in **Table 4**.

Table 4 Contact Details (TBC)

Role	Name	Contact Details
Building 4E		
Goodman's Representative	Michael Trotnar – Senior Building Manager	0409 999 447 Michael.Trotnar@goodman.com
Tenant's Representative	T.B.C upon signing of Lease	T.B.C upon signing of Lease

3.4.4 Relevant Companies

Tenant

Building 4E has a single tenancy, which includes one warehouse a workshop and one office. The tenant is responsible for the management of built infrastructure and landscaping within the boundaries of their tenancy.

Goodman

In general, Goodman is responsible for the OWE's private infrastructure and overall management of the common vegetated areas of which there a number of key components, including defendable zones for fire hazard control, bio-retention basins, landscaped setbacks, riparian corridors and development lots (including the Amenity Lot).

Goodman is only responsible for the site management of the assets it owns within the OWE. It is to be noted that Goodman are not responsible for dedicated roads or the zone substation once the respective assets ownership is transferred to the relevant utility or authority.

Penrith City Council

Penrith City Council will be responsible for the road network within Oakdale West, as well as the streetscape planting in the verges within the road reserves.

4 Potential Sources of Air Emissions

4.1 Potential Sources of Emissions to Air during Construction

During the construction works, fugitive dust emissions are considered to be the primary emission type, which could give rise to nuisance and/or health impacts for the surrounding sensitive areas. The key potential sources of dust associated with construction of Lot 4E have been identified as:

- Dust emissions from earthworks activities (e.g. excavation and loading of soils to trucks);
- Wind-generated dust from disturbed surfaces and stockpiles;
- Wheel-generated dust and particulate matter emissions in diesel exhaust emissions from on-site plant and equipment and construction traffic movements; and
- Particulate matter associated with exhaust emissions from increased/congested traffic emissions on the local road network due to road closures or diversions (if any).

In addition to the construction activities being carried out at any point in time, a number of other environmental factors may also affect the generation and dispersion of dust emissions, including:

- Wind direction - determines whether dust and suspended particles are transported in the direction of the sensitive receptors;
- Wind speed - governs the potential suspension and drift resistance of particles;
- Surface type - more erodible surface material types have an increased soil or dust erosion potential;
- Surface material moisture - increased surface material moisture reduces soil or dust erosion potential;
- Other external factors such as current works being undertaken by others outside of the defined Project boundaries and current climatic (dry) weather conditions;
- Rainfall or dew - rainfall or heavy dew that wets the surface of the soil reduces the risk of dust generation.

The Environmental Impact Statement (EIS) for the construction and operation of the whole OWE was prepared by Urbis in November 2017 (Urbis 2017). Appendix U (Air Quality Impact Assessment) of the EIS states that the main emissions to air during the construction phase will be emissions of suspended particulate matter and nuisance dust from the movement of vehicles and construction equipment, excavation and rehabilitation, demolition, clearing and grading, truck loading and unloading and wind erosion. The same sources are also identified for construction of Lot 4E.

The construction activities are broadly divided into four categories i.e. demolition, earthworks, construction (building) and trackout. Potential air quality impacts associated with construction of Lot 4E and the relative risk ratings are addressed in **Section 7**.

4.2 Potential Sources of Emissions to Air during Operation

While idling of vehicles will not occur inside the building, emissions due to fuel combustion are still anticipated to occur inside the building during the vehicle entry and exit through the building. A carbon monoxide (CO) monitoring system will be fitted to ensure that CO concentrations within the building meet indoor air quality criteria.

As discussed in the Air Quality Impact Assessment for the OWE (SLR 2020), off-site air quality impacts due to the traffic movements from the whole OWE are expected to be well below relevant air quality criteria. Notwithstanding this, a qualitative risk assessment is presented in **Section 7.2** for the operational phase air quality impacts from Warehouse 4E, and relevant mitigation measures are outlined in **Section 8**.

5 Relevant Pollutants and Air Quality Criteria

5.1 Pollutants of Concern

As identified in **Section 4**, potential air pollutants of interest for the construction of Lot 4E are considered to be both:

- Suspended particulate matter; and
- Deposited dust.

The key potential air pollutants of interest for the operation of Lot 4E are products of fuel (predominantly diesel) combustion associated with trucks entering, exiting and idling at the Site. This includes particulate matter, nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2) and volatile organic compounds (VOCs). There is also potential for minor emissions of suspended particulate matter due to the re-entrainment of road dust by vehicles, however as the site is fully sealed, these emissions will not have potential to impact nearby sensitive receptors.

The following sections outline the potential health and amenity issues associated with the above pollutants, while **Section 5.2** outlines relevant air quality assessment criteria.

5.1.1 Suspended Particulate Matter

Airborne contaminants that can be inhaled directly into the lungs can be classified on the basis of their physical properties as gases, vapours or particulate matter. In common usage, the terms “dust” and “particulates” are often used interchangeably. The health effects of particulate matter are strongly influenced by the size of the airborne particles. Smaller particles can penetrate further into the respiratory tract, with the smallest particles having a greater impact on human health as they penetrate to the gas exchange areas of the lungs. Larger particles primarily cause nuisance associated with coarse particles settling on surfaces.

The term “total particulate matter” (TSP) refers to a category of airborne particles, typically less than 30 microns (µm) in diameter. Particulate matter with an aerodynamic diameter of 10 microns or less is referred to as PM_{10}. The PM_{10} size fraction is sufficiently small to penetrate the large airways of the lungs, while $PM_{2.5}$ (2.5 microns or less) particulates are generally small enough to be drawn in and deposited into the deepest portions of the lungs. Potential adverse health impacts associated with exposure to PM_{10} and $PM_{2.5}$ include increased mortality from cardiovascular and respiratory diseases, chronic obstructive pulmonary disease and heart disease, and reduced lung capacity in asthmatic children. In an urban setting, the emission of $PM_{2.5}$ is primarily associated with vehicles exhausts resulting from the incomplete combustion of diesel.

5.1.2 Deposited Dust

Section 5.1.1 is concerned in large part with the health impacts of particulate matter. Nuisance impacts need also to be considered, mainly in relation to deposited dust. Dust can cause nuisance by settling on surfaces and possessions, affecting visibility and contaminating tank water supplies. High rates of dust deposition can also adversely affect vegetation by blanketing leaf surfaces.

5.1.3 Oxides of Nitrogen

NO_X is a general term used to describe any mixture of nitrogen oxides formed during combustion. In atmospheric chemistry NO_X generally refers to the total concentration of nitric oxide (NO) and nitrogen dioxide (NO_2). NO will be converted to NO_2 in the atmosphere after leaving a car exhaust.

NO is a colourless and odourless gas that does not significantly affect human health. However, in the presence of oxygen, NO can be oxidised to form NO_2 which can have significant health effects including damage to the respiratory tract and increased susceptibility to respiratory infections and asthma. Long term exposure to NO_2 can lead to lung disease.

5.1.4 Carbon Monoxide

CO is an odourless, colourless gas formed from the incomplete burning of fuels in motor vehicles. CO bonds to the haemoglobin in the blood and reduces the oxygen carrying capacity of red blood cells, thus decreasing the oxygen supply to the tissues and organs, in particular the heart and the brain.

It can be a common pollutant at the roadside and highest concentrations are found at the kerbside with concentrations decreasing rapidly with increasing distance from the road. CO in urban areas results almost entirely from vehicle emissions and its spatial distribution follows that of traffic flow.

5.1.5 Sulfur Dioxide

SO_2 is a colourless, pungent gas with an irritating smell. When present in sufficiently high concentrations, exposure to SO_2 can lead to impacts on the upper airways in humans (i.e. the noise and throat irritation). SO_2 can also mix with water vapour to form sulfuric acid (acid rain) which can damage vegetation, soil quality and corrode materials.

The main sources of SO_2 in the air are industries that process materials containing sulfur (i.e. wood pulping, paper manufacturing, metal refining and smelting, textile bleaching, wineries etc.). SO_2 is also present in motor vehicle emissions, however since Australian fuels are relatively low in sulphur, high ambient concentrations are not common.

5.1.6 Volatile Organic Compounds

VOCs are organic compounds (i.e. contain carbon) that have high vapour pressure at normal room-temperature conditions. Their high vapour pressure leads to evaporation from liquid or solid form and emission release to the atmosphere.

VOCs are emitted by a variety of sources, including motor vehicles, chemical plants, automobile repair services, painting/printing industries, and rubber/plastics industries. VOCs that are often typical of these sources include benzene, toluene, ethylbenzene and xylenes (often referred to as ‘BTEX’). Biogenic (natural) sources of VOC emissions (e.g. vegetation) are also significant.

Impacts due to emissions of VOCs can be health or nuisance (odour) related. Benzene is a known carcinogen and a key VOC linked with the combustion of motor vehicle fuels.

5.2 Ambient Air Quality Criteria

There are no air quality criteria specified within Development Consent SSD 22131922, therefore the NSW EPA criteria have been adopted, as discussed below.

5.2.1 Deposited Dust

The relevant criterion for nuisance dust deposition is provided in **Table 5**. The rate of dust deposition is measured by means of a collection gauge, which catches the dust settling over a fixed surface area and over a period of about 30 days.

Table 5 NSW EPA Criterion of Nuisance Dust Deposition

Pollutant	Averaging Period	Assessment Criteria (g/m^2/month)
Deposited dust	Annual	2 (maximum increase in deposited dust level) 4 (maximum total deposited dust level)

5.2.2 Suspended Particulate and Products of Combustion

Section 7.1 of the Approved Methods (EPA, 2017) set out impact assessment criteria for the air pollutants identified in **Section 5.1**. The criteria listed in the Approved Methods are derived from a range of sources (including NHMRC, NEPC, WHO, ANZEEC and DoE). The criteria specified in the Approved Methods are the defining ambient air quality criteria for NSW, and are considered to be appropriate for the setting. The relevant criteria from the Approved Methods are summarised in **Table 6**.

Table 6 NSW Air Quality Assessment Criteria – Approved Methods (EPA, 2017)

Pollutant	Averaging Period	Ambient Air Quality Criterion	
		µg/m³	pphm
Total suspended particulate (TSP)	Annual	90	-
Particulate matter less than 10 microns (PM_{10})	24-Hour	50	-
	Annual	25	-
Particulate matter less than 2.5 microns ($PM_{2.5}$)	24-Hour	25	-
	Annual	8	-
Nitrogen dioxide (NO_2)	1-hour	246	12
	Annual	62	3
Carbon monoxide (CO)	15-minutes	100,000	8,700
	1-hour	30,000	2,500
	8-hour	10,000	900
Sulfur dioxide (SO_2)	10-minutes	712	25
	1-hour	570	20
	24-hour	228	8
	Annual	60	2
Benzene	1-hour	29	0.9
Toluene	1-hour	360	9
Ethylbenzene	1-hour	8,000	180
Xylenes	1-hour	190	4

In relation to the air quality criteria shown in **Table 6**, it is noted that on 18 May 2021, the National Environment Protection Council (NEPC) varied the National Environment Protection (Ambient Air Quality) Measure (hereafter the Ambient Air NEPM) standards for ozone, NO_2 and SO_2 based on the latest scientific understanding of the health risks arising from these pollutants. In addition, the updated Ambient Air NEPM includes a reduced goal for $PM_{2.5}$ by 2025. As the ambient air quality criteria set out in the Approved Methods are based on the standards in the Ambient Air NEPM, and it is anticipated that the Approved Methods will soon be updated to include these reduced standards, the updated standards for NO_2 and $PM_{2.5}$ are also presented below in **Table 7**.

Table 7 National Ambient Air Quality Criteria (NEPM, 2025)

Pollutant	Averaging Period	Previous NEPM Standard (µg/m³)	New NEPM Standard (µg/m³)
NO_2	1-Hour	246	**165**
	Annual	62	**31**
$PM_{2.5}$	24-Hour	25	**20**
	Annual	8	**7**

5.3 Local Government Air Quality Toolkit

The NSW EPA has developed the Local Government Air Quality Toolkit (EPA 2018), in response to requests from local Council officers for information and guidance on the common air quality issues they manage. Guidance is available under Part 3 of the Local Government Air Quality Toolkit for Construction Sites.

This document lists the common sources of emissions and mitigation and management measures to control airborne dust levels from construction sites and has been consulted in the development of this AQMP.

6 Local Meteorology

The Bureau of Meteorology (BoM) maintains and publishes data from weather stations across Australia. The closest such station recording wind speed and wind direction data is the Horsley Park Automatic Weather Station (AWS) (Station ID 67119), located approximately 5.6 kilometres (km) southeast of the Development Site. The long-term and short-term seasonal wind roses and long term rainfall patterns observed at the Horsley Park AWS indicate that winds that would blow air emissions from the Site towards the nearest sensitive receptors located to the north and west occur rarely during autumn and winter (approximately 8%) of the time.

The long-term wind and rainfall patterns suggest that construction and operational activities at the Site have the greatest potential to impact on surrounding sensitive receptors during the months of May (autumn), and July (winter) to September (spring).

Full analysis of the wind roses and rainfall data can be found in **Appendix A**.

6.1 Background Air Quality

The nearest DPIE-operated air quality monitoring stations (AQMS) to the Site is located at St Marys. The St Marys AQMS was commissioned in 1992, and is located on a residential property 5.6 km northwest of the Site at an elevation of 29 m, and monitors the concentration levels of following air pollutants:

- Oxides of nitrogen (NO, NO_2 and NO_X)
- Fine particles ($PM_{2.5}$ and PM_{10})

Due to unavailability of ambient concentrations of CO and SO_2 from the St Marys AQMS, data has been sought from Prospect AQMS. The Prospect AQMS is located 11 km to northeast of the Site. It was commissioned in February 2007 and is located at William Lawson Park, Prospect, in a residential area and is at an elevation of 66 m. The Prospect AQMS is also located within 1 km of major road infrastructure (Great Western Highway and M4 Motorway). The Prospect AQMS monitors the concentration levels of following air pollutants:

- Oxides of nitrogen (NO, NO_2 and NO_X)
- Fine particles ($PM_{2.5}$ and PM_{10})
- Sulfur Dioxide (SO_2)
- Ozone (O_3)
- Carbon Monoxide (CO)

Both St Marys and Prospect AQMSs are a part of the Sydney northwest air quality monitoring region.

The available air monitoring data from the St Marys AQMS are summarised in **Table 8** (red font indicates an exceedance of the relevant criterion) and presented graphically in **Figure 6** to **Figure 8**. Air monitoring data from the Prospect AQMS are summarised in **Table 9** and presented graphically in **Figure 9** and **Figure 10**.

A review of the ambient air quality data presented in the following tables and graphs shows:

- Generally, the 24-hour average PM_{10} and $PM_{2.5}$ concentrations recorded by the St Marys AQMS are below the relevant 24-hour average guidelines, however isolated exceedances (normally on less than ten days per year) have been recorded in most years. The exception to this was the November 2019 to January 2020 period, when unprecedented and extensive bushfires within NSW resulted in an extended period of very elevated particulate concentrations across Sydney that were significantly above the 24-hour average PM_{10} and $PM_{2.5}$ guidelines. A review of the available compliance monitoring reports indicates that the intermittent exceedance days recorded during the other years were also primarily due to exceptional events such as bushfire emergencies, dust storms and hazard reduction burns.
- No exceedances of the annual average PM_{10} criterion were recorded at St Marys during the five years investigated, however the annual average $PM_{2.5}$ criterion was exceeded in 2019 due to the bushfire event that started in November 2019.
- Ambient concentrations of the gaseous pollutants NO_2, CO and SO_2 were all well below the relevant criteria for all years investigated.

Table 8 Summary of Ambient PM_{10}, $PM_{2.5}$ and NO_2 Data - St Marys AQMS (2017 – 2021)

Pollutant	PM_{10}			$PM_{2.5}$			NO_2		
Averaging Period	Maximum 24-hour	Annual	90th percentile 24-hour	Maximum 24-hour	Annual	90th percentile 24-hour	Maximum 1-hour	Annual	90th percentile 1-hour
Units	µg/m³						pphm		
2017	49.8	16.2		38.2	7.0		3.7	0.4	
2018	100.5	19.4		80.5	7.8		3.7	0.5	
2019	159.8	24.7	31.33	88.3	9.8	11.9	3.3	0.4	20.5
2020	260.3	18.9		82.5	7.6		3.4	0.4	
2021	54.9	16.2		40.3	5.8		3.3	0.4	
Criterion	**50**	**25**	-	**25**	**8**	-	**12**	**3**	-

Figure 6 Measured Maximum 1-Hour Average NO_2 Concentrations at St Marys AQMS (2017 – 2021)

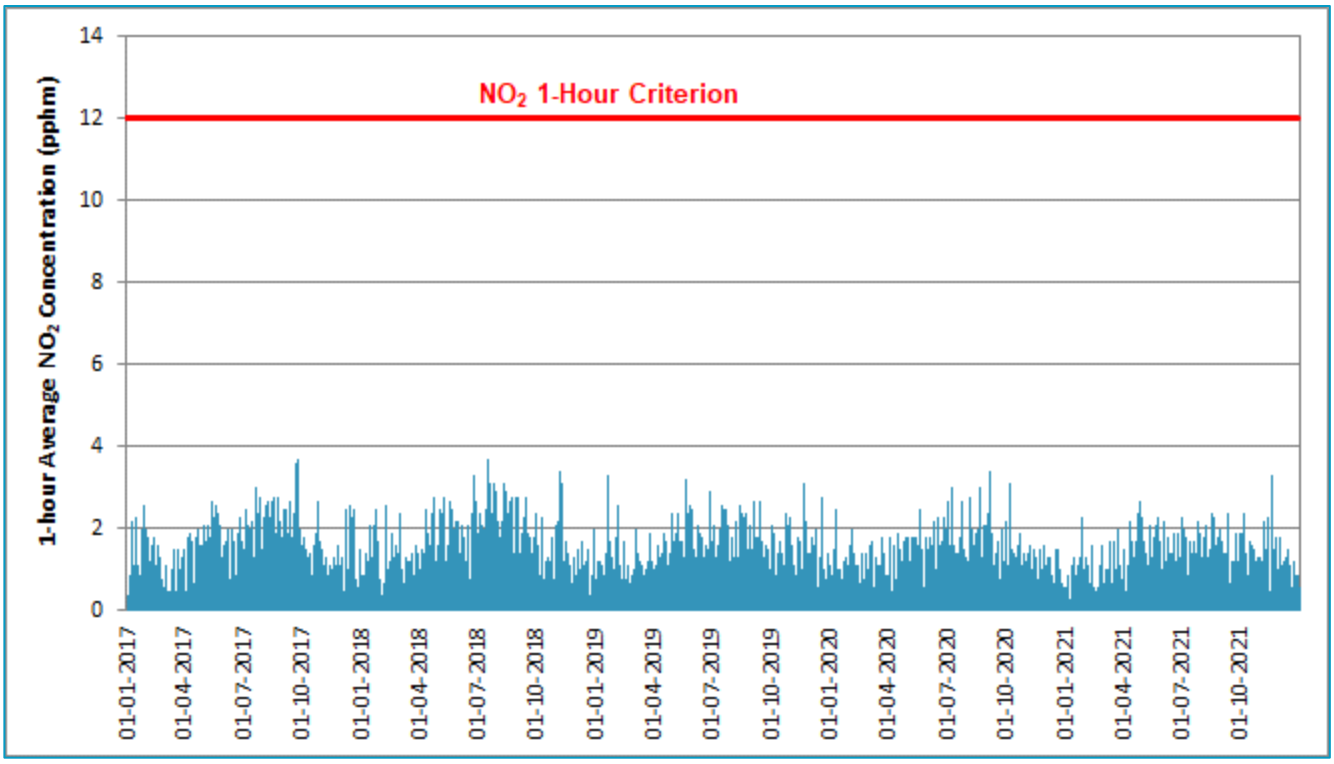


Figure 7 Measured 24-Hour Average PM_{10} Concentrations at St Marys AQMS (2017-2021)

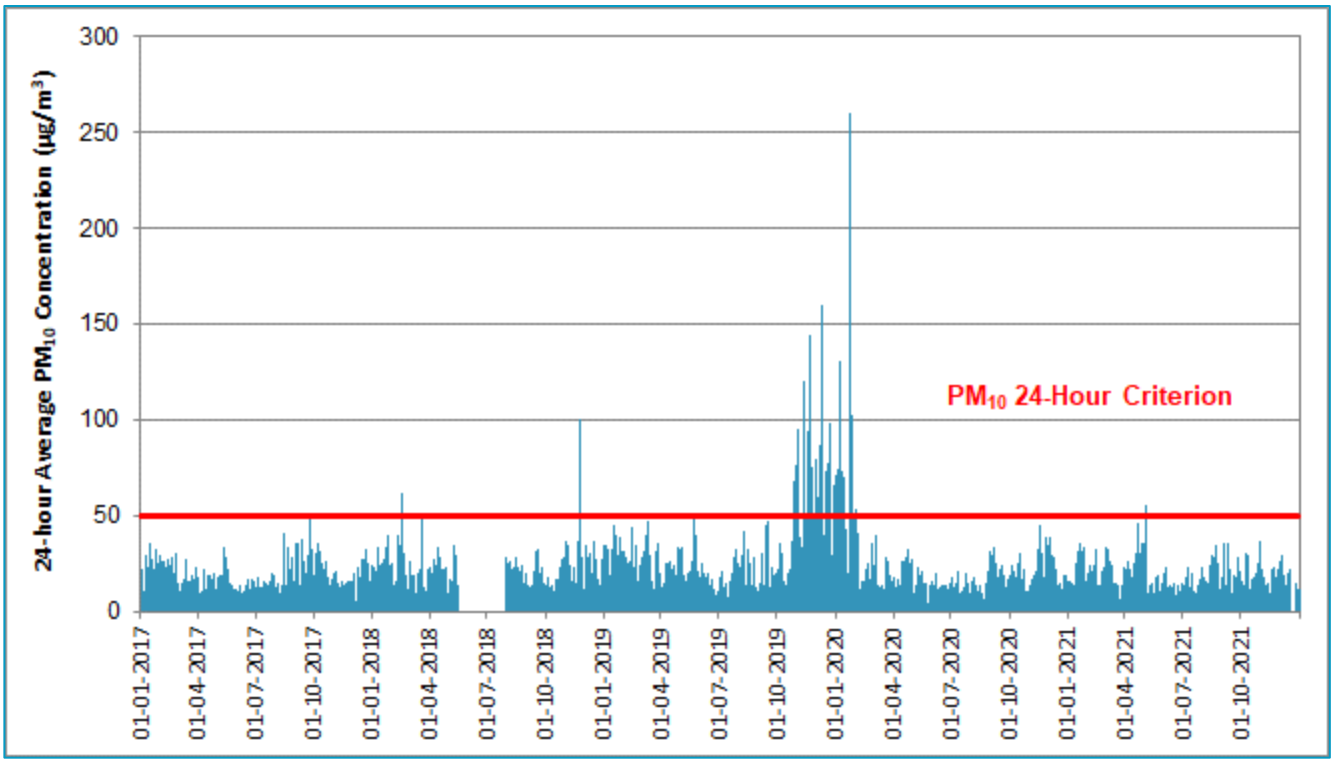


Figure 8 Measured 24-Hour Average $PM_{2.5}$ Concentrations at St Marys AQMS (2017-2021)

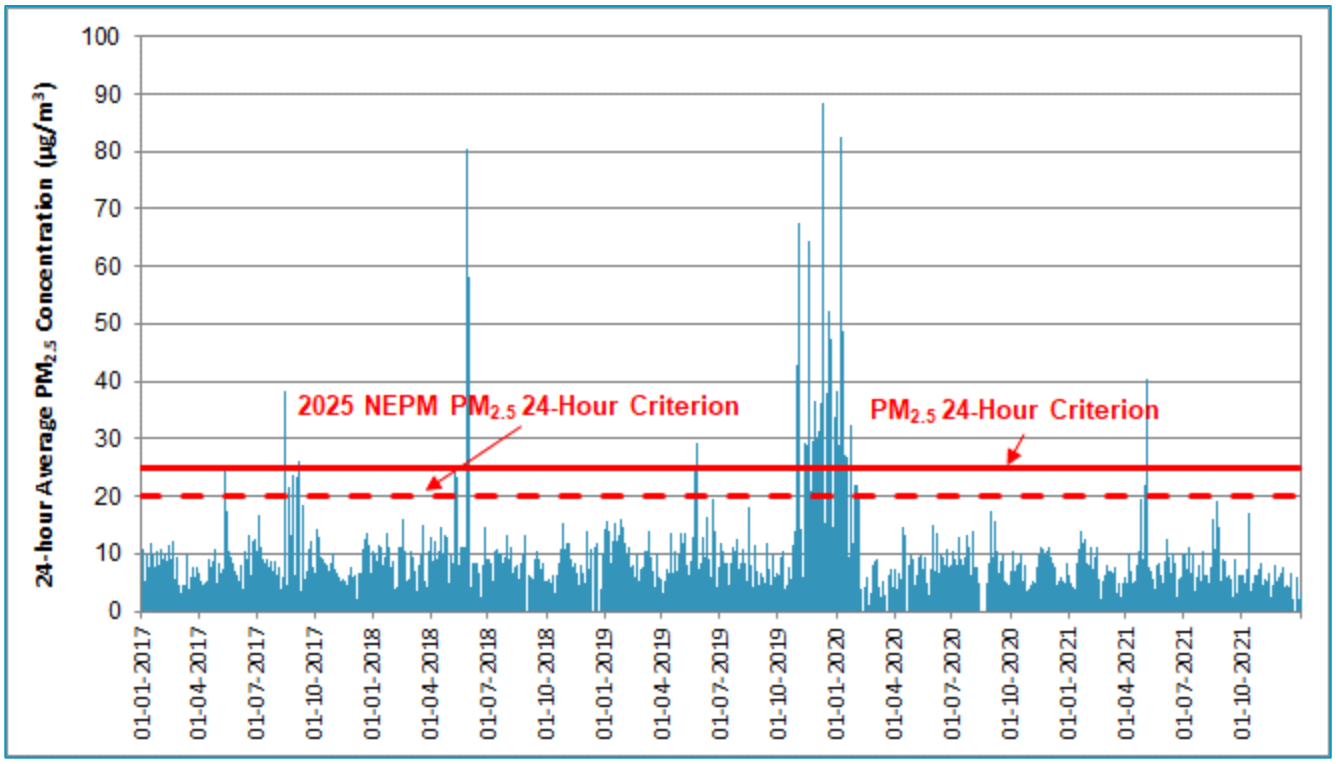


Table 9 Summary of Ambient CO and SO_2 Data - Prospect AQMS (2017 – 2021)

Pollutant	CO		SO_2		
Averaging Period	Maximum 1-hour	90th percentile 1-hour	Maximum 1-hour	Annual	90th percentile 1-hour
Units	ppm		pphm		
2017	1.6	0.4	2.3	0.07	0.2
2018	1.3		2.5	0.07	
2019	5.5		2.1	0.07	
2020	2.1		1.8	0.05	
2021	1.3		1.5	0.05	
Criterion	**25**	-	**20**	**2**	-

Figure 9 Measured Maximum 1-Hour Average CO Concentrations at Prospect AQMS (2017 – 2021)

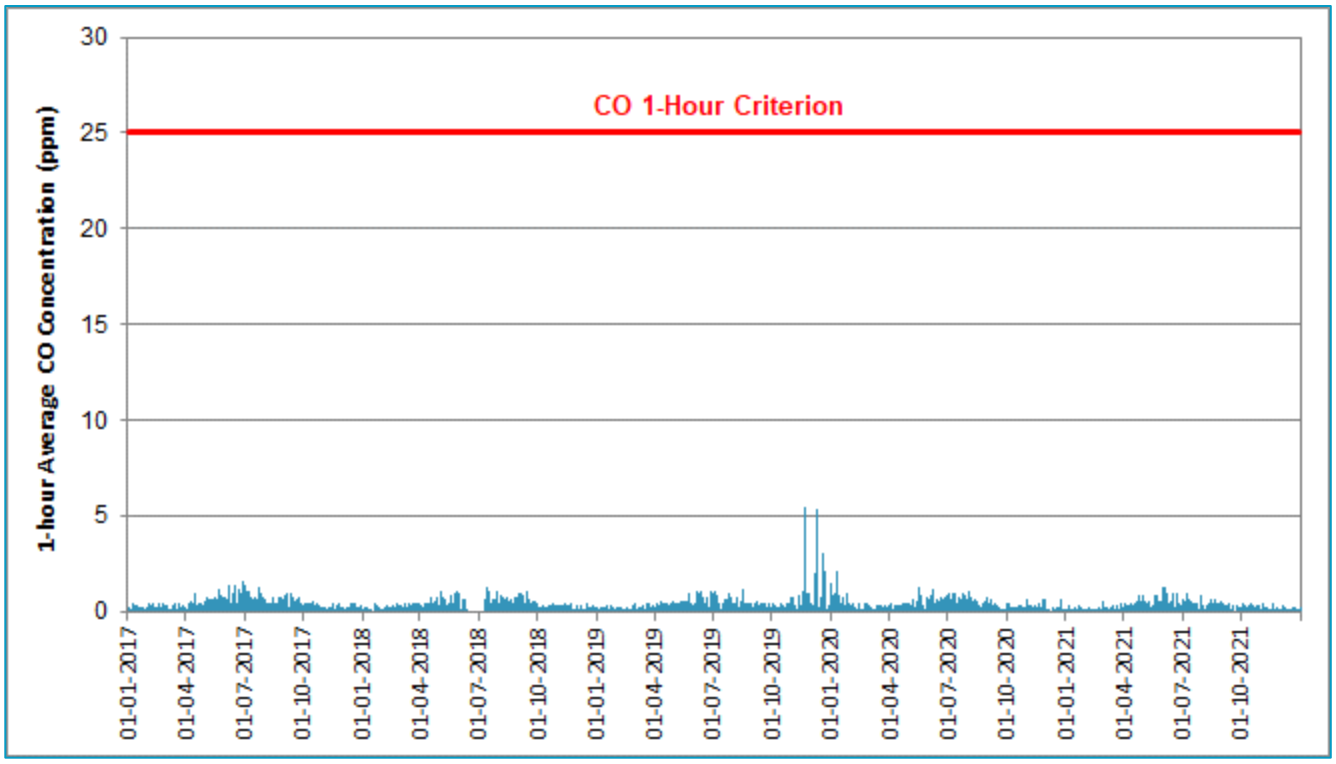
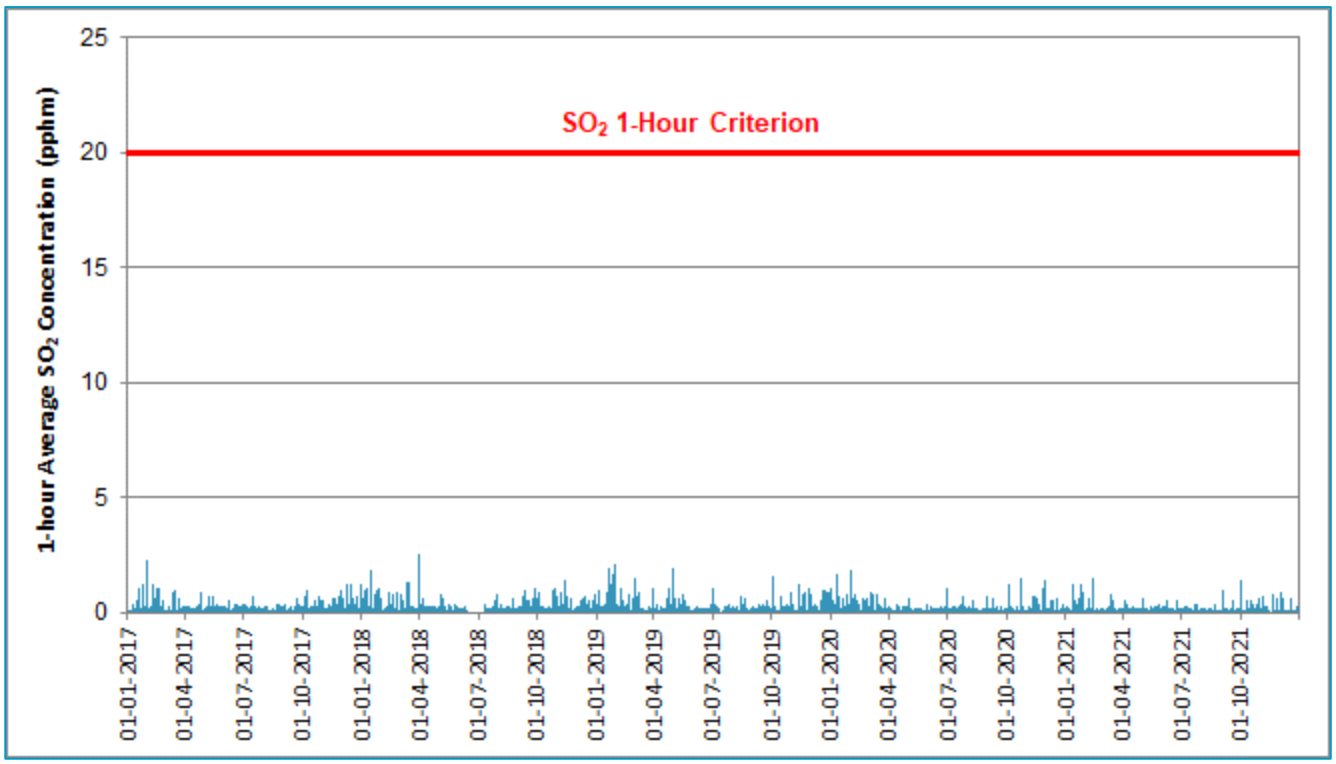


Figure 10 Measured Maximum 1-Hour Average SO_2 Concentrations at Prospect AQMS (2017 – 2021)



It was noted in the latest NSW Annual Air Quality Statement that air quality levels varied across the NSW depending on regions. Air pollution levels exceeded national standards on 15% of days (53 days) in 2021 across the metropolitan and regional centres, compared to 32% of days (118 days) in 2020 and 48% (175 days) of days in 2019. During 2021, days with extreme air pollution were attributed to the following sources:

Days with extreme air pollution in 2021 were all attributed to smoke from hazard reduction burns, resulting in elevated particle levels with daily PM_{10} levels exceeding 100 µg/m^3 or daily $PM_{2.5}$ levels exceeding 50 µg/m^3.

- There were 2 days with extremely poor PM_{10} levels at monitoring stations in metropolitan and regional centres in 2021, compared with 20 days in 2020.
- For $PM_{2.5}$, there were 9 days with extremely poor levels in 2021 compared with 19 days in 2020.

Air quality in NSW was also greatly affected by the unprecedented extensive bushfires between late 2019 and early 2020. In 2020, the air quality in NSW met national standards between 85% and 99% of the time across regions, a significant improvement compared to 2019 (60% to 92%).

In summary, even though the air quality is generally good in the Sydney region, there is potential for short term elevations in background particulate concentrations associated with regional events such as bushfires and dust storms etc to elevate local ambient particulate concentrations at the Development Site. Therefore, care needs to be taken to minimise emissions of dust from the construction works during these periods, to avoid exacerbating these particulate pollution events.

7 Assessment of Air Quality Impacts

7.1 Construction Dust Impact Assessment

The key potential health and amenity issues associated with construction of Lot 4E are:

- Elevated suspended particulate concentrations (PM_{10}); and
- Nuisance due to dust deposition (soiling of surfaces) and visible dust plumes that may potentially be observed to be leaving the site.

7.1.1 Methodology

Quantitatively assessing impacts of fugitive dust emissions from construction projects using predictive modelling is seldom considered appropriate, primarily due to the uncertainty in the details of the construction activities, including equipment type, number, location and scheduling, which are unlikely to be available at the time of the assessment. Furthermore, they are also likely to change as construction progresses. In comparison, the equipment and operations of a mine or quarry are determined during the planning stages and more likely to remain consistent for long periods (several months or years).

Instead, it is considered appropriate to conduct a qualitative assessment. Potential impacts of dust emissions associated with proposed demolition and construction activities at the Development Site have been performed based on the methodology outlined in the Institute of Air Quality Management (UK) (IAQM) document, "*Assessment of dust from demolition and construction*" (Holman et al 2014). This guidance document provides a structured approach for classifying construction sites according to the risk of air quality impacts, to identify relevant mitigation measures appropriate to the risk (see **Appendix C** for full methodology).

The IAQM approach has been used widely in Australia for the assessment of air quality impacts from construction projects and the identification of appropriate mitigation measures, which has been accepted by regulators across all states and territories for a variety of construction projects.

The IAQM method uses a four-step process for assessing dust impacts from construction activities:

- **Step 1**: Screening based on distance to the nearest sensitive receptor; whereby the sensitivity to dust deposition and human health impacts of the identified sensitive receptors is determined.
- **Step 2**: Assess risk of dust effects from activities based on:
  - the scale and nature of the works, which determines the potential dust emission magnitude; and
  - the sensitivity of the area surrounding dust-generating activities.
- **Step 3**: Determine site-specific mitigation for remaining activities with greater than negligible effects.
- **Step 4**: Assess significance of remaining activities after management measures have been considered.

7.1.2 Risk Assessment

Table 10 presents the preliminary risk of air quality impacts from uncontrolled construction activities at the OWE derived using the risk matrix provided in **Table C4** in **Appendix C**, based on the identified receptor sensitivity and sensitivity of the area. It is noted that these risks are for the whole OWE construction project, not for the construction of Lot 4E in isolation.

Table 10 Preliminary Risk of Air Quality Impacts from Construction Activities (Uncontrolled)

Impact	Sensitivity of Area	Dust Emission Magnitude				Preliminary Risk			
		Demolition	Earthworks	Construction	Trackout	Demolition	Earthworks	Construction	Trackout
Dust Soiling	Low	Small	Large	Large	Medium	Negligible	Low Risk	Low Risk	Low Risk
Human Health	Low					Negligible	Low Risk	Low Risk	Low Risk

The results indicate that there is a low risk of adverse dust soiling and a low risk of human health impacts occurring at the off-site sensitive receptor locations if no mitigation measures were to be applied to control emissions during the works.

Based on the dust emission magnitudes and the preliminary risk from these activities, the activities are ranked as (highest risk to lowest risk):

1. Earthworks
2. Construction
3. Track out
4. Demolition

For almost all construction activity, the IAQM Methods notes that the aim should be to prevent significant effects on receptors through the use of effective mitigation, and experience shows that this is generally possible.

7.2 Assessment of Combustion Emissions from Operations

7.2.1 Methodology

As discussed in **Section 4.2**, air quality issues associated with the proposed warehouse operations predominantly relate to emissions of products of combustion and particulate matter from trucks and other vehicles accessing and idling at the site.

These emissions will be of a similar nature to existing emissions from traffic on Topaz Avenue and Aldington Road and other local roads connecting the industrial operations in the area. The scale and magnitude of emissions from the Site is anticipated to be significantly lower compared to the estimated annual average daily traffic on the surrounding roads. To assess the risk of air emissions from the Site impacting on surrounding sensitive receptors during the operational phase, a risk based assessment approach has been adopted as described in **Appendix C**.

7.2.2 Risk Assessment

The risk-based assessment takes account of a range of impact descriptors, including the following:

- Nature of Impact: does the impact result in an adverse, neutral or beneficial environment?

The nature of impact from diesel combustion emissions on air quality is concluded to be *adverse* to the environment.

- Receptor Sensitivity: how sensitive is the receiving environment to the anticipated impacts?

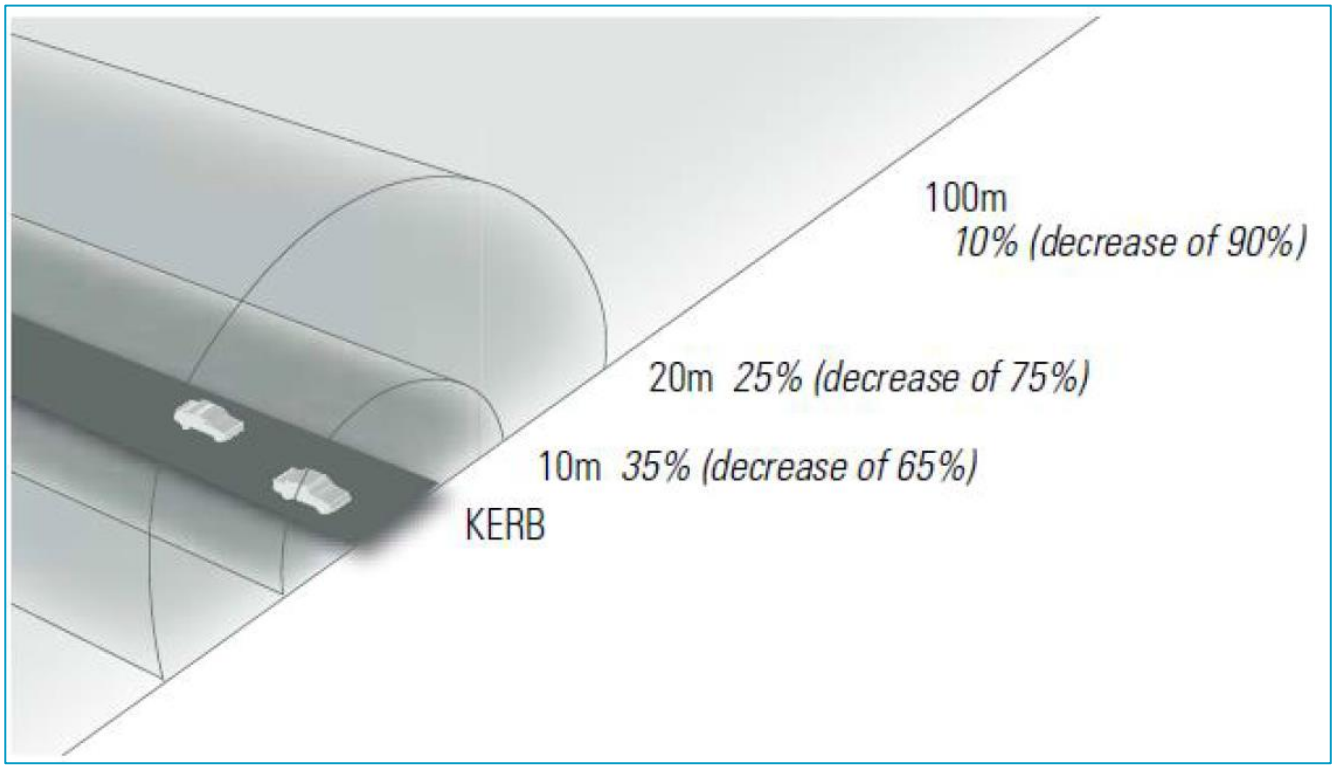
  The nearest sensitive receptors to the Site include offices within 100 m of the boundary (see **Section 3.1**). In relation to of the methodology in **Appendix C**, the sensitivity of the surrounding residential areas to emissions from the Site is concluded to be *high*.

- Magnitude: what is the anticipated scale of the impact?

  As outlined in the Development Near Rail Corridors and Busy Roads Guideline (DoP 2008) air pollutant concentrations from road traffic tend to decrease with increasing distance from the road. An indication of the relative decrease in pollutant concentrations with respect to the distance from the road is shown in **Figure 11**.

  Based on the anticipated small amount of traffic movements and its comparison to the traffic volume on the surrounding roads and considering the distance between the nearest sensitive receptors and the Site the magnitude of these emissions is considered to be *negligible*.

Figure 11 Percentage of Pollutant Concentration relative to Kerbside Concentration



Source: DoP 2008

Given the above considerations, and the scale of operations, the potential impact of the Project on the local sensitive receptors is concluded to be *neutral* for all receptors (see **Table 11**).

Table 11 Impact Significance

Magnitude / Sensitivity	Substantial Magnitude	Moderate Magnitude	Slight Magnitude	Negligible Magnitude
Very High Sensitivity	Major Significance	Major/ Intermediate Significance	Intermediate Significance	Neutral Significance
High Sensitivity	Major/ Intermediate Significance	Intermediate Significance	Intermediate/Minor Significance	Neutral Significance
Medium Sensitivity	Intermediate Significance	Intermediate/Minor Significance	Minor Significance	Neutral Significance
Low Sensitivity	Intermediate/Minor Significance	Minor Significance	Minor/Neutral Significance	Neutral Significance

It is noted that this assessment is based on warehousing operations only (ie storage and receival/dispatch of packaged goods). If during the operational phase, other industrial uses are proposed with potential to generate air pollutant emissions, then an updated site-specific air quality impact assessment should be prepared.

8 Mitigation Measures

8.1 Construction Mitigation Measures

The potential for dust emissions during construction of Lot 4E and the potential impact (as discussed in **Section 4**) on surrounding sensitive receptors are anticipated to be largely controllable through a range of mitigation measures, including good site management, good housekeeping measures, appropriate vehicle maintenance and applying appropriate dust mitigation measures where required. The dust mitigation measures to be implemented during construction of Lot 4E are detailed in **Table 12**, which are consistent with those stipulated in the CAQMP for the OWE (SLR 2020). The dust mitigation measures specific to the key emission activities (ie earthworks, construction, track out and demolition) are also provided in **Table 12.**

Note: **Table 12** is replicated as Table 13 in the Construction Environmental Management Plan (CEMP).

Table 12 Dust Mitigation Measures

Environmental Management Control	Person Responsible	Timing / Frequency	Reference / Notes
Communications			
The Community Communications Strategy will be implemented.	Communications and Community Liaison Representative	Prior to commencing construction and ongoing	Best practice
The name and contact details of person(s) accountable for air quality and dust issues will be displayed on the site boundary. This may be the Contractor's Project Manager.	Construction Contractor's Representative		
The head or regional office contact information will be displayed on site signage.			
Site Management			
All dust and air quality incidents will be undertaken as per Section 3.5 of the CEMP.	Construction Contractor's Representative	Ongoing	CEMP Section 3.5
All dust and air quality complaints will be undertaken as per Section 3.6 of the CEMP.			CEMP Section 3.6
Where excessive dust events occur (i.e. prolonged visual dust in a particular area), additional watering of dust producing activities will be undertaken or activities temporarily halted until such times that the dust source is under control.		During excessive dust events	Best practice
Horsley Park Bureau of Meteorology station weather forecast will be reviewed daily (i.e. wind, rain) to inform site dust management procedures for the day.		Daily	
Preparing and Maintaining the Site			
All reasonable steps to minimise dust generated will be undertaken during construction.	Construction Contractor's Representative	Ongoing	SSD 7348 Condition D98 SSD 22131922 Condition 34

Environmental Management Control	Person Responsible	Timing / Frequency	Reference / Notes
Exposed surfaces and stockpile will be suppressed by regular watering or use of approved dust suppressants.			SSD 7348 Condition D99a
Land stabilisation works will be carried out in such a way on site to minimise exposed surfaces.			SSD 7348 Condition D99e
Construction of Lot 4E will not cause or permit the emission of any offensive odour, as defined in the POEO Act.	Construction Contractor's Representative	Ongoing	SSD 7348 Condition D102
Dust generating activities in areas close to receptors will be closely monitored and additional mitigation applied as required to best manage potential dust emissions			Best practice
Stockpiles that will be in place for more than 20 days and are not actively used as well as any stockpiles that are susceptible to wind or water erosion will be suitably protected from erosion within 10 days of the establishment of each stockpile. Temporary stabilisation of disturbed surfaces will be undertaken within two weeks of the stockpile being established.			
Site fencing and barriers will be kept clean using wet methods.			
Operating Vehicle/Machinery and Sustainable Travel			
Trucks associated with Stage 1 will not track dirt off site and onto the public road network.	Construction Contractor's Representative	Ongoing	SSD 7348 Condition D99c)
Project access roads used by delivery trucks will be kept clean.			SSD 7348 Condition D99d
All on-road vehicles will comply with relevant vehicle emission standards (prescribed by the NSW RMS), where applicable, and will be maintained in good condition, in accordance with manufacturer's specifications and POEO Act.			Best practice
Delivery trucks will switch off engines whilst undertaking a delivery on-site, if idling time is likely to exceed 5 minutes.			
Vehicle speed limit restrictions are implemented on site, including: • General - 20km/h • High risk area - 10km/h • Haul routes – 50 km/h			
Truck queuing and unnecessary trips will be minimised through logistical planning and by the identification and use of specific park up/hold areas away from the Project.			

Environmental Management Control	Person Responsible	Timing / Frequency	Reference / Notes
Operations			
Only cutting, grinding or sawing equipment fitted with suitable dust suppression systems, such as water sprays will be used.	Construction Contractor's Representative	Ongoing	Best practice
Adequate water supply will be available on the site for effective dust/particulate matter suppression/ mitigation using a combination of potable and non-potable water sources.			
Water carts will be used on all denuded or exposed surfaces and unsealed roads to minimise dust emissions.	Construction Contractor's Representative	Ongoing	Best practice
Equipment, inclusive of, but not limited to Environmental spill kits will be readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.			
Works will be assessed during strong winds or in weather conditions where high levels of airborne particulates may potentially impact the sensitive receivers. Continual monitoring of wind speed and direction will be undertaken to guide this decision and ensure that adequate mitigation measures are undertaken		Continuously and during high winds	
Waste Management			
All trucks entering or leaving the Site will have their loads covered.	Construction Contractor's Representative	Ongoing	SSD 7348 Condition D99b
No waste materials, timbers or any other combustible materials will be burnt on site.			Best practice
Earthworks			
Scopes of work will be planned in such a way to assist in minimising the duration that surfaces are left denuded.	Construction Contractor's Representative	Ongoing	Best practice
Rehabilitation of disturbed surfaces will be undertaken within 20 days of final construction levels.		Within 20 days of final construction levels	
If unanticipated strong odours or significant visual dust emissions are noted or observed on site, an investigation will be undertaken by the Construction Contractor Project Manager to identify the scope of work or source of the emission prior to undertaking and applying any additional mitigation measures.		Ongoing	
Construction			
Sand and other aggregates will not be allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.	Construction Contractor's Representative	Ongoing	Best practice

Environmental Management Control	Person Responsible	Timing / Frequency	Reference / Notes
Trackout			
Water-assisted road sweeper(s) will be used on an as required basis should any material be tracked out of the site.	Construction Contractor's Representative	Ongoing	Best practice
Record all regular inspections and maintenance undertaken of site haul routes and project related access roads in a site log book.			
A wheel washing system and/or cattle grid system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site) will be implemented.			
Demolition			
Ensure effective water suppression of dust is used during demolition operations.	Construction Contractor's Representative	Ongoing	Best practice
Bag and remove any biological debris or damp down such material before demolition.			

As required by condition D100 (e), **Table 13** summarises the parameters identified to assess the effectiveness of the control measures shown in **Table 12**.

Table 13 Summary of the Parameters to Assess the Effectiveness of Control Measures

Parameter	Visible Dust	Dust Deposition	Complaints	PM_{10}
Key performance indicator	No visible dust leaving the site boundary	<4 g/m^2/month	No complaints related to nuisance dust	<50 µg/m^3 as a 24-hour average
Monitoring method	Visual inspection / observations	Dust deposition gauges	-	See note
Location, frequency and duration of monitoring	Daily onsite inspection	Section 10	-	See note
Record keeping	Section 10	Section 10	Section 9	See note
Response procedures	Section 11	Section 11	Section 9	See note
Compliance monitoring	-	Section 10	-	See note

Note: Real-time suspended particulate monitors are installed at the site to assist with dust management (see **Section 10**). The monitoring system used however, does not meet the requirements of a compliance instrument. Should compliance-level monitoring be required as per **Table 15**, then this table will be updated to reflect the expanded monitoring programme.

8.2 Operational Mitigation Measures

The mitigation measures provided in **Table 14** will be implemented for the operation of Lot 4E.

Table 14 Operational Mitigation Measures

Environmental Management Control	Person Responsible	Timing / Frequency	Reference / Notes
On-Site Refuelling			
Refuelling will not be allowed on-site.	Site Manager	Ongoing	Best practice
Minimisation of Onsite Vehicles Idling Times			
Vehicle engines must be turned off when loading/unloading.	Site Manager Vehicle Drivers	Ongoing	Best practice
Vehicle engines must be turned off when drivers are on a break or waiting to get administrative clearances.			
Ensure that appropriate signage is available at multiple locations within the Site encouraging drivers to switch off engines when not in use.			
Onsite Vehicle Movements			
The movement of vehicles around the site will be managed using best management practices, including clearly marked lanes and a one-way traffic system, to minimise traffic congestion and reduce exhaust emissions.	Site Manager	Ongoing	Best practice
Fugitive Dust			
Vehicle movements are to be limited to designated areas of the Site only.	Site Manager	Ongoing	Best practice
If the movement of vehicles on unsealed areas is unavoidable, and dust emissions are visible, mitigation actions will be considered for the Site. including use of a water hose to suppress the visible dust emissions, laying gravel or grassing the unsealed area to minimise the exposed soil surface, and sweeping up or washing away of dust from sealed areas if trackout is observed.			
Exhaust Air Discharge			
Discharges of pollutants to the air from the building will be captured by an extraction system compliant with the Building Code of Australia (BCA) and Australian Standard (AS1668.2-2012) *The use of ventilation and air conditioning in building, Part 2: Ventilation design for indoor air contaminant control*" and directed to rooftop vents.	Environmental Coordinator Site Manager	Ongoing	Best practice
As far as practicable, exhaust-air intakes used for general exhaust-air collection will be located on the opposite sides of the enclosure from the sources of make-up air, to ensure that the effluents are effectively removed from all parts of the enclosure.			Section 5 of AS 1668.2-2012
The effluent shall be collected as it is being produced, as close as practicable to the source of generation.			

Environmental Management Control	Person Responsible	Timing / Frequency	Reference / Notes
Where discharges are deemed to be objectionable (i.e. nuisance related), discharges will be emitted: vertically with discharge velocities not less than 5 m/s, • situated at least 3 m above the roof at point of discharge, • treated to reduce the concentration of contaminants where required, • emitted to the outside at velocities and in a direction that will ensure, to the extent practicable, a danger to health or a nuisance will not occur, and • situated a minimum separation distance of 6 m (where the airflow rate is ≥ 1,000 L/s) from any outdoor) air intake opening, natural ventilation device or opening, and boundary to an adjacent allotment, except that where the dimensions of the allotment make this impossible, then the greatest possible distance shall apply.	Environmental Coordinator Site Manager	Ongoing	Section 5 of AS 1668.2-2012
Staff Awareness and Training			
Familiarisation with the contents and requirements of this AQMP.	Site Manager Vehicle Drivers Vehicle Maintenance Staff/Mechanics	Ongoing	Best practice
Familiarisation with the best management practices to be implemented by staff, including minimising onsite vehicle movements and idling times, avoiding driving on unsealed areas and watering of dusty areas etc.			
Appropriate reporting channels if air quality issues (or potential for air quality impacts) are identified on site (e.g. smoky vehicles, unsafe storage of volatile chemicals, excessive wind-generated dust).			
Procedures for complaint handling			
Staff responsible for maintenance activities on the vehicles will have appropriate training regarding the tuning and maintenance of engines to minimise exhaust fumes and in the installation and maintenance of exhaust system requirements.	Vehicle Maintenance Staff/Mechanics		

9 Complaints Handling and Response Procedure

9.1 Construction

All complaints will be handled in accordance with the sections below and the OWE *Community Communication Strategy* (CCS) (SLR 2021).

9.1.1 Performance Objective

To ensure that all environmental complaints in relation to air emissions from construction of Lot 4E are promptly and effectively received, handled and addressed.

9.1.2 Responsibility

The Communications and Community Liaison Representative is responsible for ensuring that the appropriate management response and handling procedures are instigated and carried through in the event of an environmental complaint. The induction and toolbox talks outlined in the CEMP will be used to ensure all site employees are aware of and understand their obligations for complaints response.

All employees who take receipt of a complaint, either verbal or written, are to immediately notify the Contractor's Project Manager, who will then contact the Communications and Community Liaison Representative.

9.1.3 Complaints Handling Procedure

Upon becoming aware of a complaint, the protocol outlined below will be followed.

1. Record and Acknowledge

Any employee who take receipt of a complaint, either verbal or written, is to immediately notify the Contractor's Project Manager who will then contact the Communications and Community Liaison Representative. The Contractor's Project Manager will be available 24 hours a day, seven days a week and have the authority to stop or direct works.

In the normal course of events, the first contact for complaints will usually be made in person or by telephone.

The complainant's name, address and contact details, along with the nature of the complaint, must be requested. If the complainant refuses to supply the requested information, a note will be made on the form and complainant advised of this.

2. Assess and Prioritise

The Communications and Community Liaison Representative will prioritise all complaints by considering the seriousness of the complaint including risk to health and safety and will attempt to provide an immediate response via phone or email. This will be undertaken in accordance with the CCS (SLR 2021).

3. Investigate

A field investigation will be initiated in an attempt to confirm details relevant to the complaint and the cause of the problem. Any air quality monitoring information and/or site records at and around the time of the complaint will be reviewed for any abnormality or incident that may have resulted in the complaint.

If the complaint is due to an incident, the notification requirements and handling procedures outlined in CEMP will be followed.

4. Action or Rectify

Once the cause of the complaint has been established, every possible effort will be made to undertake appropriate action to rectify the cause of the complaint and mitigate any further impact. The Communications and Community Liaison Representative will assess whether the complaint is founded or unfounded and delegate the remediation of the issue to the Contractor's Project Manager for action, as required.

As outlined in **Section 11**, if a complaint regarding air quality impacts is concluded to be substantiated, the need for any changes to the air quality mitigation measures identified for the Project in **Section 8** and/or the air quality monitoring programme outlined in **Section 10** is to be reviewed and, the AQMP updated as appropriate.

5. Respond to Complainant

The Communications and Community Liaison Representative and the Contract Superintendent will oversee the rectification of the issue. The Communications and Community Liaison representative will then respond to the complainant once the issue has been resolved. The complainant will be provided with a follow up verbal response on what action is proposed within two hours during night-time works (between the hours of 6:00 pm and 10:00 pm) and 24 hours at other times. Where a complaint cannot be resolved by the initial or follow-up verbal response, a written response will be provided to the complainant within ten days.

6. Record

It is imperative that an investigation of the situation is carried out and proposed improvements documented in order to minimise the potential for similar complaints in the future. On this basis, every complaint received is to be recorded in the Complaint Enquiry Form. A copy of the completed form will be maintained for at least five years. The complaint will also be recorded in the Complaints Register.

7. Preventative Action

Once the complaint has been suitably handled, proposed improvements will be investigated and implemented to minimise the potential of re-occurrence. The Complaint Enquiry Form will not be closed out until the preventative actions are completed and recorded on the form.

9.1.4 Complaints Register

A Complaints Register will be maintained during construction and will contain the following:

- A copy of the environmental complaint handling procedure;
- A separate reference sheet containing the contact details;

- Blank hard copies of the Complaint Enquiry Form; and
- Copies of all completed Complaint Enquiry Forms, which are to be maintained for at least five years after the event to which they relate.

9.2 Operations

A complaints register is to be maintained and kept on Site. The complaints register is to include prompts to note down the following details:

- the date/time of the complaint;
- details of the staff member logging the complaint;
- the contact details of the complainant;
- detailed description of the incident;
- nature of the complaint (e.g. in case of a smoky vehicle, the registration number, the road being travelled on, date and time it was observed);
- activities occurring on Site at the time of the complaint (if relevant);
- perceived or assumed source of the emissions giving rise to the complaint (if known);
- weather conditions (i.e. wind, rainfall, temperature) experienced on the day of the complaint (if relevant).

An investigation is to be carried out in the event of a complaint being received to identify whether it is related to Site activities. In the case of a smoky vehicle report, the relevant vehicle is to be scheduled for a maintenance service as a priority and (where possible) removed from service until it has been serviced. If the Site operations are identified as the source of the emissions, the actions taken to rectify the situation and prevent a reoccurrence are to be documented alongside the complaint record.

If a substantiated air pollution complaint is made to the Penrith Council that cannot be rectified through the above procedures, a suitably qualified person will be engaged to develop mitigation measures and ongoing management strategies to prevent such impacts occurring in future. The developed mitigation measures and ongoing management strategies will be submitted to the Council's Health and Building Unit for review and to the Secretary for approval. Until suitable remedial control measures are in place, activities at the Site will be managed to the satisfaction of an authorised officer of the Council in order to reduce emissions to a level that does not cause a continuation of unacceptable nuisance.

10 Air Quality Monitoring Program

10.1 Construction

As discussed in **Section 7.1**, the risk of construction dust emissions causing nuisance impacts at off-site sensitive receptor locations is concluded to be low. It is also noted that any impacts will be temporary and managed through the implementation of appropriate mitigation measures (see **Section 8.1**).

An air quality monitoring program has been implemented by Goodman as part of the management of air emissions during construction of the OWE and WNSLR. The construction works on the:

- OWE commenced on 5 December 2019 and are still ongoing;
- WNSLR commenced on 6 January 2020, and were completed in January 2021.

The data from ongoing monitoring program for OWE will be utilised to inform the management measures and contingency response for the construction of Lot 4E.

A summary of the on-site air quality monitoring programme at OWE is shown in **Table 15**. The locations of these monitors are shown in **Figure 12**. Further details are provided in the OWE AQMP.

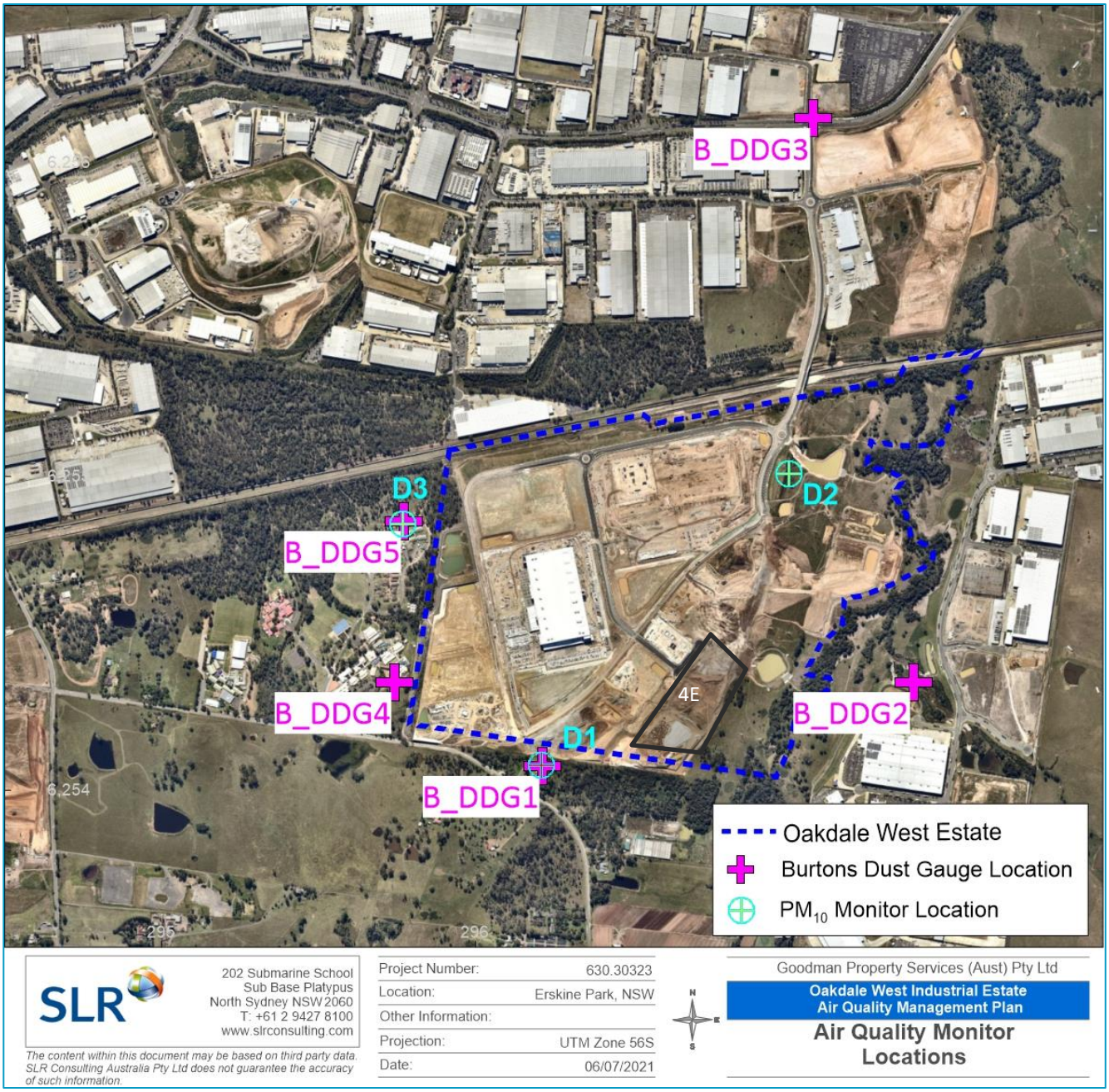
Table 15 Summary of On-Site Monitoring Programme

Pollutant	Equipment Used	Number of Monitoring Sites	Criterion (Averaging Period)
PM_{10}	Dust Pro 7000[a] (with telemetric capacity managed by Sentinex systems)	3	50 µg/m^3 (24-hour average)
Deposited dust	Dust Deposition Gauges (DDGs) - Burtons[b]	7	4 g/m^2/month (annual average)

[a] The Dust Pro 7000 system is non-compliant with the *Approved Methods for Sampling and Analysis of Air Pollutants in NSW* (DEC, 2006), and is used as a management tool to proactively manage the onsite operations to reduce dust impacts.

[b] The dust gauges were installed and maintained by construction contractor (Burtons). It has not been confirmed by SLR if the installation of these dust gauges was undertaken in compliance with the AS/NZS 3580.1.1:2016.

Figure 12 Air Quality Monitoring Locations for the OWE Construction Project



Note: The black highlighted area represent approximate area covered by Lot 4E.

10.2 Operations

As discussed in **Section 7.2**, the risk of operational phase air emissions causing adverse impacts at off-site sensitive receptor locations is concluded to be low. Any impacts will be managed through the implementation of appropriate mitigation measures (see **Section 8.2**). Ambient air quality monitoring is therefore not considered to be warranted for the operational phase.

11 Contingency Management Plan

11.1 Construction

The air quality contingency management plan for the construction of Lot 4E is shown in **Table 16**. As noted in **Section 10**, data from the ongoing monitoring program for OWE and WNSLR will be utilised to inform the appropriate contingency response for the construction of Lot 4E.

Table 16 Air Quality Contingency Management Plan for the Construction of Lot 4E

Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
Visible dust leaving the site	Trigger	Daily inspections show that there is no visible dust leaving the site.	Daily inspections show that there is visible dust leaving the site.	Daily inspections show that there is visible dust leaving the site multiple times during a day OR from multiple locations within the site.
	Response	Continue monitoring program as normal.	Review and investigate construction activities and respective control measures. Where appropriate, implement additional remedial measures, such as: • *Deployment of additional water sprays, water trucks etc*	Undertake an investigation of the dust generating activities, and if necessary, temporarily halt the dust generating activities

Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
Dust deposition reading of >4g/m^2/month	Trigger	Dust deposition rates are less than 4 g/m^2/month at all the dust gauges.	Dust deposition rate greater than 4 g/m^2/month is recorded by any of the dust gauges	Dust deposition rates greater than 4 g/m^2/month are recorded by two or more dust gauges for two months in a row.
	Response	Continue monitoring program as normal.	• OWE Project Manager to analyse data to try to identify the source(s) of dust. • Construction Contractor to review operations to reduce dust emissions from the identified key source(s). Implement any additional mitigation measures as required, such as additional watering.	• OWE Project Manager to review and investigate construction activities and respective control measures for the monitoring period. • If it is concluded that construction activities at Lot 4E were directly responsible for the exceedance (i.e. the exceedance event was not caused due to high regional dust levels or local non-project dust source), Construction Contractor to submit an incident report to government agencies.
Complaints received regarding nuisance dust	Trigger	There are no complaints received during the construction	An air-quality related complaint is received from a nearby resident	Further complaints are received from the same complainant after the additional mitigation measures have been implemented
	Response	Continue monitoring program as normal.	• Report the complaint to the regulator, in line with complaints handling procedure (See **Section 9**). • Review and investigate construction activities and increase dust suppression measures (additional watering, covering stockpiles etc), where appropriate.	• Review real-time monitoring data at the existing continuous monitors to investigate the likelihood of onsite activities contributing (see **Appendix D**).

Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
Real-time suspended particulate matter monitoring (TSP and PM_{10})	Trigger	Running 24-hour average PM_{10} concentrations < 40 µg/m^3	Running 24-hour average PM_{10} concentrations >40 µg/m^3 but <50 µg/m^3	Running 24-hour average PM_{10} concentrations >50 µg/m^3
	Response	Continue monitoring program as normal.	OWE Project Manager to review and investigate construction activities and respective control measures. Where appropriate, implement additional remedial measures, such as: • Deployment of additional water sprays, water trucks etc • Relocation or modification of dust-generating sources • Record findings of investigations and actions taken to reduce dust levels • Continue to closely monitor dust levels to ensure they are decreasing If elevated dust levels are due to regional dust event (fire, dust storm etc) – still take action to minimise dust from the Lot 4E site to minimise cumulative impacts, but also record details of the cause of the elevated background levels.	• OWE Project Manager to review and investigate construction activities and respective control measures for the monitoring period, in an air pollution incident report (see **Appendix D**). • If it is concluded that construction activities at Lot 4E were directly responsible for the exceedance (ie the exceedance event was not caused due to high regional dust levels or local non-project dust source), Construction Contractor to submit an incident report to government agencies.

11.2 Operations

At the time of preparing this AQMP, a contingency management plan is not anticipated to be necessary for the operational phase. This will be reassessed at the completion of the construction works, prior to occupancy of the building, and during the subsequent quarterly reviews of this AQMP, and a contingency plan developed if deemed appropriate.

12 Roles and Responsibilities

12.1 Construction

Overall roles and responsibilities relating to the project are outlined in Section 3.2 of the overarching CEMP. The key responsibilities specifically for dust management are as follows:

Contractor's Project Manager

- Ensuring appropriate resources/plant/personnel are available for the implementation of this AQMP;
- Assessing data from inspections and providing project-wide advice to ensure consistent approach and outcomes are achieved;
- Providing necessary training for project personnel to cover air quality management;
- Reviewing and update of this AQMP;
- Ensuring that the Environmental Coordinator monitors the PM_{10} data being supplied by the onsite Senitex system, and any other dust monitoring systems identified as being required;
- Assessing and engaging (as required) additional mitigation controls to best manage the risks of elevated dust levels before commencing works each day and ensuring that the appropriate controls are implemented and effective;
- Reviewing weather forecasts daily and current observations of meteorological conditions (as recorded at Horsley Park AWS);
- Throughout the day, visually assessing the dust levels and the effectiveness of any dust controls that have been implemented, which may include engaging additional resources to reduce or mitigate the risk of dust leaving the site;
- Ceasing particular scopes of works as required in the event of excessive dust generation due to extreme weather conditions or inadequately controlled construction activities (eg high winds, surface dirt accumulation, etc.); and
- In the event that an air quality complaint is received, the procedure in Section 3.6 of the CEMP will be implemented (see **Section 9**).

Environmental Coordinator

- Undertaking dust monitoring program; and
- Review that control measures are working in accordance with this AQMP.

All Workers on Site

- Observing any dust emission control instructions and procedures that apply to their work;
- Taking action to prevent or minimise dust emission incidents; and
- Identifying and reporting dust emission incidents.

12.2 Operations

The key responsibilities in regards to effective air quality management at the Site are as follows:

Site Manager

The Site Manager is responsible for the following:

- Ensuring appropriate resources are available for the implementation of this AQMP.
- Providing assistance and advice to all employees to fulfil the requirements of this AQMP, reviewing data from regular inspections and providing site-wide advice to ensure consistent approaches and outcomes are achieved.
- Ensuring the required checks and approvals are obtained for all vehicles using the Site to confirm their compliance with the automatic engine turn-off system requirements.
- Maintaining a complaints register and liaising with relevant regulatory agencies (if required) in the event of complaints being received.
- Ensuring that site inductions include familiarisation for all staff on the requirements and responsibilities of this AQMP.
- A review and update (if required) of this AQMP following any significant site and/or operational changes.

Vehicle Drivers

Drivers using the Site will be responsible for:

- Reporting to the Site Manager if any vehicle is found to not be fitted with an automatic engine turnoff system or the system appears to be faulty.
- Observing any air pollutant emission control instructions and procedures that apply to their work.
- Taking action to prevent or minimise air emissions generating activities.
- Identifying and reporting abnormally smoky vehicles and other emitting plant and equipment to the Site Manager.
- Informing the Site Manager of any air quality complaints received during vehicle trips or while on Site.

Vehicle Maintenance Staff/Mechanics

Staff responsible for performing maintenance checks and servicing of vehicles at the Site is responsible for:

- Testing the integrity of the automatic engine turnoff system as part of the routine vehicle maintenance schedule and documenting the results of the test in each vehicle's maintenance record.
- Reporting vehicles that do not have a functioning automatic engine turnoff system to the Site Manager (if it is unable to be repaired), to arrange replacement or maintenance by a specialist.
- Appropriate tuning and maintenance of engines to minimise pollutant emissions.

13 Review and Improvement of the AQMP

The review of the AQMP will be undertaken at least quarterly and will include participation by Goodman. The review will comprise, as a minimum, the following:

- Identification of areas of opportunity for ongoing improved environmental performance;
- Analysis of the causes of any recorded non-compliances, including those identified in environment inspections and audits;
- Verification of the effectiveness of corrective and preventative actions; and
- Highlighting any changes in procedures resulting from process improvement.

This AQMP will also be reviewed and, if necessary, revised in the following circumstances:

- Where there is any change to the scope of the construction activities and/or disturbance footprint;
- Where it is identified that the environmental performance is not meeting the objectives of the AQMP;
- In the event of a substantiated complaint being received regarding air quality impacts; and/or
- At the request of a relevant regulatory authority.

14 References

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APPENDIX A

WIND ROSES AND RAINFALL DATA ANALYSIS

Wind Conditions

Local wind speed and direction influence the dispersion of air pollutants. Wind speed determines both the distance of downwind transport and the rate of dilution as a result of 'plume' stretching. Wind direction, and the variability in wind direction, determines the general path pollutants will follow and the extent of crosswind spreading. Surface roughness (characterised by features such as the topography of the land and the presence of buildings, structures and trees) will also influence dispersion.

The Bureau of Meteorology (BoM) maintains and publishes data from weather stations across Australia. The closest such station recording wind speed and wind direction data is the Horsley Park Automatic Weather Station (AWS) (Station ID 67119), located approximately 5.6 kilometres (km) southeast of the Development Site. Considering the relatively flat terrain between the Development Site and Horsley Park AWS, it is considered reasonable to assume that the wind conditions recorded at the Horsley Park AWS are representative of the wind conditions experienced at the Development Site.

Annual wind roses for the years 2017 to 2021 compiled from data recorded by the Horsley Park AWS are presented in **Figure A1**, with seasonal wind roses for 2021 presented in **Figure A2**. Wind roses show the frequency of occurrence of winds by direction and strength. The bars correspond to the 16 compass points (degrees from North). The bar at the top of each wind rose diagram represents winds blowing from the north (i.e. northerly winds), and so on. The length of the bar represents the frequency of occurrence of winds from that direction, and the widths of the bar sections correspond to wind speed categories, the narrowest representing the lightest winds. Thus it is possible to visualise how often winds of a certain direction and strength occur over a long period, either for all hours of the day, or for particular periods during the day.

The 'Beaufort Wind Scale' (consistent with terminology used by the BoM) presented in **Table A1** was used to describe the wind speeds experienced at the Development Site.

Table A1 Beaufort Wind Scale

Beaufort Scale #	Description	m/s	Description on land
0	Calm	0-0.5	Smoke rises vertically
1	Light air	0.5-1.5	Smoke drift indicates wind direction
2-3	Light/gentle breeze	1.5-5.3	Wind felt on face, leaves rustle, light flags extended, ordinary vanes moved by wind
4	Moderate winds	5.3-8.0	Raises dust and loose paper, small branches are moved
5	Fresh winds	8.0-10.8	Small trees in leaf begin to sway, crested wavelets form on inland waters
6	Strong winds	>10.8	Large branches in motion, whistling heard in telephone wires; umbrellas used with difficulty

Source: http://www.bom.gov.au/lam/glossary/beaufort.shtml

The annual wind rose (**Figure A1**) indicates that the predominant wind directions in the area are from the southwest. Calm wind conditions (wind speed less than 0.5 m/s) were recorded approximately 12% of the time throughout the five year period reviewed. The average seasonal wind roses for the years 2017-2021 indicate that:

- In summer, wind speeds ranged from calm to fresh winds (between 0.5 m/s and 9.8 m/s). The majority of winds originated from eastern and south eastern quadrants, with very few winds from westerly directions. Calm wind conditions were recorded approximately 10% of the time during summer.
- In autumn, wind speeds ranged from calm to fresh winds (between 0.5 m/s and 9.1 m/s). The majority of winds originated from the southwest quadrant, with very few winds from the northeast. Calm wind conditions were observed to occur approximately 12.5% of the time during autumn.
- In winter, wind speeds ranged from calm to fresh winds (between 0.5 m/s and 10.1 m/s). The majority of winds originated from the southwest quadrant, with very few winds from the east. Calm wind conditions were observed to occur approximately 13.5% of the time during winter.
- In spring, wind speeds ranged from calm to fresh winds (between 0.5 m/s and 9.9 m/s). The frequencies of winds were generally even from all directions. Calm wind conditions were observed to occur approximately 11% of the time during spring.

Wind erosion of dust from exposed surfaces (ie, during the construction phase of the development) is usually initiated when wind speeds exceed the threshold friction velocity for a given surface or material, however a general rule of thumb is that wind erosion can be expected to occur above 5 m/s (USEPA 2006). The frequency of wind speeds for the period of 2017-2021 is presented in **Figure A3**. The plot showed that the frequency of wind speeds exceeding 5 m/s for the period 2017-2021 at Horsley Park AWS was approximately 6%.

Figure A1 Annual and Seasonal Wind Roses for Horsley Park (2017 to 2021)

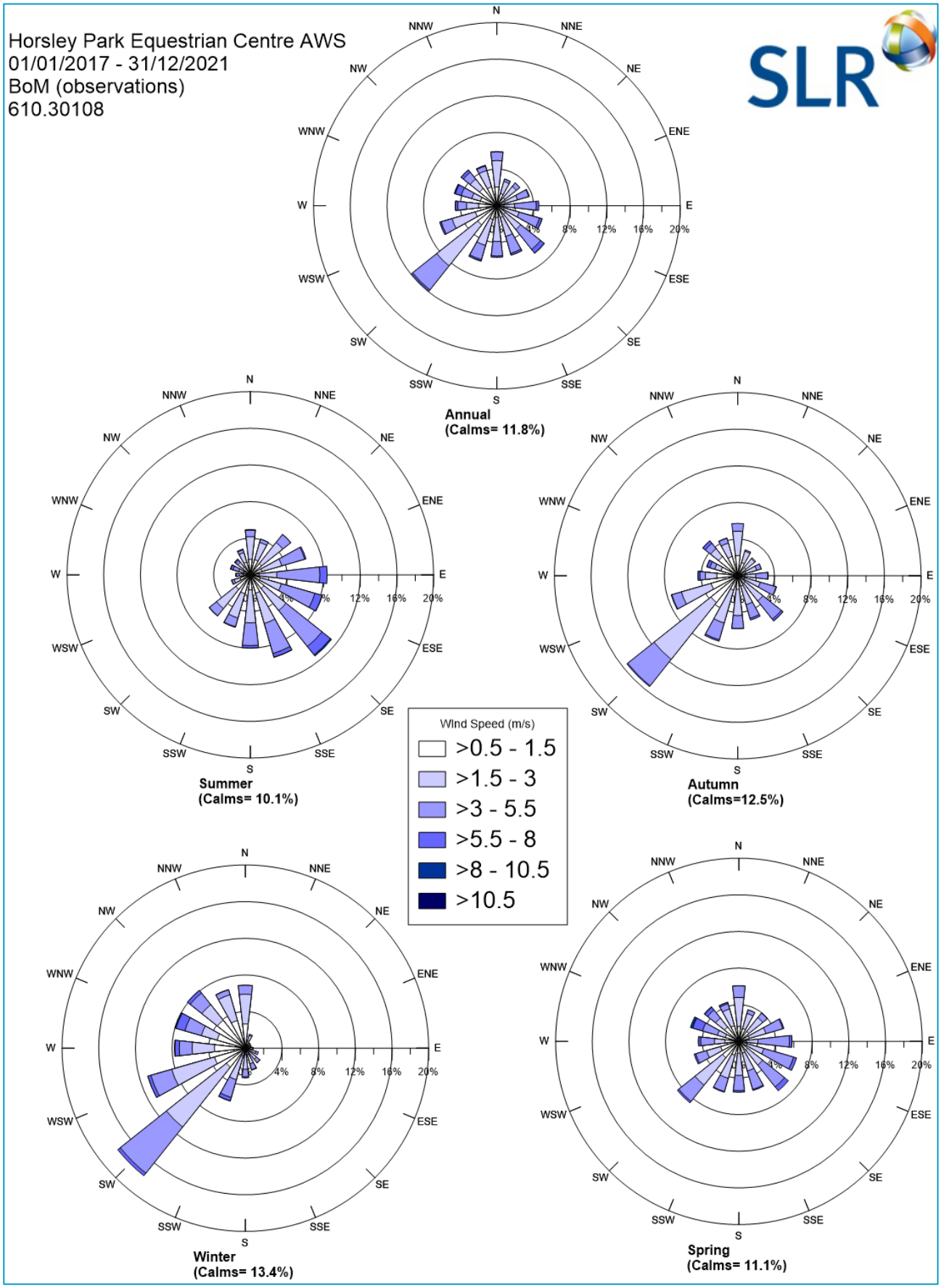
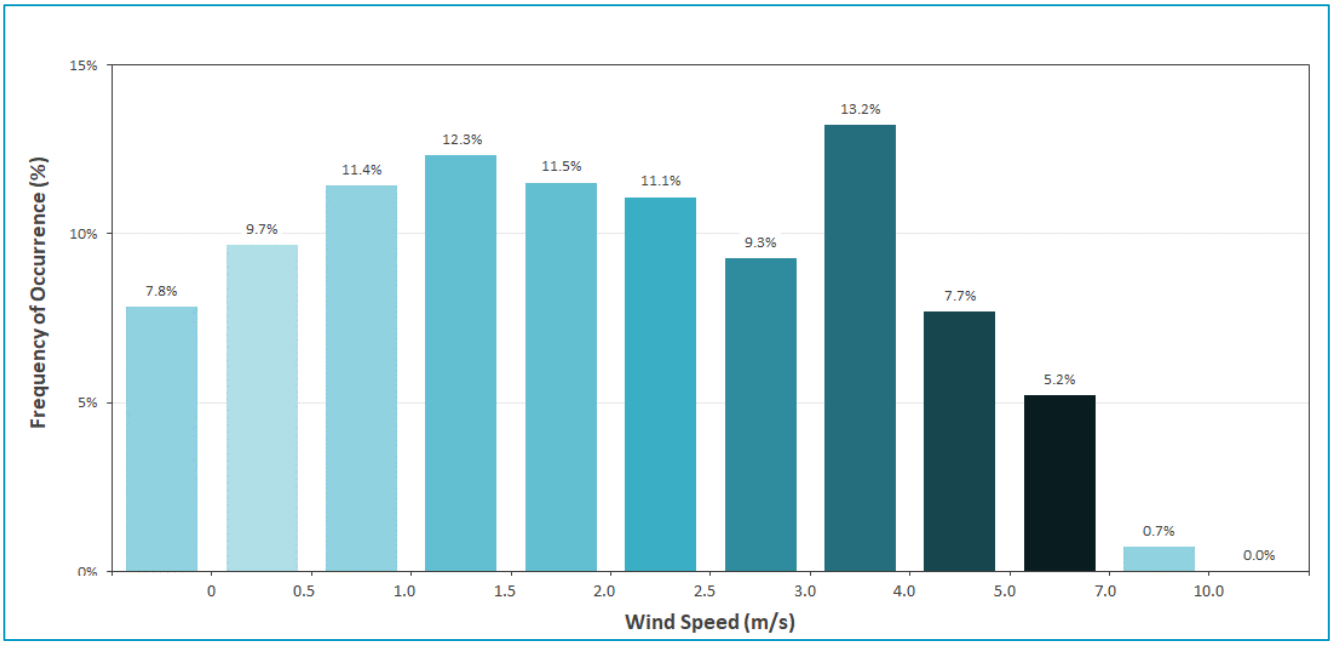

Horsley Park Equestrian Centre AWS
01/01/2017 - 31/12/2021
BoM (observations)
610.30108
Annual
(Calms= 11.8%)
Summer
(Calms= 10.1%)
Autumn
(Calms=12.5%)
Winter
(Calms= 13.4%)
Spring
(Calms= 11.1%)
Wind Speed (m/s)
>0.5 - 1.5
>1.5 - 3
>3 - 5.5
>5.5 - 8
>8 - 10.5
>10.5
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
4%
8%
12%
16%
20%

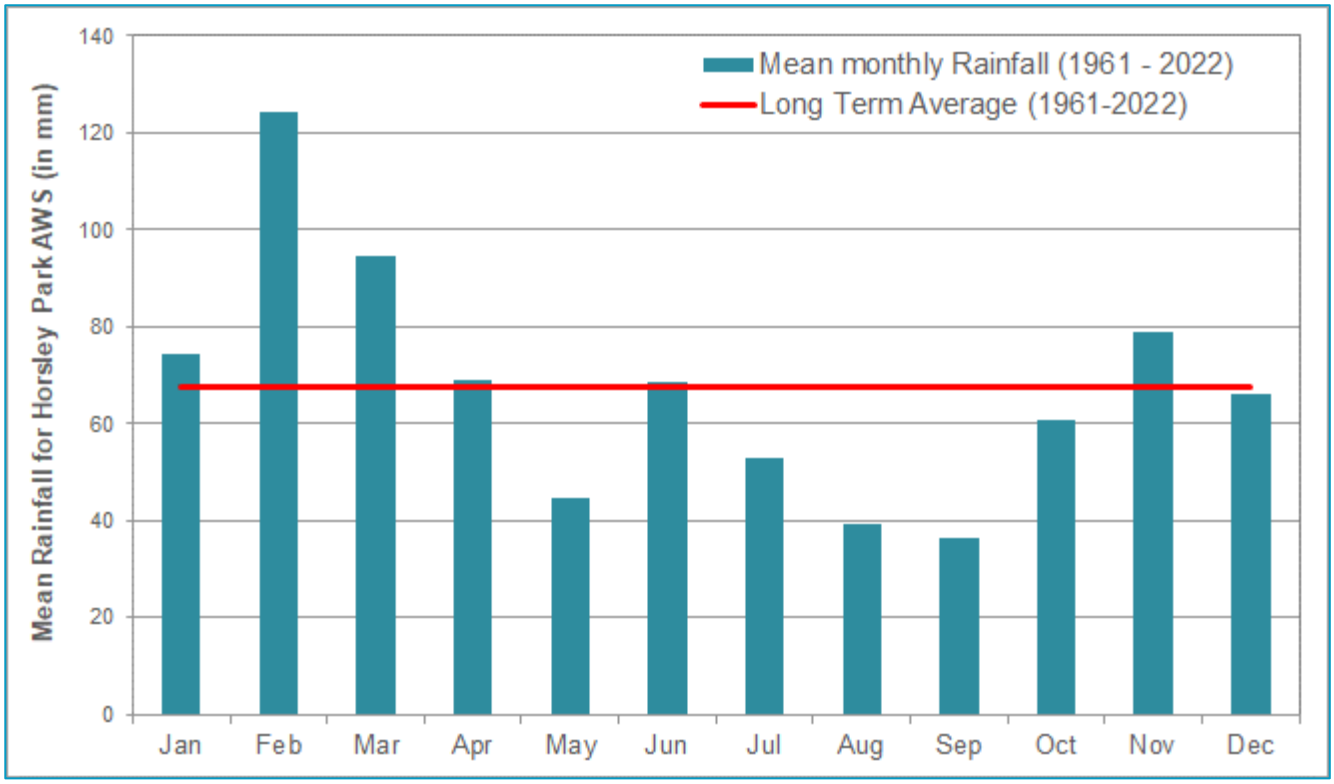
Figure A3 Wind Speed Frequency Chart for Horsley Park AWS – 2017-2021



Rainfall

Dry periods (no rainfall) have the greatest potential for fugitive dust emissions during construction. The long-term monthly rainfall averages recorded at Horsley Park AWS rain gauge are shown in **Figure A4**. It is noted that generally rainfall is relatively low in mid-winter to mid spring periods. This rainfall pattern suggests that dust emissions from the construction activities at the Development Site have the greatest potential to impact on receptors for the period of late autumn to early spring.

Figure A4 Long term Mean Rainfall for Horsley Park AWS – 1961 to 2022



APPENDIX B

CONSTRUCTION PHASE RISK ASSESSMENT METHODOLOGY

Step 1 – Screening Based on Separation Distance

The Step 1 screening criteria provided by the IAQM guidance suggests screening out any assessment of impacts from construction activities where sensitive receptors are located more than 350 m from the boundary of the site, more than 50 m from the route used by construction vehicles on public roads and more than 500 m from the site entrance. This step is noted as having deliberately been chosen to be conservative, and will require assessments for most projects.

The nearest sensitive receptor is located approximately 100 m from the nearest OWE boundary.

The screening criteria for detailed assessment are:

- a 'human receptor' within:
  - 350 m of the boundary of the site; or
  - 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s).
- an 'ecological receptor' within:
  - 50 m of the boundary of the site; or
  - 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s).

Sensitive receptors (residences) are located within 350 m of the OWE boundary, therefore further assessment is required.

Step 2a – Assessment of Scale and Nature of the Works

Step 2a of the assessment provides "dust emissions magnitudes" for each of four dust generating activities; demolition, earthworks, construction, and track-out (the movement of site material onto public roads by vehicles). The magnitudes are: *Large*; *Medium*; or *Small*, with suggested definitions for each category. The definitions given in the IAQM guidance for earthworks, construction activities and track-out, which are most relevant to this Development, are as follows:

Demolition *(Any activity involved with the removal of an existing structure [or structures]. This may also be referred to as de-construction, specifically when a building is to be removed a small part at a time)*:

- ***Large***: Total building volume >50,000 m^3, potentially dusty construction material (e.g. concrete), on-site crushing and screening, demolition activities >20 m above ground level;
- ***Medium***: Total building volume 20,000 m^3 – 50,000 m^3, potentially dusty construction material, demolition activities 10-20 m above ground level; and
- ***Small***: Total building volume <20,000 m^3, construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities <10m above ground, demolition during wetter months.

Earthworks *(Covers the processes of soil-stripping, ground-levelling, excavation and landscaping)*:

- ***Large***: Total site area greater than 10,000 m^2, potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size), more than 10 heavy earth moving vehicles active at any one time, formation of bunds greater than 8 m in height, total material moved more than 100,000 t.
- ***Medium***: Total site area 2,500 m^2 to 10,000 m^2, moderately dusty soil type (e.g. silt), 5 to 10 heavy earth moving vehicles active at any one time, formation of bunds 4 m to 8 m in height, total material moved 20,000 t to 100,000 t.
- ***Small***: Total site area less than 2,500 m^2, soil type with large grain size (e.g. sand), less than five heavy earth moving vehicles active at any one time, formation of bunds less than 4 m in height, total material moved less than 20,000 t, earthworks during wetter months.

Construction *(Any activity involved with the provision of a new structure (or structures), its modification or refurbishment. A structure will include a residential dwelling, office building, retail outlet, road, etc)*:

- ***Large***: Total building volume greater than 100,000 m^3, piling, on site concrete batching; sandblasting.
- ***Medium***: Total building volume 25,000 m^3 to 100,000 m^3, potentially dusty construction material (e.g. concrete), piling, on site concrete batching.
- ***Small***: Total building volume less than 25,000 m^3, construction material with low potential for dust release (e.g. metal cladding or timber).

Track-out *(The transport of dust and dirt from the construction / demolition site onto the public road network, where it may be deposited and then re-suspended by vehicles using the network)*:

- ***Large***: More than 50 heavy vehicle movements per day, surface materials with a high potential for dust generation, greater than 100 m of unpaved road length.
- ***Medium***: Between 10 and 50 heavy vehicle movements per day, surface materials with a moderate potential for dust generation, between 50 m and 100 m of unpaved road length.
- ***Small***: Less than 10 heavy vehicle movements per day, surface materials with a low potential for dust generation, less than 50 m of unpaved road length.

In order to provide a conservative assessment of potential impacts, it has been assumed that if at least one of the parameters specified in the 'large' definition is satisfied, the works are classified as large, and so on.

Based on the above, dust emission magnitudes have been categorised as presented in **Table C1**.

Table C1 Categorisation of Dust Emission Magnitude

Activity	Dust Emission Magnitude	Basis
Demolition	Small	**IAQM Definition:** Total building volume <20,000 m^3, construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities <10m above ground, demolition during wetter months. **Relevance to this Project:** Demolition activities will predominantly be limited to removal of any old structures (if any) within Lot 4E site boundary.
Earthworks	Large	**IAQM Definition:** Total site area greater than 10,000 m^2, potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size), more than 10 heavy earth moving vehicles active at any one time, formation of bunds greater than 8 m in height, total material moved more than 100,000 t. **Relevance to this Project:** The footprint of Lot 4E is approximately 74,000 m^2 and involves construction of one new building.
Construction	Large	**IAQM Definition:** Total building volume greater than 100,000 m^3, piling, on site concrete batching; sandblasting. **Relevance to this Project:** The footprint of Lot 4E is approximately 35,500 m^2 and involves construction of one new building (total volume of approximately 355,000 m^3).
Trackout	Medium	**IAQM Definition:** Between 10 and 50 heavy vehicle movements per day, surface materials with a moderate potential for dust generation, between 50 m and 100 m of unpaved road length. **Relevance to this Project:** *The peak traffic volume during construction is estimated to be 20 vehicle movements per hour.*

Step 2b – Risk Assessment

Assessment of the Sensitivity of the Area

Step 2b of the assessment process requires the sensitivity of the area to be defined. The sensitivity of the area takes into account:

- The specific sensitivities that identified sensitive receptors have to dust deposition and human health impacts;
- The proximity and number of those receptors;
- In the case of PM_{10}, the local background concentration; and
- Other site-specific factors, such as whether there are natural shelters such as trees to reduce the risk of wind-blown dust.

Individual receptors are classified as having *high*, *medium* or *low* sensitivity to dust deposition and human health impacts (ecological receptors are not addressed using this approach). The IAQM method provides guidance on the sensitivity of different receptor types to dust soiling and health effects as summarised in **Table C1**. It is noted that user expectations of amenity levels (dust soiling) is dependent on existing deposition levels.

Table C2 IAQM Guidance for Categorising Receptor Sensitivity

Value	High Sensitivity Receptor	Medium Sensitivity Receptor	Low Sensitivity Receptor
Dust soiling	Users can reasonably expect a high level of amenity; or The appearance, aesthetics or value of their property would be diminished by soiling, and the people or property would reasonably be expected to be present continuously, or at least regularly for extended periods as part of the normal pattern of use of the land.	Users would expect to enjoy a reasonable level of amenity, but would not reasonably expect to enjoy the same level of amenity as in their home; or The appearance, aesthetics or value of their property could be diminished by soiling; or The people or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land.	The enjoyment of amenity would not reasonably be expected; or Property would not reasonably be expected to be diminished in appearance, aesthetics or value by soiling; or There is transient exposure, where the people or property would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use of the land.
	Examples: Dwellings, museums, medium and long term car parks and car showrooms.	*Examples: Parks and places of work.*	*Examples: Playing fields, farmland (unless commercially-sensitive horticultural), footpaths, short term car parks and roads.*
Health effects	Locations where the public are exposed over a time period relevant to the air quality objective for PM_{10} (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a day).	Locations where the people exposed are workers, and exposure is over a time period relevant to the air quality objective for PM_{10} (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a day).	Locations where human exposure is transient.
	Examples: Residential properties, hospitals, schools and residential care homes.	*Examples: Office and shop workers, but will generally not include workers occupationally exposed to PM10.*	*Examples: Public footpaths, playing fields, parks and shopping street.*

According to the IAQM methods, the sensitivity of the identified individual receptors (as described above) is then used to assess the *sensitivity of the area* surrounding the active construction area, taking into account the proximity and number of those receptors, and the local background PM_{10} concentration (in the case of potential health impacts) and other site-specific factors. Additional factors to consider when determining the sensitivity of the area include:

- any history of dust generating activities in the area;
- the likelihood of concurrent dust generating activity on nearby sites;
- any pre-existing screening between the source and the receptors;
- any conclusions drawn from analysing local meteorological data which accurately represent the area and if relevant, the season during which the works will take place;
- any conclusions drawn from local topography;
- the duration of the potential impact (as a receptor may be willing to accept elevated dust levels for a known short duration, or may become more sensitive or less sensitive (acclimatised) over time for long-term impacts); and
- any known specific receptor sensitivities which go beyond the classifications given in the IAQM document.

Based on the criteria listed in **Table C2**, the sensitivity of the identified receptors in this study is concluded to be *high* for health impacts and *high* for dust soiling, as they include residential areas where people may be reasonably expected to be present continuously as part of the normal pattern of land use.

The IAQM guidance for assessing the sensitivity of an area to dust soiling is shown in **Table C3**. The sensitivity of the area should be derived for each of activity relevant to the project (ie construction and earthworks).

Table C3 IAQM Guidance for Categorising the Sensitivity of an Area to Dust Soiling Effects

Receptor Sensitivity	Number of receptors	Distance from the source (m)			
		<20	<50	<100	<350
High	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

Note: Estimate the total number of receptors within the stated distance. Only the *highest level* of area sensitivity from the table needs to be considered. For example, if there are 7 high sensitivity receptors < 20m of the source and 95 high sensitivity receptors between 20 and 50 m, then the total of number of receptors < 50 m is 102. The sensitivity of the area in this case would be high.

A modified version of the IAQM guidance for assessing the *sensitivity of an area* to health impacts is shown in **Table C4**. For high sensitivity receptors, the IAQM methods takes the existing background concentrations of PM_{10} (as an annual average) experienced in the area of interest into account and is based on the air quality objectives for PM_{10} in the UK. As these objectives differ from the ambient air quality criteria adopted for use in this assessment (i.e. an annual average of 19.1 µg/m^3 for PM_{10}) the IAQM method has been modified slightly.

This approach is consistent with the IAQM guidance, which notes that in using the tables to define the *sensitivity of an area*, professional judgement may be used to determine alternative sensitivity categories, taking into account the following factors:

- any history of dust generating activities in the area;
- the likelihood of concurrent dust generating activity on nearby sites;
- any pre-existing screening between the source and the receptors;
- any conclusions drawn from analysing local meteorological data which accurately represent the area, and if relevant the season during which the works will take place;
- any conclusions drawn from local topography;
- duration of the potential impact; and
- any known specific receptor sensitivities which go beyond the classifications given in this document.

Table C4 IAQM Guidance for Categorising the Sensitivity of an Area to Dust Health Effects

Receptor sensitivity	Annual mean PM_{10} conc.	Number of receptors [a,b]	Distance from the source (m)				
			<20	<50	<100	<200	<350
High	>25 µg/m³	>100	High	High	High	Medium	Low
		10-100	High	High	Medium	Low	Low
		1-10	High	Medium	Low	Low	Low
	21-25 µg/m³	>100	High	High	Medium	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	High	Medium	Low	Low	Low
	17-21 µg/m³	>100	High	Medium	Low	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	Medium	Low	Low	Low	Low
	<17 µg/m³	>100	Medium	Low	Low	Low	Low
		10-100	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
Medium	>25 µg/m³	>10	High	Medium	Low	Low	Low
		1-10	Medium	Low	Low	Low	Low
	21-25 µg/m³	>10	Medium	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
	17-21 µg/m³	>10	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
	<17 µg/m³	>10	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
Low	-	>1	Low	Low	Low	Low	Low

Notes:

(a) Estimate the total within the stated distance (e.g. the total within 350 m and not the number between 200 and 350 m); noting that only the highest level of area sensitivity from the table needs to be considered.

(b) In the case of high sensitivity receptors with high occupancy (such as schools or hospitals) approximate the number of people likely to be present. In the case of residential dwellings, just include the number of properties.

The nearest sensitive receptor is located within 350 m from the nearest OWE boundary. Based on the classifications shown in **Table C3** and **Table C4**, the sensitivity of the area to dust soiling and to health effects may both be classified as '*low*'. This categorisation has been made considering the individual receptor sensitivities derived above, the annual mean background PM_{10} concentration of 19.4 µg/m^3 recorded at St Marys AQMS (see **Section 6.1**) and the anticipated number of sensitive receptors present in the vicinity of the OWE.

Risk Assessment

The dust emission magnitude from Step 2a and the receptor sensitivity from Step 2b are then used in the matrices shown in **Table C5** (earthworks and construction), **Table C6** (track-out) and **Table C7** (demolition) to determine the risk category with no mitigation applied.

Table C5 Risk Category from Earthworks and Construction Activities

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Table C6 Risk Category from Track-out Activities

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Low Risk	Negligible
Low	Low Risk	Low Risk	Negligible

Table C7 Risk Category from Demolition Activities

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Negligible

APPENDIX C

OPERATIONAL PHASE RISK ASSESSMENT METHODOLOGY

The risk-based assessment takes account of a range of impact descriptors, including the following:

- **Nature of Impact**: does the impact result in an adverse or beneficial environment?
- **Sensitivity**: how sensitive is the receiving environment to the anticipated impacts? This may be applied to the sensitivity of the environment in a regional context or specific receptor locations.
- **Magnitude**: what is the anticipated scale of the impact?

The integration of receptor sensitivity with impact magnitude is used to derive the predicted **significance** of that change.

Nature of Impact

Predicted impacts may be described in terms of the overall effect upon the environment:

- **Beneficial**: the predicted impact will cause a beneficial effect on the receiving environment.
- **Neutral**: the predicted impact will cause neither a beneficial nor adverse effect.
- **Adverse**: the predicted impact will cause an adverse effect on the receiving environment.

Receptor Sensitivity

Sensitivity may vary with the anticipated impact or effect. A receptor may be determined to have varying sensitivity to different environmental changes, for example, a high sensitivity to changes in air quality, but low sensitivity to noise impacts. Sensitivity may also be derived from statutory designation which is designed to protect the receptor from such impacts.

Sensitivity terminology may vary depending upon the environmental effect, but generally this may be described in accordance with the broad categories outlined in **Table** , which has been used in this assessment to define the sensitivity of receptors to air quality impacts.

Table C1 Methodology for Assessing Sensitivity of a Receptor to Air Quality Impacts

Sensitivity	Criteria
Very High	Receptors of very high sensitivity to air pollution (eg dust or odour) such as: hospitals and clinics, retirement homes, painting and furnishing businesses, hi-tech industries and food processing.
High	Receptors of high sensitivity to air pollution, such as: schools, residential areas, food retailers, glasshouses and nurseries, horticultural land and offices.
Medium	Receptors of medium sensitivity to air pollution, such as: farms, outdoor storage, light and heavy industry.
Low	All other air quality sensitive receptors not identified above.

Magnitude of Impact

Magnitude describes the anticipated scale of the anticipated environmental change in terms of how that impact may cause a change to baseline conditions. **Table C2** outlines the methodology used in this assessment to define the magnitude of the identified potential air quality impacts.

Table C2 Methodology for Assessing Magnitude of Impacts

Magnitude	Description
Substantial	Impact is predicted to cause significant consequences on the receiving environment (may be adverse or beneficial)
Moderate	Impact is predicted to possibly cause statutory objectives/standards to be exceeded (may be adverse)
Slight	Predicted impact may be tolerated.
Negligible	Impact is predicted to cause no significant consequences.

Significance of Impact

The risk-based matrix provided below illustrates how the definition of the sensitivity and magnitude interact to produce impact significance.

Table C3 Impact Significance Matrix

Sensitivity \ Magnitude		[Defined by Table A2]			
		Substantial Magnitude	**Moderate Magnitude**	**Slight Magnitude**	**Negligible Magnitude**
[Defined by Table A1]	**Very High Sensitivity**	Major Significance	Major/ Intermediate Significance	Intermediate Significance	Neutral Significance
	High Sensitivity	Major/ Intermediate Significance	Intermediate Significance	Intermediate/Minor Significance	Neutral Significance
	Medium Sensitivity	Intermediate Significance	Intermediate/Minor Significance	Minor Significance	Neutral Significance
	Low Sensitivity	Intermediate/Minor Significance	Minor Significance	Minor/Neutral Significance	Neutral Significance

APPENDIX D

AIR QUALITY NOTIFICATION FORM

APPENDIX E - CURRICULUM VITAE OF AUTHOR

CURRICULUM VITAE

VARUN MARWAHA

ASSOCIATE

Air Quality, Asia-Pacific

QUALIFICATIONS

BEng	2006	Bachelor of Engineering - Chemical, University of Sydney

EXPERTISE

- Air Quality Dispersion modelling using a variety of software applications
- Meteorological and Ambient air quality monitoring & assessment for legislative compliance
- Australian state and federal regulatory compliance – Air Quality
- Opportunities and constraints reporting
- Detailed knowledge of air quality/meteorological interactions

Varun is an Associate Air Quality Consultant working within the Air Quality team. He has over 10 years of environmental and process engineering experience.

Varun has acquired a broad environmental experience including air quality (including odour) impact assessments, emission inventories (including National Pollutant Inventory), air quality dispersion modelling (including Ausplume, CALPUFF and CAL3QHCR), air quality monitoring (including odour), meteorological monitoring, meteorological modelling (The Air Pollution Model [TAPM] & CALMET), greenhouse gas assessments and overall project management.

Varun has conducted numerous environmental audits and prepared NPI reports for a range of industries including power stations throughout Australia.

Varun is a Certified Air Quality Professional (CAQP) and a Certified Practicing Project Manager (CPPM), and is respected for his contribution to the air quality industry.

PROJECTS

Sentosa Gateway Project, Singapore	The project involved the assessment of air impacts due to road traffic tunnel from Sentosa Island to mainland Singapore. The project proposed to build a tunnel for the outbound traffic from Sentosa with tunnel exits located on Lower Delta Road and Keppel Road. The emissions were quantified and modelled using CAL3QHCR and CALPUFF modelling suites to predict the roadside impacts. The project also included assessment of other sources of pollutants in the region for the cumulative assessment
Sydney Harbour Bridge, Sydney, NSW, Australia	Compliance Monitoring (Lead, PM_{10} and TSP). The project involves repainting the iconic Sydney Harbour Bridge. The process includes stripping the old paint (containing lead), preparation of the surface and repainting. The monitoring was conducted for lead concentration in the air along with the concentration of particulate (PM_{10} and TSP) was required. For lead monitoring, membrane filters were used and for particulate monitoring High Volume air samplers (HVAS) were employed.

CURRICULUM VITAE — VARUN MARWAHA

Capital Metro Project, Canberra, ACT, Australia (2018-2019)	The project involved preparation of Air Quality Impact Assessment (AQIA) for the proposed ACT Light Rail Stage 1 – Gungahlin to Civic Project, a 12 kilometre light rail service linking the fast- developing area of Gungahlin in the north, to the City. The emissions due to the operation of light rail network were quantified and compared to the existing regional air emissions levels. It was demonstrated that the regional emissions were likely to decrease significantly when compared with the current situation.
Proposed Residential Development, RMS	Road Traffic Impact Assessment. The project involved assessment of roadside impacts on the proposed residential development due to road traffic on a busy motorway. The aim of the project was to determine the maximum impacts and validating against the monitored roadside data. The emissions were quantified and modelled using CAL3QHCR modelling suite to predict the roadside impacts. The project also included assessment of other sources of pollutants in the region for the cumulative assessment. The modelling skills were put to test when integrating predicted results from several modelling suites (CAL3QHCR and CALPUFF)
Proposed Haul Roads (Fortescue Metals Group), WA, Australia	The project involved assessment of two possible options for building haul roads in separate directions. The aim of the project was to determine mine access route from the nearest transport facility. The emissions were quantified and modelled using CALPUFF modelling suite to predict the roadside impacts on the nearest receptors on each haul road route.
Confidential Highway Project, QLD, Australia	Emissions estimation and modelling for an air quality impact assessment for a proposed new highway in Queensland. Work included the estimation of vehicle emissions for the operational phase using the COPERT-Australia emissions modelling software and dispersion modelling of the road and tunnel emissions using CAL3QHCR and CALPUFF dispersion models.
MEMBERSHIPS	Clean Air Society of Australia and New Zealand (CASANZ)
	Member of Engineers Australia (EA)
	Institute of Chemical Engineers (IChemE)
ACCREDITATION	Certified Air Quality Professional (CAQP), CASANZ
	Certified Practicing Project Manager (CPPM), UNE
TRAINING	Advanced CALPUFF Course – Clean Air Society of Australia and New Zealand (CASANZ), 2008
	The Role of Meteorology in Dispersion Modelling – CASANZ, 2011
	Diploma of Project Management – University of New England, 2012

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APPENDIX G

Operational Traffic Management Plan

Operational Traffic Management Plan

Lot 4E – Oakdale West Industrial Estate

18/08/2022
P1640r03v2

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Sydney, NSW 2000

Document Control

Project No	1640
Project	Lot 4E – Operational Traffic Management Plan
Client	Goodman Property Services (Aust) Pty Ltd
File Reference	P1640r03v2 OTMP_Lot 4E, Oakdale West Industrial Estate

Revision History

Revision No.	Date	Details	Author	Approved by
-	03/08/2022	Draft	M. Dizon	J. Laidler
Issue I	04/08/2022	Issue I	M. Dizon	J. Laidler
Issue II	18/08/2022	Issue II	M. Dizon	J. Laidler

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APPENDICES

Glossary

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

1 Introduction

1.1 Overview

Ason Group has been engaged by Goodman Property Services (Aust) Pty. Ltd. (Goodman) to prepare an Operational Traffic Management Plan (OTMP) relating to Lot 4E within the Oakdale West Industrial Estate (OWE) at Kemps Creek (the Site).

A site plan and an overview of the proposed surroundings are provided in **Figure 1.** It is noted that SSD 22191322[1] was approved on 29 October 2021. Additionally, this SSD has undergone a modification (SSD 22191322-Mod 1[2]) which was subsequently approved on 14 July 2022. As such the OTMP has been prepared accordingly. Warehouse 4E details are summarised in **Table 1.**

TABLE 1 WAREHOUSE 4E DETAILS

Component	Warehouse 4E
Warehouse GFA (m^2)	34,000
Office GFA (m^2)	1,295
Workshop GFA (m^2)	200
Gatehouse GFA (m^2)	65
Total GFA (m^2)	**35,560**
Loading Dock Provision	42[1]
Trailer Parking Provision	21
Car Parking Provision (Spaces)	237[2]

Note: 1) This provision includes 34 recessed docks and 8 roller shutter doors.

2) This provision includes 5 accessible spaces.

1 https://www.planningportal.nsw.gov.au/major-projects/projects/oakdale-west-estate-stage-5

2 https://www.planningportal.nsw.gov.au/major-projects/projects/oakdale-west-mod-1-stage-5-building-4e

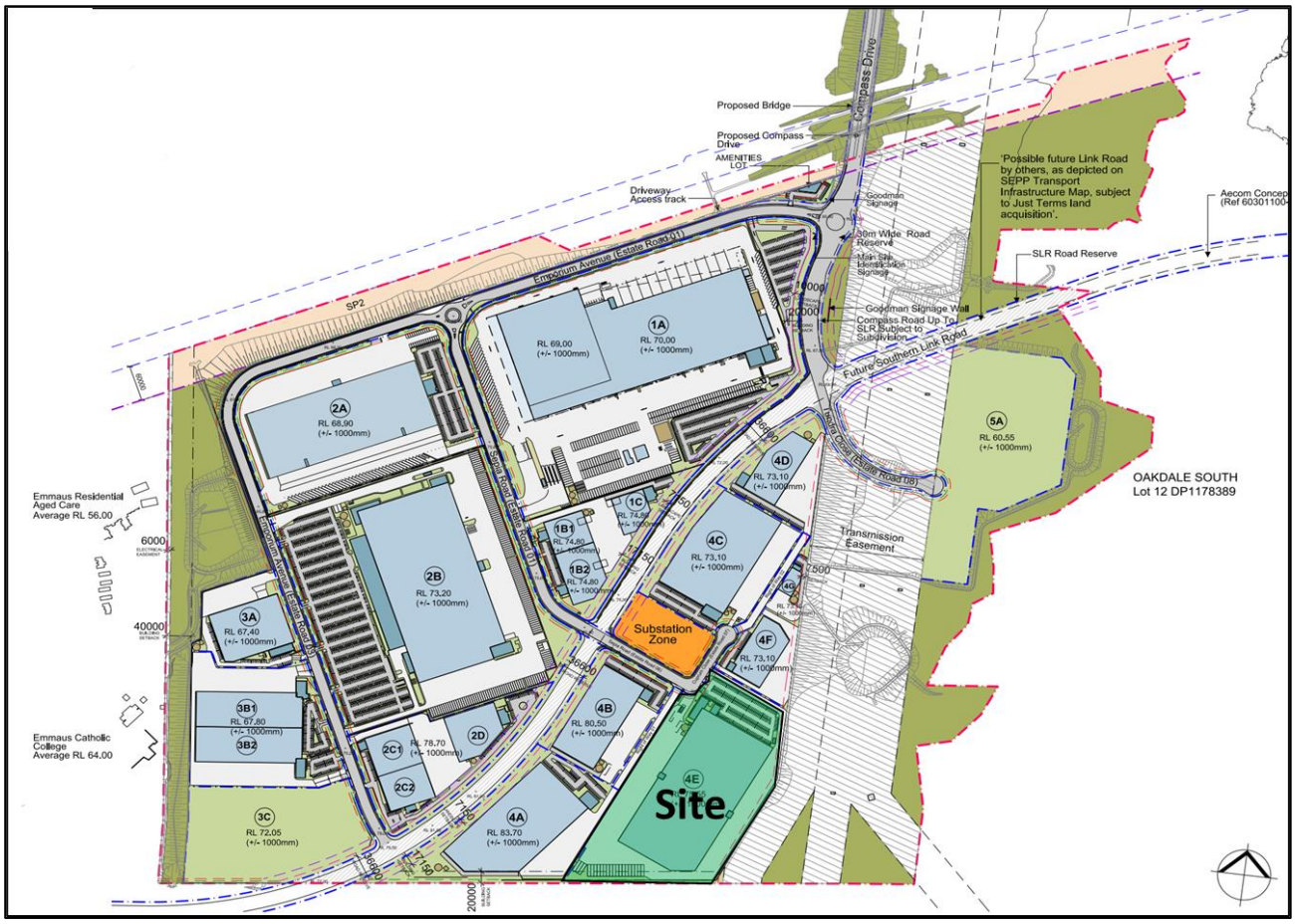

Figure 1: OWE Context Showing Warehouse 4E (MOD 10 Site Plan)

This OTMP is in response to Condition B1, B2, B6, B7, B8, B9, B10, and B11 of the Oakdale West Estate Stage 5 Development of SSD 22191322-Mod 1 dated 14 July 2022 which are outlined in **Table 2**. Additionally, this OTMP is in response to D69A of the Oakdale West Estate Stage 3 Development (SSD-7348-Mod-9), dated 08 December 2021. **Table 3** outlines these conditions.

TABLE 2 CONDITIONS OF CONSENT (SSD 22191322)

<table>
<tr><th colspan="2">Condition</th><th>Response</th></tr>
<tr><td>B1</td><td>The Applicant must comply with the hours detailed in Table 1, unless otherwise agreed in writing by the Planning Secretary.

TABLE 1 HOURS OF WORK
<table>
<tr><th>Activity</th><th>Day</th><th>Time</th></tr>
<tr><td>Construction</td><td>Monday – Friday
Saturday</td><td>7am to 6pm
8am to 1pm</td></tr>
<tr><td>Operation</td><td>Monday – Sunday</td><td>24 hours</td></tr>
</table></td><td>Hours of operation – refer Section 2.3.
Warehouse 4E will operate 24/7.</td></tr>
</table>

B2	Works outside of the hours identified in condition B1 may be undertaken in the following circumstances: (a) works that are inaudible at the nearest sensitive receivers; (b) works agreed to in writing by the Planning Secretary; (c) for the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or (d) where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm.	n/a. Site is operational 24/7.
B6	Prior to the commencement of construction of the development, the Applicant must prepare a Driver Code of Conduct and induction training for the development to minimise road traffic noise. The Applicant must update the Driver Code of Conduct and induction training for construction and operation and must implement the Code of Conduct for the life of the development.	A Drivers Code of Conduct is a requirement of and included within the OTMP prepared by Ason Group and is included as an attachment in this Operational Traffic Management Plan (OTMP), noting that the Drivers Code of Conduct has been approved as part of the CTMP. Refer to **Appendix B** of this OTMP. The Drivers Code of Conduct addresses induction training and ways to minimise the impacts on the road network, with other road users, ensure truck routes are utilised and to manage pedestrian movements.
B7	The Applicant must obtain relevant permits under the Heavy Vehicle National Law (NSW) for the use of over dimensional vehicles on the road network.	Lot 4E will typically accommodate vehicles in length up to 26.0 metre B-Doubles. The Oakdale West Industrial Estate is an approved B-Double area and provides NHVR approved connections between owe and the surrounding key road networks. Also stated in Section 8 of the TA is that Lot 4E can accommodate 35.4 metre B-Triple (limited to side loading). In order for this vehicle to access the Site, a separate application will be submitted to NHVR through liaison with Council subsequent to approval of this SSD.
B8	The Applicant must provide sufficient parking facilities on-site, including for heavy vehicles and for site personnel, to ensure that traffic associated with the development does not utilise public and residential streets or public parking facilities.	Section 5 of the OTMP outlines parking provisions for both light and heavy vehicles, to ensure that no parking on public roads will occur at any time.
B9	The Applicant must ensure:	
(a)	internal roads, driveways and parking (including grades, turn paths, sight distance requirements, aisle widths, aisle lengths and parking bay dimensions) associated with the development are constructed and maintained in accordance with the latest version of AS 2890.1:2004 Parking facilities Off-street car parking (Standards Australia, 2004), AS 2890.2:2018 Parking facilities Off-street commercial vehicle facilities (Standards Australia, 2018) and AS 2890.6.2009 Parking	Lot 4E can accommodate up to 26.0 metre B-Doubles limited to side loading and up to 19.0 metre Articulated Vehicles for recessed dock access and rear loading at roller shutter door (RSD) positions. Lot 4E can also accommodate 35.4 metre B-Triples limited to side loading. However, it is important to note that B-Triples will only access the Site once per day and will have specific routes as demonstrated in

	facilities Off-street parking for people with disabilities (Standards Australia, 2009)	the AT&L swept path analysis (attached in Appendix A of the TA)
(b)	the swept path of the longest vehicle entering and exiting the site, as well as manoeuvrability through the site, is in accordance with the relevant AUSTROADS guidelines;	Section 4.2 outlines the maximum permissible vehicle size, truck routes. For approved B-double truck routes refer to the Framework OTMP of Oakdale West Industrial Estate. The Site has been designed for typical access by vehicles up to 26.0 metre B-Doubles. Notwithstanding, the Site has been designed to cater for vehicles up to 35.4 metre B-Triples but are not expected to be utilised at this time.
(c)	the development does not result in any vehicles queuing on the public road network;	Noted. Heavy vehicles shall also not park on local roads. Refer to Section 5.2 of this OTMP.
(d)	heavy vehicles and bins associated with the development are not parked on local roads or footpaths in the vicinity of the site;	Noted. Service vehicles shall also not park on local roads. Refer to Section 4.5 of this OTMP.
(e)	all vehicles are wholly contained on site before being required to stop;	Noted. Refer to Section 4.4 of this OTMP.
(f)	all loading and unloading of materials is carried out on-site;	Noted. Refer to Section 4.4 of this OTMP.
(g)	all trucks entering or leaving the site with loads have their loads covered and do not track dirt onto the public road network; and	Noted. Refer to Section 4.4 of this OTMP.
(h)	the proposed turning areas in the car park are kept clear of any obstacles, including parked cars, at all times.	As per response to B9 (a), parking facilities have been reviewed against the relevant Australian Standards and are largely compliant, and outlined within **Appendix A**
B10	Prior to the commencement of operation of any part of the development, the Applicant must prepare a Sustainable Travel Plan. The Sustainable Travel Plan must:	Noted. A Green Travel Plan (equivalent to a STP) has been prepared as part of this OTMP (see **Appendix D)** and addresses points a to c.
(a)	be prepared in consultation with TfNSW;	
(b)	outline facilities and measures to promote public transport usage, such as car share schemes and employee incentives; and	
(c)	describe pedestrian and bicycle linkages and end of trip facilities available on-site	
B11	The Applicant must implement the Sustainable Travel Plan throughout operation of the development	Noted.

In line with the approved overarching Operational Environmental Management Plan (OEMP) for Oakdale West Industrial Estate, the Applicant has prepared this OTMP with SSD condition D69A in mind. Although it is not a requirement of SSD 22191322, the following conditions have been considered and commented on:

TABLE 3 CONDITIONS OF CONSENT (SSD 7348-MOD9)

Condition		Response
D69A	The Applicant must prepare an Operational Traffic Management Plan (OTMP) for Stage 1. The OTMP must form part of the OEMP required by condition D130 and must:	
(a)	be prepared by a suitably qualified and experienced expert, in consultation with Council and TfNSW;	Consultants from Ason Group are suitably qualified Traffic Engineers. Council and TfNSW shall be consulted following preparation of this plan, with relevant updates (if required) made following that consultation.
(b)	detail the numbers and frequency of truck movements, sizes of trucks, vehicle routes and hours of operation;	Hours of operation – refer Section 2.3. Warehouse 4E will operate 24/7. Section 4.2 outlines the maximum permissible vehicle size, truck routes. For approved B-double truck routes refer to the Framework OTMP of Oakdale West Industrial Estate. The Site has been designed for access by vehicles up to 35.4 metre B-Triples. Larger vehicles shall be subject to separate permit approvals via the National Heavy Vehicle Regulator; a process that requires separate endorsement by Council outside the scope of this OTMP.
(c)	include measures to maintain road safety and network efficiency;	Refer to Section 6.2 for measures to maintain road safety and network efficiency.
(d)	detail measures to minimise noise from development related traffic, including, procedures for receiving and addressing complaints from the community about development related traffic and noise;	Requirements within the Driver Code of Conduct (Appendix B) mandate that drivers are to be cognisant of the noise and emissions requirements. Additionally, Section 6.2 includes requirements that each tenant shall manage their own business to minimise additional traffic and noise.
(e)	include a Driver's Code of Conduct that addresses: (i) designated routes, ensuring no use of Bakers Lane or Aldington Road for operational access; (ii) travelling speeds and adherence to site-specific speed limits; (iii) procedures to ensure drivers adhere to designated heavy vehicle routes; and (iv) procedures to ensure drivers implement safe driving practices.	A driver Code of Conduct can be found in Section 4.8. The drivers code of conduct addresses ways to minimise the impacts on the road network, with other road users, ensure truck routes are utilised and to manage pedestrian movements which all stem from following the NSW road rules.

D69B	The Applicant must:	
(a)	not commence operation of Stage 1 until the OTMP required by condition D69A is approved by the Planning Secretary; and	Noted. Applicable to Stage 1.
(b)	implement the most recent version of the OTMP approved by the Planning Secretary for the duration of operation.	Noted - the most up to date version of the approved OTMP shall be implemented at all times, once operational. Any updates to this OTMP shall be communicated to relevant stakeholders, including Council, TfNSW, DP&E and building tenants.

1.2 Background

An Estate-wide (or Framework) OTMP has been prepared which outlines the general access restrictions and other traffic and parking management requirements applicable to ALL developments within the Estate. That Framework OTMP also identifies the approved traffic generation threshold applicable to the wider Estate which is informed by this and other site-specific OTMPs.

This OTMP has been prepared specifically for Warehouse 4E and relates to the operation of this warehouse within the Oakdale West Estate which was granted approval on 29 October 2021 as part of Stage 5 development.

Further background can be found online, either via the Major Projects website or Goodman's *Oakdale West Planning*[3] page.

1.3 Purpose of this Report

The purpose of this OTMP is in response to Condition B1, B2, B6, B7, B8, B9, B10, and B11 of the Oakdale West Estate Stage 5 Development (SSD-22191322 Mod-1), and D69A of SSD-7348-Mod-9 as outlined above. It provides guidance in relation to the parking and traffic management arrangements for the Estate with an overall objective to ensure safe and efficient movement of vehicles and personnel. This plan details the following:

- Thresholds for the type, frequency, and number of trucks within the Estate (and to Site),
- Detail the access and parking arrangements to ensure no queuing on the public road network,
- Appropriate internal traffic controls and signage,
- Driver Code of Conduct,
- Proposed crossings and signage for safe movement of pedestrians between designated carpark to the office areas,
- Details in relation to governance and administration of the plan.
- Site specific Green Travel Plan (equivalent to a Sustainable Travel Plan).

[3] https://au.goodman.com/oakdale-industrial-estate/oakdale-west-planning

1.4 Exclusions

This OTMP does not cover the following:

- Traffic and pedestrian management associated with construction activities. Reference should be made to relevant Construction Traffic Management Plans (CTMP) or Traffic Guidance Schemes (TGS's) specific to those works, as required.
- Traffic and parking management within the broader Estate area. For overarching Estate OTMP controls, refer to the Framework OTMP prepared separately.
- Transport of Dangerous Goods is not covered by this OTMP. A Transport Emergency Response Plan (TERP) is required prior to transport of any Dangerous Goods. It is expected that such plans will be prepared by the Tenant involved in the transport of Dangerous Goods to/from the individual businesses within the Estate.

1.5 References

In preparing this Plan, reference is made to the following:

- Ason Group, Operational Traffic Management Plan, Oakdale West Industrial Estate – Framework Traffic Management Plan, dated 22 April 2022 (Framework OTMP Report – AG ref: P1507r02v6)
- Ason Group, Operational Traffic Management Plan, Oakdale West Industrial Estate – Framework Traffic Management Plan, dated 02 August 2022 (Framework OTMP Report – AG ref: P1507r02v7)
- Ason Group, Transport Assessment Report – Oakdale West Industrial Estate, Stage 5 Development Application – SSD 22191322, dated 24 June 2021. (AG ref: P1640r01v1)
- Department of Planning & Environment, Assessment Report – Oakdale West Stage 5 Development, State Significant Development Application (SSD 22191322), approval dated 29 October 2021
- Department of Planning & Environment, Development Consent (SSD 22191322 Mod-1), 14 July 2022
- Department of Planning & Environment, Development Consent (SSD 7348 Mod-9), 08 December 2021
- National Transport Commission, Australian Code for the Transport of Dangerous Goods by Road & Rail, Edition 7.5, dated 2017.
- RMS Technical Direction TDT 2013/04a, Guide to Traffic Generating Developments – Updated traffic surveys (RMS Guide TDT 04a)
- Roads and Maritime Services (RMS), Guide to Traffic Generating Developments (RMS Guide)

2 Estate Details

2.1 Estate Overview

OWE is a warehouse and industrial development precinct situated in Kemps Creek. The Precinct lies within a series of strategic growth corridors including the Western Sydney Growth Centre and Broader Western Sydney Employment Areas and is intended to be serviced by Compass Drive (previously known as the Western North South Link Road, WNSLR).

A total development floor area of 599,455m^2 is to be provided by the industrial buildings within the Estate, as outlined by the Concept Plan (SSD 7348 MOD 10). It is noted that MOD 10 is currently under review.

Figure 2 below provides location of the Site in the context of the Estate with regard to existing road systems.

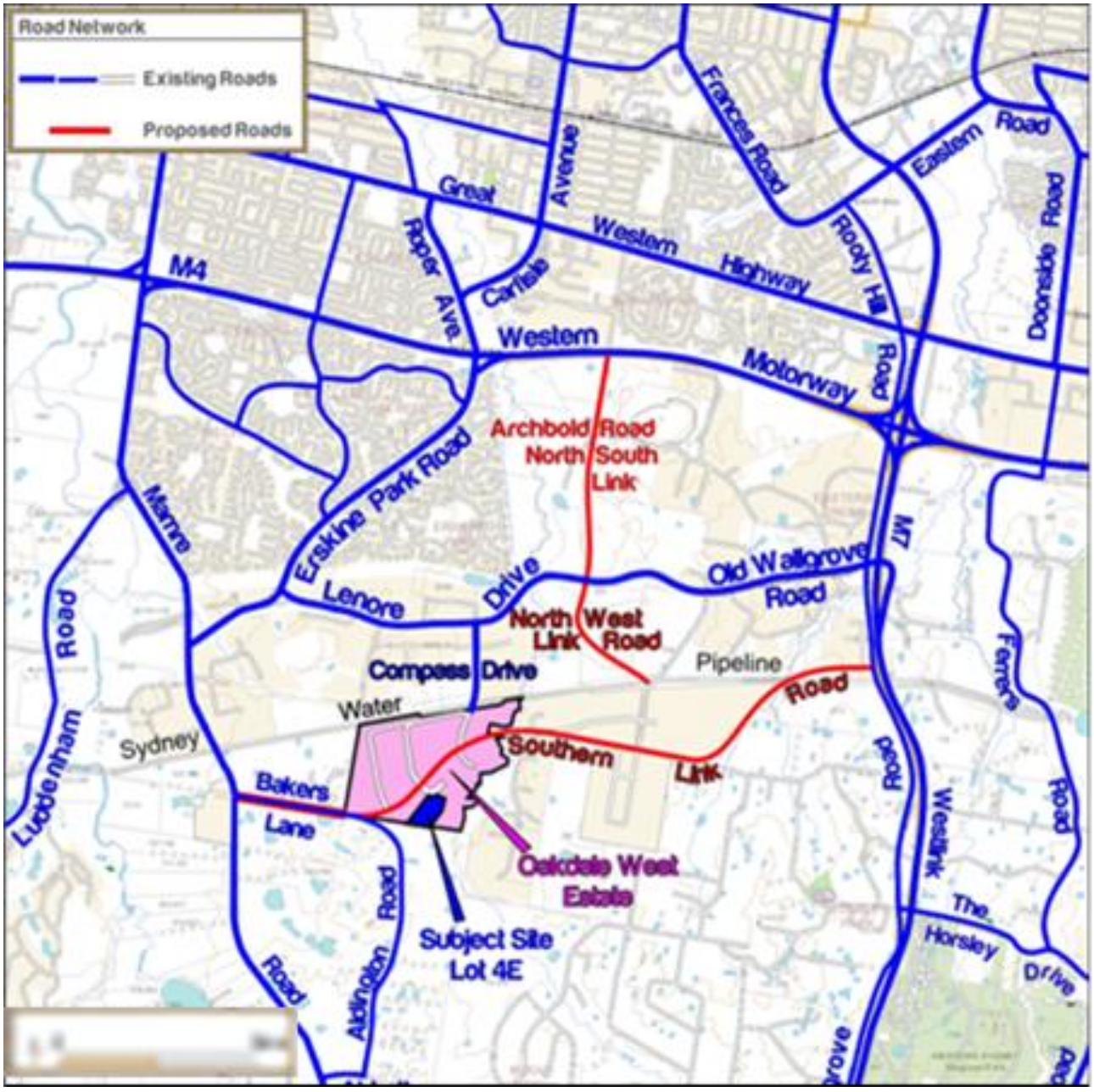

Figure 2: Site Appreciation and Road Hierarchy

All access to the Estate is provided via Compass Drive. Vehicles will travel along Old Wallgrove Road from the M4 or Lenore Drive, before heading south on Compass Drive and onto the internal estate roads.

An existing proposal with regards to the construction of the Southern Link Road (SLR) will form a connection with Mamre Road to the west and Wallgrove Road to the east.

2.2 Site Overview

Warehouse 4E is an industrial warehouse development with ancillary office. **Figure 3** below presents a plan illustrating the proposed development showing the general layout of the warehouse and associated traffic circulation, loading, and parking areas.

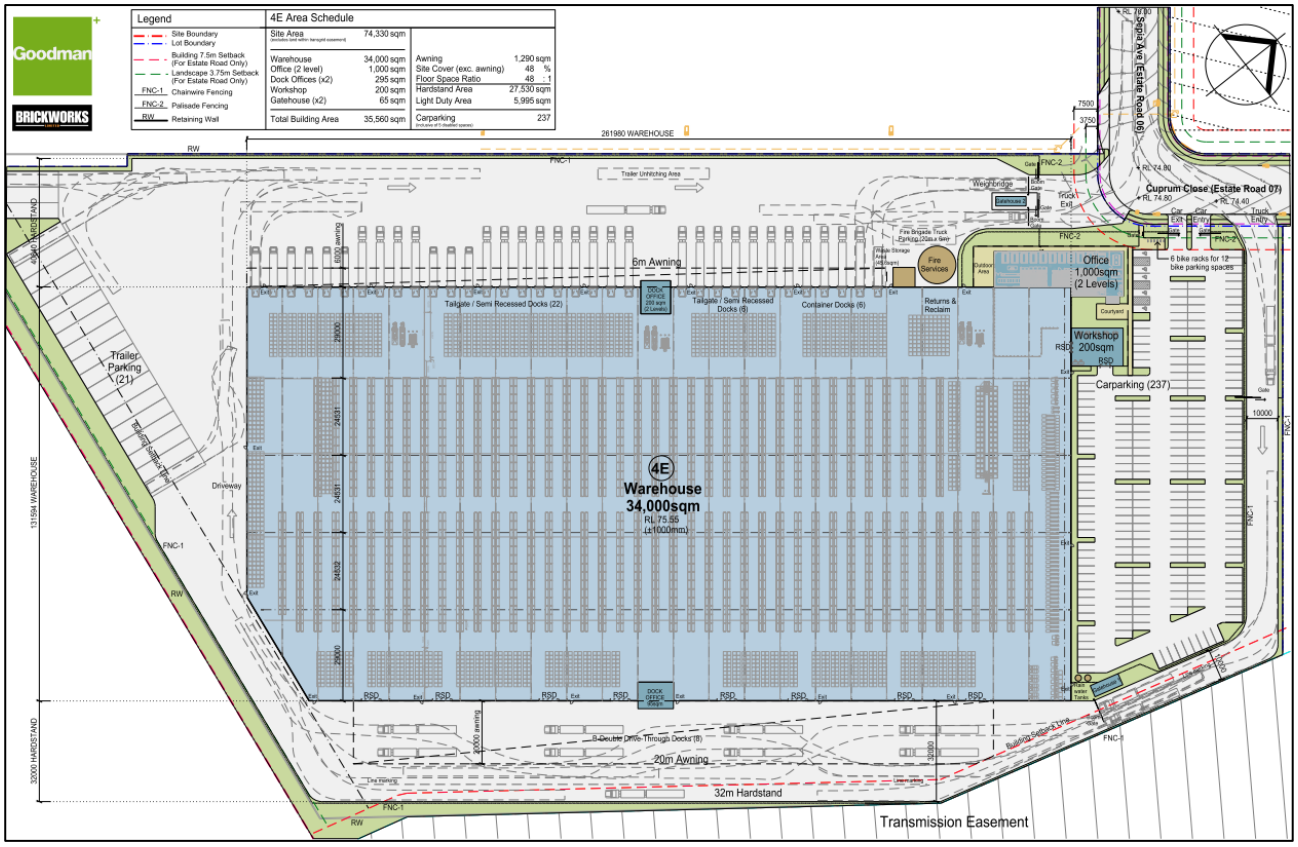

Figure 3: Warehouse 4E Site Plan

2.3 Hours of Operation

The broader Estate will be operational 24 hours a day, 7 days a week. In this respect, Warehouse 4E is also intended to operate 24 hours a day, 7 days a week.

2.4 Estate-wide Facilities

Refer to the Framework OTMP (AG ref: 1507r02v7 Framework OTMP Oakdale West Estate) for details regarding the on-street pedestrian, cyclist, road, and public transport infrastructure.

2.5 Approved Estate Vehicle Movements

The approved volumes for Warehouse 4E have been outlined below, and underpin the transport and traffic projections of the Site:

- AM Peak: 18 veh/hr
- PM Peak: 37 veh/hr
- Daily: 528 veh/day

For clarity, 1 veh/hr (or veh/day) relates to the number of vehicle movements rather than simply the number of vehicles. As such, 1 vehicle in & out equates to 2 vehicle movements.

2.6 Site Access Arrangements

Warehouse 4E movements will be facilitated via 3 vehicular access points. It has separate car and truck entry / exit points on Cuprum Close (previously referred to as Estate Road 07). Furthermore, the truck entry and exit points are also separated. A copy of the Warehouse Plan and access crossovers have been provided in **Figure 4**.

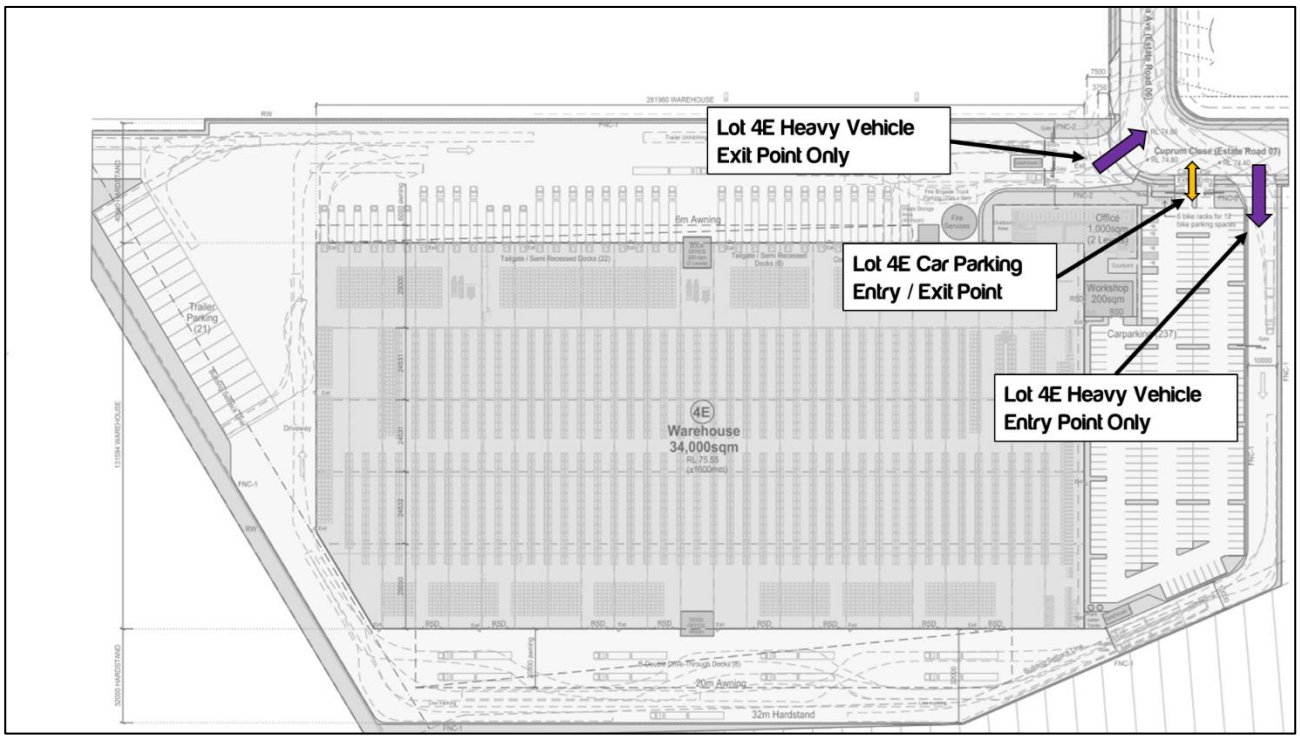

Figure 4: Warehouse Plans & Access

3 Statutory Requirements

A summary of the relevant conditions of approval – relating to operational traffic and parking management – for Oakdale West (Concept Plan, Stage 1, and Stage 2 works) are summarised below.

TABLE 4 SSD 7348 APPROVAL - COMPLIANCE TABLE

Requirement	Reference
ENVIRONMENTAL PERFORMANCE CONDITIONS	
The Applicant must ensure all traffic associated with operation of the development accesses the site from the Western North-South Link Road, and the future Southern Link Road, and does not use Bakers Lane or Aldington Road	B9g (SSD 7348-Mod-9)
The Applicant shall ensure the Concept Proposal provides car parking in accordance with the following rates; a) 1 space per 300m^2 of warehouse GFA. b) 1 space per 40m^2 of Office GFA, and. i) 2 spaces for disability parking for every 100 car parking spaces	B13 (SSD 7348-Mod-9)
The Applicant shall provide bicycle racks, and amenity and change room facilities for cyclists in accordance with *Planning Guidelines for Walking and Cycling* (December 2004, NSW Department of Infrastructure, Planning and Natural Resources and the Roads and Traffic Authority).	B14 (SSD 7348-Mod-9)
The Applicant must prepare an Operational Traffic Management Plan (OTMP) for the development. The OTMP must form part of the OEMP required by condition C5 and must: a) be prepared by a suitably qualified and experienced expert, in consultation with Council and TfNSW. b) detail the number and frequency of trucks, sizes of trucks, vehicle routes and hours of operation. c) include measures to maintain road safety and network efficiency. d) detail measures to minimise noise from development related traffic, including, procedures for receiving and addressing complaints from the community about development related traffic and noise; e) include a Driver's Code of Conduct that addresses: (i) designated routes, ensuring no use of Bakers Lane or Aldington Road for operational access; (ii) travelling speeds and adherence to site-specific speed limits; (iii) procedures to ensure drivers adhere to designated heavy vehicle routes; and (iv) procedures to ensure drivers implement safe driving practices.	D69A (SSD 7348-Mod-9)
The Applicant must ensure: (a) all access points, internal driveways, turning areas and parking are designed and constructed in accordance with the latest version of AS 2890.1:2004 Parking facilities off-street car parking (Standards Australia, 2004) and AS 2890.2:2002 Parking facilities Off-street commercial vehicle facilities (Standards Australia, 2002); (b) parking for Stage 1 is provided in accordance with the EIS and RtS for MOD 5; (c) the swept path of the longest vehicle entering and exiting the site, as well as manoeuvrability through the site, is in accordance with the relevant Austroads guidelines;	D69 (SSD7348-Mod-9)

<table>
<tr><td>(d) Stage 1 does not result in any vehicles queuing on the public road network;
(e) heavy vehicles and bins associated with the development are not parked on local roads or footpaths in the vicinity of the site;
(f) all vehicles are wholly contained on site before being required to stop;
(g) all loading and unloading of materials are carried out on site;
(h) All trucks entering or leaving the Site with loads have their loads covered and do not track dirt onto the public road network; and
(i) the proposed turning areas in the car park are kept clear of any obstacles, including parked cars, at all times.</td><td></td></tr>
<tr><td>The Applicant must comply with the hours detailed in Table 5, unless otherwise agreed in writing by the Planning Secretary.

<table><tr><th>Activity</th><th>Day</th><th>Time</th></tr><tr><td>Construction</td><td>Monday – Sunday
Saturday</td><td>7 am to 6 pm
8 am to 1 pm</td></tr><tr><td>Operation</td><td>Monday – Sunday (including public holidays)</td><td>24 hours</td></tr></table></td><td>D70 (SSD 7348-Mod-9)</td></tr>
<tr><td>Works outside of the hours identified in condition D70 may be undertaken in the following circumstances:
(a) works that are inaudible at the nearest sensitive receivers;
(b) for the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or
(c) where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm.</td><td>D71 (SSD 7348-Mod-9)</td></tr>
<tr><td colspan="2">ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING</td></tr>
<tr><td>The Applicant must prepare an Operational Environmental Management Plan (OEMP) in accordance with the requirements of condition D118 and to the satisfaction of the Planning Secretary.</td><td>D130 (SSD 7348-Mod-9)</td></tr>
<tr><td>As part of the OEMP required under Condition D130 of this consent, the Applicant must include the following:
(a) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development;
(b) describe the procedures that would be implemented to:
(i) keep the local community and relevant agencies informed about the operation and environmental performance of the development;
(ii) receive, handle, respond to, and record complaints;
(iii) resolve any disputes that may arise;
(iv) respond to any non-compliance;
(v) respond to emergencies.</td><td>D131 (SSD 7348-Mod-9)</td></tr>
<tr><td>The Applicant must:
(a) not commence operation until the OEMP is approved by the Planning Secretary; and
(b) operate the development in accordance with the OEMP approved by the Planning Secretary (and as revised and approved by the Planning Secretary from time to time</td><td>D132 (SSD 7348-Mod-9)</td></tr>
<tr><td>The Planning Secretary must be notified in writing to compliance@planning.nsw.gov.au immediately after the Applicant becomes</td><td>D135 (SSD 7348-Mod-9)</td></tr>
</table>

aware of an incident. The notification must identify the development (including the development application number and the name of the development if it has one) and set out the location and nature of the incident. Subsequent notification requirements must be given, and reports submitted in accordance with the requirements set out in Appendix 4	
The Planning Secretary must be notified in writing to compliance@planning.nsw.gov.au within seven days after the Applicant becomes aware of any non-compliance.	D136 (SSD 7348-Mod-9)
A non-compliance notification must identify the development and the application number for it, set out the condition of consent that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.	D137 (SSD 7348-Mod-9)
A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.	D138 (SSD 7348-Mod-9)
No later than 6 weeks before the date notified for the commencement of operation, a Compliance Monitoring and Reporting Program prepared in accordance with the Compliance Reporting Post Approval Requirements (Department 2018) must be submitted to the Planning Secretary	D139 (SSD 7348-Mod-9)
Compliance Reports of the development must be carried out in accordance with the Compliance Reporting Post Approval Requirements (Department 2018).	D140 (SSD 7348-Mod-9)
The Applicant must make each Compliance Report publicly available no later than 60 days after submitting it to the Planning Secretary and notify the Planning Secretary in writing at least 7 days before this is done	D141 (SSD 7348-Mod-9)

Refer to the Department of Planning & Environment's Major Project Assessments website for a full list of all conditions of approval.

3.1 Consultation with TfNSW

Consultation with TfNSW has been undertaken on 15 August 2022, with TfNSW providing no further comments on the subject OTMP. Evidence of consultation has been provided within **Appendix C**.

4 Traffic Management Plan

4.1 Pedestrian Management

Pedestrian access to the hardstand areas used by heavy vehicles shall be restricted, as far as practicable, for safety purposes. Pedestrian exclusion areas should be clearly signposted with appropriate signage (example below).

In the event that pedestrian access is required within truck manoeuvring areas, high visibility vests and other personal protective clothing shall be worn at all times. Where possible, temporary work areas within commercial vehicle manoeuvring areas should be clearly delineated by way of traffic cones and/or temporary barriers.

It should be noted that pedestrians have right-of-way when crossing driveways, therefore all vehicles turning into a development will be required to give-way to pedestrians when entering or exiting individual Lots.

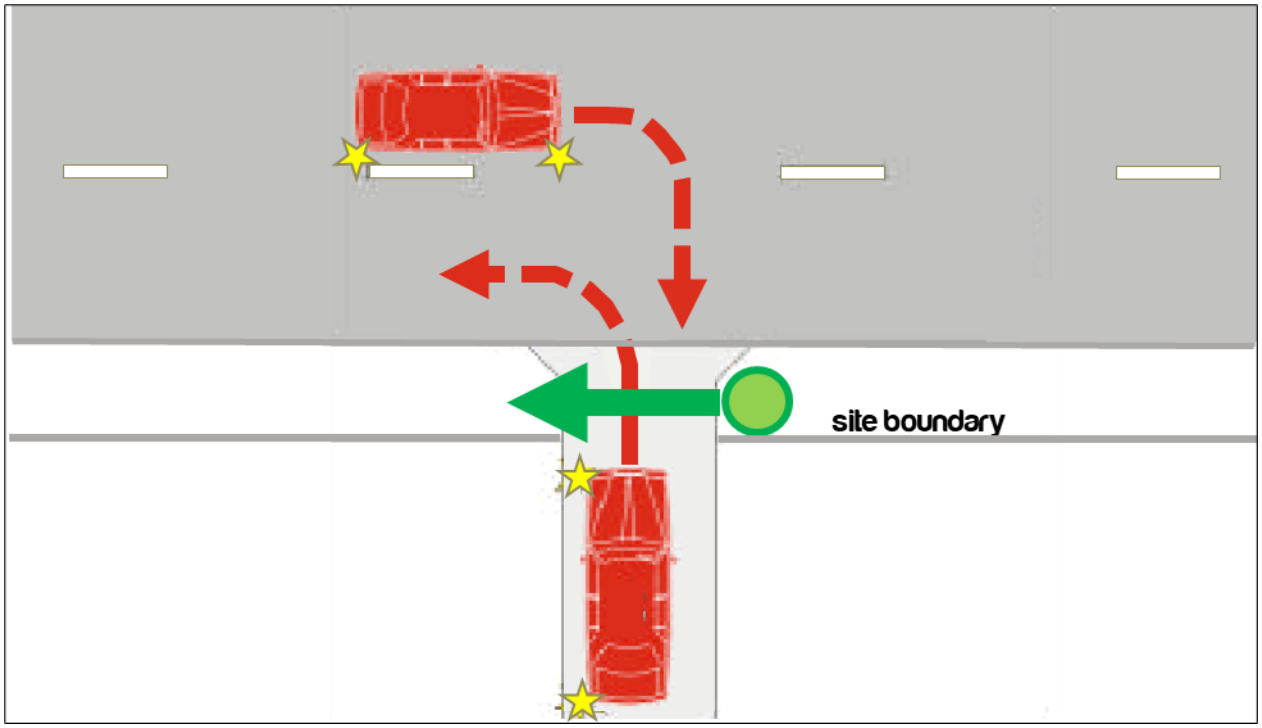

Figure 5: Pedestrian/Cyclist Priority of Movement at Site Access

4.2 Vehicle Management

All drivers are to operate vehicles in a manner consistent with the requirements of applicable Work Health and Safety (WHS) legislation and other business specific policies.

All commercial vehicle drivers are to be familiar with the Driver Code of Conduct – outlined in **Appendix B** - before attending the Estate, noting that the Drivers Code of Conduct has been approved as part of the CTMP.

The Site access driveways and hardstand area has been designed for use by vehicles up to and including 35.4 metre B-Triples (limited to side loading), as demonstrated in the swept path analysis attached as **Appendix A**.

All vehicles on-site (including car park and loading areas) shall be subject to maximum speed limit of 20km/hr at all times. Lower limits (i.e., 10km/hr) may be imposed, at the discretion of tenants.

It is also important to note that any posted speed signage within the site (private roads) should not replicate the design and appearance of the regulatory speed limit signage (a number within the red circle).

4.2.1 Maximum Vehicle Size

As indicated in above, maximum vehicle size expected to access Warehouse 4E is a 35.4 metre B-Triples (limited to side loading). It is imperative to note that if a 35.4 metre B-Triple vehicle or larger — including oversize vehicle configurations — wishes to access the Site, a separate application shall be submitted to the NHVR and approved prior to any vehicle arriving to Site and is outside the scope of this OTMP.

4.2.2 Truck Access Routes

All drivers shall access the Site from Cuprum Avenue, which has been outlined within **Figure 6**. From that point, heavy vehicles are to use the Classified Road network wherever possible, with the use of local Council roads only as necessary.

At all times, drivers are to adhere to the applicable Road Rules and the Drivers Code of Conduct outlined in Appendix B.

All drivers accessing the Site (and Estate in general) shall adhere to the following access management measures:

- Vehicles turning right into driveways or side roads shall do so from as close to the centreline of the carriageway.

  Note - if turning from a two-lane road - the RMS Heavy Vehicle Driver Handbook states that vehicles 7.5 metres or longer with a DO NOT OVERTAKE TURNING VEHICLE sign displayed on the back can turn right from the lane on the immediate left of the far-right lane.
- Heavy vehicles (in excess of 4.5 Tonne GVM) or long vehicles (over 7.5 metres in length) must not stop on a length of road outside a built-up area, except on the shoulder of the road.

  In a built-up area where parking is permitted (for vehicles lighter than 4.5 Tonne GVM and under 7.5 metres in length), they must not stop for longer than one hour (buses excepted). For more information on where vehicles can stand or park, refer to the Road Users' Handbook.

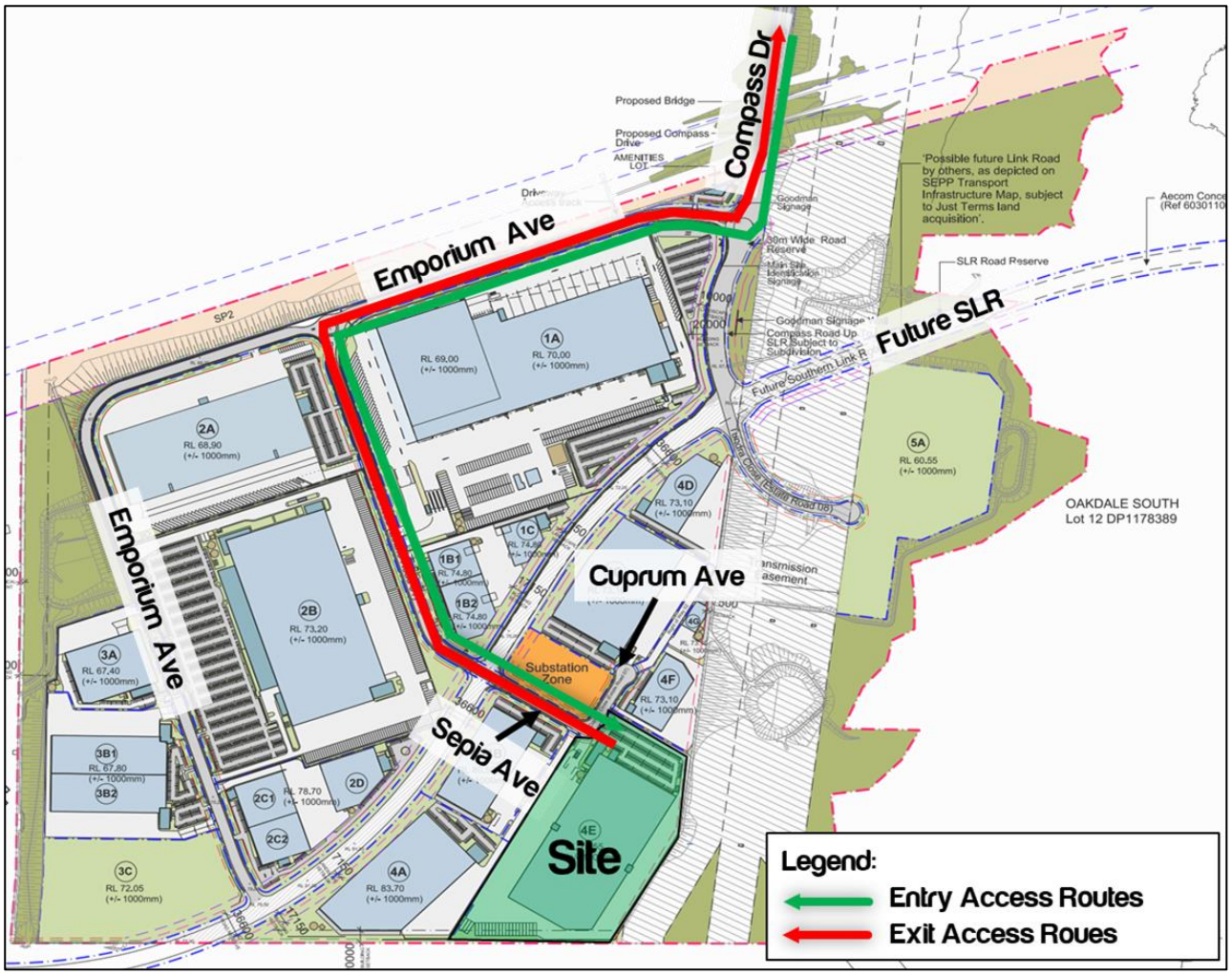

Figure 6: Warehouse 4E Access Routes.

Further to the above, the on-site circulation within Warehouse 4E shall provide access for Fire trucks, Side loading and dedicated unhitching areas as outlined below in **Figure 7**.

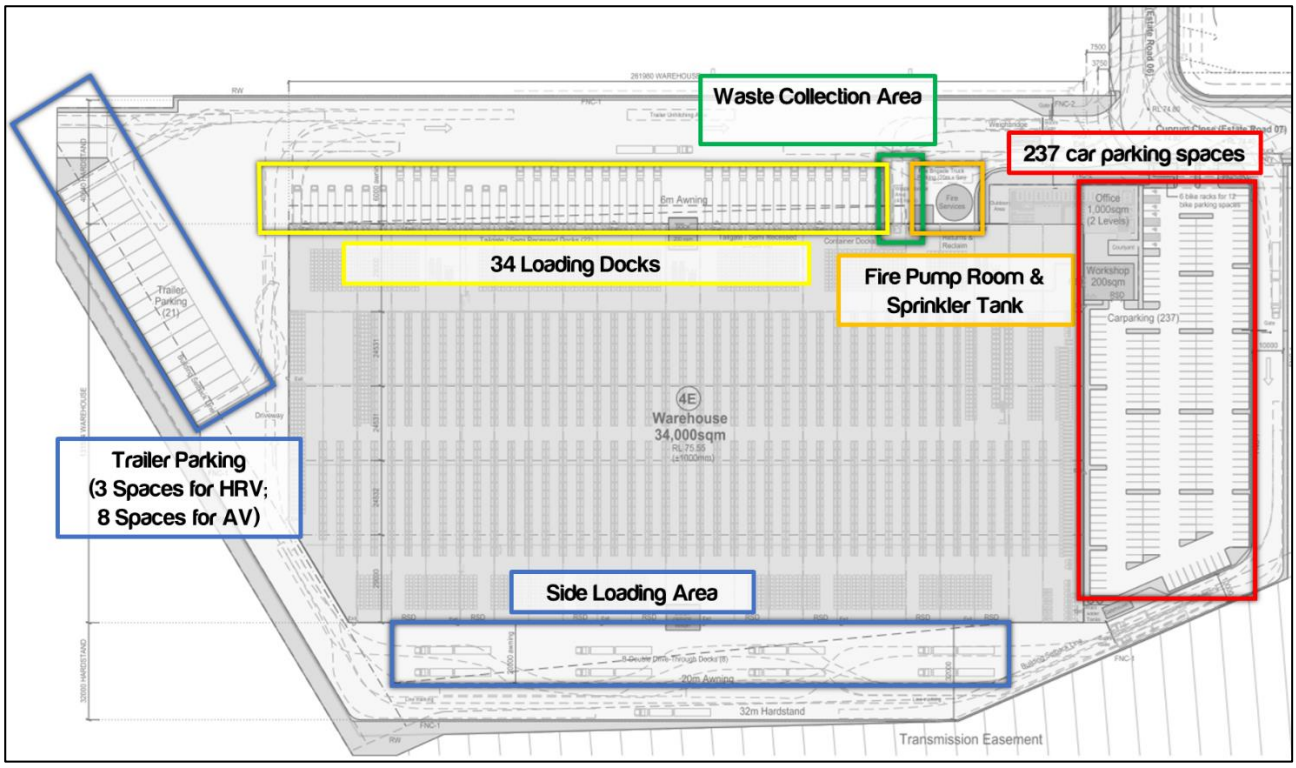

Figure 7: Light and Heavy Vehicle Parking and Loading Areas

4.3 Vehicle Queuing

As outlined in Section 2.5, the development has a threshold of 528 commercial vehicle movements per day. Further, the AM and PM peak hour traffic generation is 18 and 37 vehicles per hour respectively.

The access driveway from Cuprum Avenue, and the internal heavy vehicle circulation area provides sufficient capacity to readily accommodate these vehicle arrivals without any on-street queueing. In addition, a schedule for deliveries of materials and goods will be established prior to that day. Therefore, at no stage shall queueing occur on the public road network.

AT NO STAGE ARE VEHICLES TO QUEUE ON-STREET.

4.4 Loading and Unloading of Materials

Sufficient areas shall be set aside on-site for the loading and unloading of goods without obstructing general vehicle access or circulation. Trucks SHALL ONLY be parked on-site when they are undertaking unloading/loading activities within their designated loading docks.

Swept path analysis demonstrating required manoeuvring areas for on-site loading bays are provided in **Appendix A**, which confirms possible movements for the nominated truck sizes.

Furthermore, the vehicle queuing guidelines outlined within Section 4.3 mandate that at no stage will loading or unloading materials occur off-site. All trucks entering or leaving the site with loads have their loads covered to ensure that no vehicle will track dirt, debris, or other fallen materials onto the public road network.

4.5 Service Vehicle Access Routes

Waste service vehicles and the associated bins are not to be parked on local roads or footpaths and must remain within the Site at all times.

4.6 Temporary or Unplanned Works

Construction works, and associated traffic management measures are not covered by this plan. Notwithstanding, any traffic and pedestrian control in relation to temporary or unplanned works shall be designed in accordance with AS1742 and/or the TfNSW Traffic Control at Work Sites manual, as appropriate.

Where practicable, work areas and temporary pedestrian paths (if applicable) should be physically separated from vehicle movements by way of traffic cones, bollards and/or temporary pedestrian fencing.

4.7 Dangerous Goods

A Transport Emergency Response Plan (TERP) is required prior to transport of any Dangerous Goods. It is expected that such plans will be prepared by the Tenant involved in the transport of Dangerous Goods to/from the individual businesses within the Estate. Accordingly, transport of Dangerous Goods is not covered by this OTMP.

It is expected that any TERP would, as a minimum, be in accordance with the 2012 Emergency Response Guidebook or HB76: 2010 Dangerous Goods – Initial Emergency Response Guide.

4.8 Driver Code of Conduct

Reference should be made to the Drivers Code of conduct has been provided within Appendix B.

5 Parking Management

5.1 On-site Car Parking

In accordance with the condition B13 of SSD 7348, "The Applicant shall ensure the Concept Proposal provides car parking in accordance with the following rates". Therefore, parking rates for the wider Estate have been provided in accordance with the MOD 9 approval. The rates are as follows:

- 1 space per 300 m^2 for Warehouse;
- 1 space per 40 m^2 for Office; and
- 2 spaces for disability parking for every 100 car parking spaces

Application of the approved SSDA rates to the floor areas has been summarised below:

TABLE 5 WAREHOUSE 4E PARKING REQUIREMENTS

Land Use	GFA (m^2)	Requirement	Total Requirement	Total Provision
Warehouse	34,000	114	154	237
Office	1,295	33		
Workshop[1]	200	5		
Gatehouse[1]	65	2		

Note: 1) The workshop and gatehouse components have been assessed at the same rate as the office component (to account for a more conservative, 'worst-case' scenario).

The provision of parking (including 5 accessible spaces) provided exceeds the nominal parking requirement, and therefore, complies with the approved parking rates.

5.2 On-street Parking

On-street parking is generally restricted; and shall adhere to all signposted parking controls at all times.

Vehicles are NOT to be parked on-street.

Drivers will ensure that trailers are parked within their designated areas and will not park trailers within circulation roadways and access roads (incl. emergency vehicle access roads). Management of respective Lots shall remain the responsibility of the respective property's owner to ensure that no vehicles associated with Warehouse 4E are parked on-street.

6 Plan Administration

6.1 Plan Maintenance

This Plan shall be subject to ongoing review and will be updated as necessary in response to monitoring activities, changing requirements or in response to any documented WHS issues. In particular, a review of this Plan may be required where a new business occupies a tenancy and has different operational requirements to that envisaged under this Plan (refer to Section 2.3). Where a change of businesses does not alter the underlying characteristics of the operation, no change to this plan would be required.

As a minimum, ongoing review of the OTMP shall occur annually. All and any reviews undertaken should be documented, however key considerations regarding the review of the OTMP shall be:

- Annual surveys of the Sites access points to review traffic generation.
- Quarterly condition review in relation to dirt on public roadways for the first 2 years of operation. Following that, review can occur annually as part of the ongoing review cycle.
- Regular checks undertaken to ensure all loads are entering and leaving site covered.

6.2 Monitoring Requirements

To ensure the effectiveness of this OTMP, various monitoring requirements have been established and expected to form part of the monitoring plan required to be included as part of the overarching OEMP.

A comprehensive contingency plan shall be established and included in the overarching OEMP. In relation to transport and parking, the following measures are to be included in that overarching plan. In addition to the Framework OTMP monitoring requirements, the following site-specific ones shall apply.

TABLE 6 CONTINGENCY PLAN

Risk		Condition Green	Condition Amber	Condition Red
Operational Movements	**Trigger**	Visual monitoring of all traffic movements within the Site does not detect unsafe movement of traffic and risk to persons and property	Monitoring of all traffic movements within the Site detects unsafe movement of traffic and risk to persons and property	Monitoring of all traffic movements within the Site identifies several unsafe movements of traffic and risk to persons and property
	Response	Visual monitoring to continue daily as part of an ongoing process.	• Review needed to address persistent unsafe movements. • Modification of traffic controls to self-enforce appropriate vehicle manoeuvres within the site.	Condition Amber responses, plus the following additional responses; • Direct cessation of unsafe movements. • Notify the planning secretary within 7 business days of becoming aware of a non-compliance.
	Trigger	Following periods of adverse weather conditions (e.g., a significant heavy rain event), internal roads/aisles have been inspected prior to vehicle traffic use and no issues found	Internal roads / aisles have been inspected following adverse weather conditions and minor issues found (small potholes, dirt / debris, or pooling water)	Internal roads / aisles have been inspected following adverse weather conditions and major issues found (failed road integrity, large diameter potholes, fallen light poles or trees)
	Response	No further action required until next adverse weather event.	• Any impediments to access roads will be cleared. • Maintenance teams to repair any potholes and remove excess water when expected traffic volumes are lowest.	Condition Amber responses, plus the following additional responses; • Install a detour around any unsafe obstacle to ensure safety for all motorists and/or pedestrians.
	Trigger	Parking occupancy less than provided on-site capacity	Parking bay requirements are within 90% of the provided spaces	Parking requirements exceed parking spaces provided.
	Response	No response required. Continue monitoring program	Review and investigate parking rates and where appropriate, implement additional remediation measures such as: • Undertake additional parking reviews to determine cause of higher limit parking space issues in more detail.	Condition Amber responses, plus the following additional responses; • Temporary halting of activities and resuming when conditions have improved. • Provide incentives for carpooling and utilising active transport measures.

			• Review OTMP and update where necessary. • Provide additional training to tenants to provide information on lowering parking demands.	
	Trigger	No unsafe pedestrian movements identified.	Pedestrian behaviour identified to be risky and unsafe.	Site design/operations identified to place pedestrians in unsafe situations and multiple near miss events
	Response	No response required. Continue monitoring program	• Review needed to address persistent unsafe movements. • Modification of traffic controls to self-enforce appropriate vehicle manoeuvres within the site.	Condition Amber responses, plus the following additional responses; • Direct cessation of unsafe movements by amending design of Site. • Notify the planning secretary within 7 business days of becoming aware of a non-compliance.
	Trigger	Operational traffic volume is in accordance with permissible and programmed volume constraints	Operational traffic volumes are within 90% of the permissible volume constraints	Operational traffic volumes exceed permissible volume constraints
	Response	This operational traffic volume review shall be completed monthly for the first 6 months of operation and bi-annually thereafter.	Review and investigate operational activities, and where appropriate, implement additional remediation measures such as: • Undertake review of the Site's traffic generation in more detail. • Review OTMP and update where necessary. Provide additional training to tenants.	Condition Amber responses, plus the following additional responses; • Temporary halting of activities and resuming when conditions have improved. • Surveys of accesses shall be required to allow enforcement of site-specific thresholds. • Notify the planning secretary within 7 business days of becoming aware of a non-compliance.
	Trigger	Loading / service bays are within operational constraints	Loading / service bays are within 90% of capacity	Loading / service bays exceed capacity.
	Response	No response required. Continue monitoring program	Review and investigate operational activities, and where appropriate,	Condition Amber responses, plus the following additional responses;

			implement additional remediation measures such as: • Drivers be provided with additional training and an extra copy of the Driver Code of Conduct. • Provision of additional training to the tenants should be provided to ensure the most appropriate schedule can be created.	• Approved traffic thresholds to be enforced for the peak periods • Review OTMP and update where necessary. • Notify the planning secretary within 7 business days of becoming aware of a non-compliance.
	Trigger	Service bays are not restricted and being utilised as intended.	Vehicles other than service vehicles are stopped within the service area	Vehicles other than service vehicles are consistently parked within the service area
	Response	No response required. Continue monitoring program	Review and investigate operational activities, and where appropriate, implement additional remediation measures such as: • Drivers be provided with additional training and an extra copy of the Driver Code of Conduct. • Provision of additional training to the tenants should be provided to ensure the most appropriate schedule can be created.	Condition Amber responses, plus the following additional responses; • Review OTMP and update where necessary. • Notify the planning secretary within 7 business days of becoming aware of a non-compliance.
	Trigger	No vehicles parked adjacent to TransGrid access	Vehicle stopped adjacent to TransGrid access	Vehicle parked adjacent to, and blocking, TransGrid access
	Response	No response required. Continue monitoring program	• Vehicle and driver to be moved from blocking the access. • Provision of additional training to the tenants should be provided to ensure TransGrid easement is not to be restricted. • Drivers be provided with additional training and an extra copy of the Driver Code of Conduct.	Condition Amber responses, plus the following additional responses; • Review OTMP and update where necessary. • Notify the planning secretary within 7 business days of becoming aware of a non-compliance.

Queueing	**Trigger**	No queuing identified at the Site access	Queuing identified at the Site access	Queuing identified on the public road as a direct result from activities within the Site.
	Response	No response required. Continue monitoring program	Review the delivery schedules prepared by the tenant. • Drivers be provided with additional training and an extra copy of the Driver Code of Conduct. • Provision of additional training to the tenants should be provided to ensure the most appropriate schedule can be created.	Condition Amber responses, plus the following additional responses; • Approved traffic thresholds to be enforced for each sub-tenancy. • Review OTMP and update where necessary. • Notify the planning secretary within 7 business days of becoming aware of a non-compliance.
Incidents	**Trigger**	No incidents observed or reported	Near miss or minor incident occurred within the carriageway of OWE which did not require medical attention (such as tripping on raised footpath)	Major incident occurred within the carriageway of OWE which did not require medical attention (such as being hit by a truck while exiting a Site)
	Response	No action required at this stage, however continual reinforcement to all tenants to report all incidents shall continue.	Near miss to be reported to the appropriate Incident to be reported to Site Manager and Estate Coordinator, for immediate remedy.	Condition Amber responses, plus the following additional responses; • Temporary halting of activities and resuming when incident has been remedied. • Incident to be reported to Site Manager and Estate Coordinator. • Review OTMP and update where necessary. • Notify the planning secretary within 7 business days of becoming aware of a non-compliance.
Noise	**Trigger**	Operational noise volume is in accordance with permissible and programmed volume constraints	Operational noise volumes are within 90% of the permissible volume constraints	Operational traffic volumes exceed permissible volume constraints
	Response	No action. Continue ongoing monitoring activities.	Review and investigate noisy operational activities, and where appropriate, implement additional remediation measures such as:	Condition Amber responses, plus the following additional responses; • Undertake additional noise surveys to review cause in more detail.

			• Undertake additional noise reviews to determine cause of higher limit noise issues in more detail. • Review OTMP (and other sub-plans) and update where necessary. • Provide additional training to tenants to provide information on lowering noise emissions.	• Surveys of each tenancy shall be required to allow enforcement of site-specific thresholds. • Review OTMP and update where necessary. • Provide additional training to tenants to provide information on lowering noise emissions. • Notify the planning secretary within 7 business days of becoming aware of a non-compliance.

6.3 Key Responsibilities

Management of Warehouse 4E shall ensure:

- All staff are provided with sufficient training to undertake the required tasks. This includes responsibility for measures to ensure that all staff and visitors are familiar with the Estate wide OTMP and will comply with the site specific OTMP.
- That all vehicles will not, in any manner, be knowingly overloaded.
- Operational noise levels remain nominal. In the event that noise is exceeded, then the tenant should undertake all feasible and reasonable mitigation and management measures to ensure noise levels are within acceptable levels. If noise levels cannot be kept below applicable limits, then a different operation method or equipment must be utilised.
- All vehicles transporting loose materials will have the entire load covered and/or secured to prevent any large items, excess dust or dirt particles depositing onto the roadway during travel to and from the site.
- Vehicles must be wholly within site before being required to stop, as well as loading and unloading materials.
- Loading areas and turning areas within site will be kept clear at all times.
- All vehicles must enter and exit the Site in a forward direction.
- The Applicant must not, by their actions or requirements, force or coerce employees or drivers to break the law.
- The Applicant shall notify the Planning Secretary in writing of any non-compliance. This notification must:
  - identify the development and the application number for it,
  - set out the condition of consent that the development is non-compliant with,
  - the way in which it does not comply and
  - the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.
- The Applicant shall prepare a Compliance Monitoring and Report Program and submit to the Planning Secretary no later than 6 weeks before the commencement of operation of the Site.

Appendix A. Swept Path Analysis

Goodman

Legend

- Site Boundary
- Lot Boundary
- Building 7.5m Setback (For Estate Road Only)
- Landscape 3.75m Setback (For Estate Road Only)
- FNC-1 Chainwire Fencing
- FNC-2 Palisade Fencing
- RW Retaining Wall

4E Area Schedule

Site Area (excludes land within transgrid easement)	74,330 sqm
Warehouse	34,000 sqm
Office (2 level)	1,000 sqm
Dock Offices (x2)	295 sqm
Workshop	200 sqm
Gatehouse (x2)	65 sqm
Total Building Area	35,560 sqm

Awning	1,290 sqm
Site Cover (exc. awning)	48 %
Floor Space Ratio	48 : 1
Hardstand Area	27,530 sqm
Light Duty Area	5,995 sqm
Carparking (inclusive of 5 disabled spaces)	237

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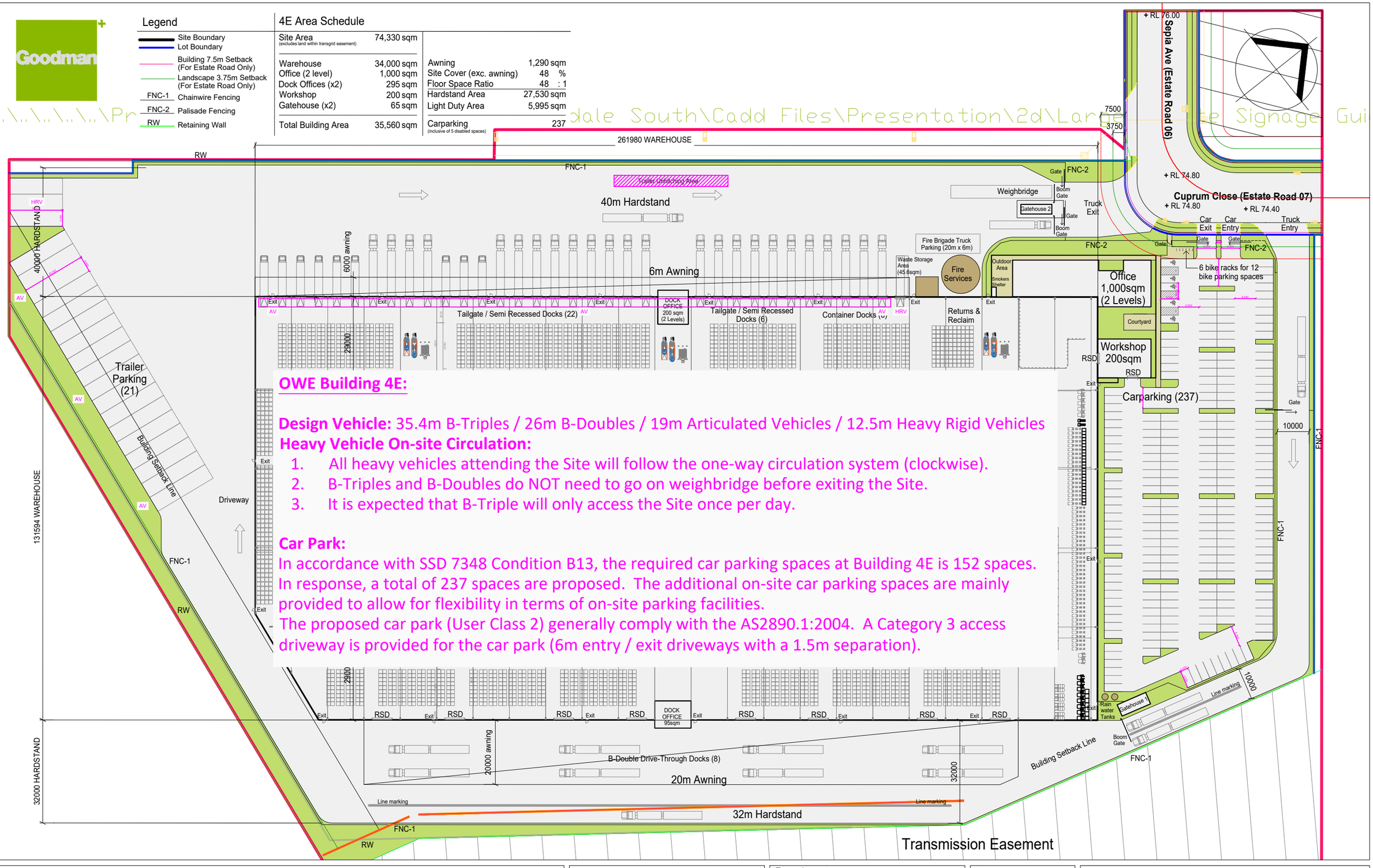

OWE Building 4E:

Design Vehicle: 35.4m B-Triples / 26m B-Doubles / 19m Articulated Vehicles / 12.5m Heavy Rigid Vehicles

Heavy Vehicle On-site Circulation:

1. All heavy vehicles attending the Site will follow the one-way circulation system (clockwise).
2. B-Triples and B-Doubles do NOT need to go on weighbridge before exiting the Site.
3. It is expected that B-Triple will only access the Site once per day.

Car Park:

In accordance with SSD 7348 Condition B13, the required car parking spaces at Building 4E is 152 spaces. In response, a total of 237 spaces are proposed. The additional on-site car parking spaces are mainly provided to allow for flexibility in terms of on-site parking facilities.

The proposed car park (User Class 2) generally comply with the AS2890.1:2004. A Category 3 access driveway is provided for the car park (6m entry / exit driveways with a 1.5m separation).

N o t e s:

This drawing is provided for information purposes only and should not be used for construction.

Document Info:
Drawn by: S. Hu
File name: AG1640d04_OWE Lot 4E.dwg

Client:
GOODMAN

P r o j e c t:
P1640
OWE - BUILDING 4E

D r a w i n g T i t l e:
Info

D a t e:
23-Jun-21

S c a l e @ A3:
1:1100

Drawing Number:
AG00

asongroup
Suite 17.02, Level 17, 1 Castlereagh St, Sydney NSW 2000
info@asongroup.com.au

4E Area Schedule

Site Area (excludes land within transgrid easement)	74,330 sqm
Warehouse	34,000 sqm
Office (2 level)	1,000 sqm
Dock Offices (x2)	295 sqm
Workshop	200 sqm
Gatehouse (x2)	65 sqm
Total Building Area	35,560 sqm
Awning	1,290 sqm
Site Cover (exc. awning)	48 %
Floor Space Ratio	48 : 1
Hardstand Area	27,530 sqm
Light Duty Area	5,995 sqm
Carparking (inclusive of 5 disabled spaces)	237

Site Boundary
Lot Boundary
Building 7.5m Setback (For Estate Road Only)
Landscape 3.75m Setback (For Estate Road Only)
Chainwire Fencing
Palisade Fencing
Retaining Wall

Note:
As advised, B-Double do not need to go on weighbridge before exiting the Site.

Notes:
This drawing is provided for information purposes only and should not be used for construction.

Document Info:
Drawn by: S. Hu
File name: AG1640d04_OWE Lot 4E.dwg

Client:
GOODMAN

Project:
P1640
OWE - BUILDING 4E

Drawing Title:
26m B-Double Circulation

Date:
23-Jun-21

Scale @ A3:
1:900

Drawing Number:
AG01

asongroup
Suite 17.02, Level 17, 1 Castlereagh St, Sydney NSW 2000
info@asongroup.com.au

4E Area Schedule

Site Area (excludes land within transgrid easement)	74,330 sqm
Warehouse	34,000 sqm
Office (2 level)	1,000 sqm
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Light Duty Area	5,995 sqm
Carparking (inclusive of 5 disabled spaces)	237

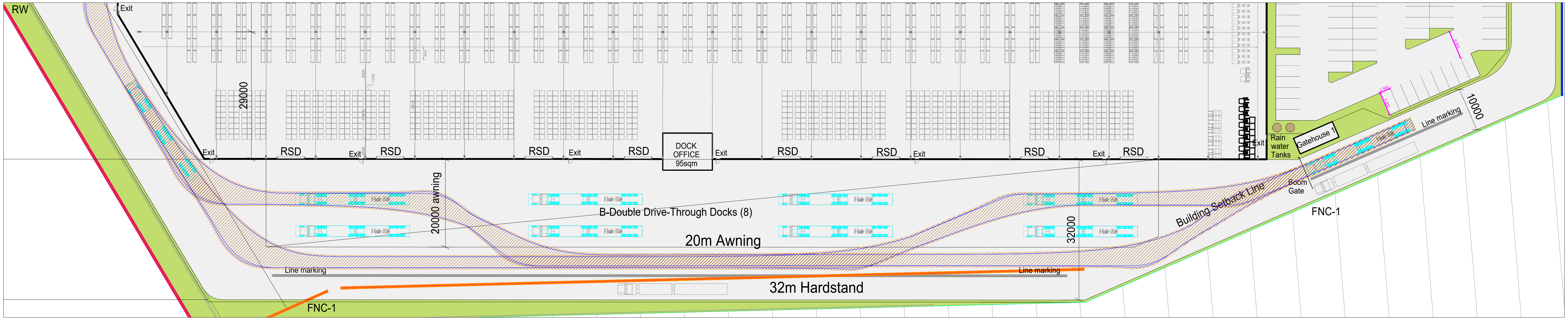
Site Boundary
Lot Boundary
Building 7.5m Setback (For Estate Road Only)
Landscape 3.75m Setback (For Estate Road Only)
Chainwire Fencing
Palisade Fencing
Retaining Wall

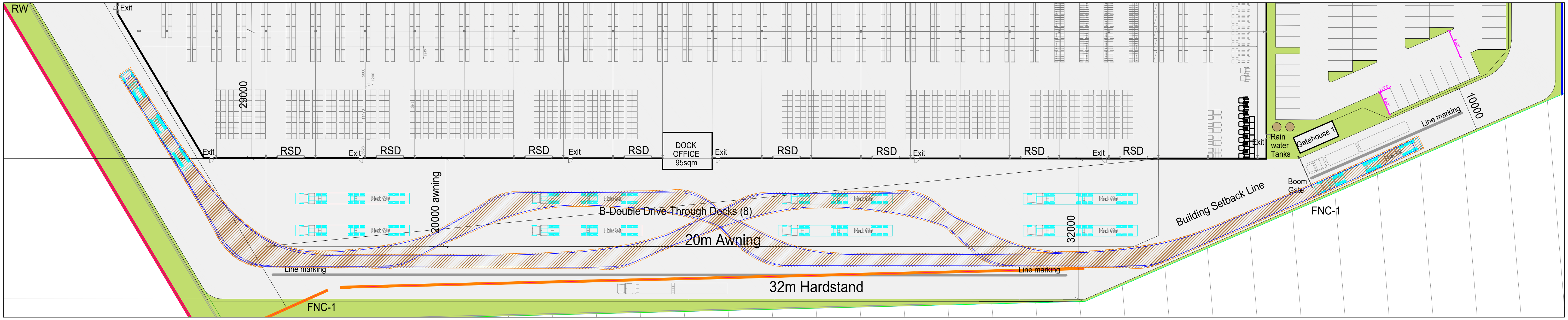
Note:
As advised, B-Triple do not need to go on weighbridge before exiting the Site.

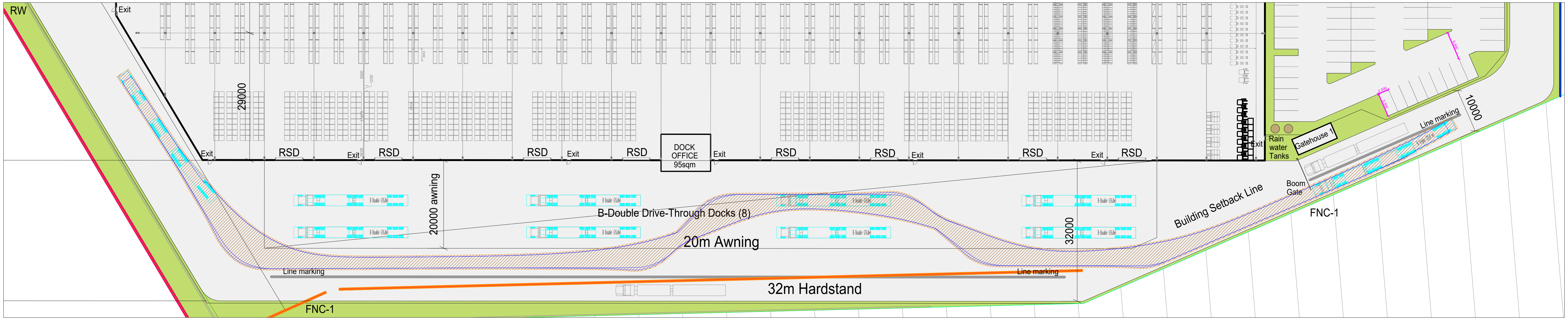
dale South\Cadd Files\Presentation\2d\Large Site Signage

261980 WAREHOUSE
RW
FNC-1
Trailer Unhitching Area
40m Hardstand
6000 awning
6m Awning
Tailgate / Semi Recessed Docks (22)
DOCK OFFICE 200 sqm (2 Levels)
Tailgate / Semi Recessed Docks (6)
Container Docks (3)
Waste Storage Area (45.6sqm)
Fire Brigade Truck Parking (20m x 6m)
Fire Services
Returns & Reclaim
Weighbridge
Gatehouse 2
Boom Gate
Gate
FNC-2
Truck Exit
Outdoor Area
Smokers Shelter
Office 1,000sqm (2 Levels)
Courtyard
Workshop
+ RL 75.00
Separa Ave (Estate Road 06)
+ RL 74.80
Cuprum Close (Estate Road 07)
+ RL 74.40
Car Exit
Car Entry
Truck Entry
6 bike racks for 12 bike parking spaces
7500
3750
29000
24531
24532
Warehouse 34,000sqm
RL 75.55 (±1000mm)
Driveway
DOCK OFFICE 95sqm
RSD
B-Double Drive-Through Docks (8)
20000 awning
20m Awning
32m Hardstand
Line marking
Building Setback Line
Rain water Tanks
Gatehouse 1
10000
32000

Notes: This drawing is provided for information purposes only and should not be used for construction.	**Document Info:** Drawn by: S. Hu File name: AG1640d04_OWE Lot 4E.dwg	**Project:** P1640 OWE - BUILDING 4E	**Date:** 23-Jun-21 **Scale @ A3:** 1:900 **Drawing Number:** AG02	asongroup Suite 17.02, Level 17, 1 Castlereagh St, Sydney NSW 2000 info@asongroup.com.au
	Client: GOODMAN	**Drawing Title:** 35.4m B-Triple Circulation		







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File name: AG1640d04_OWE Lot 4E.dwg

Client:
GOODMAN

Project:
P1640
OWE - BUILDING 4E

Drawing Title:
26m B-Double / 35.4m B-Triple
Side Loading

Date:
23-Jun-21

Scale @ A3:
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Drawing Number:
AG03

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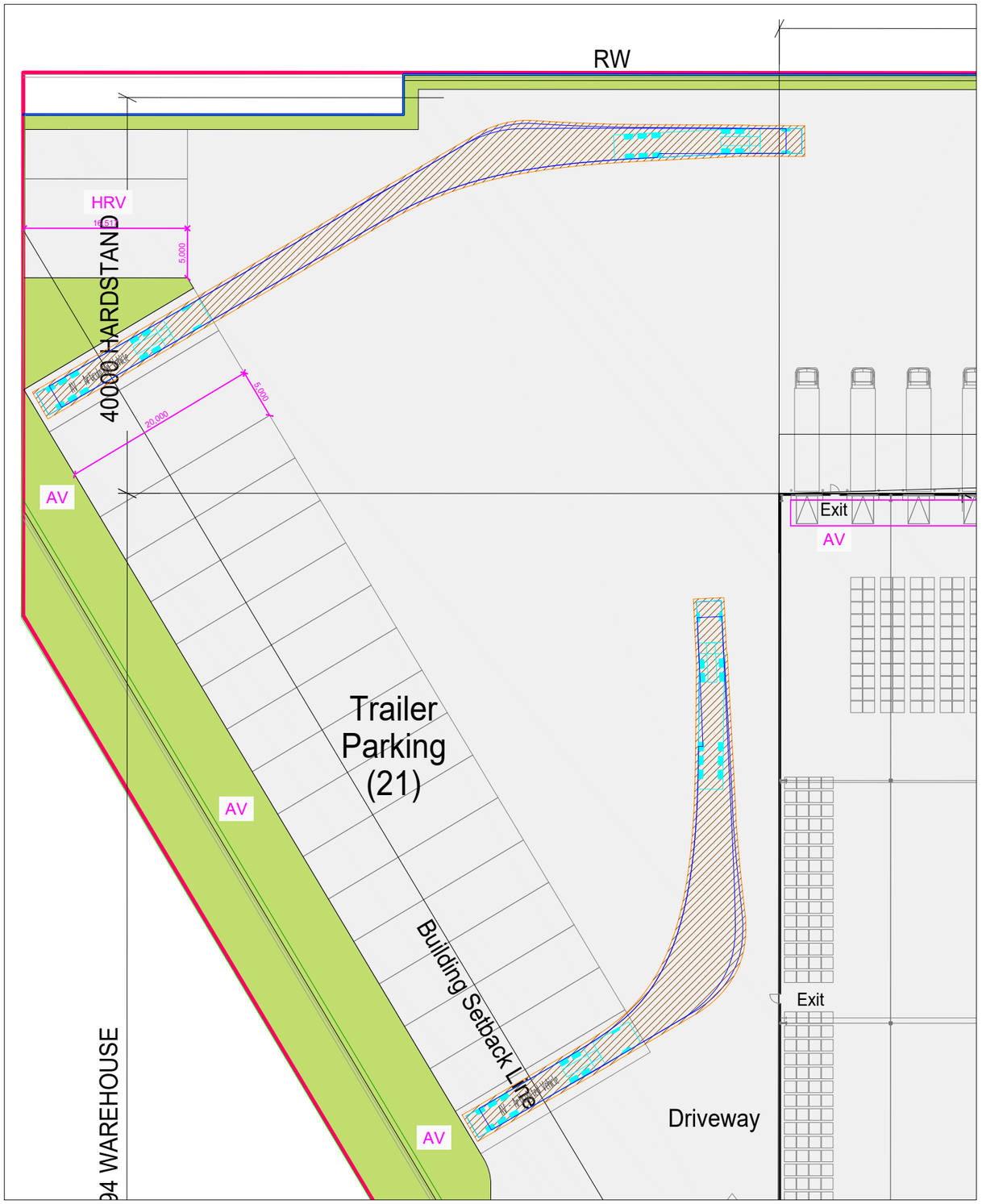

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File name: AG1640d04_OWE Lot 4E.dwg

Client:
GOODMAN

Project:
P1640
OWE - BUILDING 4E

Drawing Title:
19m AV
Trailer Parking

Date:
23-Jun-21

Scale @ A3:
1:500

Drawing Number:
AG04

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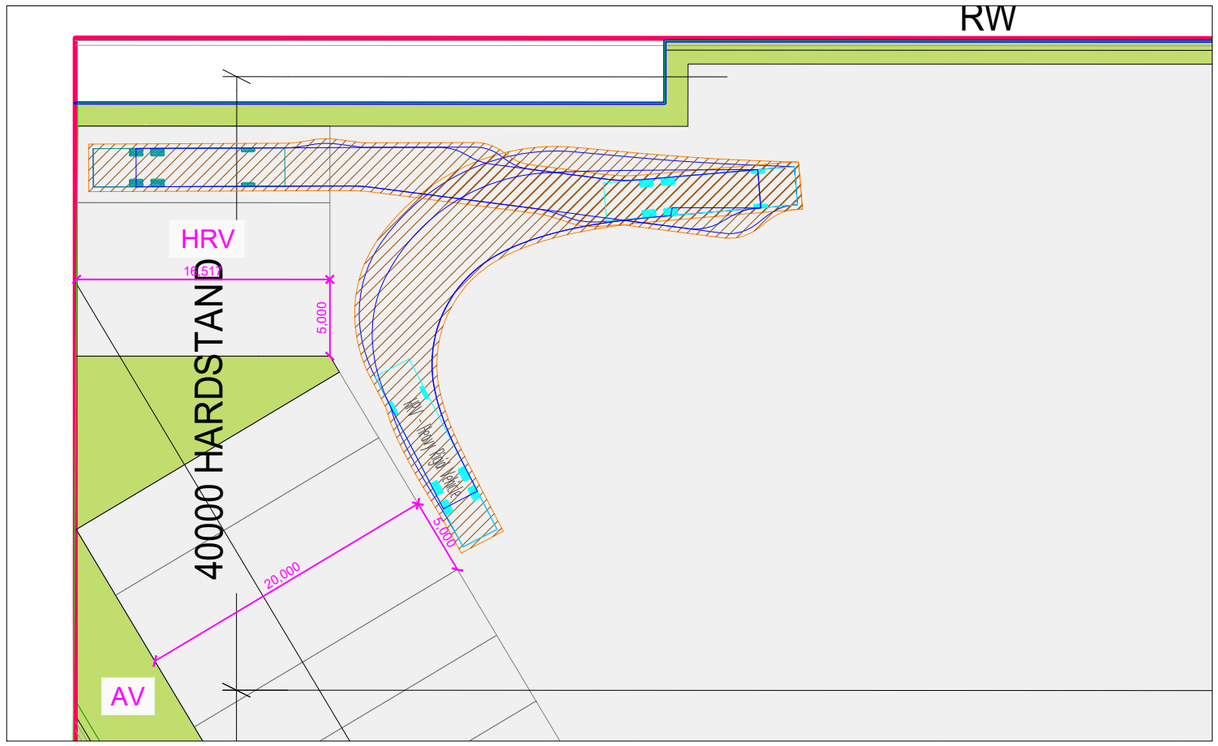

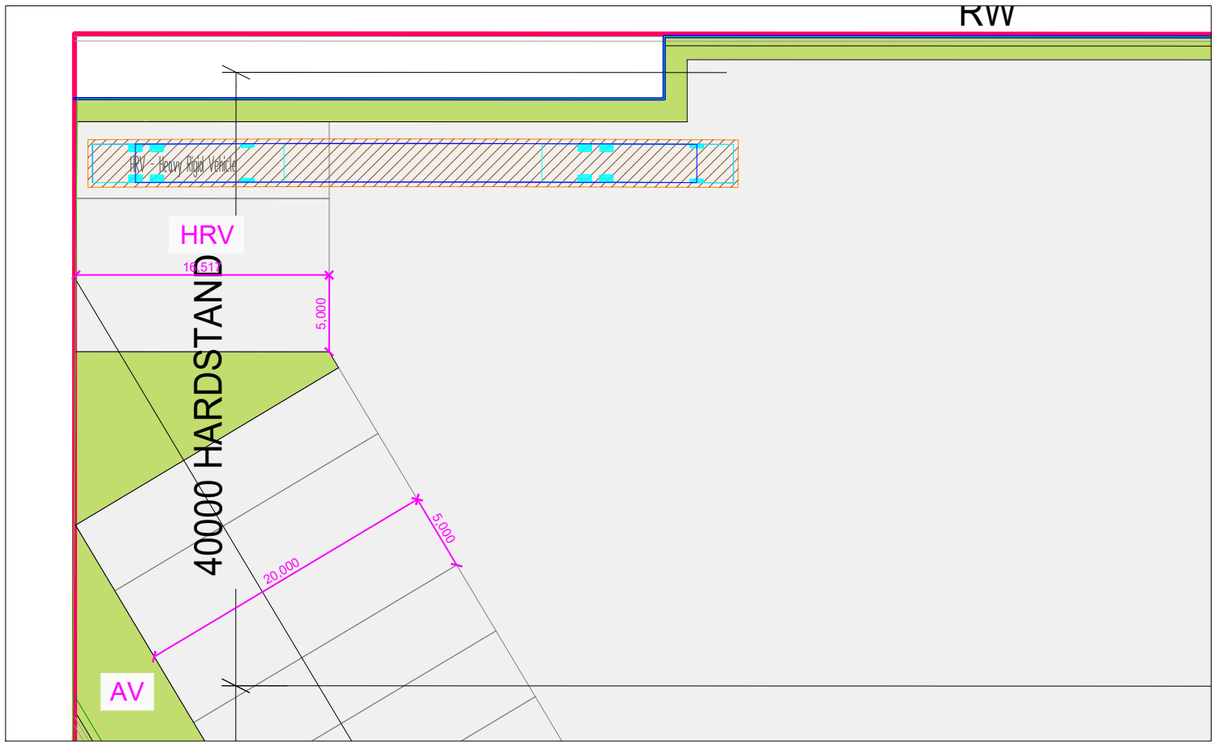

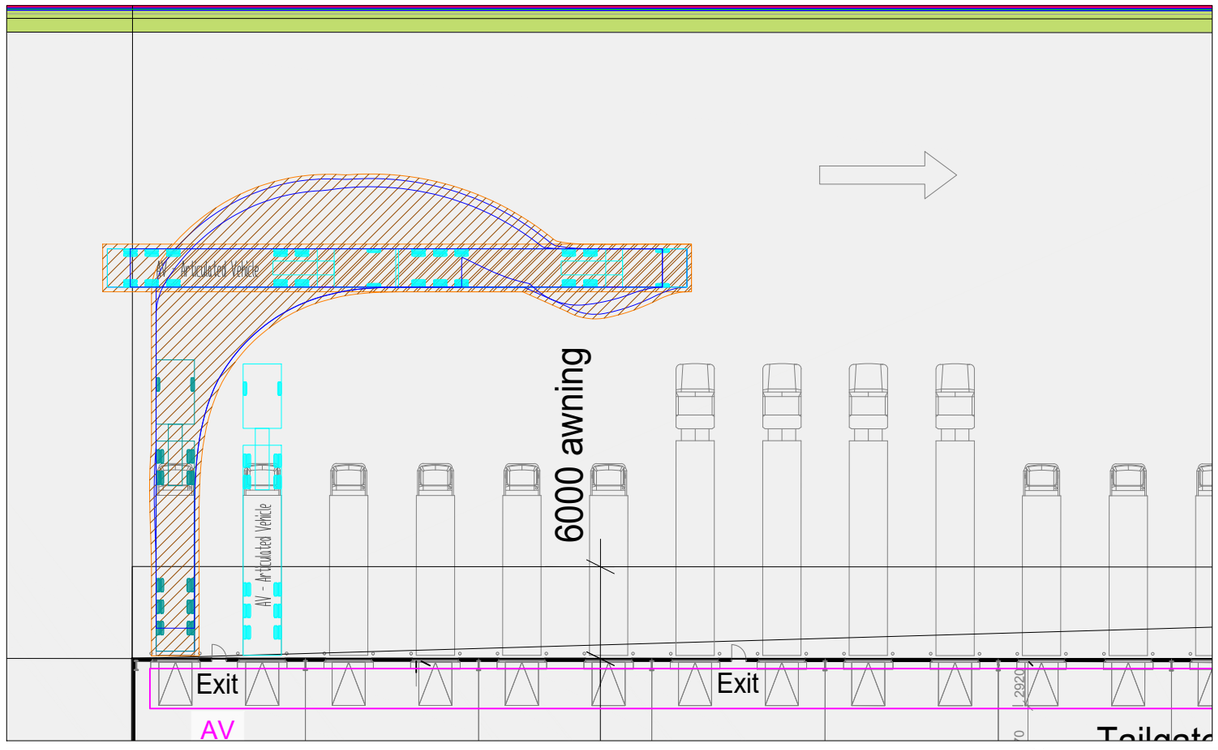

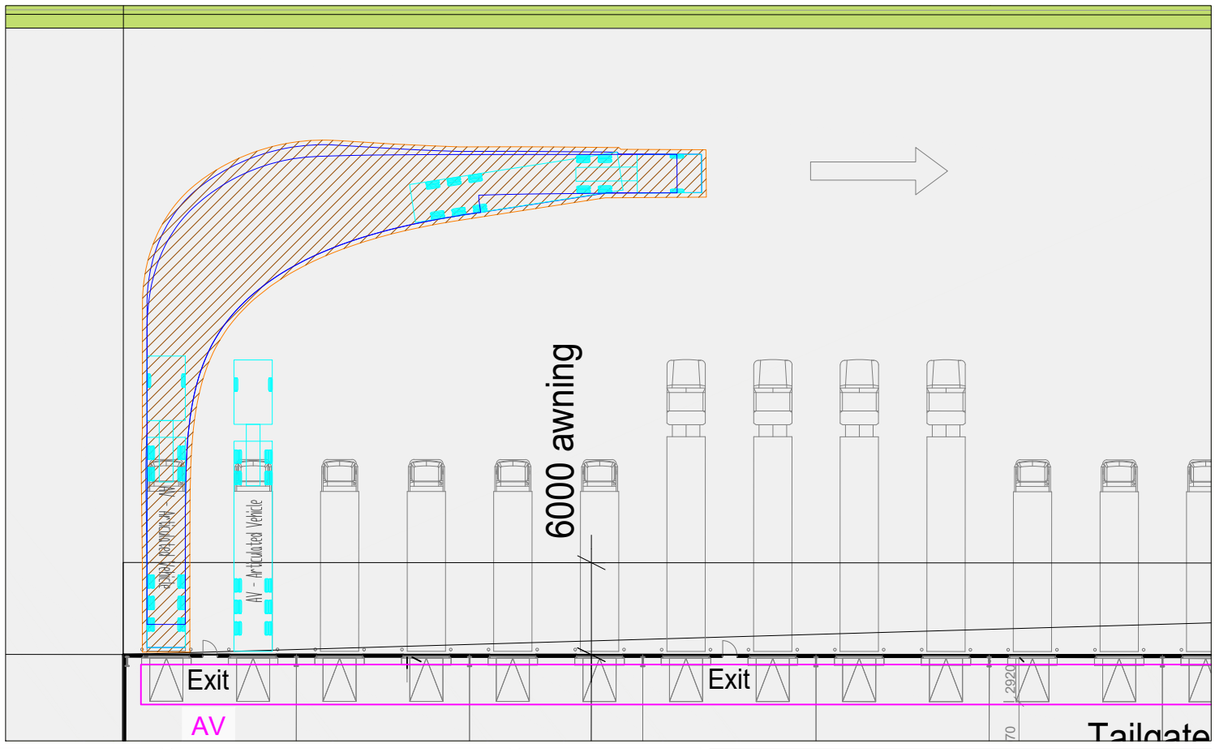

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Drawn by: S. Hu

File name: AG1640d04_OWE Lot 4E.dwg

Client:

GOODMAN

Project:

P1640

OWE - BUILDING 4E

Drawing Title:

Trailer Parking (12.5m HRV)

Access to RSD (19m AV)

Date:

23-Jun-21

Scale @ A3:

1:400

Drawing Number:

AG05

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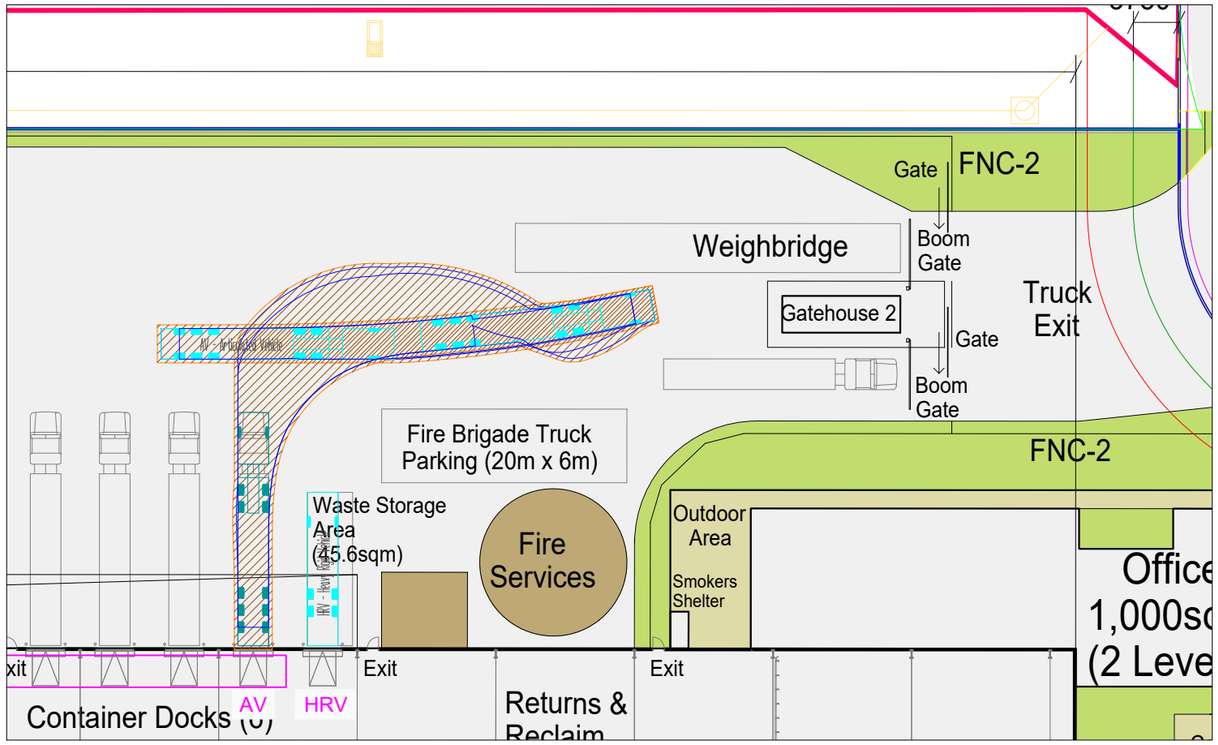

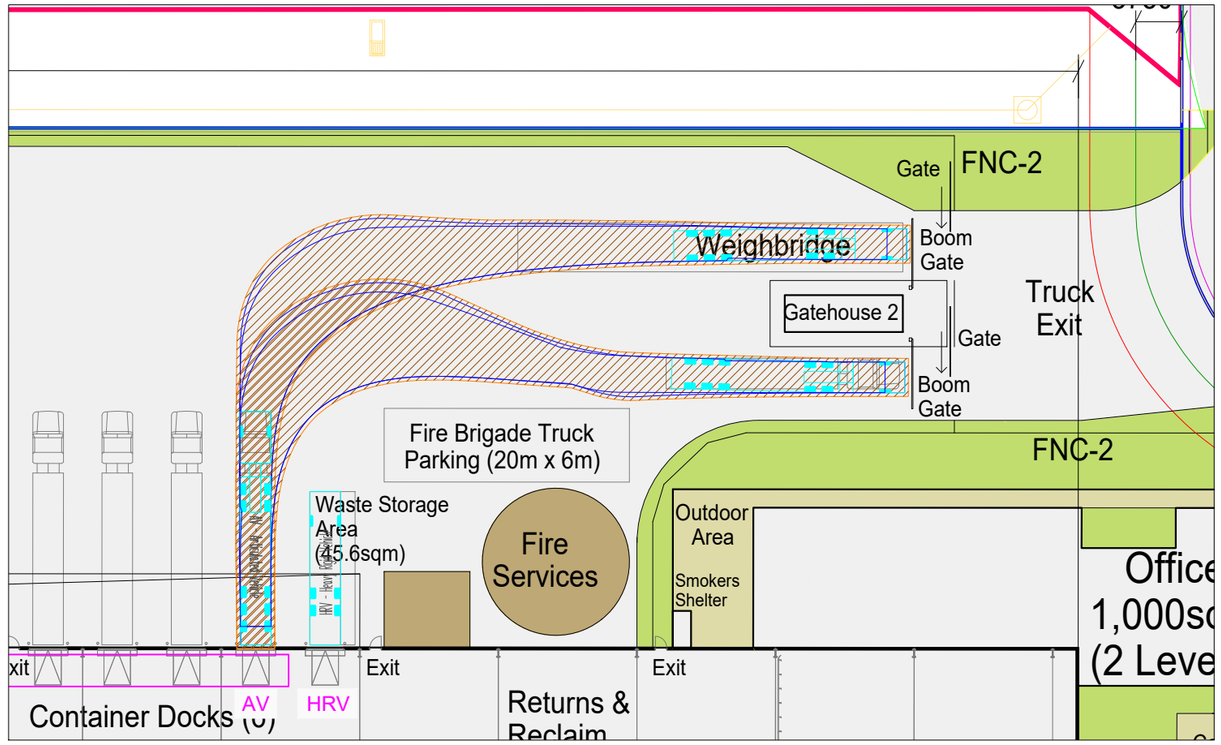

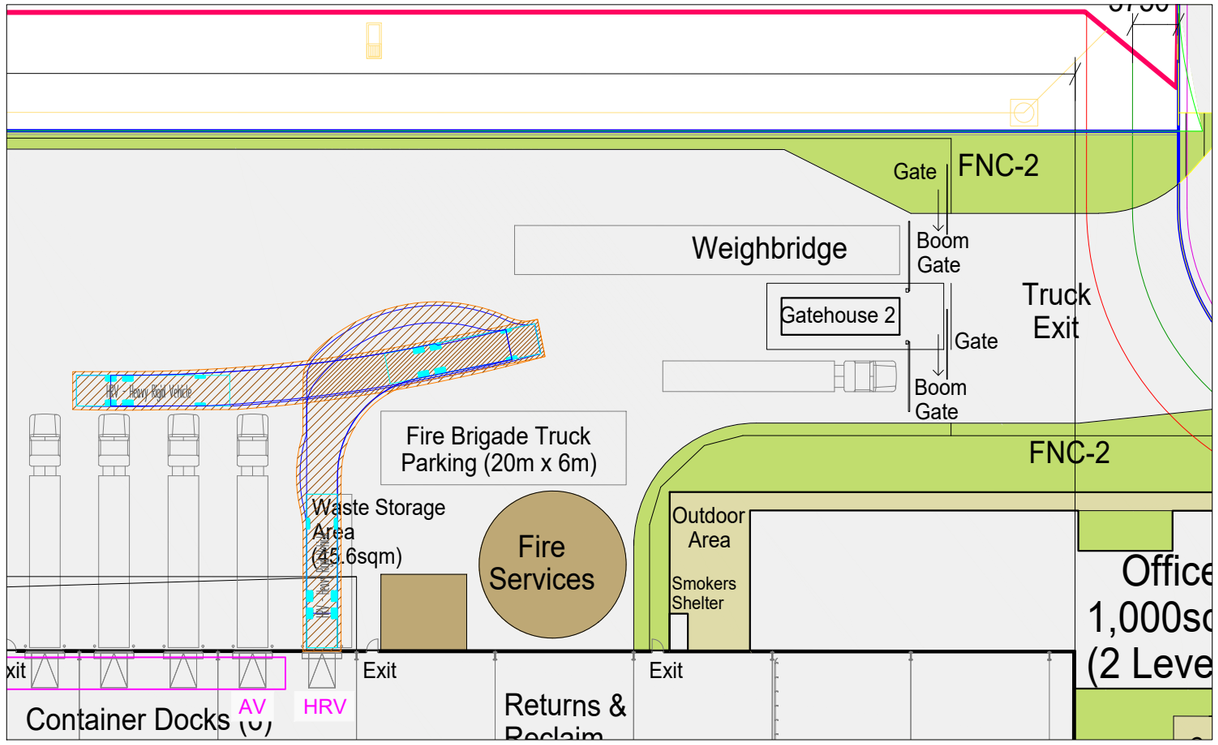

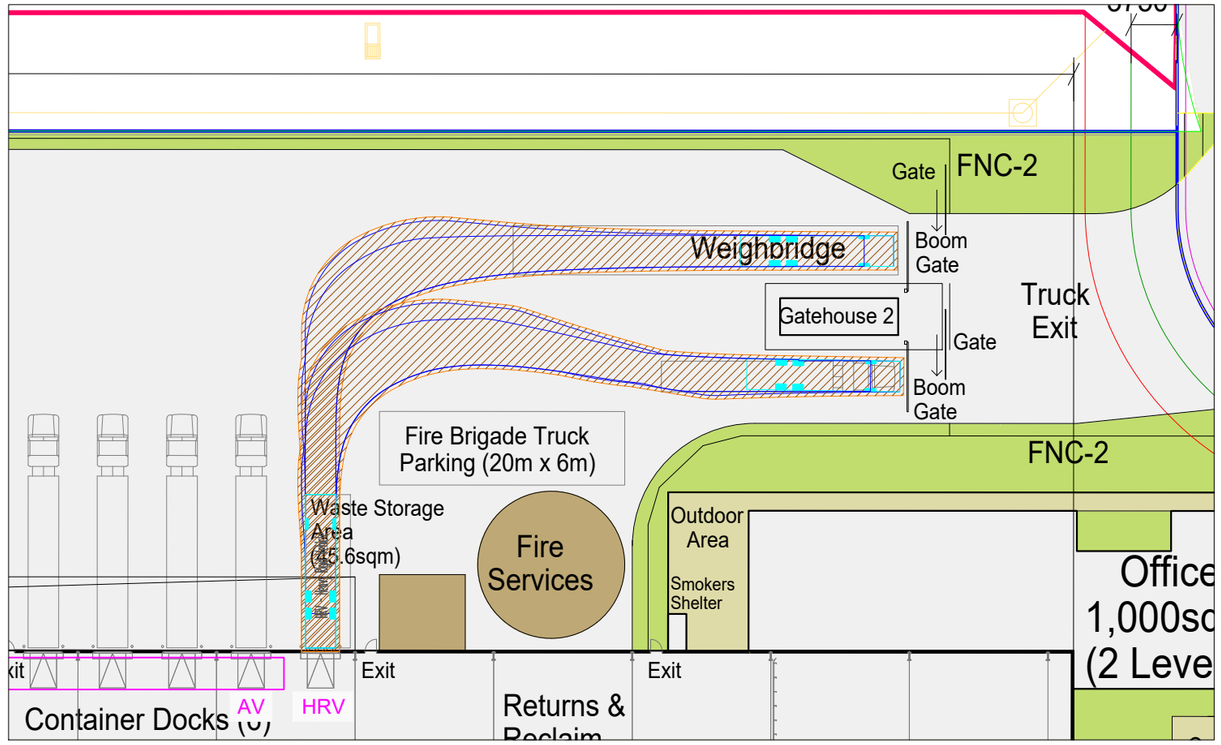

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Document Info:
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File name: AG1640d04_OWE Lot 4E.dwg

Client:
GOODMAN

Project:
P1640
OWE - BUILDING 4E

Drawing Title:
19m AV & 12.5m HRV
Access to RSD

Date:
23-Jun-21

Scale @ A3:
1:500

Drawing Number:
AG06

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Gate

FNC-

Weighbridge

Boom Gate

Gatehouse 2

Gate

Boom Gate

HRV - Heavy Rigid Vehicle

Fire Brigade Truck Parking (20m x 6m)

HRV - Heavy Rigid Vehicle

Waste Storage Area (45.6sqm)

HRV - Heavy Rigid Vehicle

Fire Services

Outdoor Area

Smokers Shelter

Exit

Exit

Exit

Recessed)

Container Docks (6)

AV

HRV

Returns & Reclaim

Notes:

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Document Info:

Drawn by: S. Hu

File name: AG1640d04_OWE Lot 4E.dwg

Client:

GOODMAN

Project:

P1640

OWE - BUILDING 4E

Drawing Title:

12.5m HRV

Fire Truck Access

Date:

23-Jun-21

Scale @ A3:

1:250

Drawing Number:

AG07

asongroup

Suite 17.02, Level 17, 1 Castlereagh St, Sydney NSW 2000

info@asongroup.com.au

Appendix B. Drivers Code of Conduct

Drivers operating within Warehouse 4E shall adhere to safe driving policies as outlined below in the Driver Code of Conduct (the Code).

Objectives of the Code

- To minimise the impact of the development on the local and regional road network;
- Minimise conflict with other road users;
- Minimise road traffic noise during night-time hours;
- Ensure truck drivers use specified routes; and
- Manage/control pedestrian movements.

Code of Conduct

The code of conduct requires that all drivers must:

- Demonstrate safe driving and road safety activities.
- Comply with all traffic and road legislation.
- Adhere to site signage and instructions.
- Only enter and exit the site via the allocated entry and exit points.

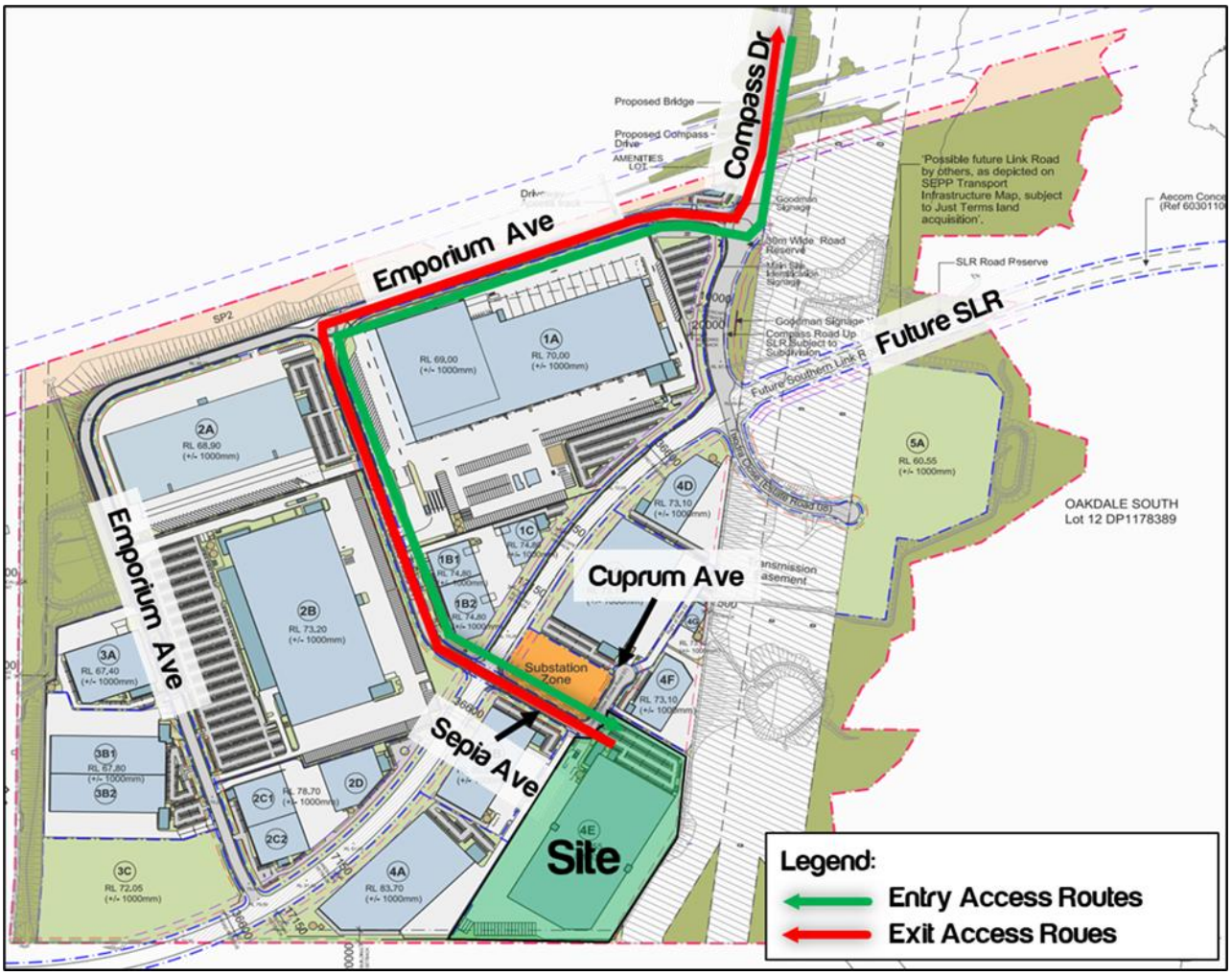
Drivers undertaking any of the following will be in a breach of conduct, result in administrative action and potential removal from Lot 4E and the broader Oakdale West Estate:

- Reckless or dangerous driving causing injury or death.
- Driving whilst disqualified or not correctly licensed.
- Drinking or being under the influence of drugs while driving
- Failing to stop after an incident.
- Loss of demerit points leading to suspension of licence.
- Any actions that warrant the suspension of a licence
- Exceeding the speed limit in place on any permanent or temporary roads

The above activities shall be enforced by licence checks, random drug and alcohol testing, and review of any community / enforcement feedback.

Driver Routes

All drivers must abide with the following route to and from the Site. As such at no time shall a vehicle access the Site via Bakers Lane or Aldington Road for operational use.



Management Team Responsibilities

Management (operator / manager / scheduler) is responsible to take all steps necessary to ensure drivers are as safe as possible and will not require staff to drive under conditions that are unsafe.

Management is to achieve this by undertaking the following:

- Ensure that all drivers adhere to the designated heavy vehicle routes as required by the route designated above, and in accordance with Condition D69A (e). If a driver accesses the Site contrary to the approved routes, then approval to drive to and from the Site will be revoked by Management.
- Ensure that the Management is responsible for ensuring no breaches of road transport laws, and to make sure that any actions or inactions taken by Management do not contribute to or encourage breaches of the NHVR.
- Ensuring all work-related vehicles are well maintained, and that the equipment enhances driver, operator, and passenger safety by way of:

  - Daily prestart inspections for all vehicles and associated equipment.
  - All vehicles must be fitted with reverse alarms.
  - Ensure all operators on-site have a current verification of competency (VOC) for their current driver's licence of the appropriate class.
  - Ensure maintenance requirements are met.
- Identify driver training needs and arranging appropriate training or re-training. This may include operator assessment as part of all inductions.
- Encouraging Safe Driving behaviour by:
  - Ensure rosters and schedules do not require drivers to exceed driving hours regulations or speed limits;
  - Keep records of drivers' activities, including work and rest times;
  - Ensure Drivers do not work while impaired by fatigue or drive in breach of their work or rest options;
  - Ensuring any Tenant is informed if their staff become unlicensed.
  - Not covering or re-imbursing staff speeding or other infringement notices.
  - Ensuring Legal use of mobile phones in vehicles while driving only and that illegal use is not undertaken.
- Encouraging better fuel efficiency by:
  - Use of other transport modes or remote conferencing, whenever practical.
  - Providing training on, and circulating information about, travel planning and efficient driving habits.

Driver Responsibilities

All drivers accessing Warehouses 4E must:

- Be responsible and accountable for their actions when operating a company vehicle or driving for the purposes of work.
- Be cognisant of the noise and emissions requirements imposed within the OEMP, and in a broader sense, the NSW/ Australian Road Rules.
- Display the highest level of professional conduct when driving a vehicle at work.
- Ensure they have a current Australian State or Territory issued driver licence for the class of vehicle they are driving, and this licence is to be carried.
- Immediately notify their supervisor or manager if their drivers' licence has been suspended, cancelled, or has had limitations applied.
- Comply with all traffic and road legislation at all times.
- Assess hazards while driving and demonstrate appropriate care.
- Regularly check the oil, tyre pressures, radiator, and battery levels of vehicles they regularly used.
- Obey all on-site signposted speed limits and comply with directions of traffic control supervisors in relation to movements in and around temporary or fixed work areas.
- Not drive outside of the approved heavy vehicle routes. All drivers must obey weight, length and height restrictions imposed by the National Heavy Vehicle Regulator, and other Government agencies. Heavy Vehicles shall adhere to the routes outlined in Section 4.2.2.
- Be aware that at no time may a tracked vehicle be permitted or required on a paved road.
- Never drive under the influence of alcohol or drugs, including prescription and over the counter medication if they cause drowsiness –to do so will merit disciplinary measures.

- Wear a safety seat belt at all times when in the vehicle.
- Avoid distraction when driving –the driver will adjust car stereos/mirrors etc. before setting off or pull over safely to do so.
- Report any near-hits, crashes, and scrapes to their manager, including those that do not result in injury.
- Report infringements to a manager at the earliest opportunity.
- Report vehicle defects to a manager prior to the next vehicle use.
- Adhere to the authorised site access and egress routes.
- Follow speed limits as imposed within the estate.
- Take reasonable care for his or her own personal health and safety.
- Not adversely, by way of actions or otherwise, impact on the health and safety of other persons.
- Notify their employer if they are not fit for duty prior to commencing their shift.
- Ensure all loads are safely covered and / or restrained, as necessary.
- Ensure no dirt or debris from the vehicles is tracked on to the public road network.
- Operate their vehicles in a safe and professional manner, with consideration for all other road users.
- Not use mobile phones when driving a vehicle or operating equipment. If the use of a mobile device is required, the driver shall pull over in a safe and legal location prior to the use of any mobile device.
- Advise management of any situations in which the driver knows, or thinks, may present a threat to workplace health and safety.
- Drive according to prevailing conditions (such as during inclement weather) and reduce speed, if necessary.
- Have a valid Container Wright Declaration if they are to move freight containers.

Crash or incident Procedure

In the event of a crash or other incident whilst driving:

- Stop your vehicle as close to it as possible to the scene, making sure you are not hindering traffic. Ensure your own safety first, then help any injured people and seek assistance immediately if required.
- Ensure the following information is noted:
  - Details of the other vehicles and registration numbers
  - Names and addresses of the other vehicle drivers.
  - Names and addresses of witnesses.
  - Insurers details
- Give the following information to the involved parties:
  - Name, address, and company details
- If the damaged vehicle is not occupied, provide a note with your contact details for the owner to contact the company.
- Ensure that the police are contacted should the following circumstances occur:
  - If there is a disagreement over the cause of the crash.
  - If there are injuries.
  - If you damage property other than your own.

- As soon as reasonably practical, report all details gathered to your manager.

Appendix C. Evidence of Consultation

Lachlan O'Reilly

From: Raymond Tran <Raymond.TRAN@transport.nsw.gov.au>
Sent: Monday, 15 August 2022 10:08 AM
To: Lachlan O'Reilly
Cc: Stephanie Partridge; Ben Milner; Luke Ridley; Alasdair Cameron; Malgy Coman; Laura Van putten
Subject: RE: Oakdale West Estate - Building 4E | Sustainable Travel Plan Consultation

Hi Lachlan

I have reviewed the OTMP and have no comment.

Kind regards,

Raymond Tran
A/Network and Safety Services Manager
Planning and Programs
Greater Sydney
Transport for NSW

M 0409 744 683 **T** (02) 8843 3133 **E** raymond.tran@transport.nsw.gov.au

transport.nsw.gov.au

27 Argyle Street
Parramatta NSW 2150

From: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>
Sent: Saturday, 6 August 2022 5:15 PM
To: Pahee Rathan <Pahee.RATHAN@transport.nsw.gov.au>; Raymond Tran <Raymond.TRAN@transport.nsw.gov.au>
Cc: Stephanie Partridge <Stephanie.Partridge@goodman.com>; Ben Milner <Ben.Milner@goodman.com>; Luke Ridley <Luke.Ridley@goodman.com>; Alasdair Cameron <Alasdair.Cameron@goodman.com>; Malgy Coman <Malgy.COMAN@transport.nsw.gov.au>; Laura Van putten <Laura.VAN.PUTTEN@transport.nsw.gov.au>
Subject: Oakdale West Estate - Building 4E | Sustainable Travel Plan Consultation
Importance: High

Dear Pahee and Reymond,

As you're aware, Goodman are currently constructing the Oakdale West Estate. We're hoping to shortly commence operation of our Lot 4E warehouse (see indicated in red in Fig.1) within the Estate.

Figure 1 - Oakdale West, including Lot 4E

In accordance with the Consent for the development (SSD 22191322) , Goodman have prepared an Operational Traffic Management Plan (OTMP) and Sustainable Travel Plan (STP) for the facility which is in line with the Estate's (SSD 7348) approved overarching OTMP.

Based on the Consent, it is a requirement of Condition B10 (a) (as below) that we demonstrate consultation with you before we can lodge this report with the Department for approval. We are unable to start Operation of the facility until the Department approves this report:

Sustainable Travel Plan

B10. Prior to the commencement of operation of any part of the development, the Applicant must prepare a Sustainable Travel Plan. The Sustainable Travel Plan must:

(a) be prepared in consultation with TfNSW;

(b) outline facilities and measures to promote public transport usage, such as car share schemes and employee incentives; and

(c) describe pedestrian and bicycle linkages and end of trip facilities available on-site.

We'd therefore be grateful if you're able to please review the STP (contained within Appendix C of the attached Building 4E OTMP) and provide us any comments you may have. A 'no comment' response would satisfy the consultation requirements if you have no feedback.

Please let me know if you have any questions, otherwise we appreciate your assistance in advance.

It would be grateful if you could please come back to us by 15 August 2022 to remain on programme.

Regards,

Goodman

Lachlan O'Reilly
Project Administrator
Lachlan.OReilly@goodman.com

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M. +61 481 254 556

The Hayesbery
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Rosebery NSW 2018
Australia
www.goodman.com

Appendix D. Green Travel Plan

Green Travel Plan

Lot 4E – Oakdale West Industrial Estate

18/08/2022
P1640r04v2

Info@asongroup.com.au
+61 2 9083 6601
Suite 17.02, Level 17,
1 Castlereagh Street,
Sydney, NSW 2000

Document Control

Project No	1640
Project	Lot 4E – Green Travel Plan
Client	Goodman Property Services (Aust) Pty Ltd
File Reference	P1640r04v2 GTP_Lot 4E, Oakdale West Industrial Estate

Revision History

Revision No.	Date	Details	Author	Approved by
-	03/08/2022	Draft	M. Dizon	J. Laidler
Issue I	04/08/2022	Issue I	M. Dizon	J. Laidler
Issue II	18/08/2022	Issue II	M. Dizon	J. Laidler

Contents

Contents Continued

Figures

Tables

APPENDICES

1 Introduction

1.1 Context

Ason Group has been engaged by Goodman Property Services (Aust) Pty. Limited (Goodman) to prepare a Green Travel Plan (GTP) relating to Lot 4E within the Oakdale West Industrial Estate (OWE) at Kemps Creek (the Site). It is noted that SSD 22191322[1] was approved on 29 October 2021. Additionally, this SSD has undergone a modification (SSD 22191322-Mod 1[2]) which was subsequently approved on 14 July 2022. As such the GTP has been prepared accordingly.

This GTP has been developed to address Condition B10 and B11 of the Oakdale West Estate Stage 5 Development (SSD-22191322-Mod 1) which is outlined in **Table 1**.

TABLE 1 CONDITIONS OF CONSENT (SSD 22191322)

Condition		Response
B10	Prior to the commencement of operation of any part of the development, the Applicant must prepare a Sustainable Travel Plan. The Sustainable Travel Plan must:	Noted. A Green Travel Plan (equivalent to a STP) has been prepared and largely addresses points a to c.
(a)	be prepared in consultation with TfNSW;	Noted. Consultation with TfNSW will be initiated as part of the finalisation of this GTP.
(b)	outline facilities and measures to promote public transport usage, such as car share schemes and employee incentives; and	Refer to Section 4 of this GTP.
(c)	describe pedestrian and bicycle linkages and end of trip facilities available on-site	Refer to Section 2.3 and Section 2.2.2 of this GTP.
B11	The Applicant must implement the Sustainable Travel Plan throughout operation of the development	Noted.

1.2 Goals

This GTP has specifically been prepared to achieve the following key goals:

1. Identify objectives and modes share targets (i.e., site and land use specific, measurable, and achievable and timeframes for implementation) to define the direction and purpose of the future GTP;
2. Suggest specific tools and actions to help achieve the objectives and mode share targets;
3. Suggest measures to promote and support the implementation of the GTP, including financial and human resource requirements, roles and responsibilities for relevant employees involved in the implementation of the future GTP;
4. Suggest a methodology and monitoring/review program to measure the effectiveness of the objectives and mode share targets of the future GTP, including the frequency of monitoring and the requirement for travel surveys to identify travel behaviours at appropriate times.

[1] https://www.planningportal.nsw.gov.au/major-projects/projects/oakdale-west-estate-stage-5

[2] https://www.planningportal.nsw.gov.au/major-projects/projects/oakdale-west-mod-1-stage-5-building-4e

1.3 Objectives

Underpinning this GTP comprises a package of measures which could be adopted and designed to address the specific travel needs of the Site. In this regard, the overall intention is to encourage and facilitate the use of alternative and sustainable modes of transport and to reduce single-occupancy car travel for journeys to and from the Site.

The primary objectives of the future GTP will be to:

- Reduce the environmental footprint of Oakdale West Estate.
- Set future staff travel mode share targets.
- Improve access, amenity, convenience, and safety of sustainable transport modes to/from the Site.
- Promote the use of 'active transport' modes such as walking and cycling, particularly for short-medium distance journeys.
- Reduce reliance on the use of private vehicles for all journeys.
- Encourage a healthier, happier, and more active & public transport use culture.

Having regard for the above, this GTP seeks to adopt the movement hierarchy shown in **Figure 1**, with priority given to 'active transport' such as walking and cycling.

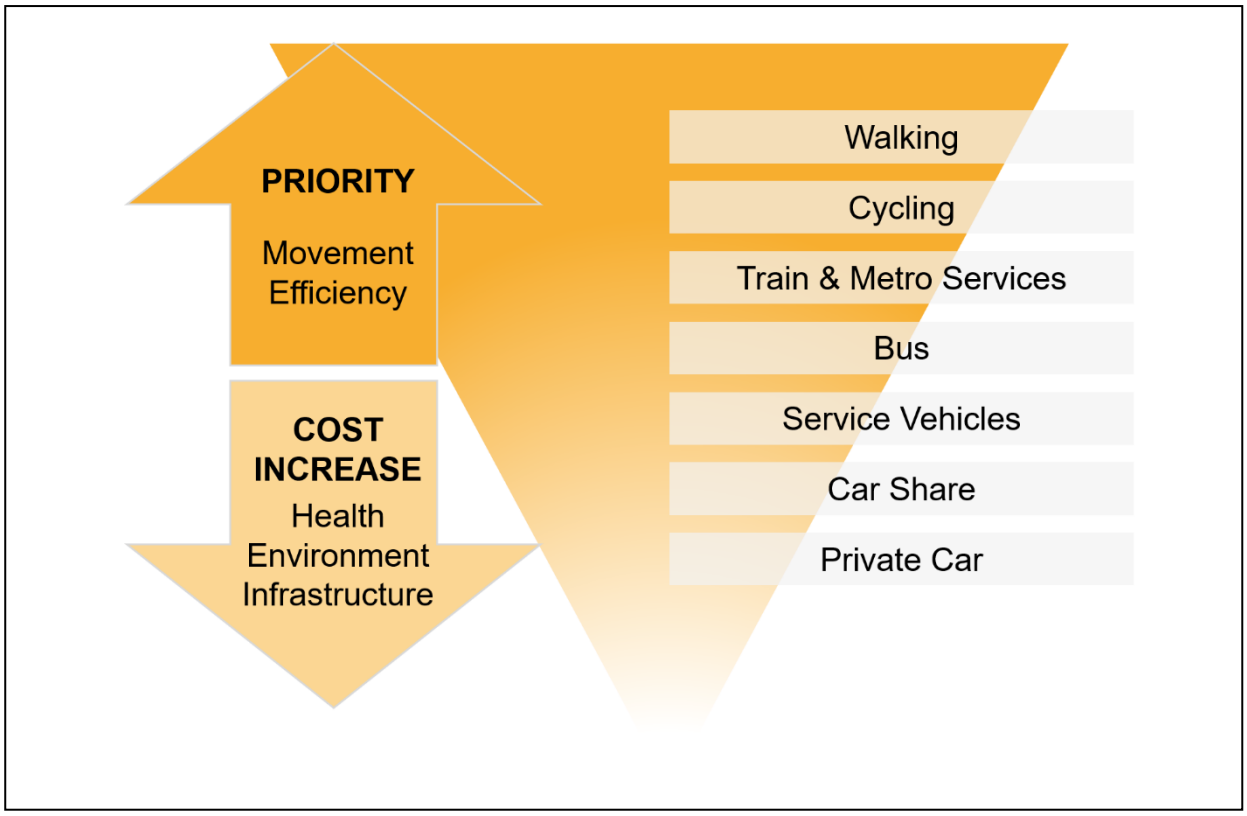


Figure 1: Movement Hierarchy

2 Site Audit

2.1 Introduction

An audit of the Site is required to determine the existing facilities in the area and review existing transport choices. This section will need to be updated prior to implementation of any future Plan, and should be updated regularly, to ensure that it remains as up to date as possible. The audit considers the following:

- Public transport services in the area, including proximity to the Site, frequency of services and accessibility;
- Bicycle and pedestrian facilities, including accessibility, connectivity, and safety; and
- Mode-split data for the Site and local area.

2.2 Development Site

2.2.1 Location & Description

Warehouse 4E is an industrial warehouse development with ancillary office, located within the broader Oakdale West Estate (OWE). The Precinct lies within a series of strategic growth corridors including the Western Sydney Growth Centre and Broader Western Sydney Employment Areas and is intended to be serviced by Compass Drive (previously known as the Western North South Link Road, WNSLR).

A total development floor area of 599,455m^2 is to be provided by the industrial buildings within the Estate, as outlined by the Concept Plan (SSD 7348 MOD 10). It is noted that MOD 10 is currently under review.

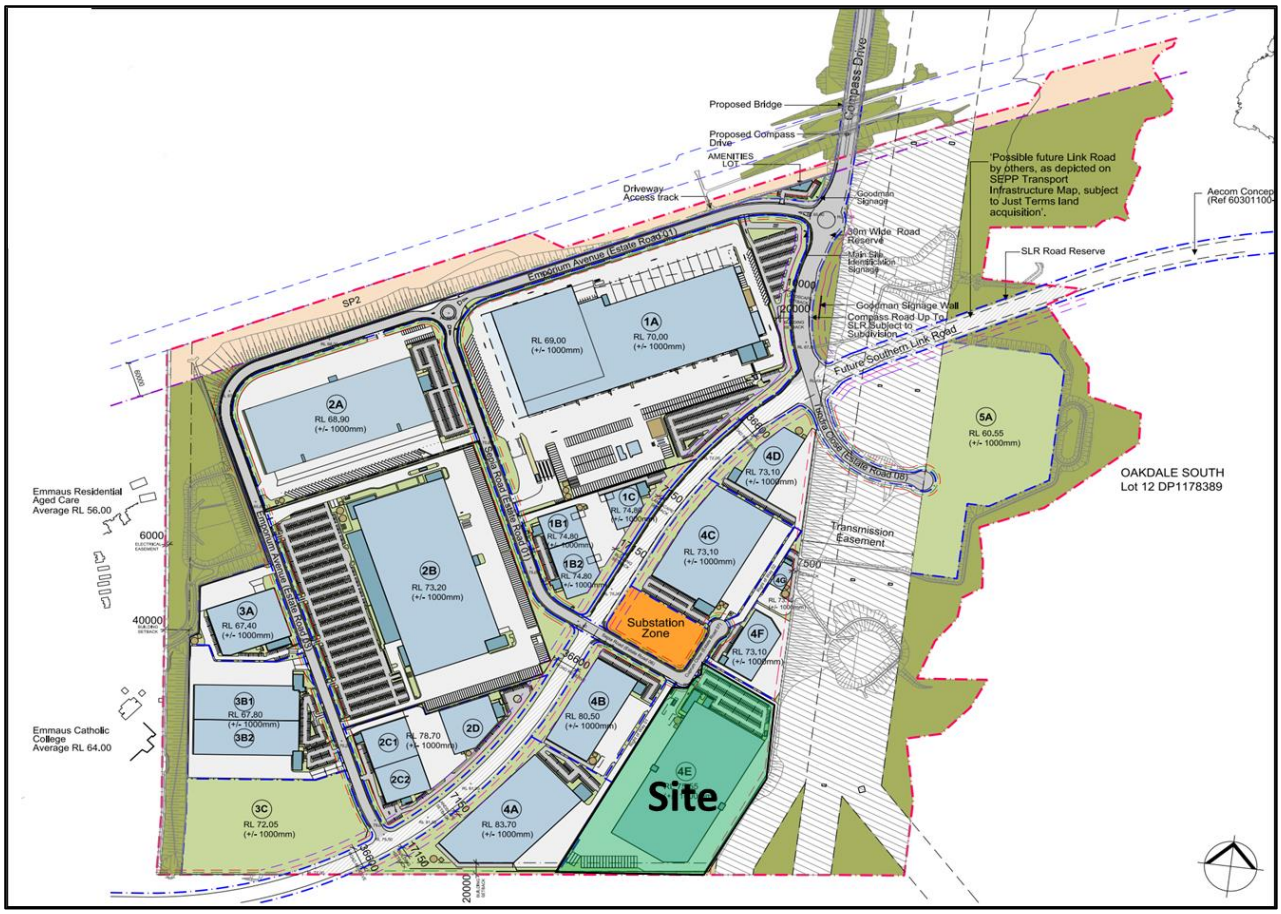


Figure 2: OWE Context Showing Warehouse 4E (MOD 10)

Figure 3 below provides the location of the Site in the context of the Estate with regard to existing road systems.

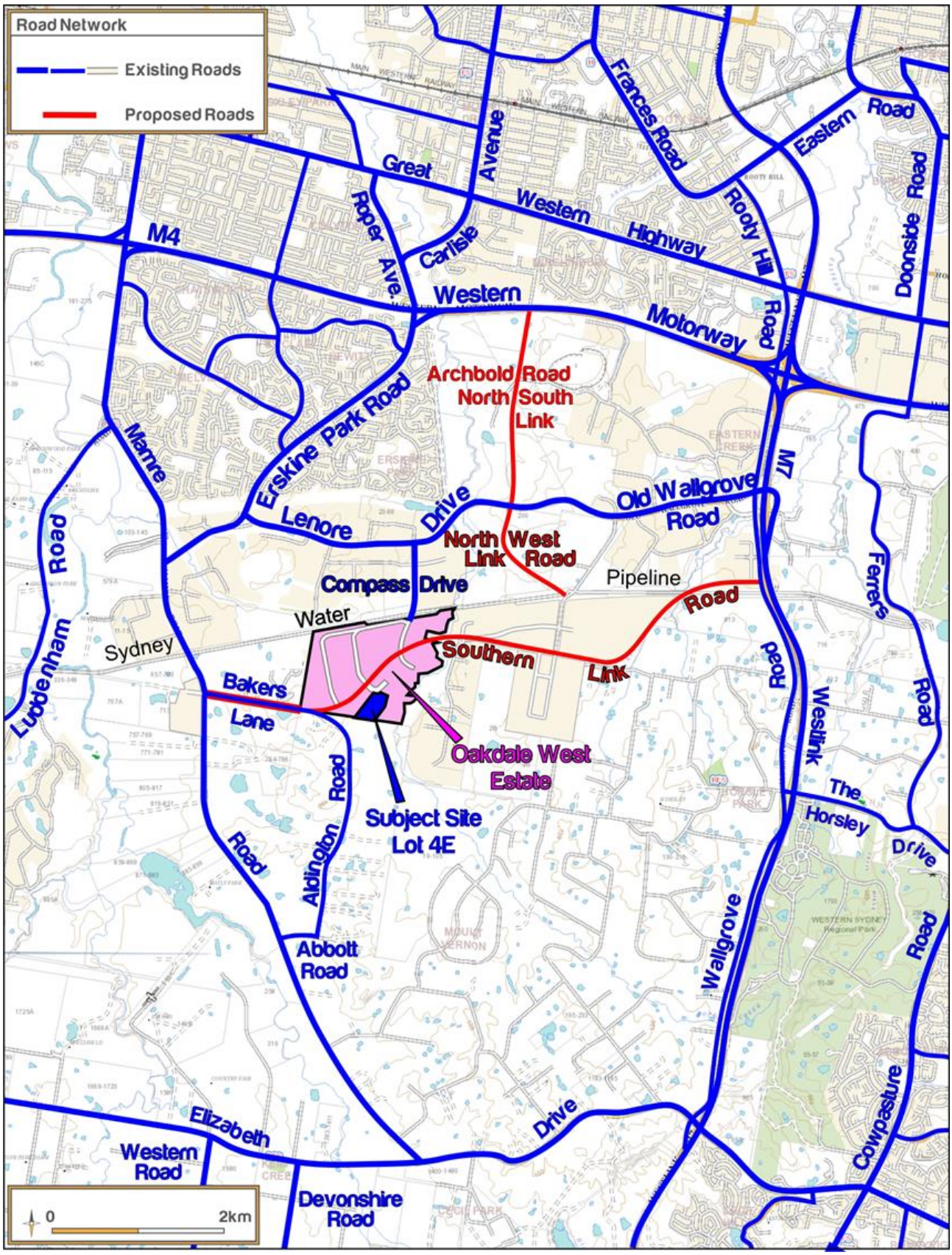


Figure 3: Site Appreciation and Road Hierarchy

2.2.2 Proposed Development

A site plan and an overview of the proposed surroundings are provided in **Figure 2.** Warehouse 4E details are summarised in **Table 2.**

TABLE 2 DEVELOPMENT YIELD

Component	Warehouse 4E
Warehouse GFA (m^2)	34,000
Office GFA (m^2)	1,295
Workshop GFA (m^2)	200
Gatehouse GFA (m^2)	65
Total GFA (m^2)	**35,560**
Loading Dock Provision	42 spaces[1]
Trailer Parking Provision	21 spaces
Car Parking Provision	237 spaces[2]
Accessible Parking	5 Spaces
Fuel Efficient Parking	12 Spaces
Bicycle Parking[3]	12 spaces
Showers[3]	6 showers
Lockers[3]	144

Note: 1) This provision includes 34 recessed docks and 8 roller shutter doors.

2) This provision includes 5 accessible spaces and 12 fuel efficient parking spaces.

3) See Figure 6 and Figure 7 for bicycle parking and changeroom locations.

Warehouse 4E is an industrial warehouse development with ancillary office. **Figure 4** below presents a plan illustrating the proposed development showing the general layout of the warehouse and associated traffic circulation, loading, and parking areas.

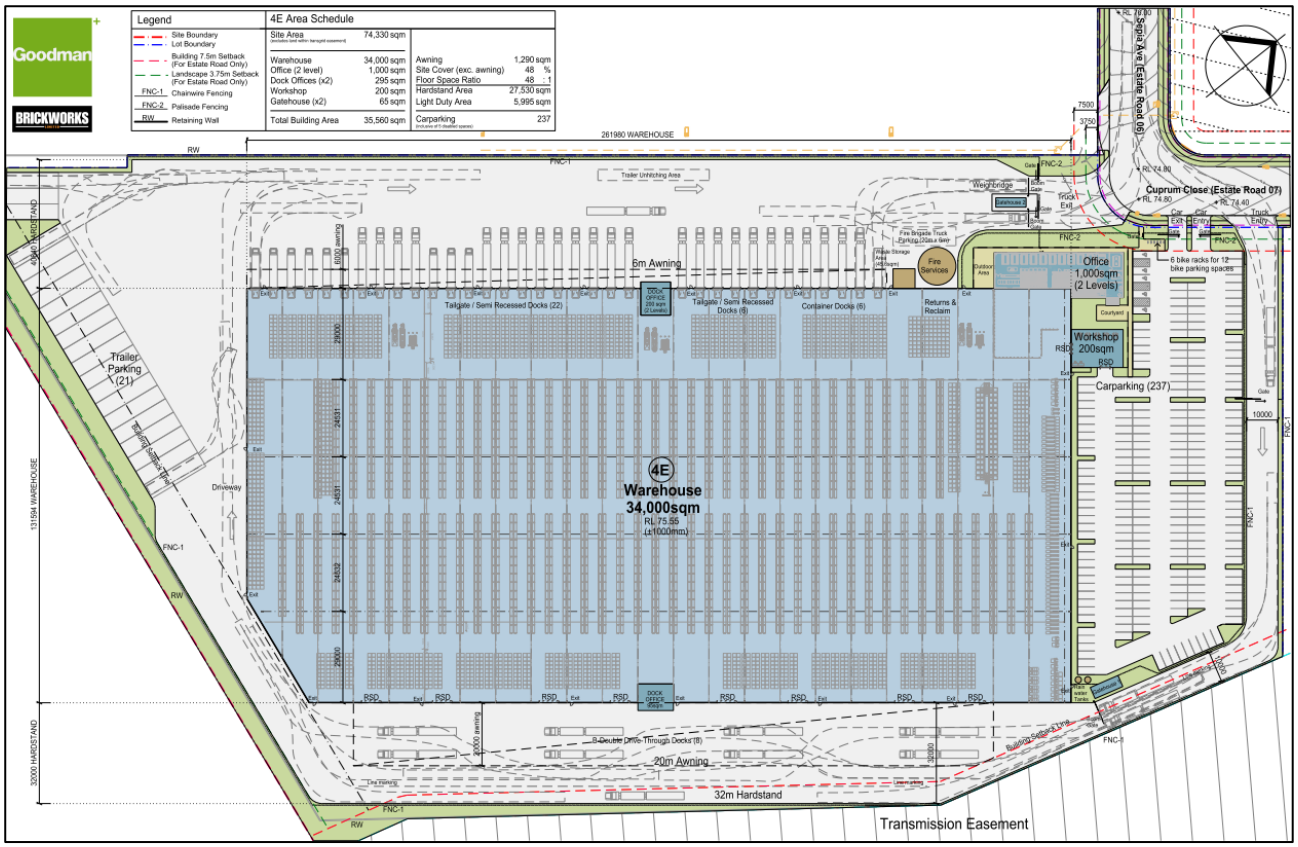


Figure 4: Warehouse 4E Site Plan

A reduced plan of Warehouse 4E has been provided below for reference.

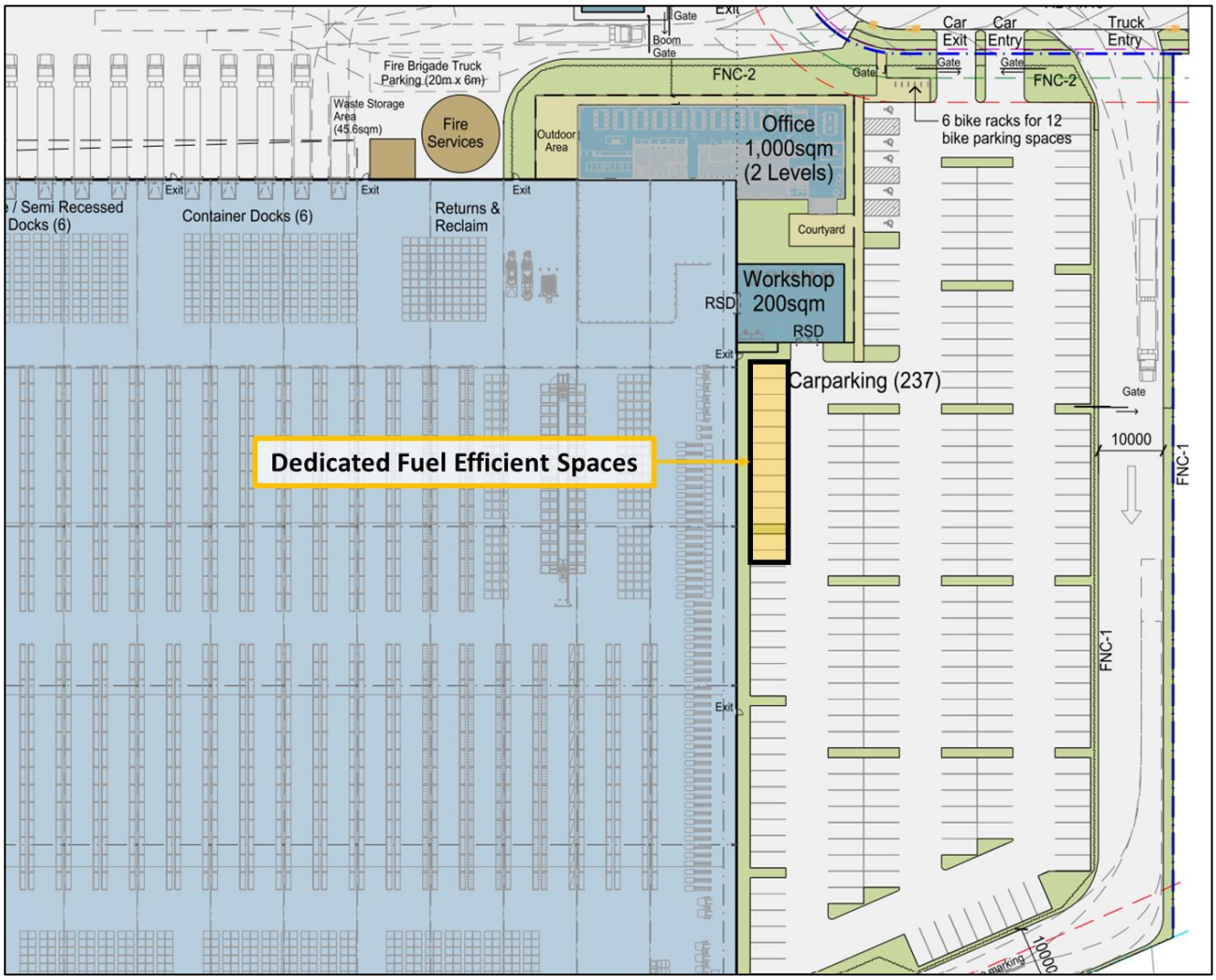


Figure 5: Dedicated Fuel-Efficient Spaces – Warehouse 4E

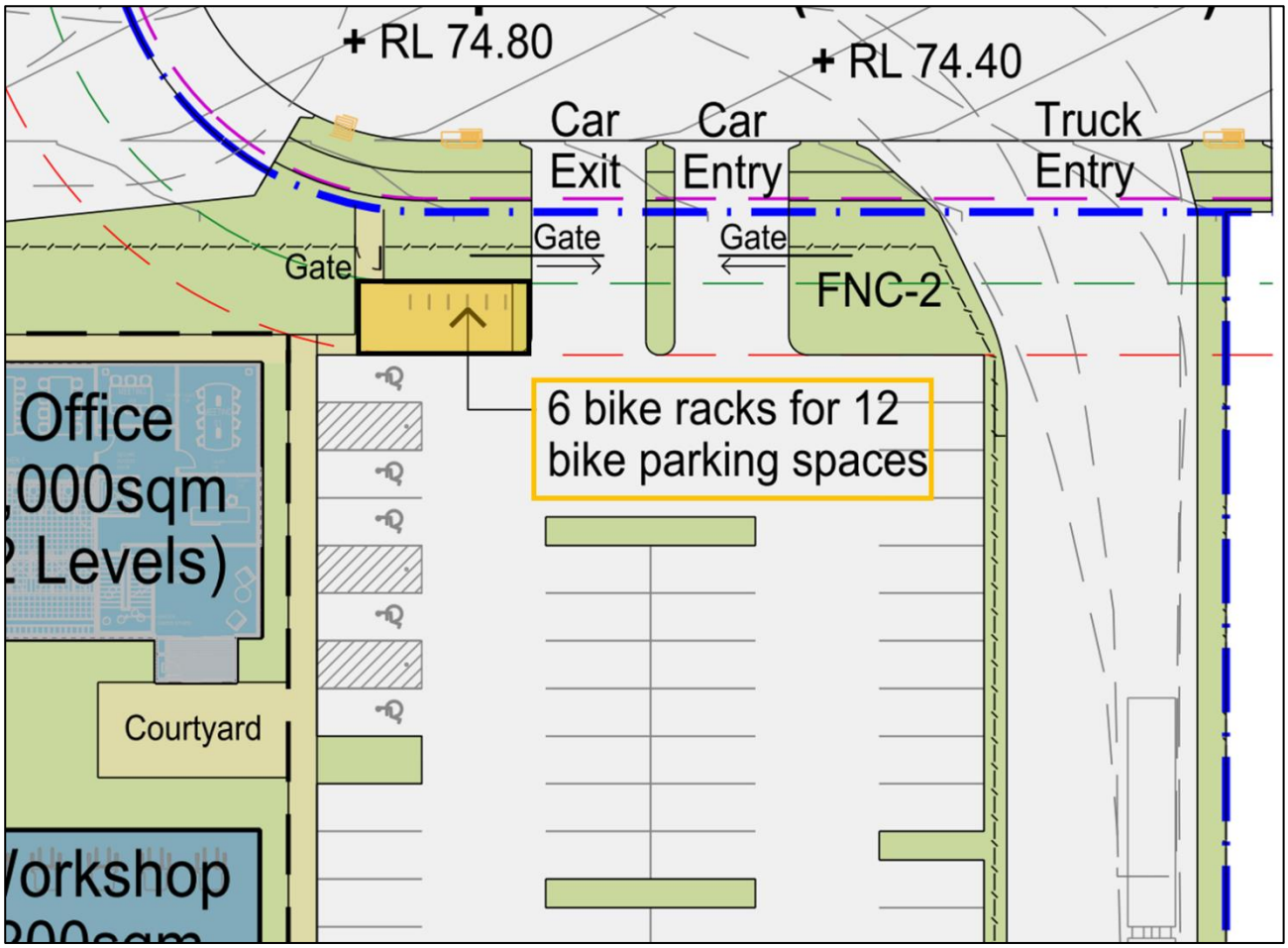


Figure 6: End-of-trip facilities (Bicycle Parking) – Warehouse 4E

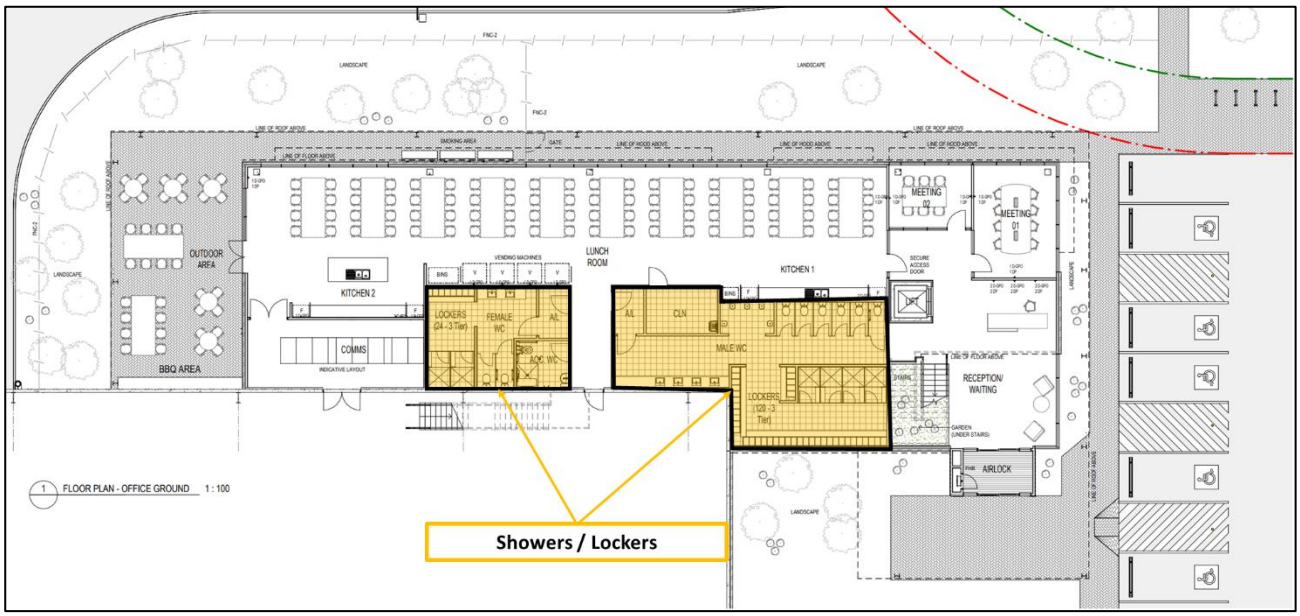


Figure 7: End-of-trip facilities (Showers/Lockers) – Warehouse 4E

2.3 Existing Public & Active Transport

2.3.1 Introduction

The Site is limited with the current active and public and transport service offering, as shown in **Figure 8**. A summary of existing public transport services is provided below.

2.3.2 Active Transport Connections

A Shared Path (cyclists and pedestrians) is provided along the northern side of Lenore Drive and western side of Old Wallgrove Road, providing connections to the regional pedestrian and cycle networks. Compass Drive and the internal roads will include a 2.5-metre shared path for both pedestrians and cyclists.

Footpaths and cycle routes do not carry high volumes of pedestrians or cyclists. Notwithstanding, any TGS shall maintain a suitable level of access past work areas for these users at all times.

2.3.3 Bus Services

TfNSW Guidelines state that bus services influence the travel mode choices of sites within 400m (approximately 5 minutes' walk) of a bus stop.

The introduction of a new bus route provides additional access for workers/ visitors within OWE. This new bus service (Route 779) commenced operations on 24 October 2021 and provides direct access to and from St Marys Train Station. Introduction of a direct connection with St Marys Train Station increases the accessibility of the site via public transport services.

2.3.4 Train Services

The Integrated Public Transport Service Planning Guidelines, Sydney Metropolitan Area (Transport for NSW, December 2013) states that rail services influence the travel mode choices of areas within 800 metres (approximately 10 minutes' walk) of a railway station. The closest railway station to the Oakdale West Precinct is Mt Druitt Station, is approximately 7km north of the site. This would imply that commuting by rail would have minimal influence on workplace travel.

It should be noted that several studies conducted for the Broader Western Sydney Employment Area (BWSEA) reference the potential development of connecting freight or passenger corridor to the Site's west, connecting the T1, T2 and T5 lines to Badgerys Creek Airport[3,4].

[3] Western Sydney Rail Needs Scoping Study https://www.westernsydneyairport.gov.au/files/WSRNSS_Outcomes_Report.pdf

[4] Broader Western Sydney Employment Area – Structure Plan https://www.planning.nsw.gov.au//media/Files/DPE/Reports/broader-western-sydney-employment-area-structure-plan-transport-planning-preliminary-analysis-report-exhib-draft-2013-06.pdf?la=en

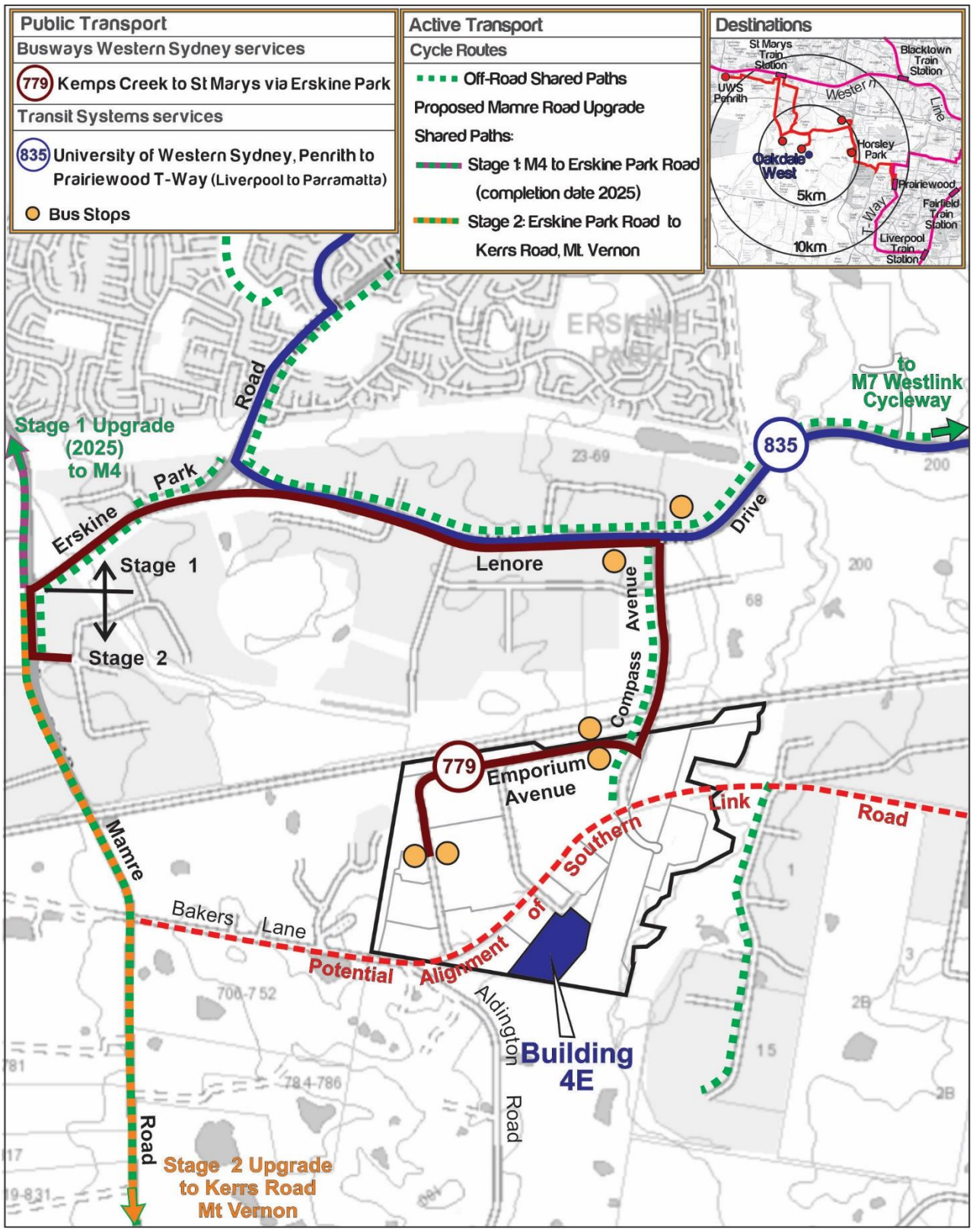


Figure 8: Public & Active Transport Network

2.4 On Demand Services

2.4.1 Car Share

Car sharing has emerged as a cost effective, flexible alternative to private vehicle ownership. Provision of car share in the area could facilitate intermittent work trips that may need to be made by car such that staff can commute by other modes. Prior to the commencement of car share providers, it is proposed to consider schemes such as provision of car share priority parking spaces, to actively encourage car sharing amongst staff.

2.5 Existing Travel Patterns

2.5.1 Journey to Work Data Analysis

Journey-to-Work (JTW) data from the Australian Bureau of Statistics (ABS) 2016 Census and specifically aggregated Destination Zones (DZ) has been referenced to understand the baseline travel characteristics of the Site. This data informs the initial targets and should be refined and updated as part of the monitoring process through the use of travel survey data of the operational development.

It is noteworthy that the OWE is still in development, as such existing travel patterns cannot be ascertained at this time. Therefore, for the purposes of the STP, a neighbouring travel zone with existing development, DZN114695449, has been identified and assessed. The JTW information for the surrounding locality is presented in Figure 9 below.

It is evident that the area experiences a high proportion of private vehicle trips (inclusive of vehicle driver and vehicle passenger modes) and similarly a low proportion of public and active transport modes; reflective of the current availability of non-car opportunities. Accordingly, the mode share analysis indicates a high likelihood for staff associated with the development to use private vehicles as the primary mode of transport.

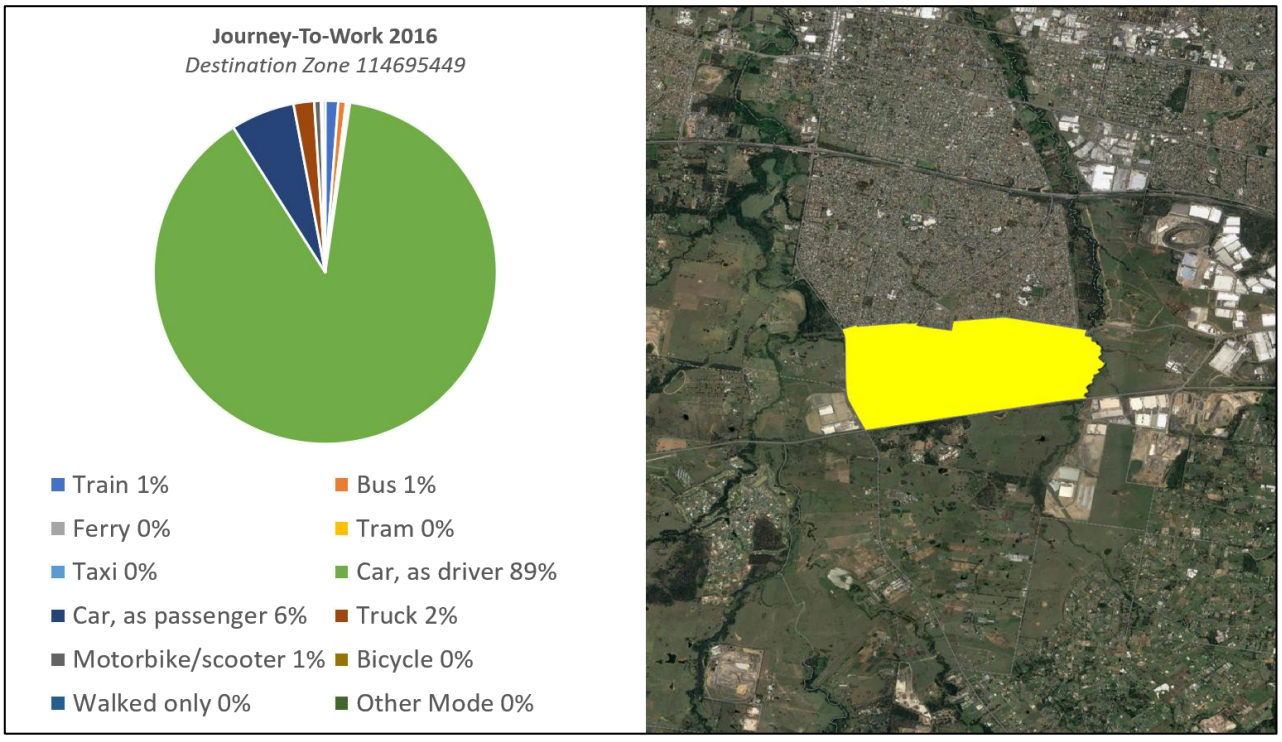


Figure 9: Journey-to-work 2016 Profile

The travel modes are presented in **Table 3.**

TABLE 3: TRAVEL MODE SUMMARY (JOURNEY TO WORK)

Travel Mode	Mode Share of Employees
Car as driver	89%
Car as passenger	6%
Truck	2%
Train	1%
Bus	1%
Motorbike/Scooter	1%
Walked only	0%
Bicycle	0%
Taxi	0%
Other Modes	0%

With reference to Table 3, it is evident that the private vehicle (car) is the overwhelming preferred mode of choice for commuters travelling to work in the area. The data indicates that 95% travel to work by car with 89% as the driver and 6% as passenger i.e., car-pooling.

2.6 Accessibility

The Site addresses accessibility requirements for employees with mobility impairments by implementing the requirements outlined within AS2890.6 and AS1428, which delivers the appropriate measures to be put in place.

The appropriate measures include:

- Dedicated accessible parking spaces are provided and consistent with Figure 2.2 of AS 2890.6
- Those accessible parking spaces being designated to those spaces closest to the office for each warehouse.
- Walkways and ramps are provided per Section 10 of AS 1428.1

Any further accessibility requirements or updates shall be identified during the annual review for this GTP.

3 Development, Scope & Implementation

3.1 Introduction

This section sets out in broad terms how the GTP will be developed, the scope of the GTP and the objectives.

3.2 Responsibility

The responsibility for the future GTP will lie with site management and should form part of organisational policies. The future GTP should include a statement on company policy in relation to travel and should be endorsed by senior management.

3.3 GTP Scope

The future GTP should address the following types of travel generated by the development:

- Commuter journeys by staff;
- Visitor journeys;
- Business travel; and
- Site related deliveries from contractors etc.

The future GTPs are expected to have most effect on commuter journeys by staff. While the operator will aim to encourage sustainable travel by visitors, ultimately staff travel is easier to influence.

The aim is to develop practical measures that are effective in reducing car use for all journeys to the Site.

3.4 Implementation

A Travel Plan Co-ordinator Leader (TPCL) will be appointed by management and would act as the primary point of contact for enquiries relating to the progress of the GTP, and act separately to the Site management team. It is recommended that a consistent TPCL be appointed for the Site so as to achieve a coordinated approach across the Site. A sub-management team shall be formed to ensure all of the actions of the GTP are enacted.

The PTCL and sub-management team should be appointed before the Site becomes occupied, or within 1 month of the site becoming occupied. Details for the TPCL role and responsibilities associated with the GTP are provided below. The main duties of the TPCL are envisaged to be:

- Leader of a broader team/ committee that is responsible of the development and implementation of the GTP.
- Internal liaison to promote awareness of the GTP amongst staff within the Site.
- Liaison with outside bodies, such as Penrith City Council (Council) and local bus operators, as required regarding the operation of the GTP.

- Providing updated travel information to staff and visitors, as necessary.
- Monitoring, review and (if necessary) updates to the GTP.

The TPCL and the sub-management team will promote participation in and commitment to the GTP from the tenant and will ensure a smooth transition so that each tenant will be responsible for their ongoing monitoring and updating of the GTP. The TPC and the sub-management team shall make it clear to each tenant that there are requirements to try and achieve sustainable transport mode shares for the site, as a condition of the development, for the life of the development.

3.5 Consultation

It is essential that any parties that may play a part in the future GTP's and its actions are aware and have an opportunity to discuss. This would enable equitable input and feedback as well maximising the overall efficacy of the GTP. For this reason, a coordinated approach to GTPs across the Site should be implemented (subject to individual tenant participation) to assist in the consultation with the relevant parties as per consultation requirements under the SSD consent.

Other organisations may be added to this list as the Plan evolves.

3.5.1 Consultation with TfNSW

Consultation with TfNSW has been undertaken, with comments regarding the subject GTP received on 11 August 2022. Evidence of consultation has been provided within **Appendix C** of this GTP.

TABLE 4: COMMENTS FROM TFNSW (11 AUGUST 2022)

Item No.	Condition	Response
1	**Car parking:** TfNSW recommend reducing the amount of carparking proposed as this will further encourage car driving as a preference and reduce any incentive to harness other more sustainable modes, consistent with Future Transport 2056 in which Travel Demand Management (TDM) is one of TfNSW top priorities. TfNSW appreciates that there will be some provision for Fuel Efficient Parking which should be monitored over time to ensure sufficient supply – and also recommend the provision of charging stations for Electric Vehicles (EV).	Based on the occupancy and use of the building (approved 24-hours operation / split shift roster), in order to comply with Condition B8 of SSD 22191322 consent conditions, the parking numbers implemented at the site have been developed in order to meet the condition, and ensure that the development does "*utilise public and residential streets or public parking facilities*" The number of parking spaces has been approved as part of the SSDA process. The utilisation of parking spaces, and quantum required shall be reviewed after the opening of the Site, and as part of the ongoing monitoring of this GTP. As outlined within Figure 5, Parking spaces for fuel efficient vehicles (including EV and carpooling vehicles) are located in close proximity to warehouse entrances, and demonstrates giving priority to those who focus on 'green travel' Please note that this GTP has been updated to include strategy regarding parking management for the Site. (See Table 6: Item 6.1)
2	**Parking management:** TfNSW recommends that a parking management plan be prepared that prioritises use by staff and visitors on a needs basis to further reduce car use – this could include the dedicated parking spaces for those who are carpooling and car sharing, which is noted in Section 2.64.1, car sharing. TfNSW appreciates that a review of parking allocation (Strategy 6.1, p 22) will be conducted every 6 months, and will include monitoring provision for EV and carpooling options.	Noted. Monitoring of the parking allocation within the Site will occur as per the outlined strategy. (See Table 6: Item 6.1)
3	**Mode share targets:** TfNSW recommend that the future mode share targets be monitored over time to ensure they are being met, particularly if there are future changes for active and public transport. This includes links to the passenger rail services, and car pooling /car sharing options, as well as potential shuttle bus connections.	Noted. Monitoring of the mode share targets within the Site will occur as per the outlined strategy. (See Table 6).
4	**Bicycle Parking:** TfNSW appreciates that there will be some bicycle parking provided (Section 2.2.2, Table 2). TfNSW recommends that the provision of bicycle spaces be monitored over time to ensure there is sufficient provision to further encourage cycling as a mode – both for	Noted. Monitoring of the bicycle parking within the Site will occur as per the outlined strategy. (See Table 6). It is noted that the location of bicycle parking and EoT facilities are already included in the Travel Access Guide (TAG) included in this GTP. See Appendix A.

	staff and visitors. A good supply of quality End of trip (EoT) facilities and bicycle parking is considered to further encourage walking and cycling mode shares. Location of both bicycle parking and EoT should also be clearly detailed in the Travel Access Guide (TAG). Some further guidance on bicycle parking and end of trip facilities can be found in the cycleway design toolkit.	
5	**Shuttle bus:** TfNSW recommends that consideration be given to a shuttle bus (Strategy 2.5 Lobby to Precinct wide shuttle bus) which could connect with, for example, Mt Druitt Train Station which is located 7km north of the site to enable greater use of the train services. This could provide a good way to move workers more sustainably, and this provides a viable option assist with movements on more sustainable modes in the shorter term – this could be considered for the whole of the Oakdale West Estate precinct to service a number of developments which are currently underway.	It is noted that Figure 8 of this GTP presents the approved public transport bus routes (routes 779 and 835) which service the Oakdale West Industrial Estate. It is understood that Goodman Pty Ltd (the Client) will not be providing shuttle buses as this is not deemed feasible for these projects. Also, the Client assumes that TfNSW would not consider this viable to create a separate private shuttle bus (24/7) to transport workers where an existing public transport service already exists. In respect of the comment around Mount Druitt being closer, this is noted. However given that St Marys is 1 stop away from Mt Druitt (3min average travel time based on Sydney Trains Timetable), the Client believes the time/distance is negligible, and thus the existing transport bus service is a more sustainable option considering it services the community also, as opposed to just the Precinct. Please note that this GTP has been updated to include strategy regarding shuttle buses for the Site. (See: Table 6; Item 2.5)
6	**Travel Access Guide (TAG):** TfNSW appreciates that a TAG has been provided in Appendix A of the GTP. TfNSW asks that the TAG caters to everyone who is using the proposed development site: employees, customers and visitors. The TAG will need to be updated on a yearly basis. The backbone of the TAG is to reduce single occupancy car use, and encourage sustainable transport journeys to and from the site using public and active transport. Therefore we would recommend that the TAG: – Clearly prioritises public and active transport as the first part of the TAG. – Provide additional information about service routes and timetables for buses and trains on the Trip Planner at transportnsw.info/. – A more detailed diagram / map showing the location and number bicycle parking spaces and EoT. – Provides detail of any shuttle bus services to be provided	Noted. The TAG will be monitored as/ when applicable. Regarding bicycle parking and EoT facility, see response to Item 4.

	– For further helpful information – please check this link How to Create a Travel Access Guide doc here.	
7	**Travel Survey:** TfNSW appreciates a sample travel survey is provided in Appendix B, and that travel surveys will be undertaken. The survey should be distributed 3 months post-occupancy (and be included in the proposed action strategies). Staff and visitors travel surveys should include questions to ask obtain workforce data analysis (including staff residential postcodes) to identify the actual staff travel origin and destination patterns, to inform strategies that help to reduce staff and visitors driving to get to and from the site. The Travel Survey should be promoted as a strategy in Table 5 Implementation Plan to promote different sustainable transport routes, and also promotion of any initiatives or strategies that encourage sustainable transport routes.	Noted. See Item 7.3 within Table 6 . The Travel Survey will be distributed to each tenancy 3 months post-occupancy. It is noted that the Travel Survey included in Appendix B includes a question relating to the post code of staff's place of residence.
8	**Submission:** Please submit an updated GTP back to TfNSW with enough time to review prior to occupancy.	Noted.

3.6 Travel Mode Targets

3.6.1 Introduction

Based on the existing travel mode splits identified in Section 2.5, the Site and the surrounding areas are considered to have a low dependency on public and active transport. This is reflective of the current nature of the area, which is largely industrial developments (or other large-scale agribusinesses / residential developments).

As such, it is expected that the JTW data accurately reflects the current trends for travel to places of work at industrial sites. For example, the TfNSW *Guide to Traffic Generating Developments – Updated Traffic Surveys* (2013) itself provides details in relation to the principal mode of travel used by staff at Erskine Park and Eastern Creek warehouses (found in close proximity to the Site), as found by surveys undertaken by TfNSW. These surveys indicate that 90% of all workers would travel via private vehicles with 8% travelling as passengers.

This section therefore sets out the targets for the reduction in car journeys associated with the Site, with consideration to the future land use in the area. Targets are the means of measuring the achievement of the objectives. They need to be clear, directly linked to the objectives, monitored, and reviewed.

Questionnaire surveys will be conducted in the future that will form the updated travel mode baseline to further develop site-specific targets. The first surveys will be undertaken shortly after occupation. These surveys will be repeated at a suitable time to assess the effectiveness of the implemented GTP; the targets are to be reviewed to align with the most up-to-date information.

The implemented GTP is to be in place for the lifetime of the development. The initial timeframe in which targets need to be monitored and reviewed will be reviewed every 1-2 years, for a minimum of 5 years.

3.6.2 Mode Share Targets

It is essential that mode share targets be achievable with consideration for the public transport, walking and cycling opportunities available within proximity to the Site. Targets should also be factoring in what future transport options could reasonably be used to access the Site, and also the nature of the development itself.

TABLE 5: MODE SHARE TARGETS

Travel Mode	Mode Share of Employees (DZN 114695449)	Proposed Targets	Relative Change
Car as driver	89%	68%	-22%
Car as passenger	6%	10%	+4%
Train[1]	1%	5%[2]	+4%
Bus[1]	1%	10%	+9%
Walked only	0%	0%	-
Bicycle	0%	5%	+5%
Other Modes	2%	2%	-

Note: 1) Key opportunity in future with provision of further regional infrastructure
2) The JTW classifies multi-modal journeys by indicating the 'primary' mode only and is considered in this proposition.

Given the limited options for modal availability in the area, it is difficult to quantify the degree of modal shift from private vehicular usage to public and active transport modes. However, in the context of development outlined in the above sections, it is evident that there is clear direction in a strategic context for the expansion of public and active transport networks to serve the Western Sydney area.

In this context, the mode share targets identified above can be considered with a focus on 20% for public and active transport, and 80% on private car usage. This ratio is reflective of travel zones observed to have higher degrees of road network connectivity and limited access to rail facilities. It shall be necessary to adjust these mode share targets as future developments and planned transport infrastructure are realized, allowing for more ambitious targets to be set.

The changes made to cycling, train and bus travel modes are specifically reliant on the improvement of connectivity and additional infrastructure to facilitate them, which is anticipated to occur through several developments and initiatives associated with the broader WSEA. Similarly, the 'Vehicle Passenger' travel mode increase will primarily be met through Precinct specific initiatives.

4 Measures and Action Strategies

4.1 Measures

The below is a range of measures which could achieve the objectives of this GTP and are expanded further within **Table 6**.

This section needs to be reviewed and confirmed prior to implementation of any future Plan.

- An introduction to the GTP for all staff, setting out its purpose and objectives.
- Provision of public transport travel information for staff, customers, and visitors.
- Encouragement of car sharing, both amongst staff on site and in the wider context.
- Provision of fuel-efficient vehicle spaces (including car share, car pool and / or EV's).
- Assisted cycle purchase schemes.
- Interest free loans to assist with cycle purchase, cycle equipment purchase etc.
- A transport section on the company website with links to local bus operator sites, to ensure that travel information is always up to date.
- The provision of transport information for visitors to the Site.

4.2 Strategies

Seven main strategies are identified, and the actions required for each are detailed in Table 6. The table details specific actions that could be implemented as part of the future GTP (subject to tenant requirements) and the party responsible for implementing each action.

These actions must be reviewed at regular intervals to ensure that the mode split targets are being met. By that principle, this document is classed as a living document and subject to regular review. It is important to note, that the actions should not be taken as mandatory but potential options that should be investigated and implemented by future inhabitants of the development.

TABLE 6: IMPLEMENTATION PLAN

STRATEGY		HOW IT WORKS	RESOURCES / RESPONSIBILITY	TIMELINE	FUNDING
1 Travel Planning and Demand Management					
1.1	Green / Sustainable Travel Plans	• Develop a GTP to provide information for Travel Access Guide (TAG) (See **Appendix A**) • Management of GTPs. • Promotion of GTPs.	Building Manager to be responsible for overall implementation of final GTP and providing annual reporting on GTP outcomes to Council. Tenant to develop Company specific travel plan based on Final GTP prior to the commencement of a new lease/sale of property. Company/Staff/Visitors shall be responsible for ongoing implementation of Company assigned actions and participation in annual monitoring and reporting process to Council	Upon completion of the development and ongoing annual GTP events.	Tenant / Business Owner
1.2	Travel Information Points	• Establish locations such as travel information points where staff and visitors and others can access travel information via interactive platforms. • Promotion of GTPs • Provision of travel and transport information options	Tenant / Business Owner	Upon completion of the development (building occupation)	Tenant / Business Owner
1.3	Flexible Working hours	Allow employees the flexibility to commute outside peak periods to reduce overall congestion and travel time.	Tenant / Business Owner	Subject to employer preference. Action to be considered by employers / Visitors as part of an Employer specific GTP to be developed and forwarded to Council prior to building occupation.	Tenant / Business Owner
1.4	Teleworking	Provide the option to work remotely (where possible) to reduce the number of vehicles travelling to the development and encourage teleconferencing rather than travelling to meetings.	Tenant / Business Owner	6 months after the commencement of the operations within the Site to better understand the travel patterns of staff.	Tenant / Business Owner

STRATEGY		HOW IT WORKS	RESOURCES / RESPONSIBILITY	TIMELINE	FUNDING
2 Promoting Public Transport					
2.1	Opal Card Loan Schemes / Subsidising schemes for public transport travel through pre-paid credit cards	Company may consider subsidising staff public transport travel. Alternatively, staff can pay for their own Opal Cards / pre-paid travel card through their salary, spreading the cost over the year to make it more affordable.	Tenant / Business Owner / TPCL	Subject to employer. Can be implemented at building occupation	Tenant / Business Owner
2.2	Maximise Bus Service Frequency	• Meet or exceed Transport NSW bus planning guidelines. • Decrease headway where possible, especially during peak periods. • Report back to TfNSW on perception of bus service adequacy.	TfNSW	Developer to hold on-going discussions with TfNSW after each annual review of GTP and report on relevant findings	TfNSW
2.3	Provide bus stops with shelter facilities	Ensuring provision of bus stops suitable for waiting areas for commuters – Developer to recommend improvements to the proposed / implemented bus stops along Burley Road to TfNSW.	TfNSW	Subject to discretion of TfNSW. Advisable to be prior to the opening of the development	TfNSW
2.4	Public Transport for work travel	The company and the TPCL can promote public transport as one of the main preferences for work travel. This should be supported by all users and visitors to development having access to Opal Cards.	TPCL	Upon completion of the development (building occupation).	Tenant / Business Owner
2.5	Lobby for Precinct wide shuttle service if practical	Shuttle service initiative that would transport staff to / from the Site to the Railway Station.	TPCL to lobby Estate Manager / Owner	Ongoing internal discussions at this time. No commitment has been established internally. Updates can be made to organisation as appropriate. Given that the Site is being serviced by existing public transport (bus routes 779 and 835), provision of private shuttle services is not considered viable.	Estate Owner / Manager
3 Promoting Carpooling & Electric Vehicle Use					

STRATEGY		HOW IT WORKS	RESOURCES / RESPONSIBILITY	TIMELINE	FUNDING
3.1	Open Car Sharing	Where anyone in a defined geographical area can join a ride sharing scheme. This involves no input from the employer and should be on the onus of staff to schedule.	Staff	Ongoing in the workplace	Fuel costs can be arranged and split equitably by those involved
3.2	Closed Car Sharing	The company / department sets up an in-house car-matching scheme	Company, TPCL	Ongoing in the workplace. Updates can be made 6 months after the commencement of the operations within the Site to better understand the travel patterns of staff.	Tenant / Business Owner
3.3	Third-party Car Sharing Program	Companies such as Liftshare are an online service that facilitates journey sharing between individual users, as well as providing separate services for businesses, organisations, and events.	Staff – encouraged by TPCL	Ongoing in the workplace. Updates can be made 6 months after the commencement of the operations within the Site to better understand the travel patterns of staff.	Staff
3.4	Carpool week	Arrange for a dedicated carpool campaign week to promote the benefits of carpooling.	Tenant / Business Owner	One week per calendar year.	Tenant / Business Owner
3.5	Prioritise Parking Spaces	Arrange for parking spaces closest to the buildings entrance (bar accessible spaces) be dedicated to fuel efficient vehicles, car share and/or carpooling vehicles.	Tenant / Business Owner	Ongoing in the workplace. The allocation of dedicated parking spaces should be undertaken following a review of the utilisation of carpooling and/or car share during the first GTP update.	Tenant / Business Owner
3.6	Electric Vehicle Program	As with Item 3.5, Arrange for parking spaces closest to the buildings entrance (bar accessible spaces) be dedicated to Electric Vehicles and other more environmentally friendly vehicles.	Tenant / Business Owner	The allocation of dedicated parking spaces should be undertaken following a review of the utilisation Electric Vehicles during the first GTP update.	Tenant / Business Owner
4 Promoting Cycling					
4.1	Create a Bicycle Users Group (BUG)	BUGs are local groups of like-minded bike riders who get together generally for social riding in their area. For the purposes of the workplace, this can be adapted as a way of creating as social and healthy aspect of travelling to work. As a minimum, the establishment of the BUGs should be promoted as Precinct wide initiative.	Tenant / Business Owner, TPCL	Ongoing in the workplace. Updates can be made 6 months after the commencement of the operations within the Site to better understand the travel patterns of staff.	Tenant / Business Owner
4.2	Providing & Maintaining End of Trip Facilities	Providing facilities such as showers, change rooms, lockers. For the initial stages of development, it is recommended to provide facilities compliant with the relevant controls and	Developer / Estate &/or warehouse Owner / Manager	To be provided at sports complex completion.	Developer / Estate &/or warehouse Owner / Manager

STRATEGY		HOW IT WORKS	RESOURCES / RESPONSIBILITY	TIMELINE	FUNDING
		the NSW Cycleways Design Toolkit, and as the Site develops further, they should be reviewed as part of the GTP monitoring process to meet any increase in demand.			
4.3	Promote Bicycle Initiatives	Promotion of bicycle initiatives – NSW bicycle week, Ride to Work etc.	TPCL	To be promoted annually	Developer / Estate &/or warehouse Owner / Manager
4.4	Advertise Bicycle Routes	Promotion of bike lanes through the TAG.	TPCL	To be promoted and provided at communal areas such as key information kiosks within facility	Tenant / Business Owner
5 Promoting Walking					
5.1	Providing End of Journey Facilities	Provision of sufficient end of trip facilities such as showers, change rooms, lockers etc to maximise pedestrian activity throughout the site and the wider precinct.	Developer	To be provided at completion of development	Tenant / Business Owner
5.2	Walking routes	Incentivise travelling by foot by highlighting possible routes particularly those to nearest bus stops	Tenant / Business Owner	To be promoted and provided at communal areas such as key information kiosks within facility	Tenant / Business Owner
5.3	Promote walking initiatives	Promotion of walking initiatives: walk to game / training day, pedometers / step challenge / gamification of walking / reward programs based on steps to elevate pedestrian activity throughout site and to / from public transport points.	Tenant / Business Owner, TPCL	To be implemented monthly or as appropriate throughout the calendar year.	Tenant / Business Owner
5.4	Provide footpaths	Lobbying of Council regarding provision of footpaths.	Council	To be provided at completion of development	Council

STRATEGY		HOW IT WORKS	RESOURCES / RESPONSIBILITY	TIMELINE	FUNDING
6 Reducing Parking					
6.1	Limited parking allocation on site	Parking availability will inherently generate vehicle trips. By restricting parking supply, you can discourage non-essential car use. A review will be undertaken during the first 6 months (and every year thereafter) to determine usage of parking within the Site. This includes parking spaces allocated for employees, customers/ visitors, carpooling, and electric vehicles (EV).	Site Management	To be an ongoing consideration. A review can be made 6 months after the commencement of the operations within the Site (and every year thereafter) to better understand the parking supply vs demand situation on site.	Tennant / Business Owner
7 Influencing Travel Behaviour					
7.1	Provision of Sustainable Travel Packs to employees and visitors	Introduces employees and visitors alike to the GTP and provides information on walking and cycling routes, and travel by bus & train, timetables, and access routes. This would include a TAG.	Tenant / Business Owner, TPCL	Travel Packs to be provided upon occupancy of building to employees.	Tenant / Business Owner
7.2	Increase Public Transport Provision	Incentive to introduce altered shift times (flexible work place policies) in order to line up with public transport timetables.	Site Management	To be an ongoing consideration.	Tennant / Business Owner
7.3	Worker and Visitor Questionnaire	Utilise the questionnaire/ travel survey provided within Appendix B to develop a broader understanding of where staff and visitor travel origin / destination patterns. This would inform additional strategies to influence travel behaviour.	Site Management	To be an ongoing consideration.	Tennant / Business Owner

4.3 Communications Strategy

4.3.1 Welcome Packs

New staff shall be provided with a 'welcome pack' as part of the on-site induction process which includes a GTP Pamphlet and other information in relation to sustainable transport choices. This pack shall include copy of the GTP, and a Travel Access guide (TAG) as provided in **Appendix A**, as well as general information regarding the health and social benefits of active transport and advice on where to seek further information. It is recommended that an electric copy of the welcome pack be created and made available to staff and provide a website link to the TfNSW trip planner[5] website.

4.3.2 Accurate Transport Information

In addition to these 'welcome packs', a copy of the TAG (Appendix A) shall be clearly displayed in communal areas of the site including (but not limited to):

- Staff lunchroom
- Lift lobby area and entrances to buildings
- Any marketing material associated with the Site, such as websites and newsletters.

[5] https://transportnsw.info/trip#/trip

5 Monitoring Strategy

5.1 Plan Maintenance

The future GTP shall be subject to ongoing reviews and will be updated accordingly. Regular reviews will be undertaken by the TPCL. As a minimum, a review of the GTP would occur once a year.

The key considerations when reviewing or monitoring the GTP are as follows:

Update baseline conditions to reflect any changes to the transport environment in the vicinity of the Site such as changes to bus services, new cycle routes etc.

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

5.2 Monitoring

So as to record the overall success, as well as the effectiveness of the individual measures, monitoring, and review of the future GTP is to be conducted at regular intervals. The TPCL will act as the primary point of contact for all enquiries relating to the GTP's progress.

The GTP will be monitored around every 1-2 years, with the first travel survey being carried out shortly after first occupation of the Development. Travel mode surveys would determine the proportion of persons travelling to/from the Site by each transport mode. This will be in the form of annual travel mode questionnaire surveys to be completed by all persons attending the Site, as far as practicable. A sample of a typical travel mode questionnaire form is included in **Appendix B**.

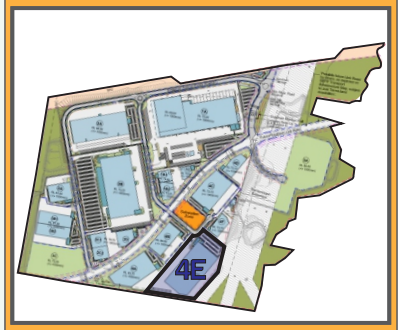
If targets are not met at the end of the initial period of monitoring, the GTP will be reviewed, new measures introduced and would be reassessed at the next monitoring stage.

Appendix A. Travel Access Guide

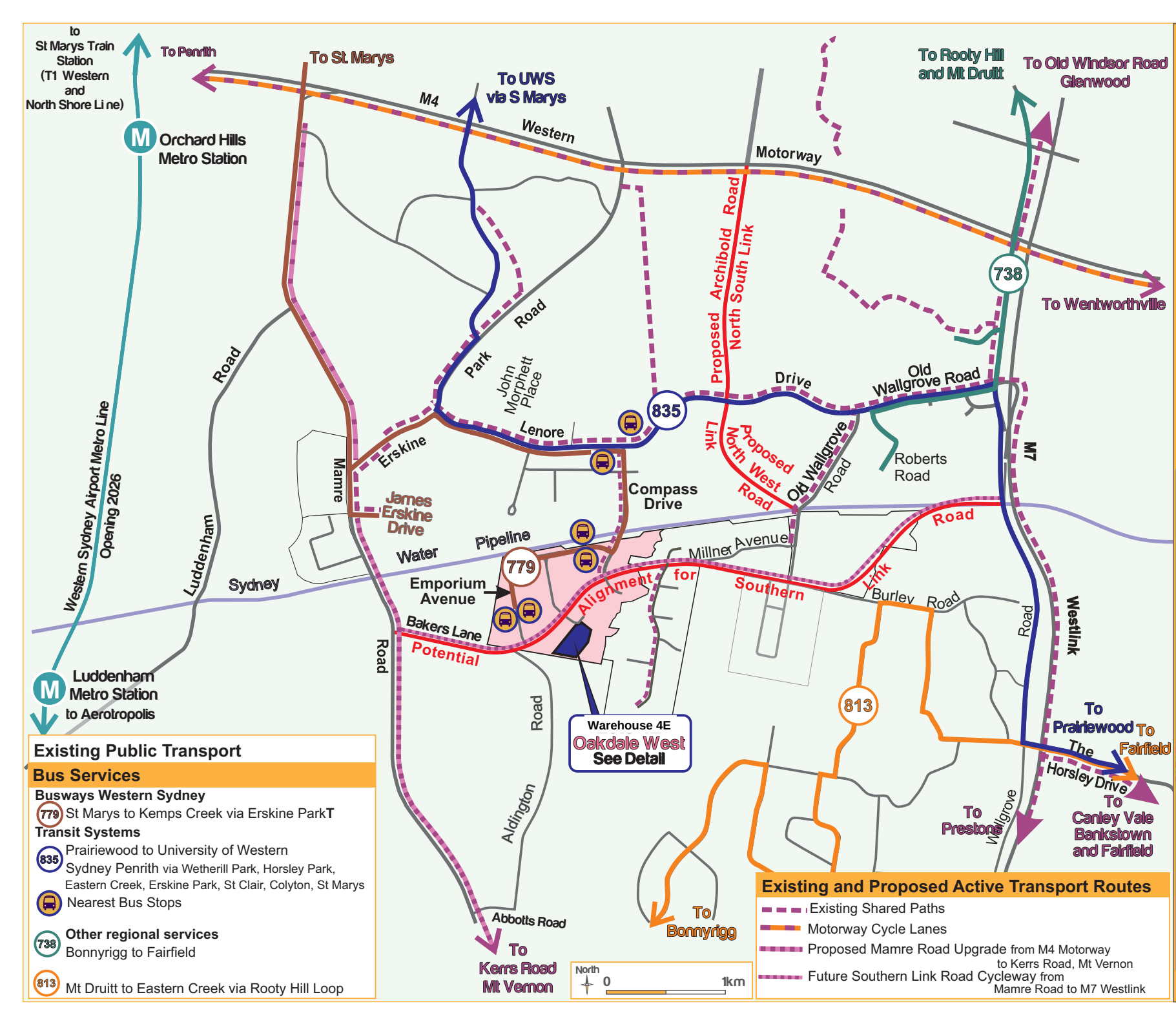
Travel Access Guide

Warehouse 4E

Cuprum Close
Oakdale West Estate



Horsley Park
2175



Existing Public Transport

Bus Services

Busways Western Sydney

779 St Marys to Kemps Creek via Erskine Park**T**

Transit Systems

835 Prairiewood to University of Western Sydney Penrith via Wetherill Park, Horsley Park, Eastern Creek, Erskine Park, St Clair, Colyton, St Marys

Nearest Bus Stops

738 **Other regional services** Bonnyrigg to Fairfield

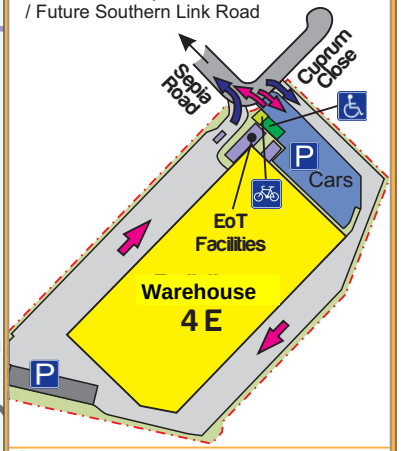
813 Mt Druitt to Eastern Creek via Rooty Hill Loop

Existing and Proposed Active Transport Routes

- Existing Shared Paths
- Motorway Cycle Lanes
- Proposed Mamre Road Upgrade from M4 Motorway to Kerrs Road, Mt Vernon
- Future Southern Link Road Cycleway from Mamre Road to M7 Westlink

Warehouse 4E Detail

To Compass Drive via Sepia Road and Emporium Avenue / Future Southern Link Road



Access

- Car Park Entry / Exit
- Truck Entry / Exit

Parking Spaces

- Car Spaces
- (5 Accessible Spaces)
- 21 Truck Trailer spaces
- 12 Bicycle spaces

August 2022

Appendix B. Sample Questionnaire

Instructions for Surveyor(s)

1. The Survey Form (over page) should be completed by EVERY PERSON attending the site on a particular day.
2. This survey should be completed SEPARATELY for EACH TRIP undertaken

Travel Mode Questionnaire Survey Form

Date: **Approximate Time:**

Q1. Are you one of the following?

☐ Warehouse staff

☐ Office staff

☐ Courier / office delivery

☐ Casual contractor

☐ Company driver / sub-contractor

☐ Other (Please specify)……

Q2. How did you travel TO the site today? Please choose the mode that you use for the greatest distance.

☐ Walked only

☐ Bicycle only

☐ Train

☐ Bus

☐ Taxi

☐ Car share vehicle

☐ Motorcycle / scooter

☐ Car (as passenger)

☐ Car (as driver)

☐ Other (Please specify)……

Q3. What time do you typically arrive to the site?

☐ Before 6:00

☐ 06:00 – 06:29

☐ 06:30 – 06:59

☐ 07:00 – 07:29

☐ 07:30 – 07:59

☐ 08:00 – 08:29

☐ 08:30 – 08:59

☐ 09:00 – 09:29

☐ 09:30 – 09:59

☐ Other (Please specify)……

Q4. If you drove to the site, where did you park?

☐ Not applicable – did not drive

☐ On-site car park

☐ On-site within truck hardstand

☐ Other (Please specify)……

Q5. What time do you typically leave the site?

☐ Before 15:00

☐ 15:00 – 15:29

☐ 15:30 – 15:59

☐ 16:00 – 16:29

☐ 16:30 – 16:59

☐ 17:00 – 17:29

☐ 17:30 – 17:59

☐ 18:00 – 18:29

☐ 18:30 – 18:59

☐ Other (Please specify)……

Q6. How did you travel FROM the site today? Please choose the mode that you use for the greatest distance.

☐ Walked only

☐ Bicycle only

☐ Train

☐ Bus

☐ Taxi

☐ Car share vehicle

☐ Motorcycle / scooter

☐ Car (as passenger)

☐ Car (as driver)

☐ Other (Please specify)……

Q7. What is the post code of your place of residence?

☐ (Please specify)……

Q8. What is the likelihood for you to choose another mode to travel to work, e.g., switching from driving to public transport or from public transport to walking or cycling?

☐ Very likely

☐ Likely

☐ Neutral

☐ Unlikely

☐ Very unlikely

☐ Not possible

Q9. What would make you want to choose another mode of transport to travel to/from work?

☐ (Please specify)……

Q10. What is the likelihood for you to change the timing of the journeys you make to avoid the busiest periods, if possible, given your work conditions?

☐ Very likely

☐ Likely

☐ Neutral

☐ Unlikely

☐ Very unlikely

☐ Not possible

Q11. Do you have any general comments on how you currently travel or how you would like to travel?

☐ (Please specify)……

[Blank Page]

Appendix C. Evidence of Consultation

Mario Dizon

From: Rosie Selby <Rosie.Selby@transport.nsw.gov.au>
Sent: Monday, 15 August 2022 12:00 PM
To: Lachlan O'Reilly
Cc: Stephanie Partridge; Ben Milner; Luke Ridley; Alasdair Cameron; Sophia Grieve
Subject: RE: Oakdale West Estate - Building 4E | Sustainable Travel Plan Consultation

Hi Lachlan,

Please find my comments in orange below.
TfNSW can confirm that this GTP is acceptable, and are comfortable to now close this out – noting the comments below.

TfNSW ask that this GTP is reviewed annually to ensure that the mode share targets are being met, and make any changes to the initiatives/implementation plan in order to support this.

I hope this assists.
Best regards,
Rosie

From: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>
Sent: Monday, 15 August 2022 11:23 AM
To: Rosie Selby <Rosie.Selby@transport.nsw.gov.au>
Cc: Stephanie Partridge <Stephanie.Partridge@goodman.com>; Ben Milner <Ben.Milner@goodman.com>; Luke Ridley <Luke.Ridley@goodman.com>; Alasdair Cameron <Alasdair.Cameron@goodman.com>; Sophia Grieve <Sophia.Grieve@transport.nsw.gov.au>
Subject: RE: Oakdale West Estate - Building 4E | Sustainable Travel Plan Consultation

Hi Rosie,

Thanks for coming back again so promptly and apologies for the delay.

Please see below our comments in red this time.

Please let me know if this address's TfNSW and we can close this consultation out, otherwise happy to discuss further.

Regards,
Lachie

Goodman

Lachlan O'Reilly
Project Administrator
Lachlan.OReilly@goodman.com

T. +61 2 9230 7284
M. +61 481 254 556

The Hayesbery
1-11 Hayes Road
Rosebery NSW 2018
Australia
www.goodman.com

From: Rosie Selby <Rosie.Selby@transport.nsw.gov.au>
Sent: Thursday, 11 August 2022 5:37 PM
To: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>
Cc: Stephanie Partridge <Stephanie.Partridge@goodman.com>; Ben Milner <Ben.Milner@goodman.com>; Luke Ridley <Luke.Ridley@goodman.com>; Alasdair Cameron <Alasdair.Cameron@goodman.com>; Sophia Grieve <Sophia.Grieve@transport.nsw.gov.au>
Subject: FW: Oakdale West Estate - Building 4E | Sustainable Travel Plan Consultation

Hi Lachlan,

Thank you for your prompt response too.

I've added my comments in the email trail below in blue.

To confirm we are underway with providing comments on Building 2A also, and we will be sending you this shortly.

I hope this assists.
Best regards, Rosie

From: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>
Sent: Thursday, 11 August 2022 4:15 PM
To: Rosie Selby <Rosie.Selby@transport.nsw.gov.au>
Cc: Stephanie Partridge <Stephanie.Partridge@goodman.com>; Ben Milner <Ben.Milner@goodman.com>; Luke Ridley <Luke.Ridley@goodman.com>; Alasdair Cameron <Alasdair.Cameron@goodman.com>; Sophia Grieve <Sophia.Grieve@transport.nsw.gov.au>
Subject: RE: Oakdale West Estate - Building 4E | Sustainable Travel Plan Consultation

Hi Rosie,

Thank you for the prompt response.

Please see below Goodman (GMG) response in Green.

In summary, we believe the plan as currently stands is adequate and responds to TfNSW consultation comments noted below request if you could please confirm the below answers close out your queries.

Additionally, could you please also confirm if you will be reviewing the Building 2A shared with TfNSW at the same time ?

Thanks in advance, and any issues please feel free to give me a call.

Regards,

Goodman
Lachlan O'Reilly
Project Administrator
Lachlan.OReilly@goodman.com

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M. +61 481 254 556

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Rosebery NSW 2018
Australia
www.goodman.com

From: Rosie Selby <Rosie.Selby@transport.nsw.gov.au>
Sent: Thursday, 11 August 2022 3:12 PM
To: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>
Cc: Sophia Grieve <Sophia.Grieve@transport.nsw.gov.au>
Subject: FW: Oakdale West Estate - Building 4E | Sustainable Travel Plan Consultation

Hi Lachlan,

Thank you for the opportunity to provide comments on the Sustainable Travel Plan Consultation for Lot 4E Oakdale West Industrial Estate.

Comment: TfNSW has reviewed the Green Travel Plan (GTP) prepared by Ason Group for Lot 4E Oakdale West Industrial Estate, and can provide the following comments. Noted and thankyou. We appreciate the prompt response. Pleasure. Closed.

Car parking: TfNSW recommend reducing the amount of carparking proposed as this will further encourage car driving as a preference, and reduce any incentive to harness other more sustainable modes, consistent with Future Transport 2056 in which Travel Demand Management (TDM) is one of TfNSW top priorities. TfNSW appreciates that there will be some provision for Fuel Efficient Parking which should be monitored over time to ensure sufficient supply – and also recommend the provision of charging stations for Electric Vehicles (EV).

- GMG Response | GMG appreciate the comment, however based on the occupancy and use of the building (approved 24 Hours operation / split shift roster), in order to comply with Condition B8 of SSD 22191322 consent conditions, the parking numbers implemented at the site have been developed in order to meet the condition, and ensure that the development does note" *utilise public and residential streets or public parking facilities'*
  Further to the comment of Fuel Efficient Parking, GMG note that we are installing 5 x 7kW Dual Ocular IQ Charging Stations, capable of charging 10 Electric Vehicles (EV). Noted, thank you. Closed.

  Notwithstanding the above, GMG note that TFNSW had the opportunity to comment on the DA as part of the exhibition phase and raise the above concern, and given the stage of works onsite we are unable to meet the recommendation. Noted. Closed.

Parking management: TfNSW recommends that a parking management plan be prepared that prioritises use by staff and visitors on a needs basis to further reduce car use – this could include the dedicated parking spaces for those who are carpooling and car sharing, which is noted in Section 2.64.1, car sharing. TfNSW appreciates that a review of parking allocation (Strategy 6.1, p 22) will be conducted every 6 months, and will include monitoring provision for EV and carpooling options.

- GMG Response | GMG note the response and deem this is considered within Strategy 6.1, p 22 as noted above. As such, monitoring of the allocation will occur as per the outlined Strategy. TfNSW appreciates that the parking allocation be monitored – and to confirm that that further spaces can allocated for staff and visitors on a needs basis, and for those using EV and carpooling. Goodman believe the response is more a note as opposed to an update required at this stage, as it will arise out of monitoring the parking management ? As such, Goodman consider this closed should our interpretation be correct. - closed

Mode share targets: TfNSW recommend that the future mode share targets be monitored over time to ensure they are being met, particularly if there are future changes for active and public transport. This includes links to the passenger rail services, and car pooling /car sharing options, as well as potential shuttle bus connections.

- GMG Response | GMG note the response and will monitor as/when applicable. Noted, thank you. Closed.

Bicycle Parking: TfNSW appreciates that there will be some bicycle parking provided (Section 2.2.2, Table 2). TfNSW recommends that the provision of bicycle spaces be monitored over time to ensure there is sufficient provision to further encourage cycling as a mode – both for staff and visitors. A good supply of quality End of trip (EoT) facilities and bicycle parking is considered to further encourage walking and cycling mode shares. Location of both bicycle parking and EoT should also be clearly detailed in the Travel Access Guide (TAG). Some further guidance on bicycle parking and end of trip facilities can be found in the cycleway design toolkit.

- GMG Response | GMG note the response and will monitor bicycle parking as part of the Strategy identified within section 6.1, p 22. In respect of the comment around Quality End of Trip (EoT) facilities, GMG refer to Figure 7, pg 9 of the plan, where in the facilities are identified on the plan. These facilities have been adequately sized to suit the approved capacity of the warehouse. Understood, but ask that this information / plan should also be included in the TAG for use by employees/visitors (see the comments on the TAG for further details). Goodman believe this information is already included in the plan. Refer to the below snippet extracted from the TAG, wherein the Bicycle parking (colour coded Lime as per the Key) and EOT facilities are ladled. As such, Goodman consider this closed: - closed

Shuttle bus: TfNSW recommends that consideration be given to a shuttle bus (Strategy 2.5 Lobby to Precinct wide shuttle bus) which could connect with, for example, Mt Druitt Train Station which is located 7km north of the site to enable greater use of the train services. This could provide a good way to move workers more sustainably, and this provides a viable option assist with movements on more sustainable modes in the shorter term – this could be considered for the whole of the Oakdale West Estate precinct to service a number of developments which are currently underway.

- GMG Response | GMG note the response and refer to figure 8, pg 11 of the plan, where in the approved public transport bus routes (779 and 835) have been identified which service the Oakdale West Industrial Estate. As such, GMG consider this strategy meet. Strategy 2.5 could still be considered for the future, where appropriate, to link to the closest station, the Mount Druid Railway Station (Route 779 links with St Mary's Station) – if you can please clarify?

- Goodman note that the Bus Service 779 from St Marys Station is currently approved and operational. Goodman would assume that TfNSW would not consider it viable to create a separate private 24/7 shuttle bus to transport workers, where an existing Public Transport service already is in place. In respect of the comment around Mount Druitt being closer, this is noted, however given that St Marys is 1 stop away from Mt Druitt (3min average travel time based on Sydney Trains Timetable), Goodman believe the time/distance is negligible, and thus the existing transport bus service is a more sustainable option considering it services the community also, as opposed to just the Precinct. As such, Goodman consider this closed. – To note that this is included in the Goodman report as a Strategy item (Strategy 2.5 Lobby to Precinct wide shuttle bus) – closed.

.

Travel Access Guide (TAG): TfNSW appreciates that a TAG has been provided in Appendix A of the GTP. TfNSW asks that the TAG caters to everyone who is using the proposed development site: employees, customers and visitors. The TAG will need to be updated on a yearly basis. The backbone of the TAG is to reduce single occupancy car use, and encourage sustainable transport journeys to and from the site using public and active transport. Therefore we would recommend that the TAG:

- Clearly prioritises public and active transport as the first part of the TAG.
- Provide additional information about service routes and timetables for buses and trains on the Trip Planner at transportnsw.info/.
- A more detailed diagram / map showing the location and number bicycle parking spaces and EoT.
- Provides detail of any shuttle bus services to be provided
- For further helpful information – please check this link How to Create a Travel Access Guide doc here..

- GMG Response | GMG note the response and will monitor as/when applicable. Noted – see comment on bicycle parking. Refer to comment above, Goodman consider this closed.

Travel Survey: TfNSW appreciates a sample travel survey is provided in Appendix B, and that travel surveys will be undertaken. The survey should be distributed 3 months post-occupancy (and be included in the proposed action strategies). Staff and visitors travel surveys should include questions to ask obtain workforce data analysis (including staff residential postcodes) to identify the actual staff travel origin and destination patterns, to inform strategies that help to reduce staff and visitors driving to get to and from the site. The Travel Survey should be promoted as a strategy in **Table 5** Implementation Plan to promote different sustainable transport routes, and also promotion of any initiatives or strategies that encourage sustainable transport routes.

- GMG Response | GMG note the response and will work with the tenant to distribute the plan to the relevant stakeholders within 3 months of occupancy as noted. Noted Closed.

Submission: Please submit an updated GTP back to TfNSW with enough time to review prior to occupancy.

- GMG Response | Based on the above, GMG consider the plan adequately captures the comments as it stands. Notwithstanding this, GMG will request ASON update the plan to include proof of this consultation. **Please confirm this is adequate for TFNSW**. TfNSW appreciate that these changes will all be included in the updated GTP, but request that the updated GTP be provided back to TfNSW for our records of this consultation. Based on Goodman's response above, we consider this STP is adequate and meets TfNSW requirements in its current form. As such, we request that TfNSW please confirm this.

I hope these comments are of assistance.
Best regards,
Rosie

Rosie Selby
Senior Transport Planner
Customer Journey Planning
Greater Sydney
Transport for NSW

M 0457 216 742 **E** rosie.selby@transport.nsw.gov.au

transport.nsw.gov.au

231 Elizabeth Street, Sydney
NSW 2000

NSW GOVERNMENT
Transport for NSW

I acknowledge the Aboriginal people of the country on which I work, their traditions, culture and a shared history and identity. I also pay my respects to Elders past and present and recognise the continued connection to country.

Please consider the environment before printing this email.

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Dear Pahee and Reymond,

As you're aware, Goodman are currently constructing the Oakdale West Estate. We're hoping to shortly commence operation of our Lot 4E warehouse (see indicated in red in Fig.1) within the Estate.

Figure 1 - Oakdale West, including Lot 4E

In accordance with the Consent for the development (SSD 22191322) , Goodman have prepared an Operational Traffic Management Plan (OTMP) and Sustainable Travel Plan (STP) for the facility which is in line with the Estate's (SSD 7348) approved overarching OTMP.

Based on the Consent, it is a requirement of Condition B10 (a) (as below) that we demonstrate consultation with you before we can lodge this report with the Department for approval. We are unable to start Operation of the facility until the Department approves this report:

Sustainable Travel Plan

B10. Prior to the commencement of operation of any part of the development, the Applicant must prepare a Sustainable Travel Plan. The Sustainable Travel Plan must:

(a) be prepared in consultation with TfNSW;

(b) outline facilities and measures to promote public transport usage, such as car share schemes and employee incentives; and

(c) describe pedestrian and bicycle linkages and end of trip facilities available on-site.

We'd therefore be grateful if you're able to please review the STP (contained within Appendix C of the attached Building 4E OTMP) and provide us any comments you may have. A 'no comment' response would satisfy the consultation requirements if you have no feedback.

Please let me know if you have any questions, otherwise we appreciate your assistance in advance.

It would be grateful if you could please come back to us by 15 August 2022 to remain on programme.

Regards,

Goodman

Lachlan O'Reilly
Project Administrator
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APPENDIX H

Waste Management Plan

OAKDALE WEST BUILDING 4E

Waste Management Plan

Prepared for:

Goodman Property Services (Aust) Pty Ltd
1-11 Hayes Rd, Rosebery NSW 2018

SLR Ref: 610.30399.00000-R01
Version No: -v1.1
June 2021

PREPARED BY

SLR Consulting Australia Pty Ltd
ABN 29 001 584 612
Tenancy 202 Submarine School, Sub Base Platypus, 120 High Street
North Sydney NSW 2060 Australia

T: +61 2 9427 8100
E: sydney@slrconsulting.com www.slrconsulting.com

BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Goodman Property Services (Aust) Pty Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
610.30399.00000-R01-v2.0 20210526	24 June 2021	Emerson Helmi Patch	Celine El-Khouri	Celine El-Khouri

CONTENTS

CONTENTS

DOCUMENT REFERENCES

TABLES

FIGURES

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APPENDICES

1 Introduction

1.1 Overview

SLR Consulting Australia Pty Ltd (SLR) has been commissioned by Goodman Property Services (Aust) Pty Ltd (the Client) to prepare a Waste Management Plan (WMP) in support of Development Application (DA) for Building 4E of the Oakdale West Estate. The WMP is for the site preparation, construction and operational activities of Building 4E of the Oakdale West Industrial Estate (the Project). This WMP will comply with the requirements of the Secretary's Environmental Assessment Requirements (SEARs) relevant to this project.

This WMP applies to the waste generated from the site preparation, construction and operational stages of the Project and has been prepared using architectural drawings supplied by the Client and attached in **Appendix A**.

1.2 Objectives

The principal objective of this WMP is to identify all potential wastes likely to be generated at the Project site during the site preparation, construction and operational phases, including a description of how waste would be handled, processed and disposed of, or re-used or recycled, in accordance with Penrith City Council's (Council) requirements.

The specific objectives of this WMP are as follows:

- To encourage the minimisation of waste production and maximisation of resource recovery.
- To ensure the appropriate management of contaminated and hazardous waste.
- To assist in ensuring that any environmental impacts during the operational life of the Project comply with Council's development consent conditions and other relevant regulatory authorities.

1.3 Review of WMP

This WMP is not a static document. It is a working document that requires review and updating to ensure ongoing suitability for the proposed on-going operations at the site.

This WMP will be reviewed and updated:

- To remain consistent with waste and landfill regulations and guidelines
- If changes are made to site waste and recycling management, or
- To take advantage of new technologies, innovations and methodologies for waste or recycling management.

Copies of the original WMP and its future versions should be retained by the building manager. Changes made to the WMP, as well as the reasons for the changes made, should be documented by the building manager as part of the review process.

2 Project Description

2.1 Overview of Proposed Development

The proposal includes the construction, fit-out and use of Building 4E as the first stage of development within Precinct 4 of the Oakdale West Estate (Stage 4 Development). The proposed development comprises a warehouse and associated car and truck parking, office facilities and loading bays along with landscaping, signage, solar panels and lighting and includes subdivision approval. The proposed development will facilitate warehouse and distribution uses consistent with the IN1 General Industrial zone under the State Environmental Planning Policy (Western Sydney Employment Area) 2009 and will include the storage and distribution of liquor.

The proposal does not require clearing or supporting infrastructure as all necessary infrastructure installation and other investigations were approved and undertaken under SSD 7348.

2.2 Overview of Proposed Construction Work

Project works are expected to include site preparation and construction activities.

A site plan for the Project is shown in **Figure 1** and **Appendix A**. The anticipated construction works for the Project include the construction of the below:

- A single building housing a single warehouse
- One ancillary office
- Two dock offices
- One ancillary workshop
- Two gatehouses
- Truck and car parking areas, and associated site hardstand.

2.3 Overview of Proposed Operations

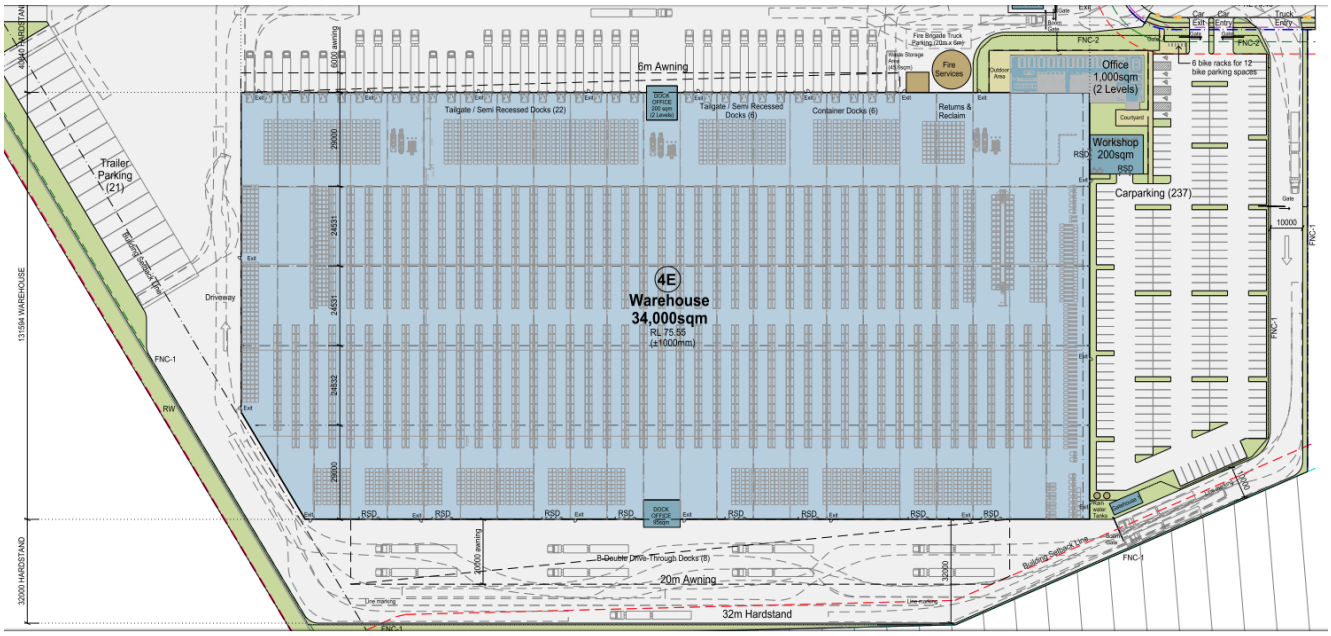


Figure 1 Site plan

Based on communication with the Client, SLR understands the Project will function as a standard warehouse with distribution operations for storage of liquor.

3 Better Practice Waste Management and Recycling

3.1 Waste Management Hierarchy

This WMP has been prepared in line with the waste management hierarchy shown in **Figure 2**, which summarises the objectives of the *Waste Avoidance and Resource Recovery Act 2001.*

The waste management hierarchy comprises the following principles, from most to least preferable:

- Waste **avoidance**, prevention or reduction of waste generation. Achievable through better design and purchasing choices.
- Waste **reuse**, reuse without substantially changing the form of the waste.
- Waste **recycling**, treatment of waste that is no longer usable in its current form to produce new products.
- Energy **recovery**, processing of residual waste materials to recover energy.
- Waste **treatment**, reduce potential environmental, health and safety risks.
- Waste **disposal**, in a manner that causes the least harm to the natural environment.

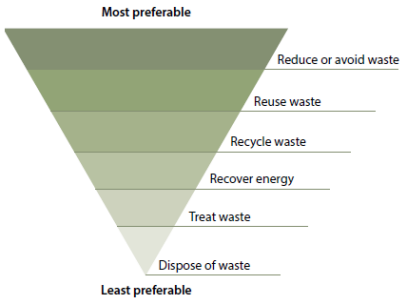


Image from NSW EPA (2014) NSW Waste Avoidance and Resource Recovery Strategy 2014-21.

Figure 2 Waste management hierarchy

3.2 Benefits of Adopting Better Practice

Adopting better practice principles in waste minimisation offers significant benefits for organisations, stakeholders and the wider community. Benefits from better practice waste minimisation include:

- Improved reputation of an organisation due to social and environmental responsibility.
- Lowered consumption of non-renewable resources.
- Reduced environmental impact, for example, pollution, from materials manufacturing and waste treatment.
- Reduced expenses from lower waste disposal.
- Providing opportunities for additional revenue streams through beneficial reuse.

4 Waste Legislation and Guidance

The legislation and guidance outlined in **Table 1** below should be referred to during the site preparation, construction and operational phases of the Project.

Table 1 Legislation and guidance

Legislation and Guidance	Objectives
Council legislation and guidelines	
Penrith Local Environmental Plan (LEP) 2010[1]	The Penrith LEP came into force for the entire Penrith local government area on 25 February 2015 and provides the legal framework of the Penrith Development Control Plan, including land use and development permitted in a set zone. The LEP also contains provisions to conserve local heritage and protect sensitive land.
Penrith Development Control Plan (DCP) 2014[2]	The Penrith DCP came into effect on 17 April 2015 and supports provision of the LEP planning controls by providing detailed planning and design guidelines. The DCP has been prepared in accordance with the *Waste Avoidance and Resource Recovery Act 2001*. One of the objectives of the DCP is to assist in reducing Penrith's ecological footprint by encouraging the diversion of waste from landfill. This WMP specifically addresses Part C5 – Waste Management of the DCP and the Waste Management Guidelines for Industrial, Commercial and Mixed Use.
Waste Strategy 2017-2026, Penrith City Council	Council's waste strategy sets out the waste management targets for the Penrith local government area including working towards reduced waste generation and increased landfill diversion. The strategy was prepared in consultation with the community and informed by waste audit results. The strategy defines the actions required to reach the targets, including actions for waste diversion from landfill, resource recovery, technology innovation, community education and resource recovery facilities.
State and National legislation and guidelines	
Building Code of Australia (BCA) and relevant Australian Standards	The BCA has the aim of achieving nationally consistent, minimum necessary standards of relevant health and safety, amenity and sustainability objectives efficiently.
Council of Australian Governments National Construction Code 2019	The National Construction Code 2019 sets the minimum requirements for the design, construction and performance of buildings throughout Australia.
NSW EPA's Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities 2012	These better practice guidelines present information on waste minimisation and resource recovery as well as information on commonly used waste management provisions. The guidelines also provide benchmarks for assessing waste production rates in Australia.
NSW Waste and Sustainable Materials Strategy 2041: Stage 1 – 2021-2027	Replacing the *NSW Waste Avoidance and Resource Recovery Strategy (2014-21)* (see below), the NSW Waste and Sustainable Materials Strategy 2041 focuses on the transition of NSW to a circular economy. The strategy focuses on minimising what is thrown away, and to use and reuse resources more efficiently, making them as productive as possible. The strategy identifies the need to identify infrastructure needs, the mandating of separation of some organic waste streams, and incentivising biogas generation from waste materials.
NSW EPA (2014) NSW Waste Avoidance and Resource Recovery Strategy 2014-21	The *NSW Waste Avoidance and Resource Recovery Strategy 2014-21* is aimed at ultimately "improving environment and community well-being by reducing the environmental impact of waste and using resources more efficiently" by presenting a framework intended to avoid and reduce waste generation, increase recycling, divert more waste from landfill, manage problem wastes better, reduce litter and reduce illegal dumping.

[1] https://legislation.nsw.gov.au/#/view/EPI/2010/540

[2] https://www.penrithcity.nsw.gov.au/building-development/planning-zoning/planning-controls/development-control-plans

Legislation and Guidance	Objectives
NSW EPA Resource Recovery Orders and Resource Recovery Exemptions	The NSW EPA has issued a number of resource recovery orders and resource recovery exemptions under the POEO (Waste) Regulation 2014 for a range of wastes that may be recovered for beneficial re-use. These wastes typically include those from demolition and construction works, as well as operational wastes such as food waste. • Resource recovery orders present conditions which generators and processors of waste must meet to supply the waste material for beneficial re-use. • Resource recovery exemptions contain the conditions which consumers must meet to use waste for beneficial re-use.
NSW EPA's Waste Classification Guidelines 2014	The NSW EPA *Waste Classification Guidelines* assists waste generators to effectively manage, treat and dispose of waste to ensure the environmental and human health risks associated with waste are managed appropriately and in accordance with the *POEO Act 1997* and is associated regulations.
Protection of the Environment Operations Act (POEO) 1997 and Amendment Act 2011	The *POEO Act 1997* and *POEO Amendment Act 2011* are administered by the NSW Environment Protection Authority (NSW EPA) to enable the NSW Government to establish instruments for setting environmental standards, goals, protocols and guidelines. They outline the regulatory requirements for lawful disposal of wastes generated during the demolition, construction and operational phases of a development, as well as the system for licencing waste transport and disposal.
The Work Health and Safety Regulation 2017	The Work Health and Safety Regulation 2017 provide detailed actions and guidance associated with the topics discussed in *The Work Health and Safety Act 2011*. The primary aim of the regulation is to protect the health and safety of workers and ensure that risks are minimised in work environments. Workplaces are to ensure that they are compliant with the requirements specified in the regulations. The regulations discuss items such as actions that are prohibited or obligated in work environments, the requirements for obtaining licences and registrations, and the roles and responsibilities of staff in workplaces.
Waste Avoidance and Resource Recovery Act 2001	The *Waste Avoidance and Resource Recovery Act 2001* aims to promote waste avoidance and resource recovery and repeals the *Waste Minimisation and Management Act 1995*. Specific objectives of the *Waste Avoidance and Resource Recovery Act 2001* include: • Encouraging efficient use of resources • Minimising the consumption of natural resources and the final disposal of waste by encouraging the avoidance of waste and the reuse and recycling of waste • Ensuring industry and the community share responsibility in reducing/dealing with waste, and • Efficiently funding of waste/resource management planning, programs and service delivery. As of 2016, the addition to the Act of Part 5 defines the legislative framework for the "Return and Earn Container Deposit Scheme" whereby selected beverage containers can be returned to State Government authorities for a monetary refund.

5 Site Preparation and Construction Waste and Recycling Management

5.1 Targets for Resource Recovery

Targets for new development are expected to contribute to state specific targets. The NSW Waste and Sustainable Materials Strategy 2041 (DPIE, 2021) sets a target of:

- 80% average recovery rate from all waste streams by 2030.

Analysis by DPIE (2021) indicates that construction and demolition waste recovery rates in FY19 were 77%.

The Penrith City Council Waste and Resources Strategy (2017-2026) has not yet been updated to reflect the recently released Waste and Sustainable Materials Strategy and is based on the Waste Avoidance and Resource Recovery Strategy 2014-2021. Specifically, Council's Waste and Resources Strategy identifies a target for FY21-22 of:

- Increasing recycling rates to 80% for construction and demolition waste
- Increasing waste diverted from landfill to 75%

It is anticipated that the waste minimisation measures in the following sections will assist the Project to meet these targets. Waste reporting and audits can be used to determine the actual percentage of wastes that have been recycled during the construction and site preparation stage of the Project.

5.2 Waste Streams and Classifications

The site preparation and construction of the Project is likely to generate the following broad waste streams:

- Site clearance wastes
- Construction wastes
- Plant maintenance waste
- Packaging wastes, and
- Work compound waste from on-site employees.

A summary of likely waste types generated from site preparation and construction activities, along with their waste classifications and proposed management methods, is provided in **Table 2**.

For further information on how to classify a waste type refer to the NSW EPA (2014) *Waste Classification Guidelines*[3]. Further information on managing site preparation and construction wastes is available from the NSW EPA website[4].

[3] Available online from https://www.epa.nsw.gov.au/your-environment/waste/classifying-waste/waste-classification-guidelines

[4] http://www.epa.nsw.gov.au/your-environment/waste/industrial-waste/construction-demolition

Table 2 Potential waste types and their management methods

Waste Types	NSW EPA Waste Classification	Proposed Management Method
Site Clearance		
Green waste including timber, pine and particle board	General solid waste (non-putrescible)	Separated, some chipped and stored on-site for landscaping, remainder to landscape supplies or off-site recycling. Stumps and large trees to landfill.
Clean fill	General solid waste (non-putrescible)	On-site re-use
Contaminated fill	To be classified subject to the results of testing	Off-site treatment or disposal to landfill
Excavated natural material (ENM) or virgin excavated natural material (VENM)	General solid waste (non-putrescible)	On-site re-use of topsoil for landscaping of the site, off-site beneficial re-use or send to landfill site.
Construction		
Sediment fencing, geotextile materials	General solid waste (non-putrescible)	Reuse at other sites where possible or disposal to landfill
Concrete	General solid waste (non-putrescible)	Off-site recycling for filling, levelling or road base
Bricks and pavers	General solid waste (non-putrescible)	Cleaned for reuse as footings, broken bricks for internal walls, crushed for landscaping or driveway use, off-site recycling
Gyprock or plasterboard	General solid waste (non-putrescible)	Off-site recycling or returned to supplier
Sand or soil	General solid waste (non-putrescible)	Off-site recycling
Metals such as fittings, appliances and bulk electrical cabling, including copper and aluminium	General solid waste (non-putrescible)	Off-site recycling at metal recycling compounds and remainder to landfill
Conduits and pipes	General solid waste (non-putrescible)	Off-site recycling
Timber	General solid waste (non-putrescible)	Off-site recycling, Chip for landscaping, Sell for firewood *Treated*: reused for formwork, bridging, blocking, propping or second-hand supplier *Untreated*: reused for floorboards, fencing, furniture, mulched second hand supplier Remainder to landscape supplies.
Doors, Windows, Fittings	General solid waste (non-putrescible)	Off-site recycling at second hand building supplier
Insulation material	General solid waste (non-putrescible)	Off-site disposal
Glass	General solid waste (non-putrescible)	Off-site recycling, glazing or aggregate for concrete production

Waste Types	NSW EPA Waste Classification	Proposed Management Method
Asbestos	Special waste	Off-site disposal at a licenced landfill facility.
Fluorescent light fittings and bulbs	Hazardous waste	Off-site recycling or disposal; contact *FluoroCycle* for more information[5]
Paint	Hazardous waste	Off-site recycling, Paintback collection[6] or disposal
Synthetic Rubber or carpet underlay	General solid waste (non-putrescible)	Off-site recycling; reprocessed and used in safety devices and speed humps
Ceramics including tiles	General solid waste (non-putrescible)	Off-site recycling at a crushing and recycling company
Carpet	General solid waste (non-putrescible)	Off-site recycling or disposal; reused for landscaping, insulation or equestrian uses
Plant Maintenance		
Empty oil and other drums or containers, such as fuel, chemicals, paints, spill clean ups	Hazardous waste: Containers were previously used to store Dangerous Goods (Class 1, 3, 4, 5 or 8) and residues have not been removed by washing or vacuuming. General solid waste (non-putrescible): Containers have been cleaned by washing or vacuuming.	Transport to comply with the transport of Dangerous Goods Code applies in preparation for off-site recycling or disposal at licensed facility Note: Discharge to sewer subject to Trade Waste Agreement with local Council
Air filters and rags	General solid waste (non-putrescible)	Off-site disposal
Drained Oil filters	General solid waste (non-putrescible)	Off-site recycling
Commercial Lead acid or Nickel cadmium Batteries	Hazardous waste	Off-site recycling, Contact the Australian Battery Recycling Initiative[7] for more information
Packaging		
Packaging materials, including wood, plastic, including stretch wrap or LLPE, cardboard and metals	General solid waste (non-putrescible)	Off-site recycling
Wooden or plastic crates and pallets	General solid waste (non-putrescible)	Reused for similar projects, returned to suppliers, or off-site recycling. Contact *Business Recycling* for more information[8]
Work Compound and Associated Offices		
Food Waste	General solid (putrescible) waste	Dispose to landfill with general garbage

[5] Available online from http://www.fluorocycle.org.au/ or http://www.environment.gov.au/settlements/waste/lamp-mercury.html

[6] Available online from https://www.paintback.com.au/

[7] http://www.batteryrecycling.org.au/home

[8] Available online from http://businessrecycling.com.au/search/

Waste Types	NSW EPA Waste Classification	Proposed Management Method
Recyclable beverage containers including glass and plastic bottles, aluminium cans and steel cans	General solid waste (non-putrescible)	Co-mingled recycling at off-site licensed facility or deliver to local NSW container deposit scheme 'Return and Earn' facility[9]
Clean paper and cardboard	General solid waste (non-putrescible)	Paper and cardboard recycling at off-site licensed facility
General domestic waste generated by workers such as soiled paper and cardboard and polystyrene	General solid waste (non-putrescible) mixed with putrescible waste	Disposal at landfill

5.3 Site preparation

The Project will be constructed on primarily greenfield land. Care should be taken to minimise site disturbance and limit unnecessary excavation.

Council's DCP states that if excess material is transported offsite, they are to be informed of the quantity, quality, method of transport and where the material will be disposed. SLR recommends that excavated spoil is classified by a specialist contaminated land consultant and separated into contaminated materials, if any, uncontaminated fill or ENM.

Uncontaminated fill or ENM should be retained on site and managed appropriately for beneficial re-use for filling earthworks. As a last resort, remaining uncontaminated fill of ENM is to be sent off-site to a licenced facility in accordance with the Protection of the Environment Operations (Waste) Regulation 2014.

For contaminated material management, refer **Section 5.7.4** of this WMP.

5.4 Construction Waste Types and Quantities

The Construction Site Manager will need to specify the types and quantities of wastes produced during construction and on this basis, the numbers and capacity of skip bins can be determined.

In the absence of readily available construction waste generation rates from Council, SLR has adopted the waste generation rates from Appendix A of The Hills Development Control Plan (DCP) 2012 for estimating the type and quantities of waste generated from construction of the Project. The waste generation rates listed in the Hills DCP include '2 Bedroom', '3 Bedroom', 'Block of Flats', 'Factory' and 'Office'. SLR has adopted the 'Factory' and 'Office' rates to measure waste expected from the Project, as the construction of a factory and office is the most relevant in representing the construction of the industrial warehouse and office precinct. In the absence of readily available published information for 'Carpark' construction waste generation rates, SLR has developed 'Carpark' construction rates based on the 'Office' rates by:

- Removing timber, bricks and gyprock as these materials are unlikely to be present in significant quantities in a modern carpark structure, and
- Increasing the rates for concrete, sand or soil, metal and 'other', in proportion, to maintain the total assumed tonnage per 1000 m^2 of construction.

[9] Available online from http://returnandearn.org.au/

The waste generation rates are shown in **Table 3**.

Table 3 Waste generation rates for the construction of the Project

Rate Type	Floor Area (m^2)	Waste types and quantities (m^3)						
		Timber	Concrete	Bricks	Gyprock	Sand or Soil	Metal	Other
Factory	1,000	0.25	2.10	1.65	0.45	4.80	0.60	0.50
Office	1,000	5.1	18.8	8.5	8.6	8.8	2.75	5
Carpark	1,000	--	30.6	--	--	14.3	4.5	8.1

The waste generation rates for 'Factory' are applied to calculate the waste quantities generated from the construction of the warehouse. The 'Office' waste generation rates are applied to calculate the waste quantities from all office administration areas. The 'Carpark' waste generation rates are applied to calculate the waste quantities from the construction of all external hard surface areas including carparks and heavy and light duty surfaces. The areas are based on the areas provided in the architectural plans attached in **Appendix A.**

Actual waste quantities and composition will vary; however, this estimate is provided so that the Construction Site Manager can make provision for on-site or off-site re-use and recycling opportunities.

The construction wastes quantities anticipated from the construction of Building 4E are provided in **Table 4**.

Table 4 Estimated types and quantities of construction waste

Project component	Area (m^2)	Waste types and quantities (m^3)						
		Timber	Concrete	Bricks	Gyprock	Sand and Soil	Metal	Other
Warehouse	34,000	10	75	60	20	165	25	20
Office (2 level)	1,000	10	20	10	10	10	5	5
Dock office x2	295	5	5	5	5	5	5	5
Workshop	200	5	5	5	5	5	5	5
Gatehouse	65	5	5	5	5	5	5	5
Hardstand area	27,530	-	845	-	-	395	125	225
Light duty area	5,995	-	185	-	-	90	30	50
Total	69,085	35	1,140	85	45	675	200	315

Waste estimates have been rounded up to the nearest 5 m^3.

A waste management plan form provided by Council is attached in **Appendix B**. The form is also available on Council's website[10]. This is to be updated by the Site Manager once waste streams, estimated quantities, and final disposal locations and recycling services have been identified.

5.5 Waste Avoidance

In accordance with Council's DCP and better practice waste management, the Building Contractor, Building Designer and/or equivalent roles should:

- Develop a purchasing policy based on the approximate volumes of materials to be used so that the correct quantities are purchased.

[10] https://www.penrithcity.nsw.gov.au/images/documents/forms/Waste_Management_Plan_Application_Form.pdf

- Arrange for delivery of materials on an 'as needed' basis to avoid material degradation through weathering and moisture damage.
- Communicate strategies to handle and store waste to minimise environmental, health and amenity impacts.
- Select materials with a low environmental impact over the lifecycle of the building.
- Choose timber from certified plantations and avoid unsustainable timber imports including western red cedar, oregon, meranti, luan or merbau.
- Use leased equipment rather than purchase and disposal.
- Minimise site disturbance and unnecessary excavation.
- Incorporate existing trees and shrubs into the landscape plan.
- Grouping wet areas together to minimise the amount of pipe work required.
- Design the Project to require standard material sizes or make arrangements with manufacturing groups for the supply of non-standard material sizes.
- Design works for de-construction.
- Reduce packaging waste by:
  - Returning packaging to suppliers where practicable to reduce waste further along the supply chain
  - Purchasing in bulk
  - Requesting cardboard or metal drums rather than plastics
  - Requesting metal straps rather than shrink wrap, and
  - Using returnable packaging such as pallets and reels.
- Use prefabricated materials.
- Select materials for Project works with low embodied energy properties or materials that have been salvaged or recycled for the construction of the Project including concrete that utilises slag and fly ash content, structural and reinforced steel that uses recycled steel content or bulk insulation products that contain recycled content, such as recycled glass in glass-wool.
- Preferentially use paints, floor coverings and adhesives with low VOC (volatile organic compound) content.
- Reduce the use of polyvinyl chloride products.
- Implement measures to prevent the occurrence of windblown litter, dust and stormwater pollution.
- Ensure subcontractors are informed of and implement site waste minimisation and management procedures.

5.6 Reuse, Recycling and Disposal

Effective management of construction materials and construction and demolition waste, including options for reuse and recycling where applicable and practicable, will be conducted. Only wastes that cannot be cost effectively reused or recycled are to be sent to landfill or appropriate disposal facilities.

Refer to **Table 2** for an outline of the proposed reuse, recycling and disposal methods for potential site preparation and construction waste streams generated by the Project.

In accordance with Council's DCP and best practice waste management, the following specific procedures should be implemented:

- Ensure the site's project management of the site includes minimising waste generation, requiring the appropriate storage and timely collection of waste materials, and maximising re-use or recycling of materials.
- Store wastes on site appropriately to prevent cross-contamination and guarantee the highest possible re-use value.
- Consider the potential of any new materials to be re-used and recycled at the end of the Project's life.
- Determine opportunities for the use of prefabricated components and recycled materials.
- Strip topsoil from areas designated for excavation and store it on site for reuse.
- Reuse excavation material will be on-site where possible.
- Re-use formwork where appropriate.
- Retain roofing material cut-offs for re-use or recycling.
- Retain used crates for storage purposes unless damaged.
- Recycle cardboard, glass and metal wastes.
- Recycle or dispose of solid waste timber, brick, concrete, asphalt and rock, where such waste cannot be re-used on site, to an appropriately licenced construction and demolition waste recycling facility or an appropriately licenced landfill.
- Dispose of all asbestos and/or hazardous wastes in accordance with SafeWork NSW and NSW EPA requirements.
- Deliver batteries and florescent lights to drop off-site recycling facility.
- Return excess materials and packaging to the supplier or manufacturer.

5.7 Waste Storage and Servicing

5.7.1 Waste Segregation and Storage

As outlined in Council's DCP, waste materials produced from site preparation and construction activities are to be separated at the source and stored separately on-site. It is anticipated that the Project will provide enough space on-site for separate storage, for example, separate skip bins or appropriately managed stockpiles, of the following waste types:

- Bricks, concrete and scrap metal
- Metal and steel, in a condition suitable for recycling at metal recycling facilities
- Timber
- Glass
- Hardstand rubble
- Uncontaminated excavation spoil, if present

- Contaminated excavation spoil, if present
- Hazardous waste, if present
- Paper and cardboard
- General co-mingled recycling waste, and
- Non-recyclable general waste.

If there is insufficient space on-site for full segregation of waste types, the Site Manager, or equivalent role, should consult with the waste and recycling collection contractor to confirm which waste types may be co-mingled prior to removal from the site.

5.7.2 Waste Storage Areas

Waste storage areas will be accessible and allow enough space for storage and servicing requirements. The storage areas will also be flexible in order to cater for change of use throughout the project. Where space is restricted, dedicated stockpile areas are to be delineated on the site, with regular transfers to dedicated skip bins for sorting.

All waste placed in skips or bins for disposal or recycling will be adequately contained to ensure that the waste does not fall, blow, wash or otherwise escape from the site. Waste containers and storage areas are to be kept clean and in a good state of repair.

As per Council's DCP, areas designated for waste storage should:

- Allow unimpeded access by site personnel and waste disposal contractors
- Consider environmental factors which could potentially cause an impact to the waste storage, such as slope, drainage and the location of watercourses and native vegetation
- Allow enough space for the storage of garden waste and other waste materials on-site
- Employ adequate environmental management controls to prevent off-site migration of waste materials and contamination from the waste. For example, consideration of slope, drainage, proximity relative to waterways, stormwater outlets and vegetation
- Consider visual amenity, safety, accessibility and convenience in their selection, and
- Not present hazards to human health or the environment.

5.7.3 Waste Servicing and Record Keeping

The Site Manager or equivalent role is to:

- Arrange for suitable waste collection contractors to remove any construction waste from site
- Ensure waste bins are not filled beyond recommended filling levels
- Ensure that all bins and loads of waste materials leaving site are covered
- Maintain waste disposal documentation detailing, at a minimum:
- Descriptions and estimated amounts of all waste materials removed from site
- Details of the waste and recycling collection contractors and facilities receiving the waste and recyclables

- Records of waste and recycling collection vehicle movements, for example, date and time of loads removed, licence plate of collection vehicles, tip dockets from receiving facility, and
- Waste classification documentation for materials disposed to off-site recycling or landfill facilities.
- Ensure lawful waste disposal records are readily accessible for inspection by regulatory authorities such as Council, SafeWork NSW or NSW EPA, and
- Remove waste during hours approved by Council.

If skips and bins are reaching capacity, removal and replacement should be organised as soon as possible. All site generated building waste collected in the skips and bins will leave the site and be deposited in the approved site lawfully able to accept them.

5.7.4 Contaminated or Hazardous Waste Management

During the site preparation and construction phases, SLR recommends that a qualified and certified contractor is engaged to remove all contaminated or hazardous materials, for example, asbestos, and dispose of all contaminated or hazardous waste at an appropriately licenced facility.

All asbestos and other hazardous waste must be handled according to appropriate legislation and regulation including the Work Health and Safety Regulation 2017.

In accordance with Council's DCP, hazardous waste management at the site may require a licence from the EPA and approval from Council. If hazardous waste is identified for removal, Council and NSW EPA are to be consulted prior to undertaking any hazardous waste removal.

5.8 Site Inductions

All staff, including sub-contractors and labourers, employed during the site preparation and construction phases of the Project must undergo induction training regarding waste management for the Site.

Induction training is to cover, as a minimum, an outline of the WMP including:

- Legal obligations and targets
- Emergency response procedures on-site
- Waste priorities and opportunities for reduction, reuse and recycling
- Waste storage locations and separation of waste
- Procedures for suspected contaminated and hazardous wastes
- Waste related signage
- The implications of poor waste management practices, and
- Responsibilities and reporting, including identification of personnel responsible for waste management and individual responsibilities.

It is the responsibility of the Site Manager or Building Contractor to notify Council of the appointment of waste removal, transport or disposal contractors.

5.9 Signage

Standard signage is to be posted in all waste storage and collection areas. All waste containers should be labelled correctly and clearly to identify stored materials.

Signs approved by the NSW EPA for labelling of waste materials are available online[11] and should be used where applicable. A selection of signs prepared by NSW EPA is provided in **Figure 3.**

Figure 3 Examples of NSW EPA labels for waste skips and bins

5.10 Monitoring and Reporting

The following monitoring practices are to be undertaken to improve site preparation and construction waste management and to obtain accurate waste generation figures:

- Conduct waste audits of current projects where feasible.
- Note waste generated and disposal methods.
- Look at past waste disposal receipts.
- Record this information to track waste avoidance, reuse and recycling performance and to help in waste estimations for future waste management plans.

As per Council's DCP, records of waste volumes recycled, reused or contractor removed are to be maintained. This can include dockets or receipts verifying recycling and disposal in accordance with this WMP. This evidence should also be presented to regulatory bodies when required.

Daily visual inspections of waste storage areas will be undertaken by site personnel and inspection checklists and logs recorded for reporting to the Site Manager on a weekly basis or as required. These inspections will be used to identify and rectify any resource and waste management issues.

Waste audits are to be carried out by the Building Contractor to gauge the effectiveness and efficiency of waste segregation procedures and recycling and reuse initiatives. Where audits show that the above procedures are not carried out effectively, additional staff training will be undertaken and signage re-examined.

[11] NSW EPA approved waste materials signage https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/business-government-recycling/standard-recycling-signs

5.11 Roles and Responsibilities

All personnel have a responsibility for their own environmental performance and compliance with all legislation. It will be the responsibility of the Building Contractor to implement the WMP, and an employee and subcontractor responsibility to ensure that they always comply with the WMP.

Where possible, an Environmental Management Representative should be appointed for the Project. Suggested roles and responsibilities are provided in **Table 5**.

Table 5 Suggested roles and responsibilities for site preparation and construction waste management

Responsible Person	General Tasks
Construction Site Manager	Ensuring plant and equipment are well maintained.
	Ordering only the required amount of materials.
	Keeping materials segregated to maximise reuse and recycling.
	Ultimately responsible for routinely checking waste sorting and storage areas for cleanliness, hygiene and safety issues, contaminated waste materials, and also ensuring that all monitoring and audit results are well documented and carried out as specified in the WMP.
Construction Environmental Manager or equivalent	Approaching and establishing the local commercial reuse of materials where reuse on-site is not practical.
	Establishing separate skips and recycling bins for effective waste segregation and recycling purposes.
	Ensuring staff and contractors are aware of site requirements.
	Provision of training of the requirements of the WMP and specific waste management strategies adopted for the Project.
	Contaminated waste management and approval of off-site waste transport, disposal locations and checking licensing requirements.
	Approval of off-site waste disposal locations and checking licensing requirements.
	Assessment of suspicious potentially contaminated materials, hazardous materials and liquid wastes.
	Monitoring, inspection and reporting requirements.

Daily visual inspections of waste storage areas may be delegated to other on-site staff. All subcontractors will be responsible for ensuring that their work complies with the WMP through the project induction and contract engagement process.

6 Operational Waste Management

6.1 Targets for Resource Recovery

The waste management performance of each new development should contribute to the overall NSW State targets for recycling outlined in the *NSW Waste Avoidance and Resource Recovery Strategy 2014-21*. The targets include increasing waste diverted from landfill to 75% and recycling 70% of commercial, industrial and municipal solid waste[12]. Each commercial and industrial development can contribute to this NSW State target through an effective waste management plan.

It is anticipated that the waste minimisation measures in the following sections will assist the Project to meet the state's targets. Waste reporting and audits can be used to determine the actual percentage of waste that are being, or have been, recycled during operation.

6.2 Waste Streams and Classifications

The operation of the Project is anticipated to generate the following broad waste streams:

- Domestic wastes generated by employees, including food wastes
- Bulk packaging wastes, including polystyrene, plastic wrapping and cardboard boxes
- Office waste
- Garden organic waste from landscaped areas
- Bulky waste items such as furniture and e-waste
- Stores, plant and general maintenance wastes, and

Potential ongoing waste types, their associated waste classifications, and management methods are provided in **Table 6**. For further information on how to determine a waste's classification, refer to the NSW EPA (2014) Waste Classification Guidelines. Suggestions for recycling drop off locations and contacts can be found on https://businessrecycling.com.au/ for each waste type.

Table 6 Potential waste types, classifications and management methods for operational waste

Waste Types	NSW EPA Classification	Proposed Management Method
General Operations		
Clean office paper	General solid (non-putrescible) waste	Paper recycling at off-site licensed facility
Cardboard including bulky cardboard boxes	General solid (non-putrescible) waste	Cardboard recycling at off-site licensed facility
Recyclable beverage containers, glass and plastic bottles, aluminium cans, steel cans	General solid (non-putrescible) waste	NSW container deposit scheme 'Return and Earn', container recycling at off-site licensed facility

[12] https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/wastestrategy/140876-warr-strategy-14-21.pdf?la=en&hash=EC6685E6624995242B0538B18C2E80C0CA2E51B3

Waste Types	NSW EPA Classification	Proposed Management Method
Food waste	General solid (putrescible) waste	Compost on or off-site or dispose to landfill with general garbage
Batteries	Hazardous waste	Off-site recycling, alternatively contact the Australian Battery Recycling Initiative for more information
Mobile Phones	Hazardous waste	Off-site recycling; can be taken to the Mobile Muster program. Contact Mobile Muster for more information
Bulky polystyrene	General solid (non-putrescible) waste	Off-site recycling or disposal at landfill
Furniture	General solid (non-putrescible) waste	Off-site reuse or disposal to landfill
E-waste	Hazardous waste	Off-site recycling
Printer toners and ink cartridges	Hazardous waste	Off-site recycling, free disposal box or bags and pickup service exists for printer toners and ink cartridges
General garbage, including non-recyclable plastics	General solid (putrescible and non-putrescible) waste	Disposal at landfill
Maintenance		
Spent smoke detectors[13]	General solid (non-putrescible) waste, or Hazardous waste (some commercial varieties)	Disposal to landfill, or off-site disposal at licensed facility
Glass, other than containers	General solid (non-putrescible) waste	Off-site recycling
Light bulbs and fluorescent tubes	Hazardous waste	Off-site recycling or disposal, contact FluoroCycle[14] or Lamp Recyclers[15] for more information
Cleaning chemicals, solvents, area wash downs, empty oil or paint drums, chemical containers	Hazardous waste if containers used to store Dangerous Goods (Class 1, 3, 4, 5 or 8) and residues have not been removed by washing or vacuuming. General solid (non-putrescible) waste if containers cleaned by washing or vacuuming.	Transport to comply with the transport of Dangerous Goods Code applies in preparation for off-site recycling or disposal at licensed facility.
Garden organics - lawn mowing, tree branches, hedge cuttings, leaves	General solid (non-putrescible) waste	Reuse on-site or contractor removal for recycling at licenced facility

13 The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) require that when more than 10 smoke alarms (particularly americium-241 sources) are collected for bulk disposal they must be treated as radioactive waste and the requirements of the National Health and Medical Research Council's Code of practice for the near-surface disposal of radioactive waste in Australia (1992) must be met.

14 https://www.fluorocycle.org.au/

15 https://www.lamprecyclers.com.au/

6.3 Estimated Quantities of Operational Waste

SLR has adopted the 'Offices' and 'Warehouse' waste generation rates from Council's DCP Industrial, Commercial and Mixed-Use Waste Management Guidelines for estimating the type and quantities of waste generated from the operational activities of the Project. The operational waste generation rates used are shown below in **Table 7**.

Table 7 Waste generation rates applied to the operations of the Project

Type of Premises	General Waste Generation (L/100 m²/day)	Recycling Generation (L/100 m²/day)
Warehouse	10	10
Offices	10	10

Using the waste generation rates in **Table 7** above, the approximate weekly waste quantities for the Project have been calculated. The operational waste quantities were also calculated based on the below assumptions:

- The floor areas as presented on the architectural drawings attached in **Appendix A**, and
- A week comprising seven days of operation

The estimated quantities of operational waste generated by the Project are shown in **Table 8**.

Table 8 Estimated quantities of operational general waste and recycling for the Project

Complex	Location	Area (m²)	General Waste (L/week)	Recycling (L/week)
Warehouse 4E	Warehouse 2	34,000	23,800	23,800
	Office (2 level)	1,000	700	700
	Dock office	295	210	210
	Workshop	200	140	140
	Gatehouse	65	70	70
	Total	**35,560**	**24,920**	**24,920**

Waste quantity estimates have been rounded up to the nearest 5 L.

To minimise packaging waste generated in the recyclables stream, it is recommended that packing waste is returned to the suppliers where possible. Standard pallets are recommended to be returned to their owners and non-standard and broken pallets are to be stockpiled and collected as required by a private waste contractor.

As per Council's DCP, food scraps should be placed in specialised containment bins and collected on a regular basis. To minimise food waste in the general waste stream, it is recommended that the food is donated, composted on site or sent off-site to a composting facility.

If additional collection services are required, such as secured document destruction, these can be organised with a private waste contractor who can provide additional bins and take collected waste to an off-site licenced facility.

The Project is anticipated to produce minimal quantities of garden organics. Less than 100 L of garden organics are estimated to be generated per week. This waste will be taken by a landscaping contractor who will dispose of it at an off-site licenced facility.

6.4 Waste Storage Area Size

For both warehouses, the waste storage area must be large enough to adequately store all quantities of operational waste and recycling between collections.

All waste storage room calculations have considered the bin dimensions listed in Council's DCP, as outlined in **Table 9**.

Table 9 Dimensions and approximate footprint of bins

Dimension	Height (mm)	Depth (mm)	Width (mm)	Gross Floor Area (GFA) (m^2)
3 m^3	1,540	1,520	2,060	3.13

To allow for ready movement of bins into and out of the bin storage area, the bin storage area is to provide a floor area of at least twice the total minimum bin GFA. This can also act as a contingency in the event of spikes in waste generation. Additionally, in accordance with Council's DCP, an additional 0.2 m is to be permitted between the bins to allow for manoeuvrability. This has been considered in the calculation of the waste storage area for each of the buildings in the Project.

The recommended storage areas do not include consideration for the storage of bulky and hazardous waste. For the additional storage space for bulky and hazardous waste, refer to **Section 6.4.2**.

6.4.1 Operational waste

The estimated number of bins required for weekly storage of operational waste and recycling generated by the Project are shown in **Table 10** and are based on:

- The estimated quantities of operational waste and recycling as shown in **Table 8**
- Bin dimensions from the Council's DCP as shown in **Table 9**

Table 10 Minimum number of bins and waste storage area for operational waste of the Project

Location	Bins Required		Collection frequency		Recommended Storage Area (m^2)
	General Waste	Comingled Recycling	General Waste	Comingled Recycling	
Warehouse 4E	3 x 3 m^3	3 x 3 m^3	3	3	37.6

6.4.2 Bulky and Hazardous Waste Management

As outlined in Council's DCP, additional storage space for the bulky waste stream must be provided. This stream includes broken pallets, broken storage units, e-waste and other materials that cannot be disposed of in the general or recyclable waste stream.

Council's guidelines do not provide storage area dimensions for bulky waste. In the absence of dimensions provided by Council, SLR has adopted storage area dimensions for bulky waste presented in The City of Sydney's Guidelines for Waste Management in New Developments. These are applied as they are the most recent recommendations for bulky waste storage that have been provided in guidelines for new developments in NSW and are applicable to non-residential developments. The recommended space for storing bulky wastes should be at least:

- 4 m^2 for developments between 100 m^2 and 2,000 m^2, and
- An additional 4m^2 for developments over 2,000 m^2 and for every 20,000 m^2 of office space.

SLR recommends 8 m^2 to be allocated for bulky waste storage. Hence in addition to the recommended waste storage area noted in **Table 10**, the total waste storage area recommended for the Project is identified in **Table 11**.

Table 11 Total recommended storage area for operations at the Project

Location	Recommended Storage Area (m^2)		
	Waste and Recycling	Bulky waste	Total Storage Area
Warehouse 4E	37.6	8	45.6

The waste storage area for the project is shown on the architectural drawing attached in **Appendix A** in line with Council's requirements.

Management may consider organising a skip on a monthly basis or as required to remove bulky waste items or engage a contractor to collect and transport these items for reuse, recycling or disposal at an EPA licensed facility.

In accordance with Council's DCP and best practice waste management, hazardous waste at the site must be placed in specialised containment bins, clearly signposted and labelled, securely locked and may require a licence and consultation from the EPA and approval from Council. Hazardous waste removal is to be undertaken as needed by appropriately licensed specialised contractors.

SLR recommends that waste audits be undertaken approximately one month into the operational phase of the Project to quantify actual waste generation rates. The assessment of generated waste quantities will be influenced by management, employee and tenant attitudes to recycling and disposal, and the adequacy of signage and education provided for occupants.

6.5 Waste Storage Room Location

In accordance with Council's DCP, the design for the waste storage areas of the Project are to take into consideration better practice waste management and recommendations from Council's DCP. In accordance with better practice waste management and Council's DCP, the waste storage area should be located so that:

- It is located away from primary street frontages
- It is near any on-site loading bays
- It is convenient, safe, functional and directly accessible to users in each tenancy and servicing collection staff, but inaccessible to the public
- It avoids pedestrian or vehicular traffic hazards likely to be caused by waste collection and storage,

- It has 1.8 m zone of unobstructed clearance between the waste storage area and the entrance.

As per Council's DCP, the nominated collection areas for each warehouse are to be clearly nominated on site plans accompanying development applications. The waste storage area for the project is shown on the architectural drawing attached in **Appendix A** in line with Council's requirements.

6.6 Waste Storage Area Features

In accordance with better practice waste management and Council's DCP, the Project's waste storage areas should have the following features:

- Blend in with the design of the wider development and the surrounding streetscape
- Be well lit and well-ventilated
- Fully enclosed and walled
- Adequate vermin prevention measures
- Reduce potential noise and odour impacts
- Enhance safety for the public
- Be connected to a water outlet for washing purposes
- Equipped with a hot and cold tap-based water supply centralised mixing valve
- Floor graded to a central drainage point which is connected to the sewer
- Have water discharge from washing flow to a sewer approved by the relevant authority
- Waterproofed and sealed non-slip floor constructed in accordance with the Building Code of Australia.
- Waste equipment is protected from theft and vandalism
- Be fully enclosed, walled and not permit through access to other on-site waste infrastructure
- Have a minimum 2.7 m unobstructed internal room height in accordance with the Building Code of Australia
- Adequate lighting and natural or mechanical ventilation in accordance with the Building Code of Australia
- Provide suitable dual door access with a minimum width of 1.8 m and a minimum 1.8 m unobstructed access corridor for the service of bins
- Provide administrative management, including signage to ensure appropriate use
- Be screened from public areas to reduce the impacts of noise, odour and visual amenity, and
- Flexible in design to allow for future changes in operation, tenancies and uses.

6.7 Waste Servicing

Based on communication with the Client, SLR understands that waste collections will be undertaken through a private contractor. The following general waste servicing access requirements should be implemented:

- Waste will be removed regularly.

- Arrangements should be in place so that the waste and recycling storage rooms are not accessible to the general public.

In accordance with Council's DCP, the following is required for the access provisions for of waste collection vehicles:

- Collection vehicles must be able to enter and exit the collection area in a forward direction
- Drawings must show the site's entry point, vehicle's route of travel and manoeuvring
- Swept path models must illustrate how a standard waste collection vehicle will enter, service and exit the site
- A 0.5 m unobstructed clearance is required from all obstructions for the vehicle's ingress and egress manoeuvres
- For rear loaded vehicles, an additional 2 m unobstructed loading zone is required behind the vehicle for the loading of 1,100 L bins. Additionally, a 0.5 m side clearance is required on either side of the vehicle for driver movements and accessibility
- Unobstructed access, adequate driveways and ramps of sufficient strength to support waste collection
- A structural engineer's report is to accompany the DA and confirm that all infrastructure used for vehicle ingress and egress movements can support the waste collection vehicle's weight. Council's DCP consists of dimensions for waste collection vehicles.

The collection vehicles required for 3 m^3 front lift bins require 6.2 m height clearance to empty the bins. Therefore, front-lift bins are commonly used in outdoor areas with no restrictions on overhead clearance. For this reason, SLR recommends that the waste storage areas be in an outdoor area with no restrictions on overhead clearance.

SLR recommends that the design of the Project is reviewed by a traffic specialist and that the drawings are updated to be in accordance with Council's servicing requirements listed above. This WMP should be updated to reflect those updates.

Hazardous waste produced at the site will be collected by appropriately licensed specialised services.

Once a private waste contractor is engaged, a valid waste and recycling collection contract is recommended to demonstrate disposal at a waste facility lawfully able to accept it. Written evidence of the valid contract should be kept on-site.

6.8 Waste Avoidance, Reuse and Recycling Measures

6.8.1 Waste Avoidance

Waste avoidance measures include:

- Participating in take-back services to suppliers to reduce waste further along the supply chain
- Avoiding printing where possible
- Review of packaging design to reduce waste but maintain 'fit for purpose'
- Providing ceramic cups, mugs, crockery and cutlery rather than disposable items

- Purchasing consumables in bulk to avoid unnecessary packaging
- Presenting all waste reduction initiatives to staff as part of their induction program, and
- Investigating leased office equipment and machinery rather than purchase and disposal.

6.8.2 Re-use

Possible re-use opportunities include establishing systems with in-house and supply chain stakeholders to transport products in re-useable packaging where possible.

6.8.3 Recycling

Recycling opportunities include:

- Collecting and recycling e-wastes
- Flatten or bale cardboard to reduce number of bins required
- Paper recycling trays provided in office areas for scrap paper collection and recycling
- Collecting printer toners and ink cartridges in allocated bins for appropriate contractor recycling, and
- Development of 'buy recycled' purchasing policy.

6.9 Communication Strategies

Waste management initiatives and management measures should be clearly communicated to building managers, owners, employees, customers and cleaners. Benefits of providing this communication include:

- improved satisfaction with services
- increased ability and willingness to participate in recycling
- improved amenity and safety
- improved knowledge and awareness through standardisation of services
- increased awareness or achievement of environmental goals and targets
- reduced contamination of recyclables stream
- increased recovery of recyclables and organics material, if implemented, and
- greater contribution to targets for waste reduction and resource recovery, the environment and heritage conservation.

To realise the above benefits, the following communication strategies should be considered:

- Use consistent signage and colour coding throughout the Project
- Ensure all staff are trained in correct waste separation and management procedures
- Provide directional signage to show location of and routes to waste storage area
- General waste and co-mingled recycling bins should be clearly labelled and colour-coded to ensure no cross contamination, where applicable

- Employees and cleaners should adhere to the WMP for compliance, in consultation with management, and
- Repair signs and labels promptly to avoid breakdown of communications.

6.10 Signage

As outlined in the Penrith DCP, the waste storage and collection areas should be provided with appropriate signage. These signs should clearly identify waste management procedures and provisions to contractors, tenants and visitors should be distributed around the Project.

Signs which clearly identify waste management procedures and provisions to staff and visitors should be distributed around the Project. Key signage considerations are:

- Clear and correct labelling on all waste and recycling bins, indicating the correct type or types of waste that can be placed into a given bin, as shown in **Figure 4**
- Signposts and directions to location of waste storage areas
- Clear signage in all waste storage areas to instruct users how to correctly separate waste and recycling
- Maintaining a consistent style colour scheme and system for signs throughout the Project, and
- Emergency contact information for reporting issues associated with waste or recycling management.

Colour-coded and labelled bin lids are necessary for identifying bins. All signage should conform to the relevant Australian Standard and use labels approved by the NSW EPA[16]. The design and use of safety signs for waste rooms and enclosures should comply with Australian Standard AS 1319 Safety Signs for the Occupational Environment and clearly describes the types of materials designated for each bin.

Figure 4 Example of bin labels for operational waste

6.11 Monitoring and Reporting

Monitoring is recommended to ensure waste and recycling management arrangements and provisions for the Project are functional, practical and are maintained to the standard outlined in this plan, at a minimum.

Visual assessments of bins and bin storage areas should be conducted by the building manager, at minimum:

16 NSW EPA waste signage and label designs http://www.epa.nsw.gov.au/wastetools/signs-posters-symbols.htm

- Weekly, in the first two months of operation to ensure the waste management system is sufficient for the operation, and
- Every six months, to ensure waste is being managed to the standards outlined in this document.

In addition, audits are to be conducted on a half-yearly basis to ensure WMP provisions are maintained.

Quantities of waste and recycling associated with disposal of waste and recycling, including dockets, receipts and other physical records should be recorded by the Building Manager. This is to allow reviews of the waste management arrangements and provisions at the site over time. Records of waste disposal should also be available to regulatory authorities such as the NSW Environmental Protection Authority and SafeWork NSW, upon request.

Any deficiencies identified in the waste management system, including, but not limited to, unexpected waste quantities, is to be rectified by the Building Manager as soon as it is practical. Where audits show that recycling is not carried out effectively, management should carry out additional staff training, signage re-examination and reviews of the waste management system where the audit or other reviewing body has deemed necessary. If this waste management plan no longer sufficiently meets the needs of the Project, review and updates to maintain suitability must be undertaken.

6.12 Roles and Responsibilities

It is the responsibility of the Building Manager, or equivalent role, to implement this WMP and a responsibility of all warehouse tenants and staff to follow the waste management procedures set out by the WMP. SLR recommends that all subcontractors enlisted by the Client are to have roles and responsibilities identified and the Project's waste management system clearly explained. A summary of recommended roles and responsibilities are provided in **Table 12**.

Table 12 Operational waste management responsibility allocation

Responsible Person	General Tasks
Management	Ensure the WMP is implemented throughout the life of the operation.
	Update the WMP on a regular basis (e.g. annually) to ensure the Plan remains applicable.
	Undertake liaison and management of contracted waste collections.
	Organise internal waste audits on a regular basis.
	Manage any complaints and non-compliances reported through waste audits etc.
	Perform inspections of all waste storage areas and waste management equipment on a regular basis.
	Organise cleaning and maintenance requirements for waste management equipment.
	Monitor bins to ensure no overfilling occurs.
	Ensure effective signage, communication and education is provided to alert visitors, employees and cleaners about the provisions of this WMP and waste management equipment use requirements.
	Monitor and maintain signage to ensure it remains clean, clear and applicable.
	Ensure waste and recycling storage rooms are kept tidy.
	Ensure that regular cleaning and daily transfer of bins is being undertaken by the cleaners
	Ultimately responsible for the management of all waste management equipment, cleaning requirements, waste transfer and collection arrangements.

Responsible Person	General Tasks
Cleaners and Staff	Removal of general waste, recyclables, cardboard waste and hazardous waste from floor areas for transfer to centralised waste and recycling collection rooms daily or as required.
	Cleaning of all bins and waste and recycling rooms on a weekly basis or as required.
	Compliance with the provisions of this WMP.
Gardening Contractor, as applicable	Removal of all garden organics waste generated during gardening maintenance activities for recycling at an off-site location or reuse as organic mulch on landscaped areas.

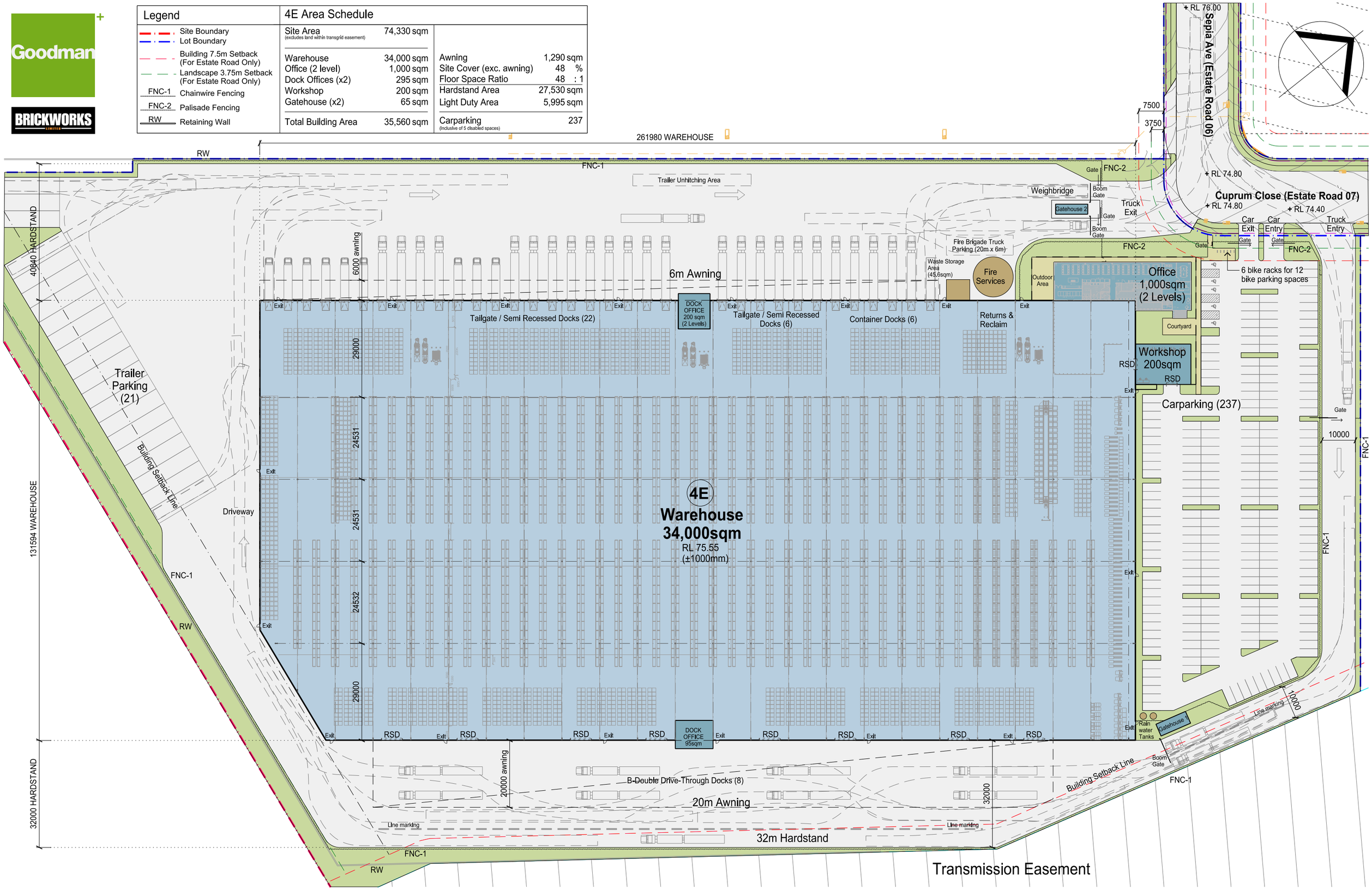
APPENDIX A
ARCHITECTURAL DRAWINGS

Goodman

BRICKWORKS LIMITED

Legend	
Site Boundary	
Lot Boundary	
Building 7.5m Setback (For Estate Road Only)	
Landscape 3.75m Setback (For Estate Road Only)	
FNC-1	Chainwire Fencing
FNC-2	Palisade Fencing
RW	Retaining Wall

4E Area Schedule			
Site Area (excludes land within transgrid easement)	74,330 sqm		
Warehouse	34,000 sqm	Awning	1,290 sqm
Office (2 level)	1,000 sqm	Site Cover (exc. awning)	48 %
Dock Offices (x2)	295 sqm	Floor Space Ratio	48 : 1
Workshop	200 sqm	Hardstand Area	27,530 sqm
Gatehouse (x2)	65 sqm	Light Duty Area	5,995 sqm
Total Building Area	35,560 sqm	Carparking (Inclusive of 5 disabled spaces)	237



SBA ARCHITECTS	Oakdale West Estate - **MOD 7**	Proposed Warehouse Facility	4E Site & Warehouse Plan	1:500 @ A1 1:1000 @ A3
	Kemps Creek, NSW			23 June 2021
				OAK 4E DA 30 (A) Job No 21116

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APPENDIX I

Landscape Management Plan

Scape Design Pty Ltd
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Suite 5, 15 The Corso, Manly 2095 NSW
office@scapedesign.com.au
NATSPEC Subscriber Number: 15125307

Oakdale West Estate, Precinct 4 - Building 4E

Landscape Management Plan

Prepared by: Scape Design Pty Ltd
Prepared for: Goodman Property Services

Revision Schedule

Revision	Date	Issued by
01	27/08/21	CH
02	19/10/21	CH
03	5/8/22	CH

1 TABLE OF CONTENTS

2 CONDITIONS

2.1 TABLE OF CONDITIONS

Condition No.		Condition	Action
Landscaping			
B17.		*Prior to the commencement of operation of the development, the Applicant must implement the Landscape Plan included in the RtS and shown on the figures in* ***Appendix 1.***	The landscaping is in progress
B18.		*The Applicant must maintain the landscaping on the site in accordance with the approved Landscape Plan for the life of the development. If any aspect of the landscaping has not been successful, the Applicant must undertake replanting and rehabilitation works, as reasonably practicable.*	The landscaping contract includes an initial 3 month maintenance period, to be followed by an ongoing maintenance regime.

3 INTRODUCTION

3.1 GENERAL

3.1.1 GENERAL CONDITIONS

Contract: Oakdale West Estate (OWE) – Building 4E (SSD 22191322 – MOD 1). For further information refer to the Oakdale West Estate LMP

Local Council(s): Penrith City Council

3.1.2 DRAWING REFERENCE

All landscape plans, details and specifications included in the project documents should be read in conjunction with this Landscape Management Plan (LMP), as well as the Oakdale West Estate LMP. All structural and civil works components of the landscape design should be referenced to engineers' details and specifications. Read the LMP in conjunction with these packages. If in doubt about any details or if conflicts are found in the documents, seek advice.

This LMP should be read in conjunction with the Oakdale West Estate LMP as it is intended to support and provide further information and detail regarding the on-lot works for Building 4E.

3.1.3 WORKMANSHIP AND MATERIALS

All landscape works, including detailed design (if relevant), must be carried out by a competent, trained and qualified landscape contractor who is experienced in horticultural practices, landscape construction and planting techniques.

The landscape contractor must hold a current Building Contractors License and/or be a financial member of LNA Landscape Association NSW & ACT or equivalent organisations in other states.

3.1.4 COUNCIL CONSULATION

Penrith City Council (PCC) were consulted in January 2020 to review and comment on the Oakdale West Estate Landscape Master Plan. The comments that were received have been resolved as per the following table:

PCC Query	PCC Advice	Action
Comments Received 28/01/2020		
1. The landscape plans and architectural drawings provide landscape beds within the car parking areas which are not considered to achieve the intention and objectives of the DCP. It is agreed that canopy tree planting is required to ameliorate the massing of built form and hard stand car parking areas, however the landscape beds are too narrow.	*It is recommended that landscape beds be consolidated to provide dimensions of no less than 2m wide and the length of a parking space is necessary with greater planting capability at the end of aisles and tree planting in dedicated beds (not diamonds between 4x spaces).*	Car parking planting layout has been consolidated to larger beds, capable of supporting grass/groundcover planting and canopy trees. Where this is not possible, trees with root vaulting have been provided.

		Refer to **Appendix 7.1 of this LMP** for amended Landscape Plans.
2. Islands are proposed as resin bonded aggregate. There is opportunity for Water Sensitive Urban Design measures	*It is recommended that Water Sensitive Urban Design measures are implemented, with engineered planting pits to ensure optimal healthy root volume and other growing conditions for trees.*	Resin bonded aggregate has been removed and replaced with decomposed granite and canopy trees with root vaulting. Refer to **Appendix 7.1 of this LMP** for amended Landscape Plans.
3. There is inadequate quantity of trees to produce necessary cooling in relation to the expanse of building and pavement footprints. The quantity of perimeter (setback) trees is not adequate as spacings are shown at between 18 and 30m. For street trees, Council typically requires 8-10m spacings, within supplementary planting in landscape setbacks to maximise canopy area.	*It is recommended that tree quantities are increased within landscape setbacks, this can be achieved by decreasing spacing between individual trees.*	Landscape setback zones have been updated to provide additional tree and planting areas, aiding in the screening of large hardstand and building surfaces. Refer to **Appendix 7.1 of this LMP** for amended Landscape Plans.
4. Council has consistently raised issue with the streetscape language of street tree plantings (being small groups with ballast mulch at verge large centres planted at 3 trees per 100 linear meters). This does not deliver adequate streetscape outcomes nor best practice for cooling the streets.	*It is recommended that street trees are planted at 8-10m centres.*	Street tree layouts are located within the Stage 1 infrastructure works. Refer to the CEMP relating to the infrastructure works for further information.
5. There is opportunity for greater variety in tree species adding to climate and biodiversity resilience. Some species suggested are not considered sufficiently resilient to climate change and their longevity and health are potentially compromised.	*Small trees are inappropriate for the scale of the built form ie. Crepe Myrtle, Tuckeroo. Tree species diversity is to be increased.*	Tree species have been updated to reflect a greater diversity of native canopy trees, providing greater resilience and amenity to the area. Refer to **Appendix 7.1 of this LMP** for amended Landscape Plans.

6. Council through other project and road approvals has established a Southern Link Road streetscape character (road verge and front setback) of informal yet massed planting with native trees providing full canopy cover.	*It is recommended that the Southern Link Road streetscape character is maintained and reflected in the landscape design, creating a consistent landscape design for the precinct.*	Refer to the Oakdale West Estate LMP for further information.
~~7. Surrounding public road intersections are considered to require additional landscaping.~~	~~*It is recommended that additional landscaping be added to public road intersections to reinforce spatial definition of the intersection and reduce large scale grey infrastructure.*~~	~~Landscape in public areas are located in the Stage 1 infrastructure works.~~ ~~Refer to the CEMP of the Oakdale West Infrastructure Project for further information.~~
8. Ballast as a groundcover is not supported due to its heat attracting properties thus compromising healthy growing conditions for trees.	*An alternative product must be provided and established for the precinct.*	Ballast has been removed and replaced with groundcovers. Refer to **Appendix 7.1 of this LMP** for amended Landscape Plans.
9. Tensile wire rope for green wall effect	*This feature should be designed to be visually effective and attractive without climbers as the climate conditions often results in failure of green walls to achieve their intended forms.*	Green walls have been designed to incorporate steel button that fasten to the tensile wire rope. This can be arranged to create an artistic effect if failure of planting occurs. Refer to **L.SK.202 in Appendix 7.1** for further information.
10. Irrigation details should be required as security of ongoing maintenance and viability is critical.	*Irrigation details required.*	Refer to **Section 5.2 and Appendix 7.3 of OWE Estate LMP** for further information.

3.2 DESCRIPTION

3.2.1 SITE LOCATION

The Oakdale West Estate is located in the Penrith Local Government Area (LGA) at the far south-western extent of the WSEA. The site is bound to the north by the Water NSW Pipeline and to the east by the Ropes Creek riparian corridor. Land along the eastern boundary of the site is also affected by a transmission easement associated with TransGrid infrastructure.

Other boundaries interface with adjoining rural lands used for a mix of rural-residential, agricultural. Emmaus Catholic College and Emmaus Retirement Village is located to the west of the site. To the east of the site is Goodman's Oakdale South estate.

Building 4E of Precinct 4 is located in the southern extremity of the Oakdale West Estate, with the only access points being off Estate Road 6 and Estate Road 7. Building 4E is bordered by Lots 4A and 4B to the West, Lot 4F to the North and the riparian corridor associated with Ropes Creek to the South.

3.2.2 PURPOSE OF LANDSCAPE MANAGEMENT PLAN

This Landscape Management Plan has been developed as per the Development Consent for the Oakdale West Estate works specifically.

The intended purpose of this LMP is to support the Oakdale West Estate LMP by providing greater detail on site management, visual and landscape treatments, and maintenance works specially for Building 4E. Further information on each of these can be found below within this LMP.

4 SITE MANAGEMENT

4.1 ENVIRONMENTAL ASPECTS

4.1.1 DESCRIPTION

The LMP seeks to manage potential visual impacts as a result of operational activities that may affect local and regional visual receptors. These impacts need to be managed to minimise impacts to sensitive visual receptors, and satisfy the conditions of the DA. It also outlines that ecological impacts are to be mitigated through adherence to the provisions set out Flora & Fauna Management Plan.

4.2 OBJECTIVES & PERFORMANCE CRITERIA

4.2.1 OBJECTIVES

The objectives of this LMP include:

- *ensuring that the conditions of the DA and Goodman Landscape standards are met*
- *managing the visual impacts of the project to comply with the landscape performance criteria*
- *ensuring the visual and landscape treatments are consistent with the ecological revegetation works described in the Oakdale West Estate – Flora & Fauna Management Plan*

4.3 MANAGEMENT ACTIONS

4.3.1 PERMANENT LANDSCAPE MANAGEMENT

Landscape Bund

The major screening element is the environmental bund along the western boundary of the site, which has already been constructed and is well vegetated. Further information is located in the Oakdale West Estate LMP.

On-Lot Landscape Treatment

The major on-lot screening technique used to provide a visual barrier to the large expanses of built form, parking and utility spaces is mass planting, including native canopy trees.

Plant typologies implemented are to be low maintenance and drought resistant, ensuring all new landscaped areas are adaptable to the Western Sydney Climate. Tree planting typologies have referenced the Penrith City Council (PCC) *Native Tree Guide*, ensuring that a proportion of locally endemic tree species are reinstated to the former agricultural site, to also increase the percentage of canopy cover. Landscape setbacks have been designed to foster a clustered and dense approach to tree planting, including native species, underplanted with a range of shrubs and groundcovers.

Car parking areas are to incorporate Water Sensitive Urban Design (WSUD) where possible. Tree pits are to utilise structural soil in order increase soil availability and therefore provide the best possible conditions for tree growth and maturity. Refer to L.SK.200 in Appendix 7.1 for further information.

Integration of landscaping with fixed elements

The Integration of fixed elements and the landscape within Oakdale West Estate Precinct 4 include elements such as:

Entry Signage
Entry signage is typically to be installed within either gravel surfaces, low planting or TF1 – Turf Rolls. Monitor Maintenance requirements of lawn care with interface elements (Section 5 of this LMP).

Fencing & Gates
All fencing and gates are to be located as per the CIVIL ENG. and ARCHITECT Drawings. Monitor Maintenance requirements with planting and lawn care at fence and gate interfaces where required (Section 5 of this LMP).

Planted Verges (Excluding Turfing)
Where road and car park medians and verges are to be planted, a 250mm wide area of mulch only is to be used next to kerbing to maintain clear sightlines to edges. Refer to the Oakdale West Estate LMP for further details.

Retaining Walls
Retaining walls and balustrading are to be finished as per CIVIL ENG. Drawings.

Street Trees and Verge Planting
Street trees and verge planting are to be finished per CIVIL ENG. Drawings and Landscape Infrastructure Stage 1 Drawings. Refer to the Oakdale West Estate LMP for further details.

5 VISUAL AND LANDSCAPE TREATMENTS

5.1 GENERAL

5.1.1 QUALITY

This section of the Landscape Management Plan describes the procedures to ensure the success of the landscaping work over the life of the development.

All landscaped areas must be maintained to the approval of the appointed principal's representative and principal's consulting landscape architect.

5.1.2 APPROACH

A proactive approach to all landscape tasks must be adopted to ensure that the appearance of the landscape as a whole is highly presentable at all times, in accordance with Goodman's *Landscape Guidelines*.

5.1.3 REQUIREMENTS

Contractors must submit an annual routine landscape maintenance program to Goodman's Project Superintendent, Landscape Manager and/or the consulting Landscape Architect within two weeks of the contract commencement date.

It is the contractor's responsibility to ensure the success of the landscaping work over the establishment period of the development.

5.2 MAINTENANCE PROGRAMS

5.2.1 GENERAL CONDITIONS

The Contractor shall rectify all defects during installation that become apparent in the works during the defect's liability period (DLP) (3 months).

Post the initial 3 month DLP period, the Client (Goodman Property Services Australia Pty Ltd) shall maintain the contract areas by the implementation of industry accepted horticultural practices between the date of practical completion and the date of final completion (15 months).

The landscape maintenance works shall include, but not be limited to the following:

- *Replacing failed plants*
- *Pruning*
- *Herbicides/Insect and pest control*
- *Fertilizing*
- *Maintaining mulch*
- *Mowing*
- *Watering/Irrigation*
- *Weeding*
- *Rubbish removal; and Cleaning of the surrounding areas.*
- *Timber stakes and hessian ties*

– *Reinforced turf cell system (if required).*

Ongoing maintenance: Ongoing maintenance facilitated by the Owner's corporation. Goodman is to contract the management of all landscape areas. The standard specification and reporting requirements of this contract are located in Goodman's Landscape Guidelines. Refer to Appendix 7.3 for further detail.

Safety: Safety procedures/ plans are to be documented for review by Principal prior to commencement of work.

Failure to maintain the landscape planting in a healthy condition may result in the Principal arranging for the maintenance work to be carried out by others at your expense.

5.2.2 AREAS DEFINED IN LANDSCAPE MAINTENANCE PLAN

All landscape areas are to be maintained throughout the maintenance program, including planting and turf areas, footpaths, gabion walls and landscape features.

5.2.3 PROTECTION OF PERSONS AND PROPERTY

Temporary works: Provide and maintain required barricades, guards, fencing, shoring, temporary roadways, footpaths, signs, lighting, watching and traffic flagging.

Accessways, services: Do not obstruct or damage roadways and footpaths, drains and watercourses and other existing services in use on or adjacent to the site. Determine the location of such services.

Property: Do not interfere with or damage property which is to remain on or adjacent to the site, including adjoining property encroaching onto the site, and trees.

5.2.4 RECTIFICATION

Accessways, services: Rectify immediately any obstruction or damage to roadways and footpaths, drains and watercourses, reinforced turf cell system and other existing services in use on or adjacent to the site. Provide temporary services whilst repairs are carried out.

Property: Rectify immediately any interference or damage to property which is to remain on or adjacent to the site, including adjoining property encroaching onto the site, and trees.

5.2.5 EXISTING SERVICES

General: Attend to existing services as follows:

- *If the service is to be continued, repair, divert or relocate. Submit proposals.*
- *If the service crosses the line of a required trench, or will lose support when the trench is excavated, provide permanent support for the existing service. Submit proposals.*
- *If the service is to be abandoned, remove redundant parts, and make safe.*

Proposals: Submit proposals for action to be taken with respect to existing services before starting this work. Minimise the number and duration of interruptions.

5.2.6 ACCESS FOR MAINTENANCE

Requirement: Provide access for maintenance of plants and equipment.

Standards: Conform to the relevant requirements of AS 1470, AS 1657, AS/NZS 1892.1, AS 2865 and AS/NZS 3666.1.

Work Health and Safety: Conform to the requirements of the applicable Work Health and Safety regulations for all temporary and permanent works.

Protection from injury: Protect personnel from injury caused by contact with objects including those that are sharp or protrude at low level.

5.2.7 LOGBOOK

Ensure a Maintenance Logbook is recorded to demonstrate that maintenance work has been undertaken and what materials, including chemical materials, have been used throughout the maintenance and establishment period.

The logbook must include the date of visit, maintenance works completed, maintenance works in progress and maintenance works required. The logbook must give details of damaged, dead or missing plants and show their locations on the relevant sheets of the Drawings.

Use the logbook to identify chemicals used as well as the reason for their use. Submit the initial logbook for inspection prior to Practical Completion and again at the end of the Defects Liability Period as a prerequisite for granting Practical and Final Completion Certificates.
Record all major events and activities in the logbook. Ensure the logbook is available for inspection on request.

5.3 MAINTENANCE WORKS

5.3.1 PLANT CARE

Planting: Ensure the general appearance and presentation of the landscape and the quality of plant material at date of practical completion is maintained for the full planting establishment period. Trees, shrubs and groundcovers shall at all times display healthy growth. Spent flower heads or stalks shall be removed immediately following flowering.

All shrubs, hedges, ground covers and trees must be trimmed into shape as required to an acceptable presentation standard.

Excessive foliage impacting onto roads, paths, fencing and lighting must be pruned during all site visits. Leaf litter and or all cuttings should be removed from all gardens and site each visit and disposed of at contractor's cost. Any dead or dying plants/shrubs should be removed and replaced with same or comparable species. The Landscape Manager must be consulted when large trees need to be removed and or replaced. The contractor will maintain each plant in a healthy condition to increase the visual appeal of the gardens.

Replacements: Replace failed, dead and/or damaged plants at maximum 3-week intervals as necessary throughout the full plant establishment period. Replacement plants shall be in a similar size and quality and identical species or variety to the plant that has failed. Replacement of plants shall be at the cost of the Contractor unless advised otherwise. If the cause of the failure is due to a controllable situation then correct the situation prior to replacing plants.
Keep all planting areas as specified and free of grass and weed.
Carry out grass and weed removal at intervals of not more than four (4) weeks and ensure that weeds do not flower to form seed heads.

For those species listed by the relevant local government authority as noxious under the Biosecurity Act 2015 take action as required by that local Government Authority (Penrith City Council). Refer to the Flora and Fauna Management Plan (FFMP) for further information regarding Weed Management and Mitigation Measures.

5.3.2 PRUNING

General: Prune to the Pruning schedule and AS 4373.

Any pruning requested by the Landscape Architect shall be performed, including any pruning of damaged growth or miscellaneous pruning considered as beneficial to the condition of the plants. All pruning works shall be undertaken in a manner equal to acceptable horticultural practice.

Pruning to ensure pathways, roads, lighting and services such as fire hydrants, overhead services and signs are kept clear from encroaching growth of plant material at all times.

- *Remove all damaged, dead or diseased wood by pruning to the nearest lateral shoot or active bud with a neat clean cut*
- *No more than 40mm - 50mm of new growth present on hedges at any time*
- *Remove all spent or dead flower heads from plants following flowering*
- *Prune young shrubs for shape by pinching out the growing tips to encourage lateral bushy growth*
- *Hedging shall be carried out to appropriate plants within garden beds. This should be carried out on a regular basis so as to avoid cutting back into 'old wood' in order to achieve the desired form.*
- *All existing hedges on site to be maintained*
- *Removal of suckers from base of trunks*
- *Formative pruning of trees to allow effective canopy development and retain natural or desired shape of the tree*
- *Pruning cuts shall be made and close to the bud at a 45° angle to ensure that any water is shed away from the bud*

5.3.3 SPRAYING

Responsibility for insect and disease control: Contractor

Period of treatment: Until the problem has been eliminated.

Chemical spray: Apply outside of normal working hours.

Avoid spraying:

- *whenever possible*
- *in the case of wet weather*
- *if wet weather is imminent*
- *if target plants are still wet after rain*
- *during windy weather*
- *if adjacent desirable species are too close to the target plants to be avoided.*

Do not spray where herbicide could fall into a watercourse or when wind conditions could cause drift outside the area to be treated or onto desirable plants.

After spraying, lop any dead weeds flush with the ground surface and dispose of the cuttings. Remove by hand any weeds that cannot be controlled by herbicide. Ensure that the entire weed including all roots is removed. Dispose of the weeds off site.

Immediately report to the Project superintendent/landscape manager any evidence of intensive weed infestation, noxious weeds, insect attack or disease amongst plant material. Submit all proposals to apply chemicals and obtain approval before starting this work.

When approved, spray with herbicide, insecticide, fungicide as appropriate in accordance with the manufacturers' recommendations. Record in the logbook all relevant details of spraying activities including:

- *Product brand / manufacturer's name*
- *Chemical / product name*
- *Chemical contents*
- *Application quantity and rate*
- *Date of application and location*
- *Results of application*

5.3.4 FERTILISING

Soil tests: Take samples from planting beds areas and conduct tests.

Fertilising: Base the fertilisation program on the soil testing results. Fertilise trees once every two years. Generally, apply an all-purpose fertiliser of N:P: K (nitrogen: phosphorus: potassium) 10:4:6 at recommended rates. Alternatively apply 12-month slow release fertiliser (such as Nutricote) at the manufacturer's recommended rate. Apply all-purpose fertiliser to shrubs annually in two bands and cultivated into the soil 100 mm deep.

Record in the logbook all relevant details of fertilizing including:

- *Product brand / manufacturer's name*
- *Fertilizer / product name*
- *Application quantity and rate*
- *Date of Application and Location*

5.3.5 STAKES, TIES, TREEGUARDS AND ROOT BARRIERS

Stakes

Generally: If plants are unable to be self-supported or if stakes are damaged, stake or restake the plants

Material: Hardwood, straight, free from knots or twists, pointed at one end.

Installation: Drive stakes into the ground at least one third of their length, avoiding damage to the root system.

Stake sizes and quantities:

- *For plants ≥ 2.5 m high: Three 50 x 50 x 2400 mm stakes per plant.*
- *For plants 1 to 2.5 m high: Two 50 x 50 x 1800 mm stakes per plant.*
- *For plants < 1 m high: One 38 x 38 x 1200 mm stake per plant.*

Ties

General: Provide ties fixed securely to the stakes, one tie at half the height of the main stem, others as necessary to stabilise the plant. Attach ties loosely so as not to restrict plant growth.

Tie types:

- *For plants ≥ 2.5 m high: Two strands of 2.5 mm galvanized wire neatly twisted together, passed through reinforced rubber or plastic hose, and installed around stake and stem in a figure eight pattern.*
- *For plants < 2.5 m high: 50 mm hessian webbing stapled to the stake.*

Marker stakes
Material: Timber offcuts 25 x 25 x 1200 mm. Dip the top 200 mm in white paint.
Installation: Drive firmly into the ground at least 300 mm from the plant. Do not tie to the plant.

Location of marker stakes:
- *Trees in grass: Mark each tree.*
- *Rip line planting areas: Mark each rip line at every fifth plant along the line.*

Trunk protection/Tree guards
Collar guards: For trees planted in turf, including those with mulched surrounds, provide 200 mm length of 100 mm diameter agricultural pipe split lengthways.
Removal: If plants are robust with well-developed systems and are strong enough to no longer require support, remove stakes and ties at the end of the planting establishment period (Defects Liability Period).

- Adjust and replace as required to ensure plants remain correctly staked.

- Repair any tree ties that have been broken and replace any missing stakes.

- Maintain the tree guards around each plant so that the natural plant growth is not impeded or restricted. Replace damaged and missing tree guards as soon as practicable after being identified.

- Remove tree guards progressively as plants mature and where it is deemed that the tree guard provides no further benefit to the establishment of the plant.

Root Barriers
Type/ location: Street Trees. Refer to the Oakdale West Estate LMP for further details. City Green 'ReRoot' 600mm Depth

Supplier: City Green. Ph: +61 1300 066 949

https://citygreen.com/products/reroot/

5.3.6 MULCHED SURFACES

The contractor is required to maintain all areas of mulch cover within garden beds. Displaced mulch should be returned to the garden beds wherever possible. All areas of mulch cover must be packed to a depth of 75mm. If replacement of mulch is required, the contractor must notify the Landscape Manager and provide quotation for approval. Specific mulch must be approved prior to installation.

5.3.7 HYDROMULCHING

General: Maintain temporary and permanent grassing areas.

Weeding: Remove weeds that emerge in newly established hydroseeded/hydromulched areas.

Reseeding: Repair topsoil, supplementing if necessary, to achieve design surface levels. Reseed over the course of the contract to maintain required densities and repair bare patches.

Watering: Until germination, keep the surface damp and the topsoil moist but not waterlogged.

After germination: Water to maintain a healthy condition, progressively hardened off to the ambient climatic conditions

5.3.8 MOWING AND TOPDRESSING

Mow and edge all turf areas and remove all grass clippings. Do not mow if there is litter, roadside rubbish and debris left on the turf as the litter may be transformed into confetti-like pieces after mowing.

Unless directed otherwise, the cut grass height must not be less than 35 mm or greater than 75 mm. Do not remove more than 50% of the height of the uncut grass at any one time. The upper limit may be varied to account for terrain, species of grass and presence of debris.
Clippings may remain where they fall, except for those that fall on road surfaces, line drains, footways or paved areas where they must be swept clear.

Lawn care
Lawn areas, including nature strips and reinforced turf cell system must be neatly mown and edged weekly in the high season (summer months), fortnightly in the low season (winter months), or weekly if required due to abnormal weather condition. All clippings must be removed from the site. All lawns must be fertilized once a year with an approved lawn fertilizer.

Interface Issues
Where landscape treatments requiring lawn care interface fixed elements such as signage, fencing and walling ensure optimal care to avoid damaging the fixed element.

5.3.9 IRRIGATION & WATERING

Maintain the irrigation system to be sure that each individual plant receives the required amount of water to maintain healthy growth, adjust and rectify as required.

Provide additional hand watering, if irrigation system fails or is yet to be installed.
Undertake watering at two-day intervals for four weeks after completion of each planting area.

The irrigation system must be fully functional at all times to ensure that all plants, trees and lawns receive adequate water at optimal frequency. The system should be tested during each site visit to ensure proper operation timing is set correctly. Adjustments must be made where necessary.

It is the contractor's responsibility to submit a bi-monthly report throughout the defect's liability period. This report should include a comprehensive report on the operational function of the system.

Notification as to when the system is in need of major repair must be done so immediately as the cost of major repairs to the system can be claimed as variation to the contract price and should be invoiced separately.

When water restrictions prevent the use of the irrigation system, arrangements must be made by the contractor to provide an alternative system of watering. Under no circumstances should plant stock be allowed to perish through lack of water.

Locations of water supply points have been marked indicatively on Landscape Drawings; all irrigation supply conduits are subject to Sydney Water Approval.

5.3.10 EROSION CONTROL MEASURES

Where necessary, maintain the erosion control devices in a tidy and weed free condition and reinstate as necessary to ensure control measures are effective where deemed necessary. Refer to the *Erosion and Sediment Control Plan* for erosion control measures.

5.3.11 FINAL CLEANING

Lamp and filter replacement and the like are dealt with in the various SERVICES worksections.

General: Before practical completion, clean throughout, including interior and exterior surfaces exposed to view. Clean debris from the site, roofs, gutters, downpipes and drainage systems. Remove waste and surplus materials.

The contractor shall target weeds that are noxious and/or capable of producing a major infestation of unwanted plants by seed distribution. Whenever possible, time weed removal to precede flowering and seed set.

Samples: Remove non-incorporated samples, prototypes and sample panels.

5.3.12 REINSTATEMENT

General: Before practical completion, clean and repair damage caused by installation or use of temporary work and restore existing facilities used during construction to original condition.

5.3.13 ADJOINING PROPERTY

Evaluation: At practical completion, for properties described in the Adjoining properties to be Recorded schedule inspect the properties with the project superintendent, recording any damage that has occurred since the pre-commencement inspection.

5.3.14 REMOVAL OF PLANT

General: Within 10 working days after practical completion, remove temporary works and construction plant no longer required. Remove the balance before the end of the defect's liability period.

5.3.15 URGENT WORKS

Not with standing anything to the contrary in the Contract, the Project Superintendent may instruct the Contractor to perform urgent maintenance works that place the completed contract works at risk.

If the Contractor fails to carry out the work within seven (7) days of such notice, the Project Superintendent (or representative) reserves the right without further notice to employ others to carry out such urgent and specified work and charge the cost to the Contractor.
Such work shall include but not limited to the inspection and clearing of drains in the pavement and gardens.

5.4 COMPLETION

A final inspection shall be made by the Project Superintendent, Contractor and Landscape Architect before the completion of the Plant Establishment Maintenance Period (Defects Liability Period).

Any items requiring rectification shall be repaired before completion of the relevant works and finally approved prior to certification.

Maintenance requirements should extend for a minimum of 18 months after the completion of works (i.e. Practical Completion or PC). Prior to handover, the contractor(s) is/are required to submit all maintenance records, progress reports and a final monitoring report. The final monitoring report shall provide a summary of all works undertaken during the plant establishment period.

6 MAINTENANCE SCHEDULES

The following Maintenance Schedule is only applicable to the 'Defects Liability Period' and/or 'Establishment Period'.

6.1 MAINTENANCE REPORT SCHEDULE

General

Landscape Maintenance Schedule, Landscape Maintenance Procedure Schedule and Landscape Specification are to be read in conjunction with one another

* Key: D – Daily, W – Weekly, F – Fortnightly, M – Monthly, 3-6M – Quarterly or Half Yearly, Y – Yearly

Task	Activity	Frequency						Action
		D	W	F	M	3-6M	Y	
1	Logbook				x		x	Complete a logbook entry when at site and at a minimum every two weeks. Upon request, make the logbook available for inspection. Submit copies of new entries in the logbook to the Contract Administrator on a monthly basis. Maintenance requirements should extend for a minimum of 1 year after the completion of works or until such time as a minimum 80% survival rate for all plantings and a maximum five percent (5%) weed cover for the treated riparian corridors, basins and verge/median planting is achieved.
2	Planting and Replacement			x	x			Inspect planting every 2 weeks and remove spent flowers and dead stalks as they become apparent. Inspect and replace failed plants within 2 weeks of observation of failure. Match species with original planted sizes and location of new with old.
3	Pruning			x				Inspect every 2 weeks and prune as necessary to remove dead wood.

								Pruning should Improve plant shape and promote healthy new growth.
4	Spraying			x				Inspect every 2 weeks and action as necessary. Do not spray if other nonchemical methods will satisfy the need to remove pests. Spray for disease control only when absolutely necessary.
5	Fertilising					x		Fertilise gardens every 3 months or in accordance with fertiliser manufacturer's directions.
6	Stakes and Ties			x			x	Inspect every 2 weeks, adjust and/or replace as necessary but remove as plants mature and are able to support themselves.
7	Mulching			x			x	Inspect and replace mulch deficiencies within 2 weeks of observation. Prior to placing new mulch aerate the soil by fork turning to a depth of at least 100mm, roughly level the soil and then place mulch. Do not disturb major plant roots while aerating soil. It can be expected that mulch will have significantly broken-down after an estimated 12-month period following initial application. It is therefore, recommended that all mulch beds are topped-up with a 50mm layer of woodchip/leaf mulch (Compliant with AS 4454) at this stage. This should be accompanied by a topdressing application of a 9-month, slow release, low phosphorous fertilizer to ensure that semi-established plantings do not suffer as a result of potential nitrogen draw-down that may be associated with the application of the 50mm mulch layer at yearly period.
8	Hydroseeding		x		x		x	Remove weeds monthly that emerge in newly established hydroseeded/hydromulched areas. Reseed monthly over the course of the contract to maintain required densities.

								Water until germination, keep the surface damp and the topsoil moist but not waterlogged. After germination: Water to maintain a healthy condition, progressively hardened off to the ambient climatic conditions
9	Mowing and Topdressing (including reinforced turf cell system)			x	x	x		Summer fortnightly. Winter monthly. Top-dress 6 monthly.
10	Irrigation and Watering	x		x				Water when and where necessary every day at site and at least every 2 weeks generally. Do not allow soil and plants to dehydrate. Allow for prolonged rain, windy and dry periods. Water in the early morning or late afternoon to avoid excessive evaporation during the heat of the day.
11	Erosion Control Measures							Refer to the **Erosion and Sediment Control Plan** for erosion control measures.
12	Final Cleaning		x				x	Inspect and remove litter immediately upon observation. Leave no waste on site. Dispose of waste material at a designated waste disposal site. All herbaceous weeds should be managed to be at very-low percentage cover levels, (as a minimum), or better. Pasture grasses should be prevented from spreading into any bushland zones by applying a spot glyphosate herbicide spray application on the 1-metre wide buffer zone, on a monthly basis or as required. Maintenance weeding for a period of 12 months after the completion of primary works with an increase in maintenance hours occurring throughout the warmer growing months.

13	Urgent Works		x					Complete within 1 week (7 days) of notification. Inspect and clear drains as required.

6.2 MAINTENANCE PROCEDURE SCHEDULE

Maintenance Scope of Works

The Maintenance procedure schedule should be used as a check list of tasks when in attendance

Week	Spring (Sep, Oct, Nov)	Summer (Dec, Jan, Feb)	Autumn (Mar, April, May)	Winter (June, July, Aug)
1	Mow and trim lawns	Mow lawns, weed	Mow Lawns	Weed
2	Weed; trim and adjust trees and shrubs	Weed; mow lawns, trim and adjust trees and shrubs	Weed; mow lawns, trim and adjust trees and shrubs	Mow and trim lawns Trim and adjust trees and shrubs
3	Mow and fertilise lawns; treat plant material for insects and disease	Mow lawns; weed; treat plant material for insects and disease	Mow and trim lawn	Weed
4	Weed; topdress, condition lawns and oversow bare patches; issue logbook	Weed; mow and trim lawns; issue logbook	Weed; mow lawns; issue logbook	Mow lawns; issue logbook
5	Fertilise all trees and shrubs in garden beds; mow and trim lawns	Mow lawns; weed	Mow lawns	Mow lawns
6	Weed; inspect mulch for deficiencies in cover; check and adjust irrigation	Mow lawns; check and adjust irrigation	Weed; inspect mulch for deficiencies in cover; check and adjust irrigation	Mow and trim lawns; treat for insects and disease; check and adjust irrigation
7	Reinstate mulch as required; treat plant material for insects and disease; mow lawns	Mow lawns; weed	Reinstate mulch as required; mow, trim and fertilise lawns	Weed
8	Weed; inspect condition of paving and furniture; issue logbook	Mow and trim lawns; inspect condition of paving & furniture; issue logbook	Weed; inspect condition of paving and furniture; issue logbook	Mow lawns; Inspect condition of paving and furniture; issue logbook

9	Mow and trim lawns	Mow lawns; treat plant material for insects and disease	Mow lawns	Weed
10	Weed; mow lawns	Mow and topdress lawns	Weed; treat plant material for insects and disease	Mow and trim lawns
11	Mow and fertilise lawns; trim and adjust trees and shrubs	Mow lawns; trim and adjust lawns; weed	Weed	Mow lawns; treat plant material for insects and disease
12	Weed; mow lawns; treat plant material for insects and disease	Mow, trim & fertilise lawns	Weed	Mow lawns; treat plant material for insects and disease
13	Check and adjust irrigation; mow lawns; issue logbook	Check and adjust irrigation; mow lawns; weed; issue logbook	Check and adjust irrigation; mow lawns; weed; issue logbook	Check and adjust irrigation; weed; issue logbook

6.3 IRRIGATION SCHEDULE

The following Irrigation Schedule is only applicable to the 'Defects Liability Period' and/or 'Establishment Period'.

Irrigation Maintenance Schedule

The Irrigation Maintenance Schedule should be used as a check list of minimum attendance

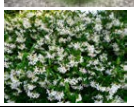
Task	Timeframe
Filters – Mainline	Monthly
Electrical Source Output (auto system)	Monthly
Controller (automatic system)	Monthly
Operation – Progression	Monthly
Activation of Valves	Monthly
Timing of Stations	Bi-Annually
Time and Day Readings	As Required
Exterior Appearance	Bi-Annually
Valve Operation	Bi-Annually
Open/Close Weeping	As Required
Sprinkler Operation	As Required
Rotaries – Clogged Nozzles	Bi-Monthly
Plant Obstructed Pattern	Bi-Monthly
Arc Coverage	Bi-Monthly
Radius Adjustment	Bi-Monthly
Pop-up Action	Bi-Monthly
Riser Seal Leaks	Bi-Monthly
Set to Grade	Bi-Monthly

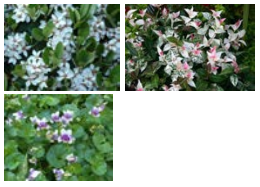
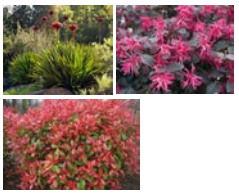
Coverage Pressure	Bi-Monthly
Rotational Speed	Bi-Monthly
Clogged Screens	Bi-Monthly
Head Damage	Bi-Monthly
Piping	Bi-Monthly
Leaks – Broken of Cracked	As Needed
Poor Welding or Threading	As Needed
Connection	As Needed
Clogged Piping	As Needed
Irrigation Report	Bi-Monthly

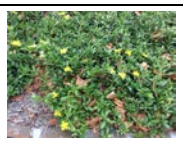
6.4 PRUNING SCHEDULE

The contractor is to prune all plants or shrubs species as required to satisfy Goodman's presentation standard. Pruning should be carried out on a 'needs-basis' specific to each plant. Pruning should be carried out to encourage new growth that will result in a dense canopy density. No more than 30mm of new growth should be seen before pruning takes place. All plant pruning should be carried out using best horticultural techniques. No hedging of native grasses permitted at any time.

6.4.1 PRUNING SCHEDULE – OAKDALE WEST ESTATE, PRECINCT 1

Plant Mix	Shape/description	Critical issues	Pruning Frequency	Planting Palette
PM1A	Car Park Edge Mix - Sun *Callistemon viminalis 'Little John'* *Pennisetum alopecurioides* *Trachelospermum jasminoides*	Shrubs/Grasses/ Groundcovers Drought tolerant, low water and fertiliser requirements.	Shrubs/Grasses/ Groundcovers Prune after flowering to remove spent flowers, encourage healthy growth and maintain safe access.	  
PM1B	Car Park Edge Mix - Shade *Hibbertia scandens* *Pennisetum alopecurioides 'Nafray'* *Viola hederacea*	Grasses/Groundcovers Drought and shade tolerant, low water and fertiliser requirements.	Grasses/Groundcovers Remove spent flowers and any dieback. Only prune to maintain safe access.	  
PM2A	Car Park Island Mix - Sun *Gazania tomentosa* *Pennisetum alopecuriodes*	Grasses/Groundcovers Drought tolerant, low water and fertiliser requirements.	Grasses/Groundcovers Prune after flowering to remove spent flowers, encourage healthy growth and maintain safe access.	 

Plant Mix	Shape/description	Critical issues	Pruning Frequency	Planting Palette
PM3A	Side Edge Mix Low - Sun *Callistemon 'White Anzac'* *Gazania tomentosa* *Pennisetum alopecurioides*	Shrubs/Grasses/ Groundcovers Drought tolerant, low water and fertiliser requirements.	Shrubs/Grasses/ Groundcovers Prune after flowering to remove spent flowers, encourage healthy growth and maintain safe access.	
PM3B	Site Edge Mix Low – Shade *Rhaphiolepsis indica 'Oriental Pearl'* *Trachelospermum jasminoides 'Tricolor'* *Viola hederacea*	Shrubs/Grasses/ Groundcovers Drought tolerant, low water and fertiliser requirements.	Shrubs/Grasses/ Groundcovers Prune after flowering to remove spent flowers, encourage healthy growth and maintain safe access.	
PM4	Site Markers Mix *Nandina domestica 'Gulf Stream'* *Pennisetum alopecurioides*	Shrubs/Grasses Drought tolerant, low water and fertiliser requirements.	Shrubs/Grasses Prune after flowering to remove spent flowers, encourage healthy growth and maintain safe access.	
PM5A	Feature Planting Mix *Doryanthes excelsa* *Lorapetalum chinense rubrun 'China Pink'* *Photinia x fraseri 'Red Robin'*	Shrubs/Grasses Drought tolerant, low water and fertiliser requirements.	Shrubs/Grasses Prune after flowering to remove spent flowers, encourage healthy growth and maintain safe access.	
PM6A	Site Hedge Mix – Sun *Acmena smithii 'Hot Flush'* *Metrosideros thomasii* *Rhapiolepsis indica 'Oriental Pearl'* *Rhapiolepsis indica 'Snow Maiden'*	Shrubs Drought tolerant, low water and fertiliser requirements.	Shrubs Prune after flowering to remove spent flowers, encourage healthy growth and maintain safe access.	
PM7A	Groundcovers Mix A *Gazania tomentosa*	Groundcovers Drought tolerant, low water and fertiliser requirements.	Groundcovers Prune after flowering to remove spent flowers, encourage healthy growth and maintain safe access.	

Plant Mix	Shape/description	Critical issues	Pruning Frequency	Planting Palette
PM7B	Groundcovers Mix B *Trachelopsermum jasminoides 'Tricolor'*	**Groundcovers** Drought tolerant, low water and fertiliser requirements.	**Groundcovers** Prune after flowering to remove spent flowers, encourage healthy growth and maintain safe access.	
PM9A	Climbers Mix – Sun *Hibbertia scandens*	**Climbers** Drought tolerant, low water and fertiliser requirements.	**Climbers** Prune after flowering to remove spent flowers, encourage healthy growth and maintain safe access.	
PM9B	Climbers Mix – Shade *Trachelopsermum jasminoides*	**Climbers** Drought tolerant, low water and fertiliser requirements.	**Climbers** Prune after flowering to remove spent flowers, encourage healthy growth and maintain safe access.	

Tree Mix	Shape/description	Critical issues	Pruning Frequency	Planting Palette
Trees	General Trees *Angophora bakeri* *Angophora floribunda* *Corymbia eximia* *Corymbia maculata* *Cupaniopsis anacardioides* *Eucalyptus amplifolia* *Eucalyptus crebra* *Eucalyptus moluccana* *Glochidion ferdinandi* *Lagerstroemia indica 'Tuscarora'* *Magnolia grandiflora 'Exmouth'* *Melaleuca linarifolia* *Pyrus calleryana 'Capital'* *Tristaniopsis laurina 'Luscious'* *Waterhousea floribunda*	**Street Trees** Plant in moist but well drained soils with full or partial sun.	**Trees** Prune during flower dormancy, to encourage dense canopy and maintain safe access.	

TABLE OF CONTENTS

6.5 CONTINGENCY MANAGEMENT PLAN

Contingency Management Plan – Oakdale West Estate

Key Element	Trigger/ Response	Condition Green	Condition Amber	Condition Red
Irrigation	Trigger	Irrigation system operating at optimum frequency.	Irrigation system yet to be installed.	Irrigation system fails.
	Response	No response required. Continue to monitor.	Provide additional hand watering until system is installed.	Provide additional hand watering until system is repaired. The irrigation system must be fully functional at all times to ensure that all plants, trees and lawns receive adequate water at optimal frequency.
Plant Failure	Trigger	No significant plant failure is present. Monitoring verifies that there is <5% of plants failing.	Monitoring verifies there is plant failure at a rate between 5% -10%.	Monitoring verifies there is plant failure at a rate greater than 10%.
	Response	No response required. Continue to monitor.	If the cause of failure is due to a controllable situation then correct situation prior to replacing plants. All planting areas are to be free of grass and weed. Replace plants with one of similar size and quality and identical species. of variety of the ones failed.	If the cause of failure is due to a controllable situation then correct situation prior to replacing plants. All planting areas are to be free of grass and weed. Replace plants with one of similar size and quality and identical species. of variety of the ones failed.
Revegetation Failure	Trigger	Revegetation is growing to desired design surface levels	Monitoring verifies that weed emergence has occurred.	Monitoring verifies that weed emergence and plant failure has occurred.

Key Element	Trigger/ Response	Condition Green	Condition Amber	Condition Red
	Response	No response required. Continue to monitor.	Refer to LMP for monitoring requirements once problem has been identified. Possible solutions include the removal of weeds as per Section 5.3.7 of this LMP.	Refer to LMP for monitoring requirements once problem has been identified. Possible solutions include removal of weeds and re-seeding of revegetation cover crop as per Section 5.3.7 of this LMP.
Slope Failure	Trigger	No significant erosion is present that would constitute a safety hazard or compromise the capability of supporting the end land use. Monitoring verifies there are no gully or tunnel erosion features, or rill erosion >200mm deep.	Monitoring verifies there is gully or tunnel erosion features, or rill erosion 200mm deep.	Monitoring verifies there is gully or tunnel erosion features, or rill erosion > 200mm deep.
	Response	No response required. Continue to monitor.	A suitably trained person to inspect the site. Investigate opportunities to install water management infrastructure to address erosion. Remediate as appropriate.	Undertake a review of the drainage of the area and provide recommendations to appropriately remediate the erosion. Remediate as soon as practicable.

7 APPENDICES

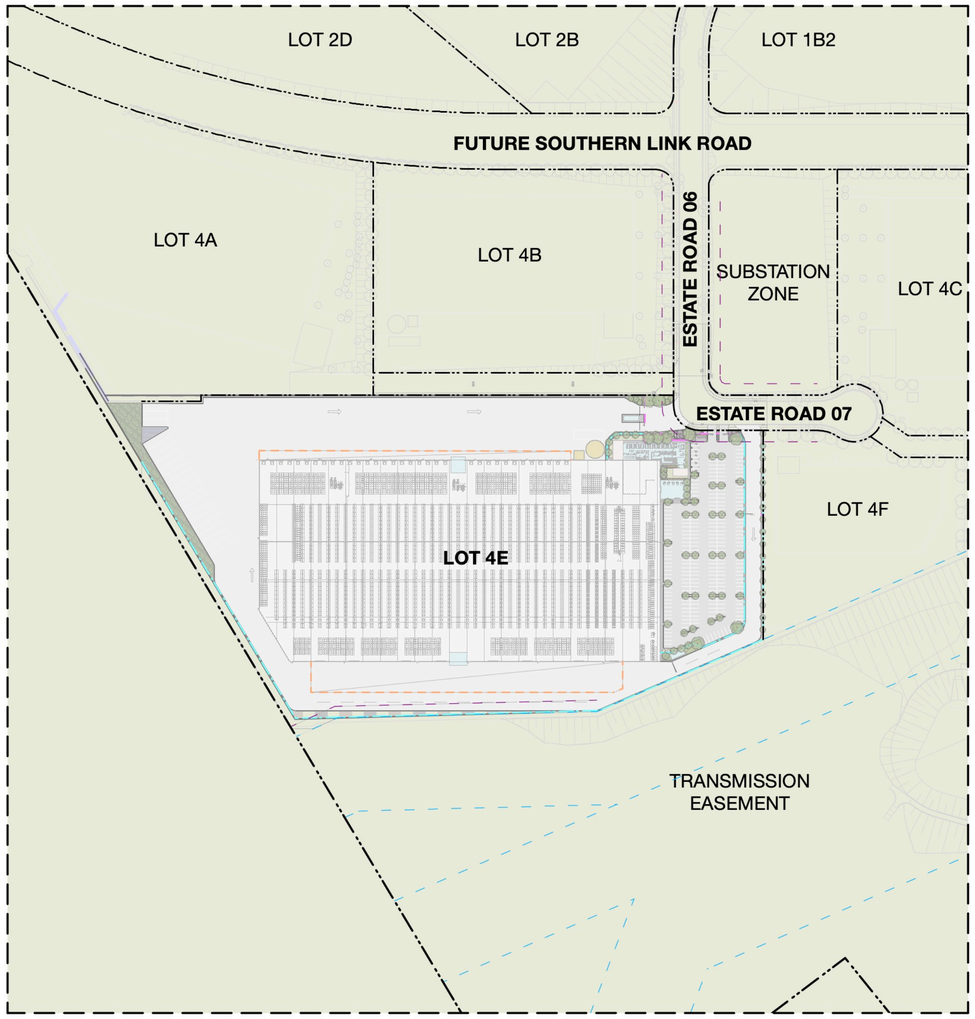
7.1 REFERENCED LANDSCAPE DRAWINGS

scape DESIGN

LANDSCAPE ARCHITECTURE

Address Suite 5, 15 The Corso
Manly NSW 2095
Phone 02 9976 0756
email office@scapedesign.com.au
Web www.scapedesign.com.au

KEY MAP



PROJECT

Oakdale West Estate
Stage 5 - Lot 4E

Kemps Creek, NSW

Cover Sheet

PHASE

Development Application
Landscape Drawing Set

CLIENT

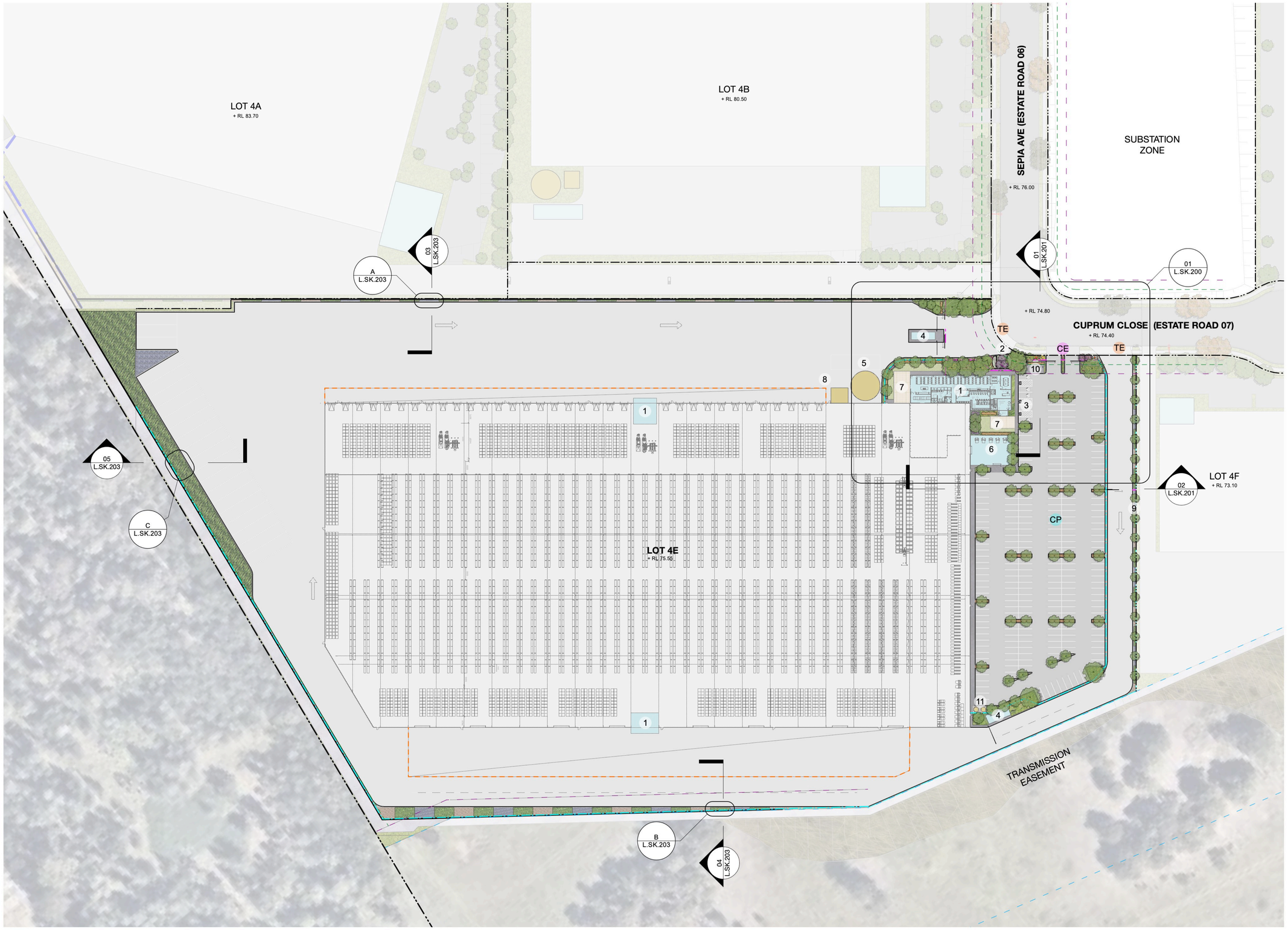
Goodman Property Services (AUST) PTY LTD

TRANSMITTAL

Dwg. Number	Dwg. Name	Revision	Date
L.SK.00	Cover Sheet	D	15/9/21
L.SK.01	Landscape Sketch Plan - Lot 4E	D	15/9/21
L.SK.02	Planting Plan - Lot 4E	D	15/9/21
L.SK.03	Planting Schedule - Lot 4E	D	15/9/21
L.SK.04	Character & Materials	B	24/6/21
L.SK.105	Landscape - Detailed Plan & Notes	C	15/9/21
L.SK.200	Carpark Details	B	24/6/21
L.SK.201	Landscape Sections Sheet 1	C	15/9/21
L.SK.202	Landscape Sections Sheet 2	C	15/9/21
L.SK.203	Landscape Sections Sheet 3 & Detailed Plans	C	16/8/21

Not For Construction

Stage 5 DA - Lot 4E



Note: All finished levels subject to change +/- 1000mm.

0 10 20 30 40 50 M

LEGEND

PROGRAMME

1 Office
2 Entry marker
3 Accessible parking
4 Gate house
5 Fire services area
6 Workshop
7 Staff rest area
8 Waste storage area
9 Small screening trees in planted bays
10 Bike racks
11 Rain water tanks
CE Car entry/exit
CP Carparking
TE Truck entry/exit

GENERAL

Site Boundary
Lot Boundary
+ FFL 562.00 Finished Floor Level
+ RL 562.00 Reduced Level
Architecture Above
Chain Mesh Fence Refer Arch. dwgs.
Palisade Fence Refer Arch. dwgs.
Building Setback
Landscape Setback

PREPARATION & GROUNDWORKS

Building
Office
Services

WALLS & EDGES

Steel Edge
Flush Concrete Kerb
Raised Concrete Kerb
Retaining Insitu Wall

PAVEMENTS

Coarse Aggregate
Insitu Concrete
Feature paving
Decomposed granite
Rock mulch - bluestone
Rock mulch - sandstone
Pram Ramp

FURNITURE & FITTINGS

Proposed Street Lighting
Proposed Sleeper Mullion
Proposed Sandstone Block
Gate
Signage

PLANTING

TF1-General Turf
TF2-Feature Turf
PM1A-Car park edge mix-sun
PM1B-Car park edge mix-shade
PM2A-Car park island mix-sun
PM3A-Site edge mix-sun
PM3B-Site edge mix-shade
PM4C-Shrubs & groundcovers planting mix
PM5A-Feature planting mix-sun
PM6A-Site hedge mix-sun
PM7A-Groundcover mix A
PM7B-Groundcover mix B

TREES

Existing Tree to be Removed Refer ARBORISTS REPORT
Existing Tree to be Retained
Proposed Tree - General
Proposed Tree - Entry Marker
Proposed Tree - Site Marker

scape DESIGN
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Stage 5 DA
Lot 4E

PROJECT
Oakdale West Estate
Kemps Creek, NSW

CLIENT
Goodman Property Services

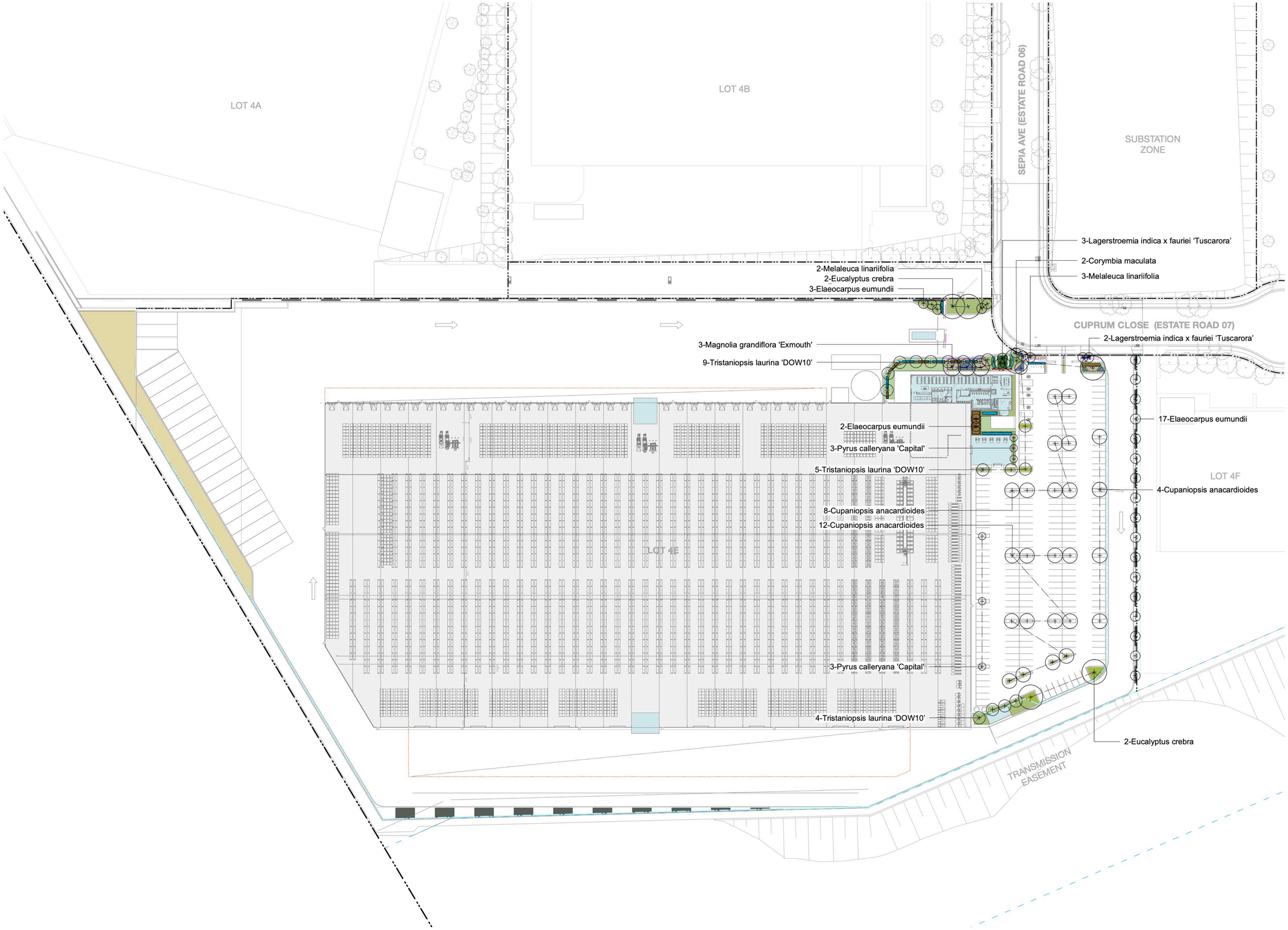
Not For Construction

revision	description	by	date
D	FOR COORDINATION	ZZ	15/9/21
C	REVISED - BOUNDARY LANDSCAPE	ZZ	16/8/21
B	DEVELOPMENT APPLICATION	ZZ	24/6/21
A	FOR COORDINATION	TR	2/6/21

Landscape Sketch Plan - Lot 4E

scale	1:750@A1
drawn	ZZ/TR
checked	CH
project no.	163-18
project phase	Development Application

L.SK.01 D



LEGEND

PLANTING

- TF1-General Turf
- TF2-Feature Turf
- PM1A-Car park edge mix-sun
- PM1B-Car park edge mix-shade
- PM2A-Car park island mix-sun
- PM3A-Site edge mix low-sun
- PM3B-Site edge mix low-shade
- PM4C-Shrubs & groundcovers planting mix
- PM5A-Feature planting mix
- PM6A-Site hedge mix-sun
- PM7A-Groundcover mix A
- PM7B-Groundcover mix B
- Proposed tree/specimen plant

scape DESIGN

LANDSCAPE ARCHITECTURE

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Stage 5 DA
Lot 4E

PROJECT

Oakdale West Estate

Kemps Creek, NSW

CLIENT

Goodman Property Services

Not For Construction

revision	revision description	by	date
D	FOR COORDINATION	ZZ	15/9/21
C	REVISED - BOUNDARY LANDSCAPE	ZZ	12/8/21
B	DEVELOPMENT APPLICATION	ZZ	24/6/21
A	FOR COORDINATION	TR	2/6/21

Planting Plan - Lot 4E

scale	1:750@A1
drawn	TR
checked	CH
project no.	163-18
project phase	Development Application

L.SK.02 D

PLANTING SCHEDULE - LOT 4E

	Botanical Name	Common Name	Height (m)	Spread (m)	Pot Size	Rate (m2)	
Trees							
	Corymbia maculata	Spotted Gum	30.0	10.0	75L	As Shown	
	Cupaniopsis anacardioides	Tuckeroo	12.0	6.0	75L	As Shown	
	Elaeocarpus eumundii	Eumundi Quandong	10.0	4.0	75L	As Shown	
	Eucalyptus crebra	Narrow leaved Ironbark	30.0	10.0	75L	As Shown	
	Lagerstroemia indica x fauriei 'Tuscarora'	Crepe Myrtle (Hot Pink)	8.0	4.0	200L	As Shown	
	Magnolia grandiflora 'Exmouth'	Bull Bay Magnolia	12.0	7.0	75L	As Shown	
	Melaleuca linariifolia	Snow-in-Summer	10.0	4.0	45L	As Shown	
	Pyrus calleryana 'Capital'	Capital Flowering Pear	10.0	3.0	75L	As Shown	
	Tristaniopsis laurina 'DOW10'	Water Gum	10.0	5.0	75L	As Shown	
PM1A - Car Park Edge Mix - Sun						Area =	472 sq.m
	Callistemon viminalis 'Little John'	Little John Bottlebrush	0.6	0.8	140mm	4	
	Pennisetum alopecuroides 'Nafray'	Pennisetum Nafray	0.5	0.5	140mm	4	
	Trachelospermum jasminoides	Star Jasmine	0.9	0.3	140mm	4	
PM1B - Car Park Edge Mix - Shade						Area =	16 sq.m
	Hibbertia scandens	Climbing Guinea-Flower	2.0	2.0	140mm	4	
	Pennisetum alopecuroides 'Nafray'	Pennisetum Nafray	0.5	0.5	140mm	4	
PM2A - Car Park Island Mix - Sun						Area =	69 sq.m
	Gazania tomentosa	Silver Gazania	0.3	1.5	140mm	4	
	Nandina domestica 'Gulf Stream'	Dwarf Sacred Bamboo	0.8	0.8	140mm	4	
	Pennisetum alopecuroides 'Nafray'	Pennisetum Nafray	0.5	0.5	140mm	4	
PM3B - Site Edge Mix Low - Shade						Area =	401 sq.m
	Hibbertia scandens	Climbing Guinea-Flower	2.0	2.0	140mm	4	
	Rhaphiolepis indica 'Oriental Pearl'	Oriental Pearl Indian Hawthorn	1.0	1.0	140mm	4	
	Trachelospermum jasminoides 'tricolor'	Tricolor Star Jasmine	0.5	1.0	140mm	4	
PM4C - Shrubs & Groundcovers Planting Mix						Area =	1000 sq.m
	Callistemon 'White Anzac'	Bottlebrush	1.0	2.0	140mm	4	
	Callistemon viminalis 'Little John'	Little John Bottlebrush	0.6	0.8	140mm	4	
	Dodonaea viscosa	Wedge-leaf Hop-bush	2.5	1.5	140mm	4	
	Grevillea lanigera 'Mt Tamboritha'	Mt Tamboritha Grevillea	0.3	1.0	140mm	4	
	Indigofera australis	Australian Indigo	1.8	1.8	140mm	4	
	Pennisetum alopecuroides	Fountain Grass	0.5	0.5	140mm	4	
PM5A - Feature Planting Mix						Area =	55 sq.m
	Doryanthes excelsa	Gymea Lily	2.0	1.5	200mm	4	
	Loropetalum chinense rubrum 'China Pink'	Chinese Fringe Flower	1.5	1.5	200mm	4	
	Photinia x fraseri 'Red Robin'	Red Robin	3.0	2.0	200mm	4	
PM6A - Site Hedge Mix - Sun						Area =	49 sq.m
	Acmena smithii 'Fire Screen'	Creek Lilly Pilly	2.0	1.2	300mm	3	
	Metrosideros collina 'Springfire'	NZ Christmas Bush	2.0	2.0	200mm	3	
	Metrosideros thomasii	New Zealand Christmas Bush	4.0	4.0	300mm	3	
	Rhaphiolepis indica 'Oriental Pearl'	Oriental Pearl Indian Hawthorn	1.0	1.0	300mm	3	
	Rhaphiolepis indica 'Snow Maiden'	Snow Maiden Indian Hawthorn	0.5	1.0	300mm	3	
PM7A - Groundcovers Mix A						Area =	44 sq.m
	Gazania tomentosa	Silver Gazania	0.3	1.5	140mm	4	
PM7B - Groundcovers Mix B						Area =	47 sq.m
	Trachelospermum jasminoides 'tricolor'	Tricolor Star Jasmine	0.5	1.0	140mm	4	
TF1 - General Turf						Area =	130 sq.m
	Stenotaphrum secundatum 'Sir Walter'	Sir Walter Buffalo			Turf Roll		
TF2 - Feature Turf (Planted)						Area =	31 sq.m
	Zoysia tenuifolia	No-Mow Grass/Velvet Grass			200mm	5	

NOTE:
1. Mass planting to be undertaken in large groupings of the same species to approval of landscape architect.
2. Hedging species are to be set out in linear arrangements of same speceies to approval of landscape architect.
3. All planting and turf areas to be irrigated with subsurface drip line. Refer to the Oakdale West Estate Landscape Management Plan and Goodman Landscape Guidelines for further information

Note: All finished levels subject to change +/- 1000mm.

PLANTING PALETTE

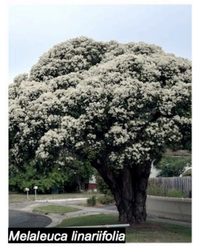
Buffer Trees


Corymbia maculata


Tristaniopsis laurina 'DOW10'

Car Park Trees


Cupaniopsis anacardioides


Melaleuca linariifolia

Feature Trees


Lagerstroemia indica x fauriei 'Tuscarora'


Magnolia grandiflora 'Exmouth'


Pyrus calleryana 'Capital'

PM1A - Car Park Edge Mix - Sun


Callistemon viminalis 'Little John'


Pennisetum alopecuroides 'Nafray'

PM1B - Car Park Edge Mix - Shade


Hibbertia scandens


Pennisetum alopecuroides 'Nafray'

PM2A - Car Park Island Mix - Sun


Gazania tomentosa


Nandina domestic 'Gulf Stream'


Pennisetum alopecuroides 'Nafray'

PM3B - Site Edge Mix Low - Shade


Rhaphiolepis indica 'Oriental Pearl'


Trachelospermum jasminoides 'Tricolour'

PM4C - Shrubs & Groundcovers Planting


Dodonaea viscosa


Indigofera australis

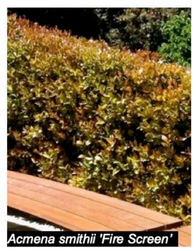
PM5A - Feature Planting Mix


Doryanthes excelsa


Loropetalum rubrum chinense 'China Pink'

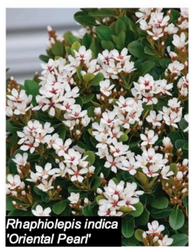

Photinia x fraseri 'Red Robin'

PM6A - Site Hedge Mix - Sun


Acmena smithii 'Fire Screen'


Metrosideros thomsanii

PM7A - Groundcovers Mix A


Rhaphiolepis indica 'Oriental Pearl'


Gazania tomentosa

PM7B - Groundcovers Mix B


Trachelospermum jasminoides 'Tricolour'

TF1 - General Turf


Stenotaphrum secundatum 'Sir Walter'

TF2 - Feature Turf


Zoysia tenuifolia

scape DESIGN
LANDSCAPE ARCHITECTURE
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Stage 5 DA
Lot 4E

PROJECT
Oakdale West Estate
Kemps Creek, NSW

CLIENT
Goodman Property Services

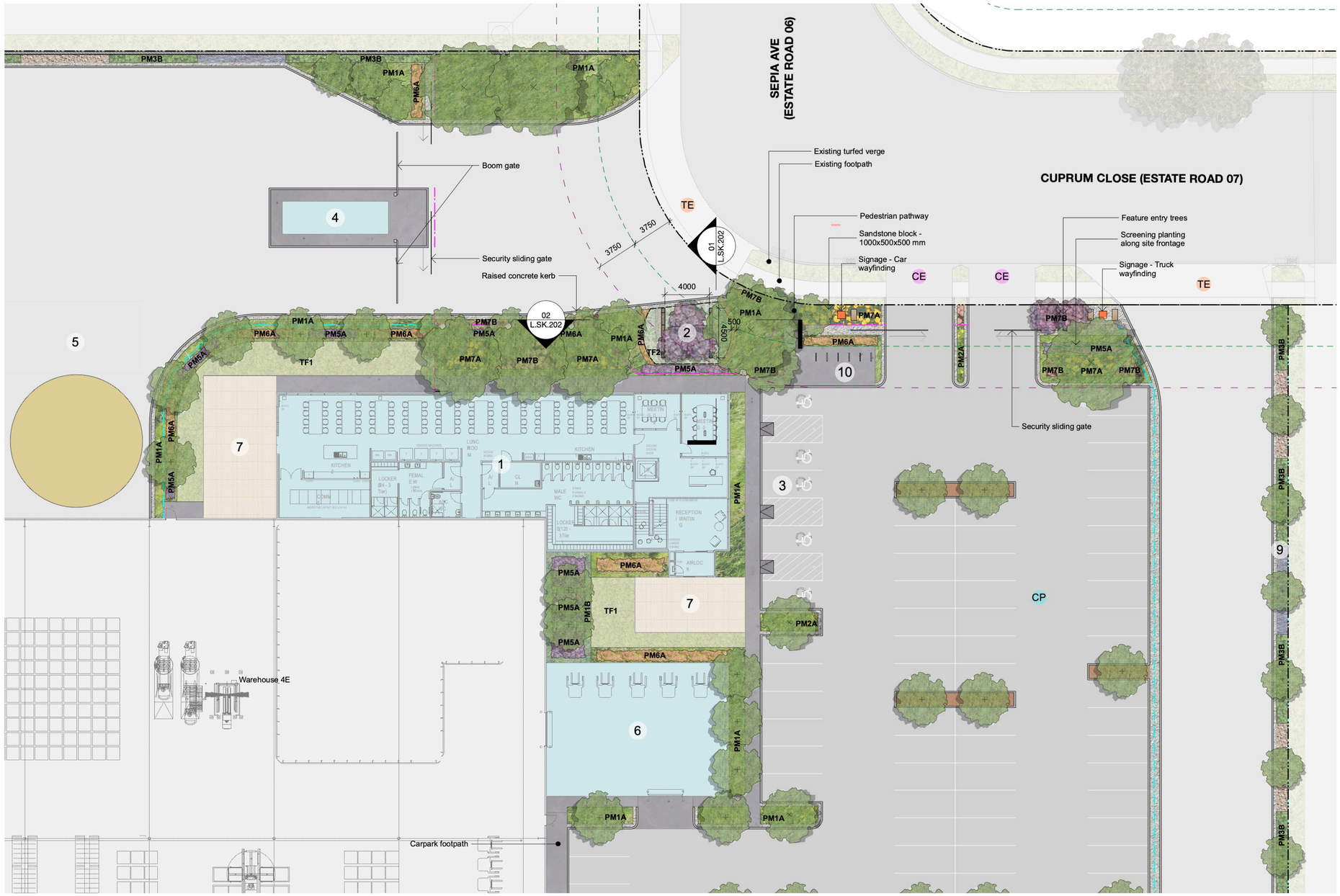
Not For Construction

revision	revision description	by	date
D	FOR COORDINATION	ZZ	15/9/21
C	REVISED - BOUNDARY LANDSCAPE	ZZ	12/8/21
B	DEVELOPMENT APPLICATION	ZZ	24/6/21
A	FOR COORDINATION	TR	2/6/21

Planting Schedule - Lot 4E

scale	N/A
drawn	TR
checked	CH
project no.	163-18
project phase	Development Application

L.SK.03 D



LEGEND

PROGRAMME

1 Office
2 Entry marker
3 Accessible parking
4 Gate house
5 Fire services area
6 Workshop
7 Staff rest area
8 Waste storage area
9 Small screening trees in planted bays
10 Bike racks
11 Rain water tanks
CE Car entry/exit
CP Carparking
TE Truck entry/exit

GENERAL

Site Boundary
Lot Boundary
FFL 562.00 Finished Floor Level
RL 562.00 Reduced Level
Architecture Above
Chain Mesh Fence Refer Arch. dwgs.
Palisade Fence Refer Arch. dwgs.
Building Setback
Landscape Setback

PREPARATION & GROUNDWORKS

Building
Office
Services

WALLS & EDGES

Steel Edge
Flush Concrete Kerb
Raised Concrete Kerb
Retaining Insitu Wall

PAVEMENTS

Coarse Aggregate
Insitu Concrete
Feature paving
Decomposed granite
Rock mulch - bluestone
Rock mulch - sandstone
Pram Ramp

FURNITURE & FITTINGS

Proposed Street Lighting
Proposed Sleeper Mullion
Proposed Sandstone Block
Gate
Signage

PLANTING

TF1-General Turf
TF2-Feature Turf
PM1A-Car park edge mix-sun
PM1B-Car park edge mix-shade
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PM3B-Site edge mix-shade
PM4C-Shrubs & groundcovers planting mix
PM5A-Feature planting mix-sun
PM6A-Site hedge mix-sun
PM7A-Groundcover mix A
PM7B-Groundcover mix B

TREES

Existing Tree to be Removed Refer ARBORISTS REPORT
Existing Tree to be Retained
Proposed Tree - General
Proposed Tree - Entry Marker
Proposed Tree - Site Marker

Note: All finished levels subject to change +/- 1000mm.

Landscape Design Statement - Lot 4E Development Application

The landscape design prepared for Oakdale West Estate – Lot 4E, aims to expand on previous individual lot design within Oakdale West, reinforcing a consistent and robust landscape character, adhering to the high standard this development aims to achieve. Despite being one of the smaller lots within the Oakdale West Precinct, Lot 4E will incorporate over 100 native and exotic trees which seek to ensure all large expanses of built form, parking and utility areas are appropriately screened by vegetation. Permeable surfaces of planting, low maintenance turf and gravel, will be maximised in order to reduce run-off. Plant typologies implemented are to be low maintenance and drought resistant, ensuring all new landscaped areas are water sensitive and tolerant of the harsh Western Sydney climate. With the utilisation of water sensitive elements in carparks such as stratacell soil structure systems or similar, the large amounts of carpark hardscape will be broken up with significant tree planting.

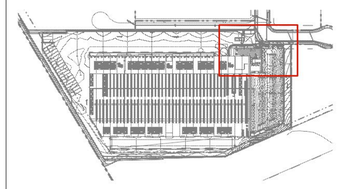
Lot 4E falls under Stage 5 of construction, which will already see the completion of the vegetated bund along the Western edge of the estate. This vegetated bund provides large amounts of visual screening, particularly to the sensitive receivers in the West. To further reduce the visual impacts of the development, a noise wall will be installed along the boundary during the Stage 1 works. This will be accompanied by screening vegetation as well in order to further soften built elements within the Estate.

In addition, the generous landscape setbacks within Precinct 4 will foster a clustered, yet dense approach to tree planting with native species which is consistent with the Precinct 1 and 2 landscape design. This will further provide visual screening to the immediate neighbours of the site, but also for users of internal roads and footpaths. When combined with the proposed estate streetscape design, large, meaningful strips of canopy trees with mass planting of shrubs and groundcovers will form a dense vegetative screen for the development. Once within the site, tall feature trees help define the building edge and reinforce the main pedestrian entry points. Landscape verticality will also be provided through entry markers where possible, which are used at precinct nodes and driveway entry points to establish a network of wayfinding features. These elements reference the cultural history of the site through their materiality and form.

Overall, the planting palette aspires to balance council environmental and planning requirements, while also staying consistent to the high-quality Goodman landscape identity that is reflected throughout each of their estates both in Oakdale and more broadly in Western Sydney. With Goodman taking ownership of the landscape maintenance and on-going care of all landscape areas within Oakdale West Estate, the health and function both during the establishment period and beyond, will be carefully monitored and driven towards a successful and robust outcome.

0 2 4 6 8 10 M

KEY PLAN



scape DESIGN
LANDSCAPE ARCHITECTURE
Address Suite 5, 15 The Corso Manly NSW 2095
Phone 02 9976 0756
email office@scapedesign.com.au
Web www.scapedesign.com.au

Stage 5 DA
Lot 4E

PROJECT
Oakdale West Estate
Kemps Creek, NSW

CLIENT
Goodman Property Services

Not For Construction

revision	revision description	by	date
C	FOR COORDINATION	ZZ	15/9/21
B	DEVELOPMENT APPLICATION	ZZ	24/6/21
A	FOR COORDINATION	TR	2/6/21

Landscape Detailed Plan & Notes

scale	1:200@A1
drawn	ZZ/TR
checked	CH
project no.	163-18
project phase	Development Application

L.SK.105 C

01 Lot 4E Section 1
Scale 1:50 @ A1

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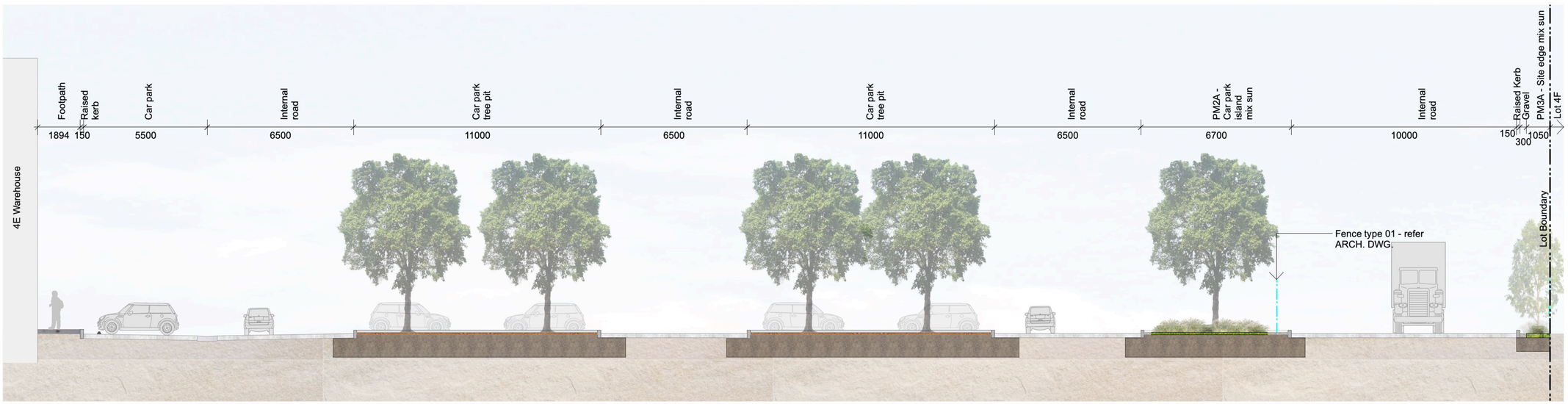

02 Lot 4E Sections 02
Scale 1:100 @ A1

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Note: All finished levels subject to change +/- 1000mm.

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PROJECT
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C	FOR COORDINATION	ZZ	15/9/21
B	DEVELOPMENT APPLICATION	ZZ	24/6/21
A	FOR COORDINATION	TR	2/6/21

Landscape Sections Sheet 1

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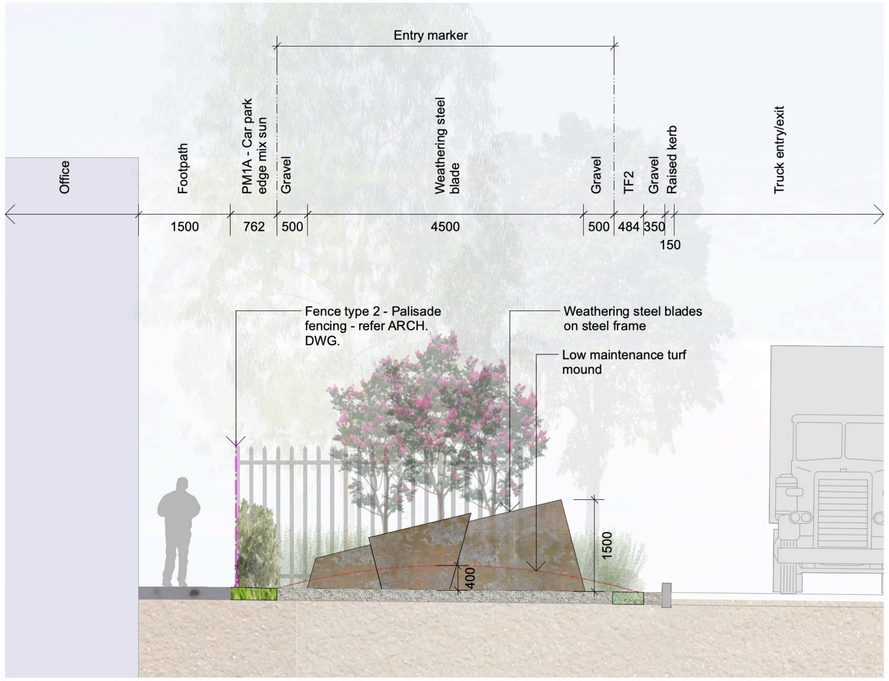
drawn	ZZ/TR
checked	CH
project no.	163-18
project phase	Development Application

L.SK.201 C



01 Entry marker
Detailed Elevation - Scale 1:50 @ A1

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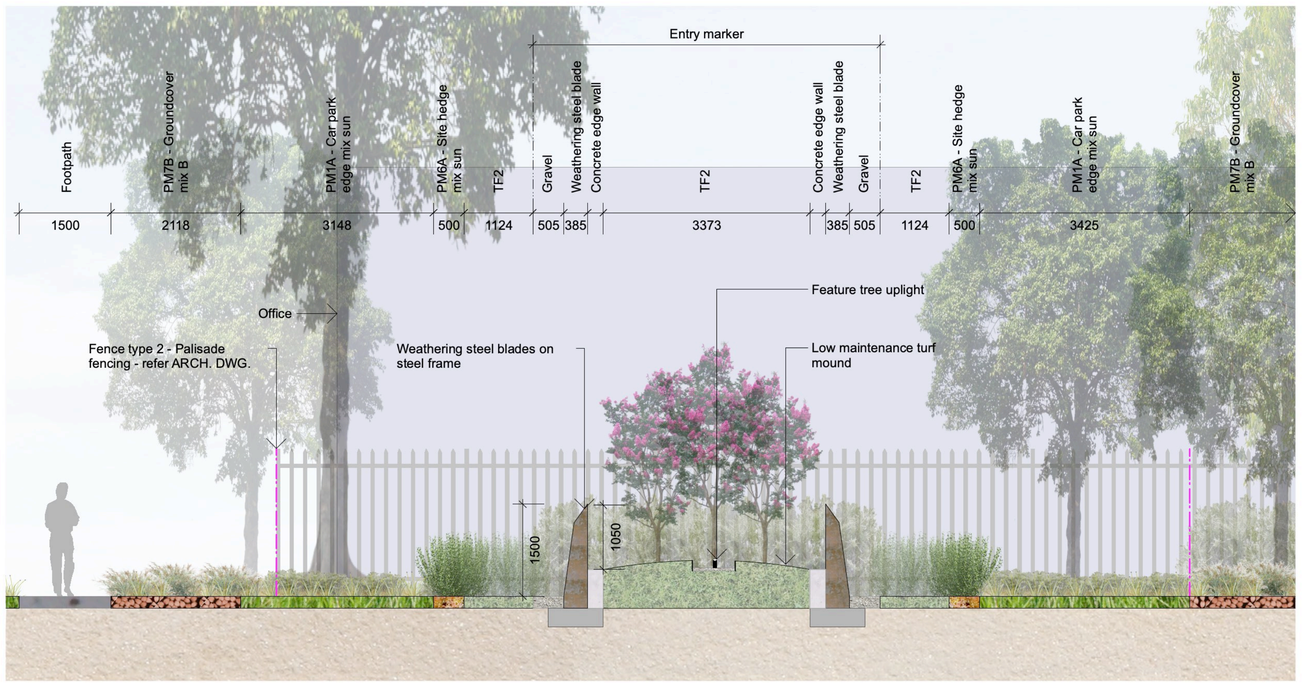

02 Entry marker
Detailed Section - Scale 1:50 @ A1

0 1 2 3 M

Note: All finished levels subject to change +/- 1000mm.

scape DESIGN

LANDSCAPE ARCHITECTURE

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Stage 5 DA Lot 4E

PROJECT
Oakdale West Estate
Kemps Creek, NSW

CLIENT
Goodman Property Services

Not For Construction

revision	revision description	by	date
C	FOR COORDINATION	ZZ	15/9/21
B	DEVELOPMENT APPLICATION	ZZ	24/8/21
A	FOR COORDINATION	TR	2/6/21

Landscape Sections Sheet 2

scale	1:50 & 1:100@A1
drawn	ZZ/TR
checked	CH
project no.	163-18
project phase	Development Application

L.SK.202 C

7.2 REFERENCED LANDSCAPE SPECIFICATION

Quantity of Soil Additive

Plant Size	Quantity
"Viro-Tube"	Nil
"Forestry Tube"	20 grams
"Semi Advanced"	40 grams
"Advanced"	80 grams
"Super Advanced"	400 grams
"Semi Mature"	One kilogram

3.8 STAKES AND TIES

Stakes

Material: Hardwood, straight, free from knots or twists, pointed at one end.

Installation: Drive stakes into the ground at least one third of their length, avoiding damage to the root system.

Stake sizes:

- For plants ≥ 2.5 m high: Three 50 x 50 x 2400 mm stakes per plant.
- For plants 1 to 2.5 m high: Two 50 x 50 x 1800 mm stakes per plant.
- For plants < 1 m high: One 38 x 38 x 1200 mm stake per plant.

Ties

General: Provide ties fixed securely to the stakes, one tie at half the height of the main stem, others as necessary to stabilise the plant. Attach ties loosely so as not to restrict plant growth.

Tie types:

- For plants ≥ 2.5 m high: Two strands of 2.5 mm galvanized wire neatly twisted together, passed through reinforced rubber or plastic hose, and installed around stake and stem in a figure of eight pattern.
- For plants < 2.5 m high: 50 mm hessian webbing stapled to the stake.

Trunk protection

Collar guards: 200 mm length of 100 mm diameter agricultural pipe split lengthways.

3.9 SEED PREPARATION

Where site conditions are not suitable for the pre-treatment and mixing of native and grass seed, this work may be done off site in conditions conducive for this purpose.

HOLD POINT	
Process Held:	Use of seed pre-treated off site.
Submission Details:	At least 3 working days prior to delivery, submit the accompanying certificate showing the species, variety, weight and place of pre-treatment.
Release of Hold Point:	The Principal will consider the submitted documents and may inspect the seed prior to authorising the release of the Hold Point.

Pre-treatment to Assist Germination

Where hot water is the specified pre-treatment, place the seed in a calico bag together with camphor granules as an insect repellent at the rate of 50 g per 10 litres of water. Immerse the bag in hot water

with temperature of around 90ºC for a minimum period of 60 minutes and then remove from the water, drain and allow to dry. When dry, mix the treated seed with the remaining seed and broadcast when conditions are suitable.

Seed that has been pre-treated must be used within five days of pre-treatment.

Where proprietary products are used to assist germination, use as recommended by the manufacturer.

Preparation for Hydromulching, Hydroseeding and Straw Mulching

Storage tanks, containers and equipment to be used in hydromulching, hydroseeding and straw mulching must be clean and free of contamination from previous operations.

Table– Application Rates for Materials

Material	Rate per Hectare
Hydromulching	
Water	35,000 litres
Organic fertiliser: pelletised poultry manure	250 kg
Seed	See Planting Schedule
Cellulose fibre mulch: – Sugar cane mulch, mixed with 20% (by weight) of shredded paper – Wood fibre mulch	 3,500 kg 2,500 kg
Binder: granulated 'Guar gum'	60 kg
Biodegradable green dye	As recommended
Hydroseeding	
Water	20,000 litres
Organic fertiliser: pelletised poultry manure	250 kg
Seed	See Planting Schedule
Biodegradable green dye	As recommended
Straw mulching Straw Binder – Undiluted residual bitumen emulsion – Granulated 'Guar gum'	 5,000 kg 2,500 litres 100 kg

Produce hydromulch / hydroseed slurry mixtures by adding the specified materials into the tank and agitate until a homogenous blend is obtained.

Sowing Methods

Unless otherwise shown on the Drawings, sow areas with slopes of 5 to 1 or flatter, using one of the following methods:

- dry sowing
- for small areas only, by hand.

Unless otherwise shown on the Drawings, sow areas with slopes steeper than 5 to 1 in any direction, using one of the following methods:

- hydroseeding and straw mulching
- hydromulching
- for rock face batters, hydroseeding
- for small areas only, by hand.

Stepped batters must be topsoiled as described and hydroseeded or hydromulched.

WITNESS POINT	
Process Witnessed:	Sowing
Submission Details:	Notify the Principal, not less than 5 clear working days prior to the intended time of sowing, giving details of the area to be sown.

3.10 DRY SOWING

Undertake dry sowing using either:

- a tractor drawn seed drill to place seed at a depth of 5 mm
- a spreader followed immediately by a single pass with an unweighted diamond harrow.

Where practicable, tractor passes with the seed drill or harrow must follow finished surface contours. Distribute seed and fertiliser evenly over the areas to be sown at the rates specified. Apply fertiliser concurrently with the seeding operation.

Gauge the application rate of the seed mix to ensure an even distribution over the areas sown, in accordance with the nominated rates. Maintain records of measurements and calculations to determine actual distribution rates for each lot.

Hydromulching and Hydroseeding

Carry out hydromulching / hydroseeding within 2 days of completion of soil preparation or, if delayed by weather conditions, as soon as weather conditions permit.

Agitate continuously the slurry to maintain a uniform consistency during application.

The sprayed hydromulch layer within 48 hours of application must have a minimum thickness at any location of 5 mm when using sugar cane mulch (mixed with shredded paper), or 2 mm when using wood fibre.

Straw Mulching

The straw mulch must comprise the materials and application rates set out in Table R178.1.

Apply the straw mulch uniformly using a purpose-made blower unit. Incorporate the emulsion as a spray into the air stream of the mulch blower or apply it in a separate operation within 12 hours from the application of straw mulch.

The straw mulch layer within 48 hours of application must have a minimum thickness at any location of 25 mm.

Weather Conditions for Hydroseeding, Hydromulching and Straw Mulching

Do not apply hydroseeding, hydromulching and straw mulching:

- when winds exceed 15 km/hr
- when temperatures exceed 37°C
- where the surface is too wet
- during rain periods or when rain appears imminent.

Signposting

Supply and install information signs approximately 1,500 x 600 mm stating, "NATIVE PLANT REGENERATION AREA—PLEASE KEEP OFF", including the requisite posts, brackets and fittings, where shown on the Drawings or as directed by the Principal. Support each sign at a height of 1.5 metres on two 75 mm dia steel posts set in concrete 500 mm deep into the ground at a distance of 900 mm apart.

7.3 GOODMAN MAINTENANCE GUIDELINES

Appendix 2 | Specification

system again to re-flush if blockages are apparent and re-seal tube ends

Commissioning

The entire system should be tuned and tested to deliver an adequate amount of water to all plants and turf. Test the system in the presence of the Landscape Architect and/or irrigation designer to facilitate the issue of a Certificate of Practical Completion.

Maintain the system for the duration of the establishment maintenance period as detailed elsewhere in the specification. Replace any faulty, broken or stolen components. Leave the system operating as if it was newly installed upon acceptance of the completed work.

Maintenance

General

Gardens, lawns and landscaped areas must be maintained to Goodman's presentation standard and condition at all times. Goodman places a heavy emphasis on a high standard of landscaping to support their market image.

Plants and shrubs should be cultivated to maintain optimal growth while individual plants that don't thrive should be replaced with healthy specimens. Plants and shrubs should be pruned appropriately to promote growth. Where necessary, all plants should be dead headed to maintain optimal appearance.

Weeds should be removed at all visits while measures should be taken to discourage weed growth. Weeds must be removed from all garden beds, fence lines and surrounding areas, all paved areas and walkways, construction joints and any entrance areas. All large weeds should be removed by hand, small weeds are to be sprayed with appropriate industrial strength weed killer with blue dye additive.

A prophylactic chemical weeding program should be implemented. Goodman Building Manager must be notified and approve any application of chemical weed treatment. The contractor must specify the type of chemical weed treatment product used, where it was used and quantity used. The contractor must submit a certificate or signed documentation received from chemical weed treatment supplier confirming application of chemical treatment to Goodman Landscape Manager. Spraying is to occur during non-office hours to reduce any health hazard for occupants of the commercial offices or industrial estates.

Every effort must be made to ensure that all plants are adequately watered at all times. When irrigation is not permitted, alternative methods of watering should be discussed with the Building Manager.

A proactive approach must be adopted to ensure that appearance of the landscape as a whole is highly presentable at all times. Recommendations on new plant or shrub specimen, landscape design, modifications etc should be made to Goodman Landscape Manager where opportunities exist to enhance the appearance of the landscape generally or in specific areas.

Contractors must submit annual routine landscape maintenance program to Goodman Landscape Manager within two weeks of contract commencement date.

Lawn care

Lawn areas, including nature strips must be neatly mown and edged weekly in the high season (summer months), fortnightly in the low season (winter months), or weekly if required due to abnormal weather condition. All clippings must be removed from the site.

All lawns must be fertilized once a year with an approved lawn fertilizer.

Tree shrub and plant care

All shrubs, hedges, ground covers and trees must be trimmed into shape as required to an acceptable Goodman presentation standard. Flowering plants/ shrubs should be pruned to promote optimal flowering at the appropriate times.

Excessive foliage impacting onto roads, paths, fencing and lighting must be pruned during all site visits.

Leaf litter and or all cuttings should be removed from all gardens and site each visit and disposed of at contractor's cost.

Any dead or dying plants/shrubs should be removed and replaced with same or comparable species. Goodman Landscape Manager must be consulted when large trees need to be removed and or replaced.

The contractor will maintain each plant in a healthy condition to increase the visual appeal of the gardens.

Appendix 2 | Specification

Remove faded leaves, fronds and flowers to encourage new growth.

The contractor will prune all plants or shrubs species as required and satisfy Goodman's presentation standard. Pruning should be carried out on a 'needs-basis' specific to each plant. Pruning should be carried out to encourage new growth that will result in a dense canopy density. No more than 30mm of new growth should be seen before pruning takes place. All plant pruning should be carried out using best horticultural techniques. No hedging of native grasses permitted at any time.

Replacement of any plant or shrub which may die, fail to thrive, or are damaged due to contractors negligence must be replaced by the contractor without cost to Goodman. The replacement plant or shrub must be of a similar size, quality and identical species or variety to the plant or shrub which has failed, unless otherwise directed by Goodman Landscape Manager

Where plants fail due to vandalism, or where plants are stolen, the cost of replacement of the plants will be met by Goodman.

Mulch

The contractor is required to maintain all areas of mulch cover within garden beds. Displaced mulch should be returned to the garden beds wherever possible. All area of mulch cover must be packed to a depth of 75mm. If replacement of mulch is required, the contractor must notify Goodman Landscape Manager and provide quotation for approval. Specific mulch must be approved by Goodman representative prior to installation.

Irrigation

The irrigation system must be fully functional at all times to ensure that all plants, trees and lawns receive adequate water at optimal frequency. The system should be tested during each site visit to ensure proper operation timing is set correctly. Adjustments must be made where necessary.

It is the contractors responsibility to submit a monthly report to Goodman which includes a comprehensive report on the operational function of the system.

Goodman Landscape Manager must be notified when the system is in need of major repair. The cost of major repairs to the system can be claimed as variation to the contract price and should be invoiced separately.

When water restrictions prevent the use of the irrigation system, arrangements must be made by the contractor to provide an alternative system of watering. Under no circumstances should plant stock be allowed to perish through lack of water.

Herbicide / pesticide application

Apply pesticide treatment to lawn areas to eliminate weeds/pests and diseases as soon as any attack is noticed. At any given time no more than 2% may be effected by weeds/pests and diseases. Spraying must occur during non-office hours to reduce any health hazard for occupants of the commercial offices or industrial estates. Do not use pesticides near streams, ditches, wetlands, or shorelines.

Rubbish

All rubbish generated by landscaping maintenance activities and from garden beds must be removed from the site at each visit and deposited at an approved waste collection depot at contractor's cost.

General rubbish accumulating within the driveways, car parks etc. will be removed by the landscape contractor on each weekly visit.

Fertilizing

Apply slow-release fertiliser in liquid form or in pellet form to all plants as required to maintain healthy growth conditions.

Fertilising of individual trees, individual palms, garden beds containing shrubs and groundcovers, and lawns should occur as required by individual species to maintain healthy growth conditions. All garden plants are to be fertilised in March and September of every year.

Seasol or other seaweed extract type fertilises and/or Dynamic Lifter or other organic fertiliser in pelletised form should be used. Do not use soluble fertilizers near streams, ditches, wetlands, or shorelines. Do not use blood and bone. All fertiliser is to be odourless.

Turf topdressing

The contractor is to review the condition of lawn areas to assess the need to provide topdressing. If topdressing is required, the contractor must report to Goodman Landscape Manager for approval. Premium topdressing mix must be 80% sand and 20% soil.

Appendix 2 | Specification

Repairs

Any repairs required to lawn areas should occur immediately following notification of the extent of works and approval to proceed by Goodman Landscape Manager.

Restaking

Where trees, palms, or shrubs require staking during plant establishment, the contractor will ensure that staking remains intact and rigid for its intended purpose. Staking that has failed must be repaired immediately to ensure no plant stress from winds.

Garden edging

The contractor is to review the condition of garden bed edging and ensure that no damage, sinking, or lifting has occurred. If any repair is required, contractor must notify Goodman Landscape Manager for approval. Contractor is to ensure that all garden edging is maintained in original condition.

Planters

The maintenance of any planter box (especially on-slab) requires careful attention to ensure that the waterproofing element is not affected. Any work done within planter box must be by hand. Neither machinery nor tools are to be used within any planter box that may cut and damage the waterproofing elements. The contractor will replenish soil nutrients and fertilisers in each planter box on a regular basis to ensure healthy continual growth of any plant species.

Letterboxes / directory boards

The contractor is to clean and wipe down directory boards and letter boxes at the entrance to the property and remove unwanted material (this is limited to a height accessible by ladder).

All hedges or shrubbery near directory boards must be kept trimmed, so that clear visual recognition by any emergency services can be ascertain the clear address of the site or direction to any part of the site.

Drains

All grated stormwater drains or strip drains in all car park levels and driveways zones must be inspected monthly and cleared of accumulation of debris, leaves and soil, so that there is no hindrance or impediment of their correct operation as stormwater drains.

All grated stormwater drains or strip drains in all gardens, lawn zones and pavement areas must be inspected weekly or after storms and maintained free of and accumulation of debris, leaves and soil, so that there is no hindrance or impediment of their correct operation as stormwater drains.

Any drains grate or section of strip drains that is rusted, faulty or may constitute a hazard to the site's tenants or visitors must be reported to Goodman Landscape Manager. Recommendation and replacement cost is to be submitted to Goodman Landscape Manager for approval.

Equipment

The contractor will supply all necessary equipment required to conduct landscape maintenance in the most efficient manner and with minimal interruption to tenants. All necessary equipment will be tested and tagged to comply with all relevant OH&S legislation and regulations.

Supervision / communication

Contractor is to appoint one point of contact (Supervisor/Operation Manager) to represent the contractor for the term of the agreement. The nominated point of contact should provide regular supervision to the on-site staff undertaking the works. Goodman anticipates that this supervisor should attend all sites as a minimum weekly to ensure presentation standards and workmanship is within required KPI's. The supervisor will also to attend site meetings with the relevant Goodman Landscape Manager to inspect the site and review any landscape maintenance issues and or variations each month.

A works report will be required to be filled out by the contractor and sent to Goodman, including relevant information regarding the following (Photos, Summary of works for period, works to be completed next month, safety issues, enhancement ideas, general issues). This report should be forwarded to Goodman on a monthly basis.

APPENDIX J

Vegetation Management Plan

Oakdale West Estate

Vegetation Management Plan

prepared for

Goodman Property
Services (Aust.) Pty Ltd

écologique | environmental consulting

Oakdale West Estate
Vegetation Management Plan

prepared for

Goodman Property Services (Aust.) Pty Ltd

Document control

Prepared by		
Kathryn Duchatel BSc. Env. CEnvP EIANZ #691 BAM Accreditation No.BAAS17054		02/10/2019

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Revision Schedule

Rev No	Date	Description	Issued to
1	19/07/2019	Draft VMP for review	Goodman
2	05/08/2019	VMP for MOD 1 submission	Goodman
3	02/10/2019	VMP for MOD 1 submission – amended consent condition numbers	Goodman

Executive Summary

Background

Goodman Property Services (Aust.) Pty Ltd (Goodman) are currently developing the Oakdale West Industrial Estate (Oakdale West) under State Significant Development approval (SSD7348). Consent approved the removal of approximately 4.4 ha of native vegetation.

Consent conditions are based on various assessment and strategy reports lodged and approved under the original SSD7348, which has included:

- Biodiversity Assessment Reports (2017, 2018) prepared under the NSW Framework for Biodiversity Assessment (FBA), which calculated that 172 ecosystem credits would need to be retired to offset native vegetation clearing (consent condition D90).
- Biodiversity Offsetting Strategies (2017, 2018), which specified how Goodman would establish and manage a biodiversity offset area in order to offset the required ecosystem credits as conditioned under consent condition D91 (which required the establishment of a biodiversity conservation area)

However, during the time since the SSD7348 was lodged and assessed, the *Threatened Species Conservation Act 1995* (TSC Act), under which the FBA was based, has been repealed and replaced by the *Biodiversity Conservation Act 2016* (BC Act).

Transitional arrangements provisioned for under the *Biodiversity Conservation (Savings and Transitional) Regulation 2017* (BC Reg.) expired in February 2018. This has resulted in the redundancy of the approved Biodiversity Offset Strategy.

Purpose of VMP

This Vegetation Management Plan (VMP) has been prepared to support a development modification (MOD 1) for Oakdale West. Relevant to the site's biodiversity, the intent of MOD 1 is as follows:

- To overcome the redundancy of the BOS while avoiding lengthy delays associated with reassessment under new legislation.
- Meet the objectives of the *Water Management Act 2000* (WM Act) through the rehabilitation and restoration of a riparian corridor along Ropes Creek, which would otherwise have been restored as part of the proposed biodiversity offset area.

This VMP applies to an area of approximately 4.2 ha which extends along the western side of Ropes Creek as shown in Figure 1-2. The areas of the Ropes Creek corridor are considered commensurate with the proportion of the SSD7348 development footprint that has encroached onto waterfront land.

Site constraints that have been considered in determining the extent of the VMP proposed are shown on Figure 1-1 and outlined below:

- The alignment of the future Southern Link Road (SLR) which traverses the Ropes Creek riparian corridor;
- Feasible management boundaries and access constraints, given that Oakdale South's boundaries extend to the western side of Ropes Creek and conflict with the future development of Oakdale West under SSD7348;
- The alignment of the existing electricity easement, which also precludes restoration works; and
- The proposed preferred alignment of the Western Sydney Freight Line (WSFL), which has been identified by Transport for NSW as requiring a 60m easement along the northern boundary of Oakdale West.

Goodman may choose to establish the remainder of the former biodiversity offsetting area as a Biodiversity Stewardship Site under agreement with the Biodiversity Conservation Trust (BCT). In the interim this area will continue to be protected by way of the following:

- Removal of cattle, replacement of redundant fencing and installation of new fencing
- Habitat placement (large woody debris), which is provisioned for in civil contracts for the development and detailed in the Flora and Fauna Management subplan to the Construction Environmental Management Plan (CEMP)
- Targeted weed control of scheduled weeds in accordance with the Biosecurity Act 2015 and as listed in the Greater Sydney Regional Strategic Weed Management Plan 2017-2022

Contents

Tables

Figures

Glossary / Abbreviations

Abbreviations	Expanded text
BAR	Biodiversity Assessment Report
BC Act	NSW Biodiversity Conservation Act 2016
BC Reg.	NSW Biodiversity Conservation (Savings and Transitional) Regulation 2017
BCT	NSW Biodiversity Conservation Trust
BOS	Biodiversity Offset Strategy
CEEC	Critically Endangered Ecological Community
CEMP	Construction Environmental Management Plan
DoEE	Australian Department of Environment and Energy
DOI	NSW Department of Industry
EEC	Endangered Ecological Community
EIS	Environmental Impact Statement
EPA	Environment Protection Authority
EPBC Act	Environmental Protection and Biodiversity Conservation Act 1999
FM Act	Fisheries Management Act 1994
MNES	Matters of National Environmental Significance
OEH	NSW Office of Environment and Heritage
PCT	Plant community type
RTS	Response to Submissions
SSD	State Significant Development
TSC Act	NSW Threatened Species Conservation Act 1995
VMP	Vegetation Management Plan
WM Act	NSW Water Management Act 2000
WNSLR	Western North South Link Road

1. Introduction

1.1 Overview

Oakdale West Industrial Estate (Oakdale West) is a State Significant Development (SSD7348) being developed by Goodman Property Services (Goodman).

Oakdale West is a staged development for a warehousing and distribution hub, which includes estate-wide earthworks, infrastructure and services and the construction of the Western North South Link Road (WNSLR).

The SSD7348 application was supported by the following documentation in response to SEARs and subsequent stakeholder submissions:

- Environmental Impact Statement (EIS) (Urbis, November 2017)
- Response to Submissions (RTS) (Urbis, May 2018)
- Supplementary RTS (Urbis, October 2018)
- Biodiversity Assessment Report (BAR) (Cumberland Ecology 2017 and écologique 2018)
- Biodiversity Offset Strategy (Cumberland Ecology 2017 and écologique 2018)

Consent for SSD7348 approves the removal of approximately 4.41 hectares (ha) of remnant native vegetation, subject to the following consent conditions:

- D90. Within 12 months of the date of this development consent, or as otherwise agreed with the Planning Secretary, the Applicant must retire 172 ecosystem credits to offset the removal of 4.41 hectares of native vegetation on the Site.
- D91. The Applicant shall establish a Biodiversity Offset Area on the Site, consistent with the area described in the RTS, in accordance with a Biodiversity Stewardship Agreement with the Biodiversity Conservation Trust.

The Biodiversity Offset Strategy (BOS) specified how Goodman would meet the above consent conditions. However, during the time since the SSD7348 was lodged and assessed, the *Threatened Species Conservation Act 1995* (TSC Act) was replaced by the *Biodiversity Conservation Act 2016* (BC Act).

Investigations and assessment required to prepare both the Oakdale West BAR and BOS used the former TSC Act biodiversity assessment methods.

Transitional arrangements provisioned for under the *Biodiversity Conservation (Savings and Transitional) Regulation 2017* (BC Reg.) expired in February 2018. This has resulted in the redundancy of the BOS, which was approved under SSD7348.

This Vegetation Management Plan (VMP) has been prepared to support a development modification (MOD 1) for Oakdale West. Relevant to the site's biodiversity, the intent of MOD 1 is as follows:

- To overcome the redundancy of the BOS while avoiding lengthy delays associated with reassessment under new legislation
- Meet the objectives of the *Water Management Act 2000* (WM Act) through the rehabilitation and restoration of a riparian corridor along Ropes Creek, which would otherwise have been restored as part of the proposed Biodiversity Offset Area.

1.2 Consultation

1.2.1 Department of Planning and Environment

The neighbouring Oakdale South Estate (Oakdale South SSD6917) recently lodged a modification MOD 11) for the same reasons as the Oakdale West SSD7348 MOD 1.

In preparing the Oakdale South SSD6917 MOD 11, consultation was undertaken with the Department of Planning and Environment (the Department) and that the same issue would occur for Oakdale West SSD7348 was also discussed.

In response the Department consulted with Office of Environment and Heritage (OEH) on the matter, and issued the following suggestions which applied to both Oakdale South SSD6917 and Oakdale West SSD7348:

- Purchase of appropriate BBAM credits from the market (i.e. credits assessed and calculated under repealed legislation) available on the market assessed under the repealed legislation), or
- Obtain a statement of reasonable equivalence to convert the existing BBAM credit obligation into BAM credits (i.e. credits assessed and calculated under the BC Act) and,
    - Enter into a biodiversity stewardship agreement under the BC Act on a parcel of land to generate the relevant credit types, then retire the relevant credits, or
    - Pay an amount equivalent to those credits into the Biodiversity Conservation Trust (BCT).

Oakdale South SSD6917 has obtained a statement of reasonable equivalence from the OEH and will be fulfilling its offsetting requirements through a combination of purchasing and retiring ecosystem credits from the market and direct payment to the BCT.

Oakdale West SSD7348 intend on taking the same approach and propose also to restore/rehabilitate and maintain areas of the Ropes Creek riparian corridor to fulfil the objects of the WM Act.

1.2.2 Department of Industry

The Department of Industry (DOI) was consulted during the assessment of SSD7348, specifically in relation to the proposed Biodiversity Offsetting Strategy encompassing the Ropes Creek riparian zone and meeting the objects of the WM Act.

The RTS and supplementary RTS for Oakdale West SSD7348 provided a number of diagrams in response to DOI's submissions, which illustrated the areas of the proposed development's footprint that encroached onto waterfront land.

The masterplan footprint for Oakdale West SSD7348 has been amended since the issue of the RTS and supplementary RTS. As a result the areas of the development that encroach onto waterfront land have also been amended and are illustrated in Figure 1-1 of this VMP.

1.3 Land to which this VMP applies

This VMP applies to an area of approximately 4.2 ha which extends along the western side of Ropes Creek as shown in Figure 1-2.

The areas of the Ropes Creek corridor are considered commensurate with the proportion of the SSD7348 development footprint that has encroached onto waterfront land.

Site constraints that have been considered in determining the extent of the VMP proposed are shown on Figure 1-1 and outlined below:

- The alignment of the future Southern Link Road (SLR) which traverses the Ropes Creek riparian corridor;
- Feasible management boundaries and access constraints, given that Oakdale South's boundaries extend to the western side of Ropes Creek and conflict with the future development of Oakdale West under SSD7348;

- The alignment of the existing electricity easement, which also precludes restoration works; and
- The proposed preferred alignment of the Western Sydney Freight Line (WSFL), which has been identified by Transport for NSW as requiring a 60m easement along the northern boundary of Oakdale West[1].

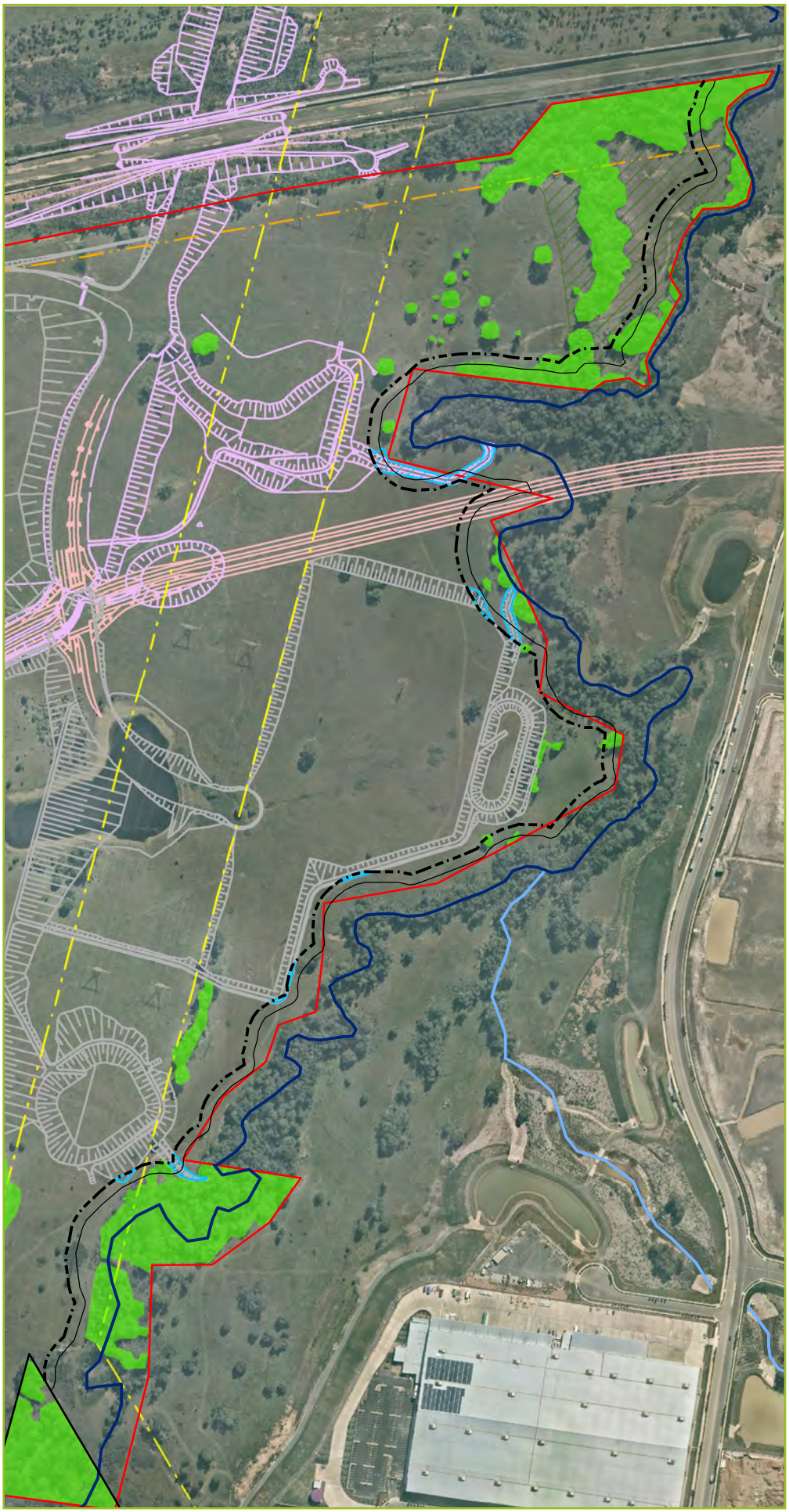
The remainder of the biodiversity offsetting area identified in the redundant BOS will continue to be protected by way of the following:

- Removal of cattle, replacement of redundant fencing and installation of new fencing
- Habitat placement (large woody debris), which is provisioned for in civil contracts for the development and detailed in the Flora and Fauna Management subplan to the Construction Environmental Management Plan (CEMP)
- Targeted weed control of scheduled weeds in accordance with the Biosecurity Act 2015 and as listed in the Greater Sydney Regional Strategic Weed Management Plan 2017-2022

Goodman may choose to establish this area in the future as a Biodiversity Stewardship Site under agreement with the Biodiversity Conservation Trust (BCT).

[1] Should the WSFL eventually be constructed at this location, the impacts to the remnant native vegetation that would result will become the responsibility of TfNSW. For the purpose of SSD7348 MOD 1, the proposed development will not impact on this area.

écologique



Oakdale West Estate

Vegetation Management Plan

RIPARIAN GUIDELINES
- Ropes Creek 3rd order
- Tributary 1st order
- 40m - waterfront land
- 30m - riparian buffer
- Waterfront land encroachment

OAKDALE WEST
- Oakdale West boundary
- Native vegetation to be retained
- Fenced conservation area
- Oakdale West siteworks
- WNSLR siteworks

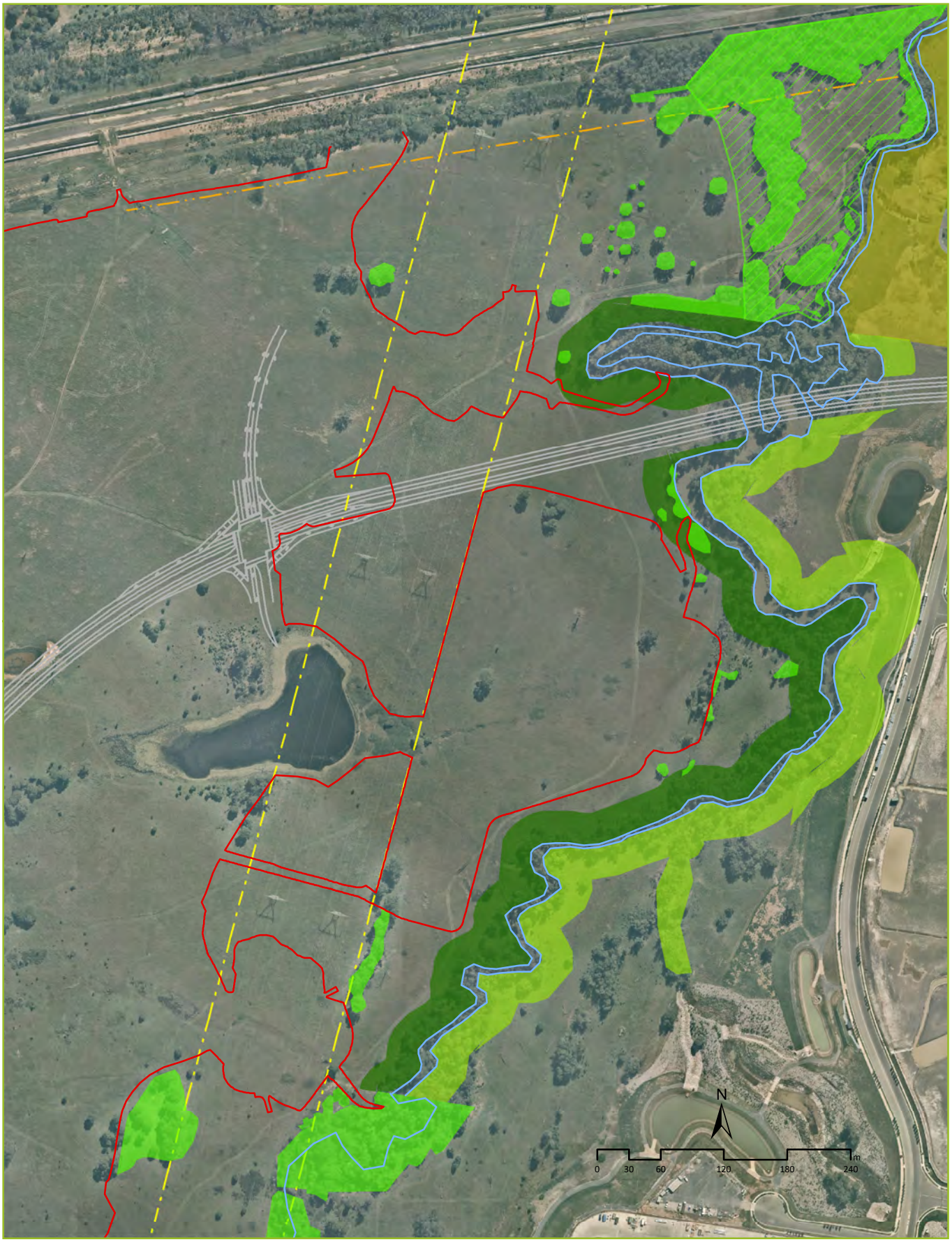
SITE CONSTRAINTS
- Electricity easement
- Future WSFL
- Future Southern Link Road

N

0 35 70 140 210 280 m

Figure 1-1
Site constraints

Coordinate System: MGA Zone 56 (GDA 94)
Image sources: Nearmap 7 April 2019



Oakdale West Estate VMP

Oakdale West VMP extent
Oakdale South VMP extent
Native vegetation to be retained
Oakdale Central biodiversity area
Fenced conservation area
Extent of works
Ropes Creek
Electricity easement
Future WSFL
Future Southern Link Road

Figure 1-2 Proposed VMP extent

Coordinate System: MGA Zone 56 (GDA 94)
Image sources: Nearmap 7 April 2019

2. Site Description

2.1 Ropes Creek riparian corridor

As can be seen from Figure 1-1, the Ropes Creek riparian corridor broadly defines the eastern boundary of Oakdale West although much of the creek itself lies within the neighbouring Oakdale South Estate

Ropes Creek is a 3rd order Strahler stream order watercourse, as mapped on the NSW Hydro Line dataset[2]. As such, this watercourse generally needs to be retained with a 30m vegetated riparian zone to each side of the channel.

A 30m riparian zone will be restored from the top of the western bank of Ropes Creek as part of the Oakdale West SSD7348 development. A corresponding 30m riparian zone will be restored from the top of the eastern bank of Ropes Creek as part of the Oakdale South SSD6917 development.

The Oakdale West SSD7348 development footprint encroaches marginally onto waterfront at five separate areas (see Figure 1-1), which in total amounts to 485m^2.

The outlets from three bioretention basins are located within the riparian corridor (see Figure 1-1), which are permitted, so long as they create minimal harm, and as they relate to meeting the objectives of the WM Act and the DOI's guidelines for controlled activities on waterfront land.

2.2 Native Vegetation

2.2.1 Plant Community Types

The Ropes Creek riparian corridor is subject to a significant level of remnant riparian vegetation. Investigations and assessment under the former biodiversity assessment method (BAM) identified two plant community types (PCTs) within the corridor, as summarised in Table 2-1.

Table 2-1. PCTs identified within the Ropes Creek riparian corridor

ID	PCT common name	Status	
		BC Act	EPBC Act
PCT 835	Forest Red Gum - Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain, Sydney Basin	Endangered	Not listed
PCT 1232	Swamp Oak floodplain forest fringing estuaries, Sydney Basin Bioregion and South East Corner Bioregion	Endangered	Endangered

Since investigations and collection of floristic data were undertaken to support the SSD7348 development application, a major upgrade to the NSW Vegetation Information System (VIS) took effect for the Sydney Metropolitan region.

Appropriate to the Ropes Creek riparian corridor is the inclusion of "Swamp Oak open forest on riverflats of the Cumberland Plain and Hunter valley" (PCT 1800) which is a more appropriate PCT than PCT 1232.

[2] The Water Management (General) Regulation 2018 hydro line spatial data is a dataset of mapped watercourses and waterbodies in NSW. Based on the Spatial Services (Department of Finance, Services & Innovation) the data set is used to determine the Strahler stream order of a stream to identify whether an exemption from the requirement for a water licence or approval under the Water Management (General) Regulation 2018 applies.

The allocation of PCTs is only necessary for the assessment of native vegetation removal and calculation of ecosystem credits that are required to offset impacts to native vegetation. For the purpose of this VMP the appropriateness of PCT allocation is provided to justify the assemblage of vegetation communities and associated constituent plant species) proposed for restoration purposes.

A further consideration is the dominance of *Casuarina glauca* (swamp oak), which is regenerating through widespread suckering and resultant monospecific gene pool. The aim of this VMP is to ensure that a diverse range of endemic riparian flora is reinstated, which includes genetic diversity.

2.2.1 Flora species

Native flora species observed within the riparian corridor consists of a canopy dominated by swamp oak and *Melaleuca styphelioides* (prickly-leaf paperbark) with less frequently occurring *Eucalyptus tereticornis* (river redgum), *E. moluccana* (grey gum) and *Angophora floribunda* (rough barked apple gum).

Regenerating *Bursaria spinosa* (native blackthorn) is the most dominant species in the shrub layer species with various acacia species also present (*Acacia implexa, A. decurrens, A. floribunda* and *A. parramattensis*).

Native ground layer plant species are scattered throughout the riparian corridor including patches of native grasses such as *Microleana stipoides* (weeping meadow grass) and other herbs (such as *Dichondra repens, Pratia purpurascens, Brunoniella australis*).

Given the extent of remnant vegetation within the corridor, a medium to high level of natural resilience is expected.

2.3 Introduced Vegetation

Sections of Ropes Creek are infested with *Juncus acutus* (spiny rush) within the channel and lower creek banks. *Alternanthera philoxerioides* (alligator weed) is known to occur upstream of the VMP subject area but has yet to be identified within downstream reaches.

Higher elevated creek banks and the riparian corridor support moderate populations of grazed exotic grasses with scattered patches of *Rubus fruticosus* (blackberry) and individuals of *Lycium ferocissimum* (African boxthorn), *Dovyalis caffra* (kei apple) and *Cestrum parqui* (green cestrum). Most of which are identified as priority weed species in the Greater Sydney Regional Strategic Weed Management Plan 2017-2022 (refer Section 3.4.1).

3. Restoration Approach

3.1 Overview

The specific objectives of this VMP align with those prescribed in the NSW Guidelines for vegetation management plans on waterfront land (DPIW July 2012) (the guidelines). The main objective being to provide a stable watercourse and riparian corridor which will emulate local native vegetation communities. Specific issues that need to be addressed within this VMP include:

- Conserve and protect environmentally sensitive areas and biodiversity values;
- Restore and rehabilitate degraded bushland and areas of significant vegetation;
- Ensure the protection of threatened species, populations or ecological communities;
- Limit the impact of development upon existing native vegetation;
- Provide habitat connectivity and fauna corridors;
- Promote sustainable vegetation management;
- Undertake responsive site management and landscaping to ensure that bushland values are conserved; and
- Specify appropriate environmental protection works to enhance the ecological and bushland amenity value of the site.

A combination of assisted bushland regeneration and reconstruction through revegetation shall be undertaken in areas of remnant native vegetation and pasture land within the VMP riparian zones (respectively).

3.2 Assisted Bushland Rehabilitation

Assisted bushland regeneration works shall be implemented in areas where natural regeneration is likely, by removing obstacles and making amendments to abiotic conditions to effect the regeneration of remnant native vegetation with varying resilience levels.

The aim of assisted bushland regeneration is to create conditions that favour the ecosystem's own recovery processes. The following principles from OEH's Conservation Management Notes (OEH 2011) apply to this VMP:

- Working where the natives are stronger, i.e. looking after the good areas and creating the conditions that promote their expansion into adjoining more degraded areas. An exception to this approach in the VMP riparian corridors will be targeting priority weed species in accordance with the *Biosecurity Act 2015*;
- Avoiding excessive disturbance because it often favours weed regrowth. But employing some disturbance where it is needed to trigger native plant regeneration or to treat compacted soil;
- Avoiding mulching (mostly) because mulch suppresses germination of seedlings, although it should be used in the following circumstances:
    - Small, low resilience patches within the regeneration area where natural leaf litter is available from nearby sources, and
    - On the edges of bushland areas to define the limits of the regeneration zone, and to suppress the encroachment of exotic grasses.
    - Above all, mulching shall avoid burying resilient areas where natural recruitment from the soil seed bank is evident.

Management activities relating to the assisted bushland regeneration are detailed in Section 4.

3.3 Reconstruction through revegetation

Where areas are found to have a low capacity for natural regeneration (i.e. former pasture land), these shall be fully reconstructed through revegetation of canopy, shrub and ground layer plant species constituent of River-flat Eucalypt Forest communities (RFEF). Reconstruction activities generally entail the following:

- Spraying out of introduced pasture grasses, herbs and forbs using a combination of selective and non-selective herbicides and high volume and low volume applications;
- Planting of local RFEF tree, shrub and groundlayer species; and
- Jute matting or mulching, depending on the location.

Section 4 details management activities relating to the reconstruction through revegetation.

3.4 Threatening processes

The most significant threatening processes that contribute or have contributed to degradation of the site's riparian corridors include:

- Past clearing of native vegetation;
- Grazing;
- Weed infestations, and
- Disturbance of soil and soil-stored native seed from various works associated with past land uses and proposed development.

The site's boundary will be securely fenced and grazing cattle removed. The existing natural riparian corridors will be demarcated as 'no go' zones and silt fencing installed to prevent movement of sediments in runoff entering these zones, during construction.

3.4.1 Weed infestations

Weed infestations will be managed as outlined in this VMP and in accordance with the *Biosecurity Act 2015*. The *Biosecurity Act 2015* replaces the *Noxious Weeds Act 1993,* which was repealed in August 2017.

The *Biosecurity Act 2015* itself is tenure neutral, in that unlike the previous *Noxious Weeds Act 1993* there is no scheduled "list" of weeds. As such all weeds need to be categorised by a risk they pose in relation to human health, biodiversity or agricultural production. The General Biosecurity Duty (GBD) is a key feature of the *Biosecurity Act 2015* (S22). Simply put, it means that all private and public land managers (or anyone who deals with weeds) must prevent, eliminate or minimise the risk of those weeds present.

The Greater Sydney Regional Strategic Weed Management Plan 2017-2022 identifies both State level and regionally determined priority weeds and high-risk activities that are relevant to the Oakdale West are listed in Appendix 1.

4. Management Actions

4.1 Management Zones

The VMP applies to two management zones: (a) assisted bushland regeneration, and (b) reconstruction through revegetation.

Work activities specific to these management zones are summarised in Table 4-1 and detailed in the following Sections with relevant work areas shown in Figure 4-1.

4.2 Weed Control

4.2.1 Primary weeding

Primary weeding is the first stage of bushland regeneration and reconstruction, which will require a range of techniques such as: the selective spraying of weeds with herbicides; cutting/scraping and painting deep rooted woody weeds and climbers with hand tools, chainsaws and brushcutters and painting cut stumps with herbicide; and selective hand removal of weeds.

Primary weeding is required in all VMP zones with a priority given to:

- Species scheduled under the *Biosecurity Act 2015* (see Table A, Appendix A);
- Widespread growth of spiny rush; and
- Woody weeds and climbers.

Additionally:

- Herbicide should not be allowed to fall into a watercourse or when wind conditions could cause drift outside the area to be treated or onto desirable plants.
- Weeds that cannot be removed by hand are to be manually removed, ensuring that the entire weed including all roots is removed;
- Damage to native plant species should be avoided during any weeding works; an
- All seed, flowering and invasive vegetative parts of weeds should be bagged and disposed of appropriately off site.

4.2.2 Secondary weeding

Secondary weeding involves the selective removal or treatment of weeds, whilst allowing regenerating or planted native plants to increase in size, abundance and percentage cover.

Secondary weeding should be undertake at intervals of not more than four weeks following the completion of primary weeding and continue throughout the plant establishment period in reconstruction areas and as an ongoing task in assisted bush regeneration areas.

All herbaceous weeds should be managed to be at very-low percentage cover levels, (as a minimum 5% cover), or better. Particularly problematic herbaceous weeds with wind-blown seeds should be prevented from seeding at all times throughout the site.

4.2.3 Maintenance weeding

It can be expected that the remnant and revegetated areas in each VMP zone will always require a certain level of maintenance weeding, as weed seeds and vegetative propagules make their way on site from the soil stored seedbank, via water, wind and bird droppings. However, it can be expected that the amount of weeding required will decrease once the regenerating native plants grow, recover and become more resistant to disturbance and weed colonisation.

Maintenance weeding shall extend for a minimum of three years following the completion of the Plant Establishment / Defects Liability Period (refer Section 4.5.4) or until such time as a minimum

80% survival rate for all plantings and a maximum five percent (5%) weed cover for each VMP management zone.

4.3 Soil amelioration

In areas not subject to construction disturbance it is anticipated that existing soils will be suitable for revegetation following weed control without the need for amelioration.

Where construction activities have disturbed site soils (e.g. compaction, loss of topsoil) the following shall apply:

- All debris, stones and left over building materials (arising from the works) are to be removed from site.
- Stones exceeding 25 mm, clods of earth exceeding 50 mm, and weeds, rubbish or other deleterious material brought to the surface during excavation or cultivation, must be removed.
- Supply and cultivate/spread 50mm layer of organic compost within 50mm layer of topsoil.
- Organic compost to be pH neutral; low in phosphorus suitable for planting Australian natives; free from clods of soil, rock, rubbish, and other non-organic matter.

4.4 Mulching

The higher elevated parts of VMP reconstruction zones are to be mulched with a minimum 100mm layer of mulch to assist with weed suppression, improve soil water conservation and soil erosion control.

Mulch is to be placed to the required depth, clear of plant stems, and raked to an even surface flush with the surrounding finished levels. Mulch is to be spread so that after settling it is:

- Smooth and evenly graded between design surface levels
- Flush with adjacent finished levels
- Of the required depths (100 mm depth)
- Sloped towards the base of plant stems, but not in contact with the stem

4.5 Planting program

4.5.1 Plant procurement

Plant procurement involves the sourcing of plant species that are consistent with those provided in the Planting Schedule (provided in Appendix B).

Plant procurement shall either be undertaken by Goodman or the Contractor (to be determined on engagement of Contractor).

Most commercial nurseries that supply plant stock to the Western Sydney Region have the capacity to provide suitable seed or other propagative materials without the need for targeted collection of seed/ propagation materials. However at least four to six months advance notice will be required to ensure that the species listed the Planting Schedule (provided in Appendix B) are able to be supplied at the intended commencement of planting.

Plant stock is to be inspected by the Contractor and Site Superintendent (or otherwise appointed Goodman representative) at least one month prior to commencement of planting works and on delivery to the site.

Plants that are not: true to species; vigorous and healthy; with a well-developed root system; free from disease / pests; and are not without scars or dead wood; are to be rejected at delivery.

Planting shall be undertaken immediately after acceptance of plant delivery. If this is not possible: appropriate storage to keep the plants in good condition on the site, adequately protected from frost, wind, sun and vermin, and secured from vandals; shall be facilitated.

4.5.2 Planting procedure

Planting shall generally entail the following:

- Dig hole sufficient for root ball of plant. The removal from the container and the positioning of the plant is to be done with minimum disturbance to the roots.
- Slow-release native plant fertiliser (low phosphorous formulated native plant fertiliser tablet/granules) and water saving crystals shall be placed into the planting hole.
- After planting, the soil shall be replaced and carefully firmed, leaving a slight depression around each plant to allow for water collection. Soil is to be replaced in the hole so that the base of the stem is level with the soil surface, not set below the soil, or sitting above.
- All plants should be watered-in thoroughly after planting to settle any air pockets around the root ball of the plant and to give the plant a good initial supply of water.

4.5.3 Practical completion

It is anticipated that Practical Completion can be achieved within six months from commencement of the bush regeneration/restoration works in each VMP zone. During this time planting establishment is to be achieved through watering, weeding, pest/disease control, replacing dead plant material and repairing/replacing erosion control matting/mulch. All plants should be watered thoroughly on at least 4 to 6 occasions, during this period.

Failure to maintain each VMP management zone in a stable and healthy condition may result in the Superintendent arranging for the maintenance work to be carried out by others at the expense of the Contractor.

Practical Completion shall require a minimum 80 per cent survival rate of each species planted and a maximum of:

- 5 per cent weed cover in restoration zones
- 10 percent weed cover in rehabilitation zones

4.5.4 Planting establishment /defects liability

The Plant Establishment / Defects Liability Period shall be in force for 18 months after Practical Completion of each stage of the works or until the site is stable, whichever is the longer period.

Any defective work, whether the result of poor workmanship, use of defective materials, damage through carelessness, or of any other cause, shall be removed and replaced at the Contractor's expense by work or materials of the required standard.

4.6 Performance measures

Performance targets are necessary to objectively measure the progress and the achievement of the VMP objectives. The anticipated timing of VMP management activities and related performance measures are outlined below and in Table 4-1.

1) All environmental and priority weeds are to be continuously suppressed and, if possible, eradicated from the site using recognised appropriate bush regeneration methods in accordance with best practice.
2) Weed control and revegetation works are to be carried out by a qualified bushland regeneration contractor for a period of 5 years.
3) Regeneration/restoration specified vegetation communities with a minimum 80% cover of native species achieved.
4) Weed control targets should eventually progress down to between 5% - 10% (or less) at the end of year 5.

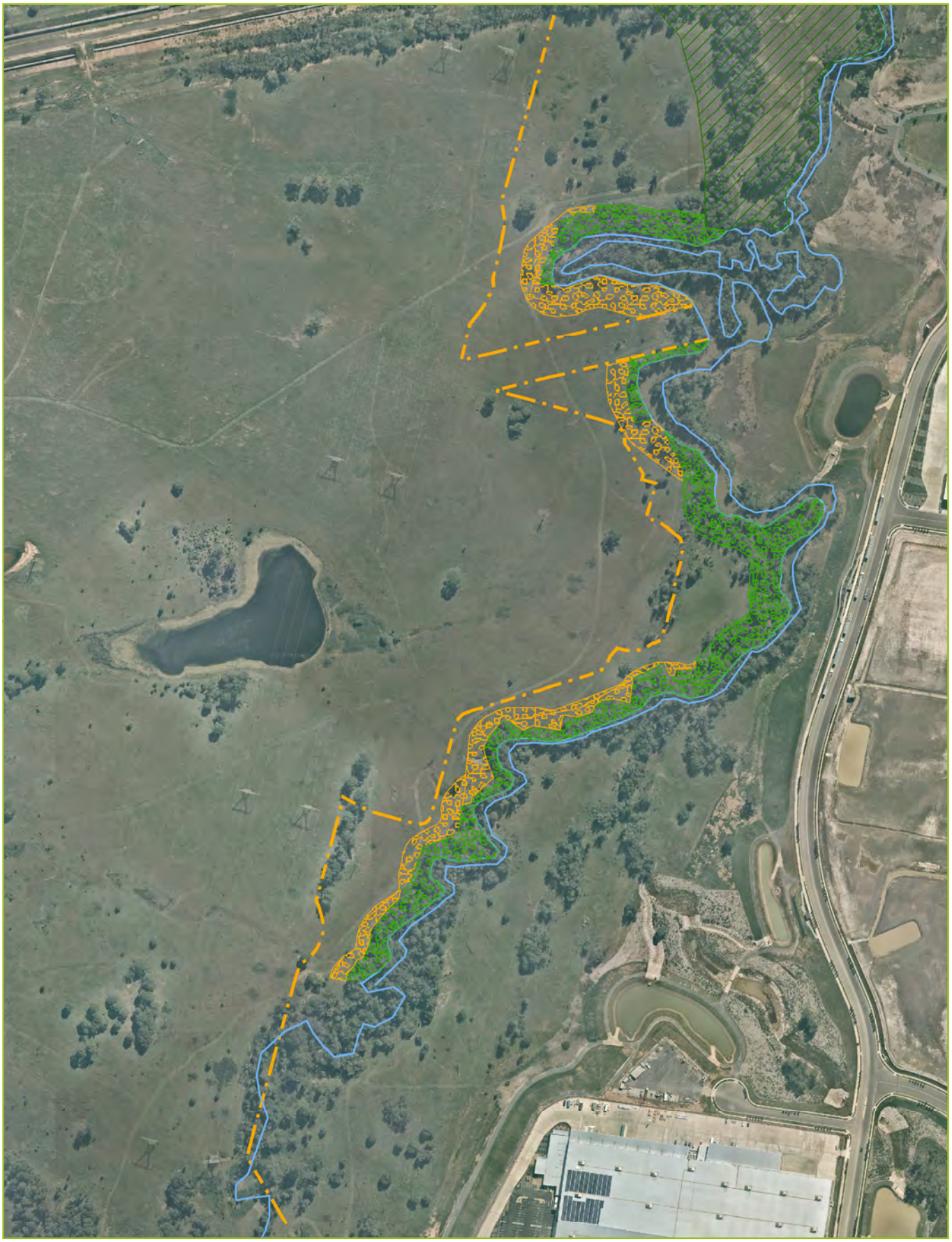
Table 4-1. VMP implementation schedule

Task	Timing	Performance measure
Plant procurement	Minimum 4-6mths pre-commencement of VMP implementation	Plants that are not: true to species; vigorous and healthy; with a well-developed root system; free from disease / pests; and are not without scars or dead wood; shall be rejected at delivery.
Completion of revegetation planting works	Practical Completion	• 100% of management zones treated • 100% of plants installed
Plant establishment	6 months	• Minimum 90% per cent survival rate of each species planted in all zones • Maximum 10% weed cover in reconstruction zones • Maximum 20% weed cover in regeneration zones
Defects Liability Period	18 months	• Minimum 80% per cent survival rate of each species planted in all zones • Maximum 10% weed cover in reconstruction zones • Maximum 20% weed cover in regeneration zones
Maintenance Period	36 months	• Minimum 80% per cent survival rate of each species planted in all zones • Maximum 5% weed cover in reconstruction zones • Maximum10% weed cover in regeneration zones

4.7 Compliance certification

Site audits, monitoring and reporting on the progress and achievement of the VMP performance targets shall be undertaken by the Site Superintendent or other representative nominated by Goodman. In general, reporting and compliance certificates shall be issued for the following items:

- Completion of primary weed control works
- Completion of secondary weed control works
- Inspection of plant materials delivered to site prior to commencement of planting works
- Completion of revegetation planting works (Practical Completion)
- Completion of plant establishment period
- Defects Liability Period
- Satisfactory achievement of revegetation/restoration works as per VMP performance targets (Section 4.6).



Regeneration
Revegetation
Fenced conservation area
Ropes Creek
Former_BOS_extent

N

0 30 60 120 180 240 m

Oakdale West Estate VMP

Figure 4-1 Proposed VMP extent

Coordinate System: MGA Zone 56 (GDA 94)
Image sources: Nearmap 7 April 2019

5. References

Cumberland Ecology (2017) Oakdale West State Significant Development Application Biodiversity Assessment Report, prepared for Goodman Property Services (Aust.) Pty Ltd, March 2017.

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Office of Environment and Environment (OEH) (2011) Conservation Management Notes - Managing bushland and wildlife habitat. Office of Environment and Heritage, Department of Premier and Cabinet NSW. ISBN 978 1 74293 316 0 OEH 2011/0659

Appendix A. Weeds of the riparian zone

Species / Common names	Management measures
Shrubs	
Cestrum parqui Green cestrum	**Schedule 2: Regional Priority Weed** **Regional Priority Weed Objective - ASSET PROTECTION:** Land managers mitigate the risk of the plant being introduced to land used for grazing of livestock. Land managers prevent spread from their land where feasible. The plant or parts of the plant are not traded, carried, grown or released into the environment. The plant should be fully and continuously suppressed and destroyed on grazing land Implement quarantine and/or hygiene protocols **Schedule 3: Local Priority Weed** Land managers have mitigated the risk of the plant being introduced to land used for grazing of livestock The plant should be fully suppressed and destroyed on grazing land.
Dovyalis caffra Kei apple	**Schedule 2: Regional Priority Weed** **Regional Priority Weed Objective - ERADICATION** The plant is eradicated from the land and the land is kept free of the plant. Destruction of all infestations where feasible. Manage in accordance with New Weed Incursion Plan. Detailed surveillance and mapping to locate all infestations Local Control Authority is notified if the plant is found on the land. The plant or parts of the plant are not traded, carried, grown or released into the environment.
Lantana camara Lantana	**Schedule 1: State Priority Weed** **State Priority Weed Objective - ASSET PROTECTION (Whole of State):** Mandatory Measure (Division 8, Clause33, Biosecurity Regulation 2017): A person must not move, import into the State or sell. **Regional Strategic Response:** Identify priority assets for targeted management.
Lycium ferocissimum African boxthorn	**Schedule 1: State Priority Weed** **State Priority Weed Objective - ASSET PROTECTION (Whole of State):** Mandatory Measure (Division 8, Clause33, Biosecurity Regulation 2017): A person must not move, import into the State or sell. **Regional Strategic Response:** Identify priority assets for targeted management.

Species / Common names	Management measures
Olea europaea subsp. *cuspidata* African olive	**Schedule 2: Regional Priority Weed** **Regional Priority Weeds Objective – CONTAINMENT:** Oakdale West lies within the region classified as the core infestation area. The following applies: The plant or parts of the plant are not traded, carried, grown or released into the environment. Implement quarantine and/or hygiene protocols. Surveillance and mapping to locate all infested properties. Monitor change in current distribution to ensure containment of spread. Land managers prevent spread from their land where feasible. Land managers reduce the impact on priority assets. Identify priority assets for targeted management
Rubus fruticosus agg Blackberry	**Schedule 1: State Priority Weed** **State Priority Weed Objective – ASSET PROTECTION (Whole of State):** Mandatory Measure (Division 8, Clause33, Biosecurity Regulation 2017): A person must not move, import into the State or sell. **Regional Strategic Response:** Identify priority assets for targeted management.
Ulex europaeus Gorse	**Schedule 1: State Priority Weed** **State Priority Weed Objective – ASSET PROTECTION (Whole of State):** Mandatory Measure (Division 8, Clause33, Biosecurity Regulation 2017): A person must not move, import into the State or sell. **Schedule 2: Regional Priority Weed** **Regional Priority Weeds Objective – CONTAINMENT:** Land managers prevent spread from their land where feasible Destruction of all infestations, aiming at local eradication where feasible. Detailed surveillance and mapping to locate all infestations. Implement quarantine and/or hygiene protocols. Monitor progress towards eradication
Aquatic and semi-aquatic	
Alternanthera philoxerioides Alligator weed – Weed of National Significance	**Schedule 1: State Priority Weeds** **State Priority Weed Objective – CONTAINMENT:** Mandatory Measure (Division 8, Clause 33, Biosecurity Regulation 2017): A person must not move, import into the State or sell. **Schedule 2: Regional Priority Weed** **Regional Priority Weeds Objective – CONTAINMENT:**

Species / Common names	Management measures
	Oakdale West lies within the region classified as the core infestation area. The following applies: Prevent spread from their land where feasible. Mitigate the risk of the plant being introduced to their land. Reduce the impact on priority assets. Implement quarantine and/or hygiene protocols. Manage in accordance with the Priorities for the control of Alligator Weed in the Sydney Region.
Cyperus difformis Dirty Dora	Other
Cyperus eragrostis Umbrella sedge	Other
Juncus acutus Spiny rush	Other
Vines/scramblers	
Anredera cordifolia Madeira vine	**Schedule 1: State Priority Weed** **State Priority Weed Objective – ASSET PROTECTION (Whole of State):** Mandatory Measure (Division 8, Clause33, Biosecurity Regulation 2017): A person must not move, import into the State or sell. **Regional Strategic Response:** Identify priority assets for targeted management.
Araujia sericifera Moth vine	Other
Asparagus aethiopicus ground asparagus *†A. africanus* climbing asparagus *A. asparagoides* bridal creeper *A. plumosus* climbing asparagus fern	**Schedule 1: State Priority Weed** **State Priority Weed Objective – ASSET PROTECTION (Whole of State):** Mandatory Measure (Division 8, Clause33, Biosecurity Regulation 2017): A person must not move, import into the State or sell. **Regional Strategic Response:** Identify priority assets for targeted management. *†A. africanus* Destruction of all infestations where feasible. Manage in accordance with New Weed Incursion Plan. ▫ Detailed surveillance and mapping to locate all infestations
Asparagus virgatus Asparagus fern	**Schedule 3: Local Priority Weed** The plant or parts of the plant have not been traded, carried, grown or released into the environment. Surveillance and mapping to locate all infested properties and maintain currency of exclusion zone and objectives.
Modiola caroliniana Creeper mallow	Other

Species / Common names	Management measures
Grasses	
Axonopus fissifolius Carpet grass	Other
Briza subaristata hilean quaking grass	Other
Bromus catharticus Prairie grass	Other
Ehrharta erecta Panic veldtgrass	Other
Lolium perenne Ryegrass	Other
Paspalum dilatatum Paspalum	Other
Pennisetum clandestinum Kikuyu	Other
Sporobolus africanus Parramatta grass	Other
Herbs	
Anagallis arvensis Scarlet pimpernel	Other
Brassica fruticulosa Twiggy turnip	Other
Cirsium vulgare Spear thistle	Other
Hypochaeris radicata Catsear	Other
Senecio madagascariensis Fireweed	**Schedule 1: State Priority Weed** **State Priority Weed Objective – ASSET PROTECTION (Whole of State):** Mandatory Measure (Division 8, Clause33, Biosecurity Regulation 2017): A person must not move, import into the State or sell. **Regional Strategic Response**: Identify priority assets for targeted management.
Sida rhombifolia Paddy's lucerne	Other
Solanum americanum American black nightshade	Other
Solanum linnaeanum Apple of Sodom	Other
Sonchus oleraceus Common sowthistle	Other

Appendix B. Planting Schedule

Zone	Species	density/m^2	%mix	Qty
RC reconstruction (15,604m^2)				
Trees/large shrubs	Acacia decurrens	0.05	5	40
	Acacia parramattensis	0.05	5	40
	Angophora floribunda	0.05	15	115
	Eucalyptus amplifolia	0.05	15	115
	Eucalyptus eugeniodes	0.05	15	115
	Eucalyptus moluccana	0.05	15	115
	Eucalyptus tereticornis	0.05	15	115
	Melaleuca styphelioides	0.05	15	115
			100	**770**
Smaller shrubs	Acacia floribunda	0.2	8	250
	Breynia oblongifolia	0.2	10	312
	Clerodendrum tomentosum	0.2	10	312
	Daviesia genistifolia	0.2	8	250
	Daviesia ulicifolia	0.2	8	250
	Dillwynia sieberi	0.2	8	250
	Dodonaea spp.	0.2	10	312
	Goodenia ovata	0.2	10	312
	Indigofera australis	0.2	10	312
	Ozothamanthus diosmifolium	0.2	10	312
	Pultenea spp.	0.2	8	250
			100	**3,122**
Grasses	Aristida ramosa/vagans	2	5	1,560
	Cymbogon refractus	2	10	3,120
	Chloris truncata/ventricosa	2	5	1,560
	Dicanthium sericeum	2	5	1,560
	Dichelachne micrantha	2	10	3,120
	Echinopogon ovata	2	10	3,120
	Eriochloa pseudochritcha	2	5	1,560
	Imperata cylindrica	2	10	3,120
	Microlaeana stipoides	2	10	3,120
	Poa labillardieri	2	10	3,120
	Rytidosperma racemosum	2	10	3,120
	Themeda triandra	2	10	3,120
			100	**31,200**
Sedges/Sedge-like	Lomandra longifolia	1	50	7,802
	Dianella longifolia	1	50	7,802

Zone	Species	density/m^2	%mix	Qty
			100	**15,604**
Herbs	Arthropodium spp.	0.05	as available	780
	Bulbine bulbosa	0.05		
	Clematis spp.	0.05		
	Desmodium varians	0.05		
	Dichondra repens	0.05		
	Glycine clandestina	0.05		
	Hardenbergia violacea	0.05		
	Oplismenus aemulus	0.05		
	Oxalis perannans	0.05		
	Plectranthus parviflorus	0.05		
	Pratia purpurescens	0.05		
	Scaveola albida	0.05		
	Veronca plebeia	0.05		
	Wahlenbergia gracilis	0.05		
				780
			Total plants RC reconstruction	**51,476**
RC Regeneration (30% of 26,071m^2)				
Smaller shrubs	Acacia floribunda	0.2	8	125
	Breynia oblongifolia	0.2	10	156
	Clerodendrum tomentosum	0.2	10	156
	Daviesia genistifolia	0.2	8	125
	Daviesia ulicifolia	0.2	8	125
	Dillwynia sieberi	0.2	8	125
	Dodonaea spp.	0.2	10	125
	Goodenia ovata	0.2	10	125
	Indigofera australis	0.2	10	125
	Ozothamanthus diosmifolium	0.2	10	125
	Pultenea spp.	0.2	8	156
			100	**1468**
Grasses	Aristida ramosa/vagans	2	5	782
	Cymbogon refractus	2	10	1,564
	Chloris truncata/ventricosa	2	5	782
	Dicanthium sericeum	2	5	782
	Dichelachne micrantha	2	10	1,564
	Echinopogon ovata	2	10	1,564
	Eriochloa pseudochritcha	2	5	782
	Imperata cylindrica	2	10	1,564
	Microlaeana stipoides	2	10	1,564
	Poa labillardieri	2	10	1,564

Zone	Species	density/m^2	%mix	Qty
	Rytidosperma racemosum	2	10	1,564
	Themeda triandra	2	10	1,564
			100	**15,640**
Sedges/Sedge-like	Lomandra longifolia	1	50	3,910
	Dianella longifolia	1	50	3,910
			100	**7,820**
Herbs	Arthropodium spp.	0.05	as available	391
	Bulbine bulbosa	0.05		
	Clematis spp.	0.05		
	Desmodium varians	0.05		
	Dichondra repens	0.05		
	Glycine clandestina	0.05		
	Hardenbergia violacea	0.05		
	Oplismenus aemulus	0.05		
	Oxalis perannans	0.05		
	Plectranthus parviflorus	0.05		
	Pratia purpurescens	0.05		
	Scaveola albida	0.05		
	Veronca plebeia	0.05		
	Wahlenbergia gracilis	0.05		
			Total plants RC revegetation zone	**25,319**

écologique | environmental consulting

APPENDIX K

Bushfire Emergency Management and Evacuation Plan

BLACKASH
BUSHFIRE CONSULTING

BUSHFIRE EMERGENCY MANAGEMENT AND EVACUATION PLAN

Building 4E - Oakdale West Industrial Estate

RING

'000'

for all emergencies

Prepared for

Goodman Property Services (Aust.) Pty Ltd

Version 1.0

4 August 2022

Document Tracking

Project Name:	**Building 4E – Oakdale West Industrial Estate**
Prepared by	Corey Shackleton
Client Details:	Ms. Stephanie Partridge Senior Development Manager Goodman 1-11 Hayes Road, ROSEBERY NSW 2018
Address	Building 4E, Oakdale West Industrial Estate
Owner	Goodman Property Services (Aust.) Pty Ltd

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Document Control

Version	Primary Author(s)	Description	Date Completed
0.1	Corey Shackleton	Draft	1 August 2022
1.0	Corey Shackleton	Final	4 August 2022

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Fire Protection Association of Australia BPAD Level 3 – 34603

BLACKASH
BUSHFIRE CONSULTING

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BPAD Bushfire Planning & Design Accredited Practitioner Level 3

Plan Authorisation & Review

This document has been prepared by Blackash Bushfire Consulting for the Building 4E - Oakdale West Industrial Estate. The Bushfire Emergency and Evacuation Plan complies with the NSW Rural Fire Service requirements for bushfire evacuation and is consistent with the NSW RFS' *A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan*.

Responsibility for enacting, testing, and implementing the document rests with the Manager of Building. This document does not include evacuation arrangements for specific hazards (e.g. floods, storm, active shooter, internal structure fire, etc).

This document is to be reviewed through consultation with stakeholders affected by this document:

- no less than every three years; and
- following an emergency resulting in significant evacuations.

The Manager of Building 4E is responsible for authorisation of the plan and review as per Table 1. The Plan is to be reviewed and signed by 1 August in each year, prior to the start of the Bushfire Danger Period (1 October, unless announcement to declare earlier by NSW RFS).

Table 1: Plan authorisation and review

Authorised by	Name	Signature	Date
2023			
2024			
2025			

The Manager of Building 4E is responsible for distributing a current 'Evacuation Plan' in August each year to The Hills Local Emergency Management Committee (LEMC through Council), the Local Emergency Management Officer (LEMO through Council) and other appropriate authorities. (e.g. NSW Rural Fire Services, NSW Police and Fire and Rescue NSW).

Site Details

This plan has been developed for Building 4E within the Oakdale West Industrial Estate (Figure 3). The plan is designed to assist management to protect life and property in the event of a bushfire affecting the site.

This plan outlines procedures for both sheltering (remaining on site) and evacuation to enhance the protection of visitors and staff from the threat of a bushfire.

The site is affected by bushfire prone land. Bushfire prone land is an area of land that can support a bushfire or is likely to be subject to bushfire attack (ember, flame contact, radiant heat).

The primary action to follow under normal bushfire conditions is to:

☒ Shelter ☐ Evacuate/Warehouse Closure

Type	Building 4E - Oakdale West Industrial Estate	
Contact Person	TBA Manager Building 4E	**Mobile:** TBA **Email:** TBA
	After Hours: TBA	**Phone:** TBA
On site shelter Location	Office	
Assembly point for off-site evacuation	Carpark	
Off-site evacuation	St Clair Shopping Centre	
Alternate off-site evacuation	Rooty Hill RSL Club	

Emergency Contacts

Organisation	Office	Phone
Emergency	General emergency number Fire/ Police/ Ambulance	**000**
NSW Police	St Marys Police Station, 38-42 King Street, St Marys	9677 7499 **000**
NSW Rural Fire Service (Cumberland)	8-12 Jeanette Street, Regentville	4734 7777 **000**
NSW Rural Fire Service (Nearest)	367-377 Cnr Mamre Road and Luddenham Road, Luddenham	9670 5353 **000**
NSW Rural Fire Service	Bushfire Information Line	1800 679 737
Fire and Rescue NSW (St Marys)	1 Marsden Road, St Marys	9493 1077 **000**
Fire and Rescue NSW (Mt Druitt)	81 Railway Street, Mount Druitt	9625 4403 **000**
Penrith City Council	Penrith Civic Centre, 601 High Street, Penrith	4732 7777
St Clair Shopping Centre	155 Bennett Road, St Clair	9834 5318
Rooty Hill RSL Club	33 Railway Street, Rooty Hill	9625 5500

Role & Responsibilities

Position	Name of Person	Building/Area of Responsibility	Contact
Chief Warden (CW)	TBC	Site Controller responsible for co-ordination of response procedures and chief communicator with Emergency Services and the Building 4E staff and visitors.	TBC
Deputy Chief Warden	TBC	Site Controller responsible for co-ordination of response procedures and chief communicator with Emergency Services and the Building 4E staff and visitors in absence of Team Leader/ Chief Warden is unavailable	TBC
Management & Administration Warden 1	TBC	On becoming aware of an emergency will take control of all Management and Administration staff and office areas, instructing staff and visitors accordingly.	TBC
Warehouse Warden 2	TBC	On becoming aware of an emergency will take control of the warehouse areas, instructing staff and visitors accordingly.	TBC
Dock Area Warden 3	TBC	On becoming aware of an emergency will take control of the dock and associated areas, instructing staff and visitors accordingly.	TBC

Building 4E - Overview

Occupants	Total (Max)	At any one time
Staff	TBC	TBC
Visitors	Variable	Variable

People with Support Needs

Occupants	Total (Max)	At any one time
Staff with Support Needs	Unknown	Unknown
Visitors with Support Needs	Unknown	Unknown

Occupation Times

Occupants	Open	Close
Staff	TBC	TBC
Visitors	TBC	TBC

Transportation Requirements (Evacuation)

Number of persons likely requiring transport	Nil
Number of vehicles required	Nil
Designated assembly point for evacuation	Carpark
Estimated travelling time to off-site evacuation areas	St Clair Shopping Centre – 10 min / 6.5km Rooty Hill RSL Club – 18 min / 12km

1. Introduction

This report responds to the following SSD-22131922 consent condition associated with the development:

> "Condition B27. Prior to the commencement of operation, the Applicant must prepare a Bushfire Emergency and Evacuation Management Plan for the development, consistent with the NSW RFS' A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan."

The aim of this document is to inform and enhance emergency management arrangements during forecast extreme to catastrophic fire weather and provide for sheltering or evacuations during actual and or forecast bushfires.

The bushfire evacuation procedures have been completed in accordance with NSW Rural Fire Service *Guide to Developing A Bushfire Emergency Management Plan* and with consideration of Australian Standard AS 3745-2010 – *Planning for Emergencies in facilities* and NSW Government *Evacuation Management Guidelines (March 2014)*.

2. Bushfire Risk

Bushfire is a normal part of Australia's natural environment, particularly in eucalypt forests. However, the frequency and intensity of bushfires varies throughout the landscape and seasons. Bushfires are a common occurrence during drier parts of the year.

Climate change is expected to bring longer bushfire seasons to parts of Australia, an increasing number of extreme fire weather days, and increasing fire intensity.

Bushfires of low or moderate intensity often pose little threat to life, property and community assets, but the potential for changes in wind direction can be a significant hazard. However, bushfires that burn in heavy fuels, steep terrain or on hot, dry and windy days often spread rapidly, crown in forests, produce powerful convection columns and create extensive spot fires ahead of the fire front, often making their control impossible until weather conditions moderate.

The intensity of a bushfire, which determines to a large extent how much damage it will do, is a product of the fuels burning (quantity, arrangement, size, moisture content), the weather at

the time (temperature, wind speed and direction, relative humidity, atmospheric stability) and the topography of the land where the fire is burning (slope and aspect).

Vulnerability to bushfire risk is a combination of the physical location of the persons under threat and the understanding and ability that person has that enables them to deal with the risk.

As the fire danger reaches "extreme', bushfires are often described as firestorms and become impossible to control. When the fire danger reaches 'Catastrophic", the risk of serious injury or death to people in the path of a bushfire increases significantly, and many properties and other community infrastructure can become difficult or impossible to defend.

It is the position of Australian fire agencies that the safest action to protect life is for people to be away from the bushfire or threat of bushfire as early as possible.

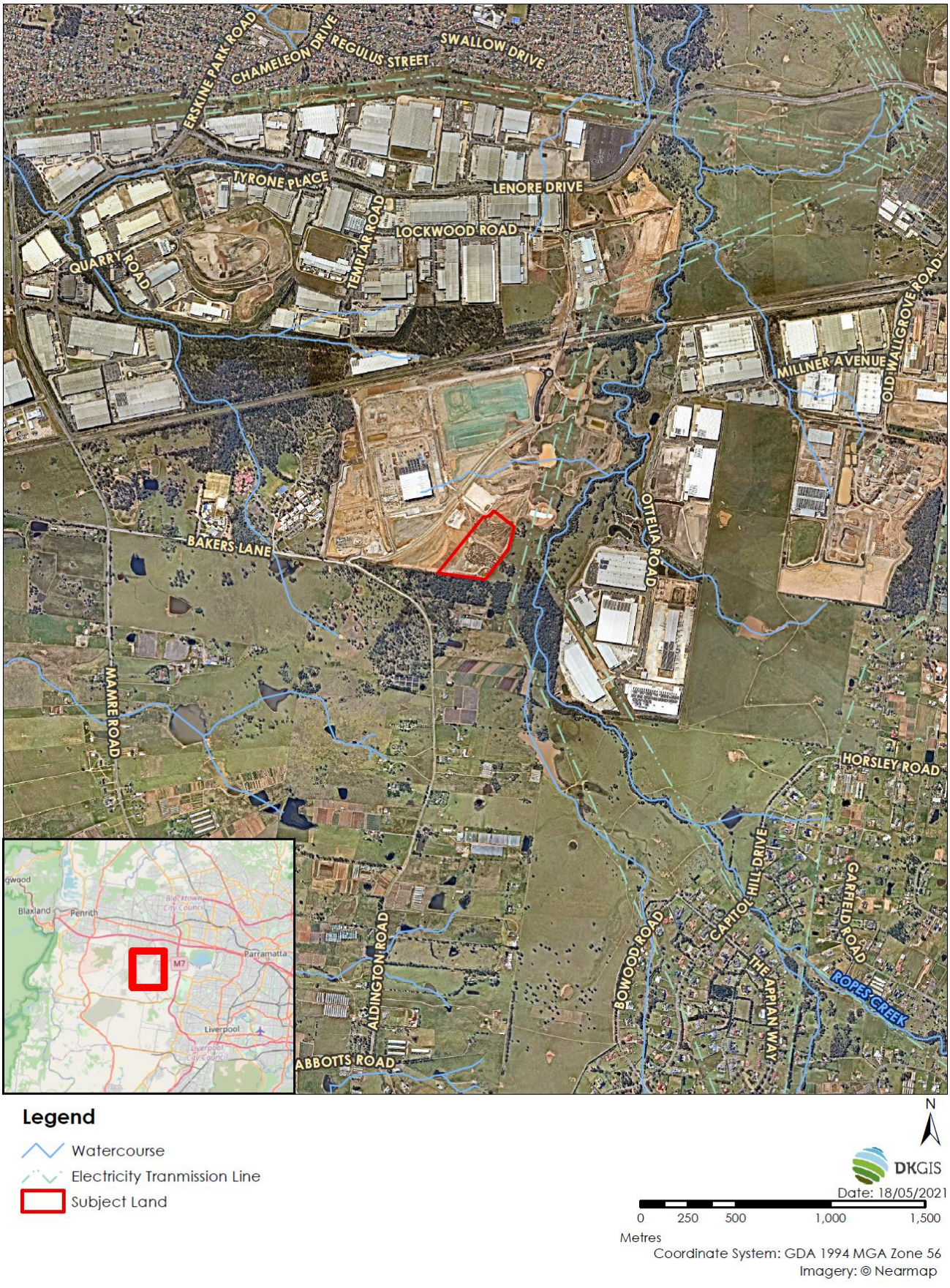


Figure 1: Site Location.

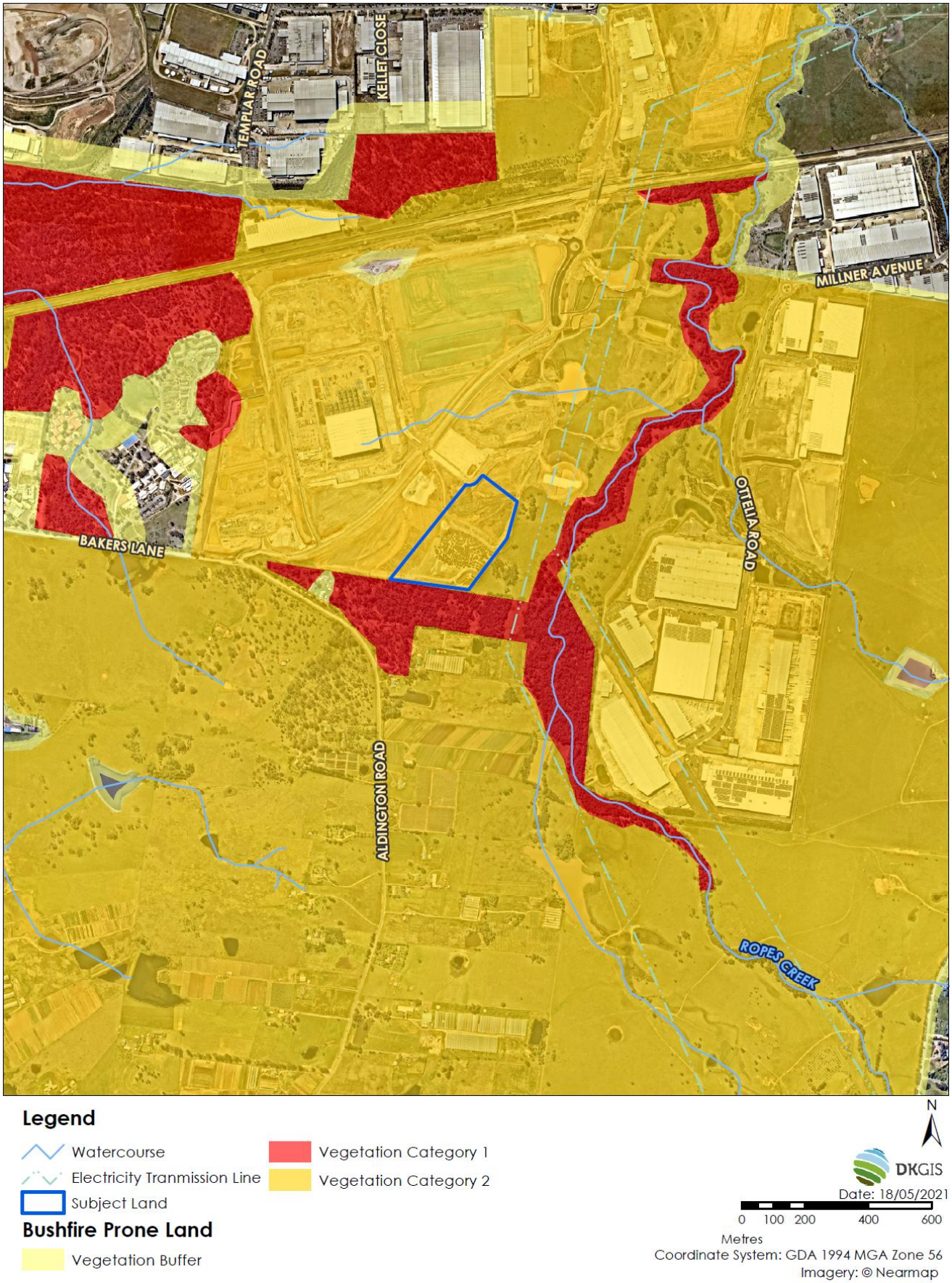


Figure 2: Bush Fire Prone Land Map showing location of the site

3. Preparation for bushfires

The official Bushfire Danger Period generally starts on 1 October and extends through to the following April. However, the fires season has been starting earlier and finishing latter. During this period, bushfires can occur at any time.

3.1. Before the commencement of the Bush Fire Danger Period

Before the commencement of the Bush Fire Danger Period, the Manager of Building 4E will:

- Review and update the Bushfire Emergency Management Plan and Evacuation Plan;
- Liaise with emergency service agencies about emergency procedures;
- Ensure appropriate maintenance of APZ and other bushfire protection measures has appropriate maintenance of APZ, and other bushfire protection measures has been completed prior to 1 October each year;
- Certification should be received prior to October that the work has been completed in accordance with RFS Standards for Asset Protection Zones to Inner Protection Zone standard;
- Communicate the sites bushfire preparedness arrangements with staff including their responsibilities at a staff meeting in September each year;
- Test and verify fire protection systems (fire hydrants, evacuation alarms, fire extinguishers);
- Check emergency equipment and first aid resources are available and operational (battery radio, mobile telephone);
- Provide updated contact details including a mobile number for emergency contact;
- Conduct practice fire evacuation drills; and
- Make the Evacuation Plan available to staff of the Warehouse.

3.2. During the bushfire danger period

During the bushfire danger period including during periods of increased fire danger, the Manager of Building 4E will monitor information sources for bushfire conditions by:

- Listening to the local radio station, TV and/or monitoring the NSW Rural Fire Service website at www.rfs.nsw.gov.au for information on bushfire activity or fire danger ratings;
- Knowing the Fire Danger Ratings for the area;
- Staying alert for warnings such as Bush Fire Alert Levels issued by the RFS;
- Watching for signs of fire, especially smoke or the smell of smoke;
- Calling the RFS Bush fire Information Line on 1800 NSW RFS (1800 679 737); and
- Downloading the free iPhone application from NSW Rural Fire Service – Fires Near Me NSW and keeping aware of fire in the vicinity of the site.

3.3. Hazard reduction burning

Land managers will often undertake hazard reduction burns in the cooler months of the year. Hazard reduction burns are planned fires in specific areas.

Agencies undertaking planned hazard reduction burns near the site may notify the Manager of the 4E Building. However, some hazard reduction burns will be undertaken that may cause smoke drift onto the site. Until it is confirmed that a hazard reduction burn is being undertaken, all fires should be considered as uncontrolled.

4. Fire Danger Ratings

Fire Danger Ratings give an indication of the consequences of a fire, if one was to start. The higher the fire danger, the more dangerous the conditions. The Fire Danger Ratings should act as a trigger to take action.

Fire Danger Ratings are based on predicted weather conditions such as temperature, humidity, wind and the dryness of the landscape. Bushfires are more likely to spread and cause damage on days when the weather is very hot, dry and windy. The higher the fire danger rating, the more dangerous the conditions. Figure 1 describes each of the Fire Danger Ratings.

Fire Danger Rating	Description
CATASTROPHIC FDI 100+ (Code Red)	• Fires will be uncontrollable, unpredictable and fast moving – flames will be higher than roof tops. • People will die and be injured. Thousands of homes and businesses will be destroyed. • Well prepared, well constructed and defended homes may not be safe during the fire. Construction standards do not go beyond a Fire Danger Index of 100. • Thousands of embers will be blown around. • Spot fires will move quickly and come from many directions, up to 20 km ahead of the fire. **Leaving is the best option.**
EXTREME FDI 75-99	• Fires will be uncontrollable, unpredictable and fast moving – flames will be higher than roof tops. • People will die and be injured. Hundreds of homes and businesses will be destroyed. • Only well prepared, well constructed and actively defended houses are likely to offer safety during a fire. • Thousands of embers will be blown around. • Spot fires will move quickly and come from many directions, up to 6 km ahead of the fire. **Leaving is the safest option for your survival.**
SEVERE FDI 50-74	• Fires will be uncontrollable and move quickly– flames may be higher than roof tops. • There is a chance people may die and be injured. Some homes and businesses will be destroyed. • Well prepared and actively defended houses can offer safety during a fire. • Expect embers to be blown around. • Spot fires may occur up to 4 km ahead of the fire **Leaving is the safest option for your survival. Your home will only offer safety if it and you are well prepared and you can actively defend it during a fire.**
VERY HIGH FDI 25-49	• Fires can be difficult to control – flames may burn into the tree tops. • There is a low chance people may die or be injured. Some homes and businesses may be damaged or destroyed. • Well prepared and actively defended houses can offer safety during a fire. • Embers may be blown ahead of the fire. • Spot fires may occur up to 2 km ahead of the fire. **Leaving is the safest option for your survival. Your home will only offer safety it is and you are well prepared and you can actively defend it during a fire.**
HIGH FDI 12-24	• Fires can be controlled • Loss of life is highly unlikely and damage to property will be limited • Well prepared and actively defended houses can offer safety during a fire. • Embers may be blown ahead of the fire. • Spot fires can occur close to the main fire. **Know where to get more information and monitor the situation for any changes**
LOW-MODERATE FDI 0-11	• Fires can be easily controlled • Little to no risk to life and property **Know where to get more information and monitor the situation for any changes**

Figure 1: Fire Danger Ratings and what they mean (Source AFAC www.fireandbiodiversity.org.au/_literature.../AFAC_Fire_Danger_Ratings_explained).

The NSW Rural Fire Service provides a map of the Fire Danger Ratings at: https://www.rfs.nsw.gov.au/fire-information/fdr-and-tobans.

The site is within the Greater Sydney Region Fire Weather Forecast Area.

4.1. Catastrophic Fire Weather

The Warehouse must stay abreast of weather forecasts and where a Catastrophic Fire Danger Rating is predicted the Manager should undertake initial preparation. If a Catastrophic Fire Danger Rating be issued and any fires are within 10kms of the site, staff and visotors should move to the onsite shelter and consideration should be given to temporarily ceasing operations.

4.2. Total Fire Ban

To reduce the risk of fires damaging or destroying life, property and the environment the NSW RFS Commissioner may declare a Total Fire Ban (TOBAN). A TOBAN is a day of elevated bushfire danger potential and is declared by the NSW RFS on days when fires are likely to spread rapidly and will be difficult to control.

In a Total Fire Ban no fire may be lit in the open and all fire permits are suspended. This includes incinerators and barbecues which burn solid fuel, e.g. wood, charcoal or heat beads. No general-purpose welding, grinding, soldering or gas cutting can be done in the open.

Total Fire Bans are normally declared by 5pm on the day before a ban but can be declared or revoked at any time. Always check the NSW RFS web page for latest information at: http://www.rfs.nsw.gov.au/fire-information/fdr-and-tobans.

Fire Danger Ratings are updated twice daily by the NSW RFS at 6.00am and 4pm.

On TOBAN days, the Building 4E Manager must be vigilant in maintaining situational awareness. This should be done through regular monitoring of local conditions, local radio and the NSW RFS website and 'Fires Near Me'.

5. Bushfire Emergencies

"*A bushfire can be a terrifying situation. Strong gusty winds, intense heat and flames will make you tired quickly. Thick heavy smoke will sting your eyes and choke your lungs. It will be difficult to see and breathe*" (NSW RFS).

Clear advice from emergency services is that people who are at higher risk, such as children, elderly, disabled or with medical problems, should always leave early and move to an area that is not at risk. However, in the context of the Building 4E, where the building is well constructed (compliant with NCC, PBP 2019, etc) with over 90 trained staff, evacuation is considered a more appropriate primary action.

5.1. Emergency Alerts

Emergency Alert is a national telephone warning system that aims to save lives by letting people know about threats such as bushfire as early as possible. When danger is imminent, authorised groups such as NSW Rural Fire Service, NSW Police or the NSW SES can send a warning message to residents in high risk areas.

Emergency Alerts are sent in the form of:

- recorded voice messages to landline numbers based on handset location; and
- text messages to mobile phones based on billing address.

If the site receives an Emergency Alert, follow the instructions in the message.

5.2. Bushfire Alert Levels

During a bush fire, Alert Levels are used to give an indication of the level of threat from a fire.

Don't wait for a warning. Some fires start and spread quickly, there may not be time for a warning. If you get a Bush Fire Alert, you must take it seriously. Failure to take action can result in death or injury.

There are three levels of Bush Fire Alerts:

Advice

A fire has started. There is no immediate danger. Stay up to date in case the situation changes.

Watch and Act

There is a heightened level of threat. Conditions are changing and you need to start taking action now to protect staff and visitors.

Emergency Warning

An Emergency Warning is the highest level of Bush Fire Alert. The site may be in danger and need to take action immediately. Any delay now puts the lives of staff and visitors at risk.

Figure 2: Bushfire Alert Levels

6. Emergency Management & Evacuation

The focus of the Emergency Management and Evacuation Plan is to put in place strategies that do not expose the Building 4E occupants to the effects of bushfire attack and focus on eliminating exposure to bushfire threat by providing a framework for decisions to be made regarding the safest options if there are fires in the vicinity.

The plan is based on the premise that:

1. On Total Fire Ban days and above, the Facility Manager must maintain good situational awareness in order to determine the Triggers for Action (Section 8);
2. On days of Total Fire Ban the NSW RFS may liaise with the Facility Manager should the need arise to evacuate or limit occupation;
3. Given the relatively low bushfire risk to the site and the adequate protection incorporated into the design of the development visitors and staff can safely shelter in place (on-site) during a bushfire emergency;
4. Off-site evacuation can generally be done from the site into safer areas of the Oakdale West Estate or pre-identified areas if done early, but should only be done when and as directed by the NSW Police or Combat Agency.

6.1. Shelter in Place

Given the nature of Building 4E and its use, shelter in place is considered the primary and optimal bushfire emergency response. This is primarily because the site is only exposed to a relatively low bushfire risk and given the design and construction of the building, the Office in the north of the site is well outside the 2kW/m^2 threshold.

The Office (see Figure 3) has been identified as the shelter in place location due to its size and separation from the bushfire hazard. Figure 4 shows the radiant heat mapping across the site, identifying the 10kW/m2 and 2kW/m2 areas. The Triggers for Action, including shelter in place are detailed in Section 8.

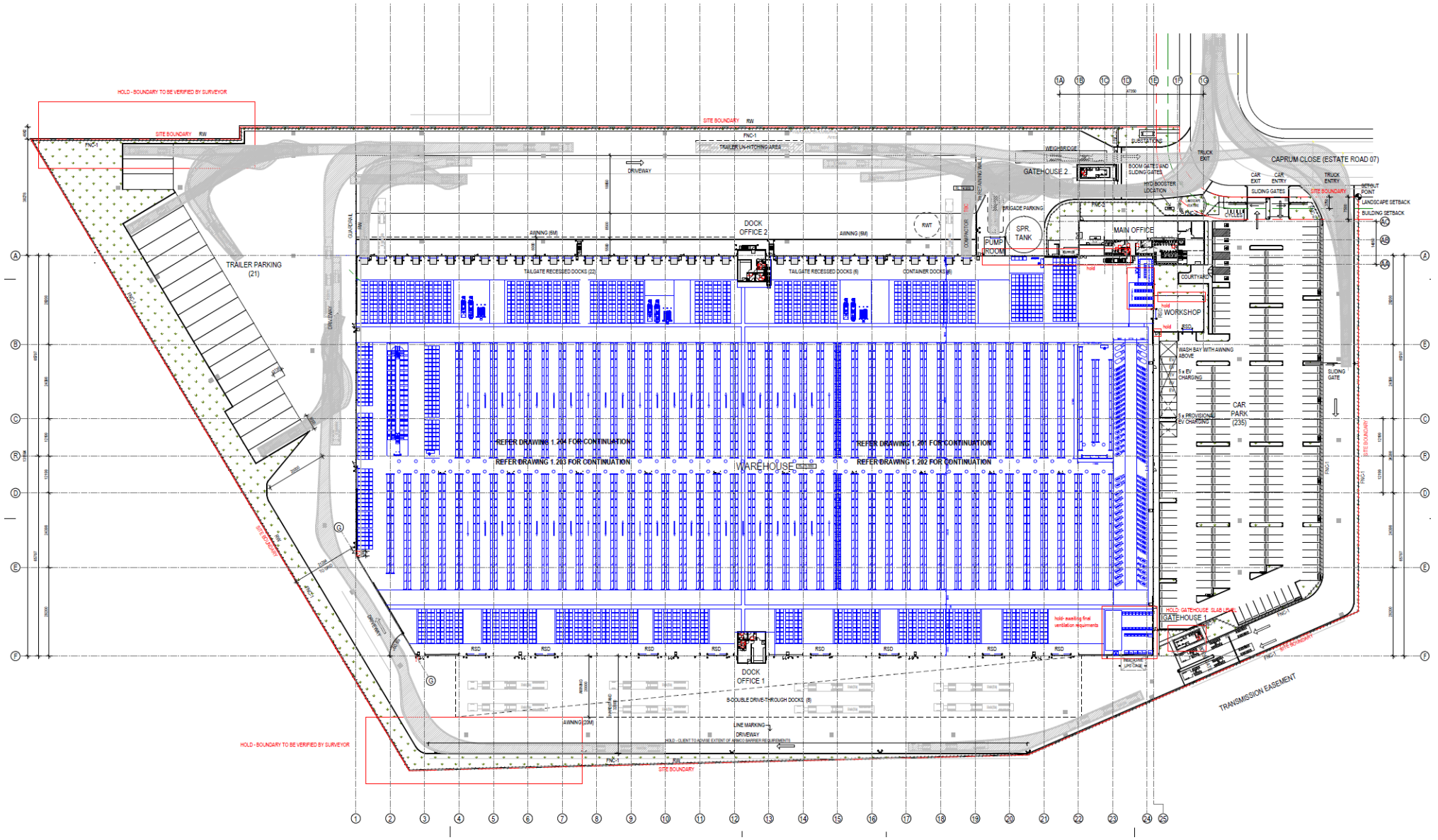


Figure 3: Building layout

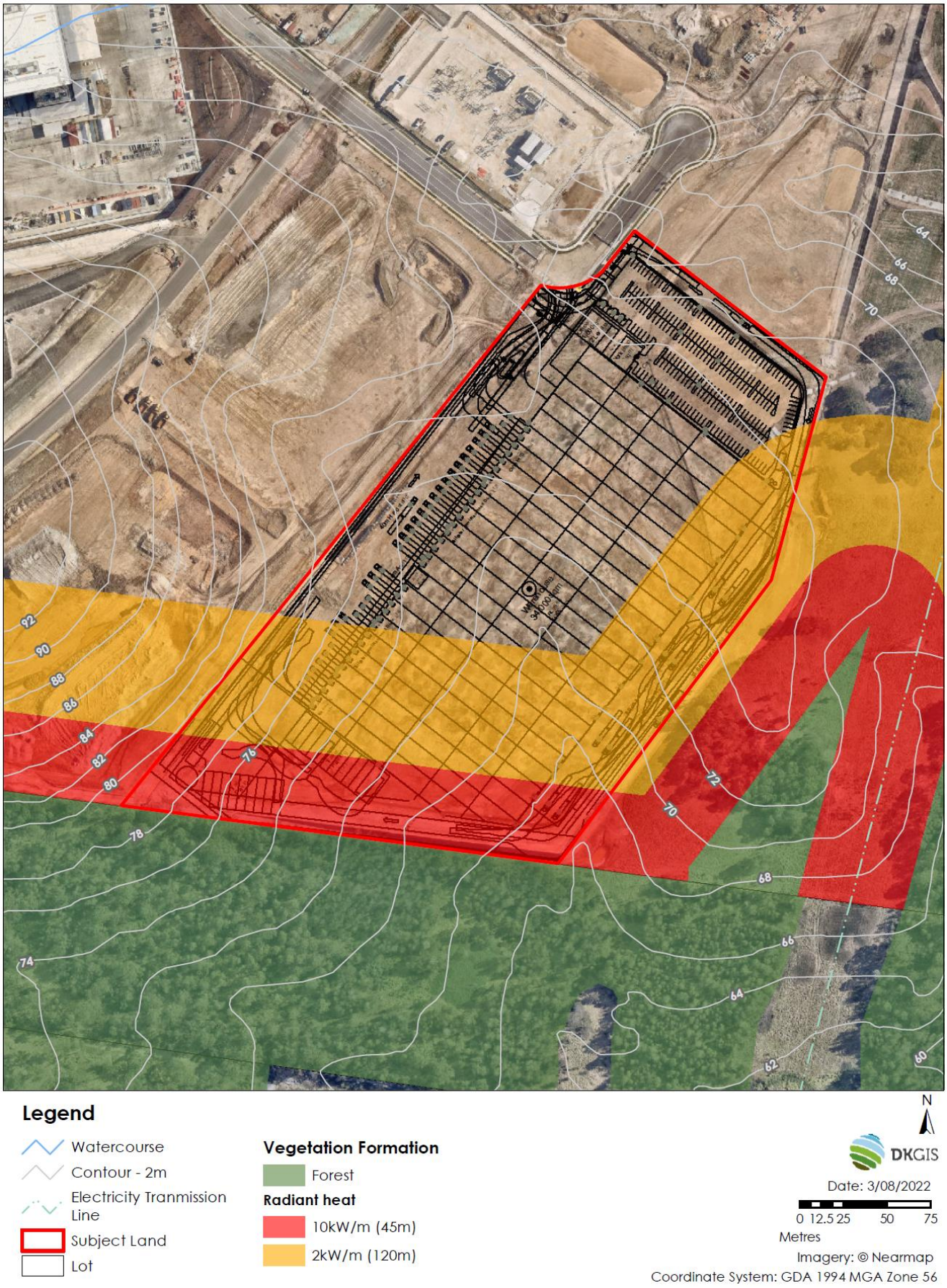


Figure 4: Radiant heat mapping across the site.

6.2. Closure of the Facility

The Building 4E Manager should regularly monitor the Fire Danger Ratings and bushfire conditions. A series of trigger points (Section 8) have been identified to inform the closure and evacuation of the warehouse.

Given the potential consequences, while the facility should remain open during periods of 'Catastrophic' Fire Danger, situational awareness is paramount to ensure swift action is taken should a fire start nearby or threaten the site. Clear notification procedures should be developed including signage to inform staff during these periods.

6.3. Evacuation

Evacuation is a risk management strategy that may be used to mitigate the effects of an emergency on a community. It involves the movement of people to a safer location. The types of evacuation and alternatives to evacuation include[1]:

Immediate Evacuation *This results from a hazard impact that forces immediate action, thereby allowing little or no warning and limited preparation time.*

Pre-Warned/Managed Evacuation *This follows the receipt of sufficient and reliable information which prompts a decision to evacuate ahead of a potential hazard impact.*

Self-Managed Evacuation/Relocation *This is a spontaneous type of evacuation involving the self-initiated movement of people as individuals, families or community groups. This may include circumstances where visitors and staff are advised to leave early ahead of dangerous conditions*

Shelter in Place *Shelter in place should be considered as an alternative when the risk associated with evacuation is seen as being greater than that of sheltering in place or as an outcome of an immediate threat to individuals where evacuation cannot be initiated in a safe manner.*

6.3.1. Off-site Evacuation

The Evacuation Plan has been completed such that it does not rely on the immediate availability of emergency service personnel to undertake the evacuation. Given the nature of the warehouse and its use, shelter in place is considered the primary and optimal bushfire

[1] NSW Evacuation Management Guidelines (March 2014)

emergency response. As such, the decision to move staff and visitors to the shelter in place area must be undertaken confidently and without hesitation by the Manager.

If determined necessary, the off-site evacuation point has been determined as the St Clair Shopping Centre which is located 10 minutes' drive to the north (Figure 5).

The alternative off-site evacuation point is the Rooty Hill RSL Club, an 18 -minute drive to the northeast (see Figure 5).

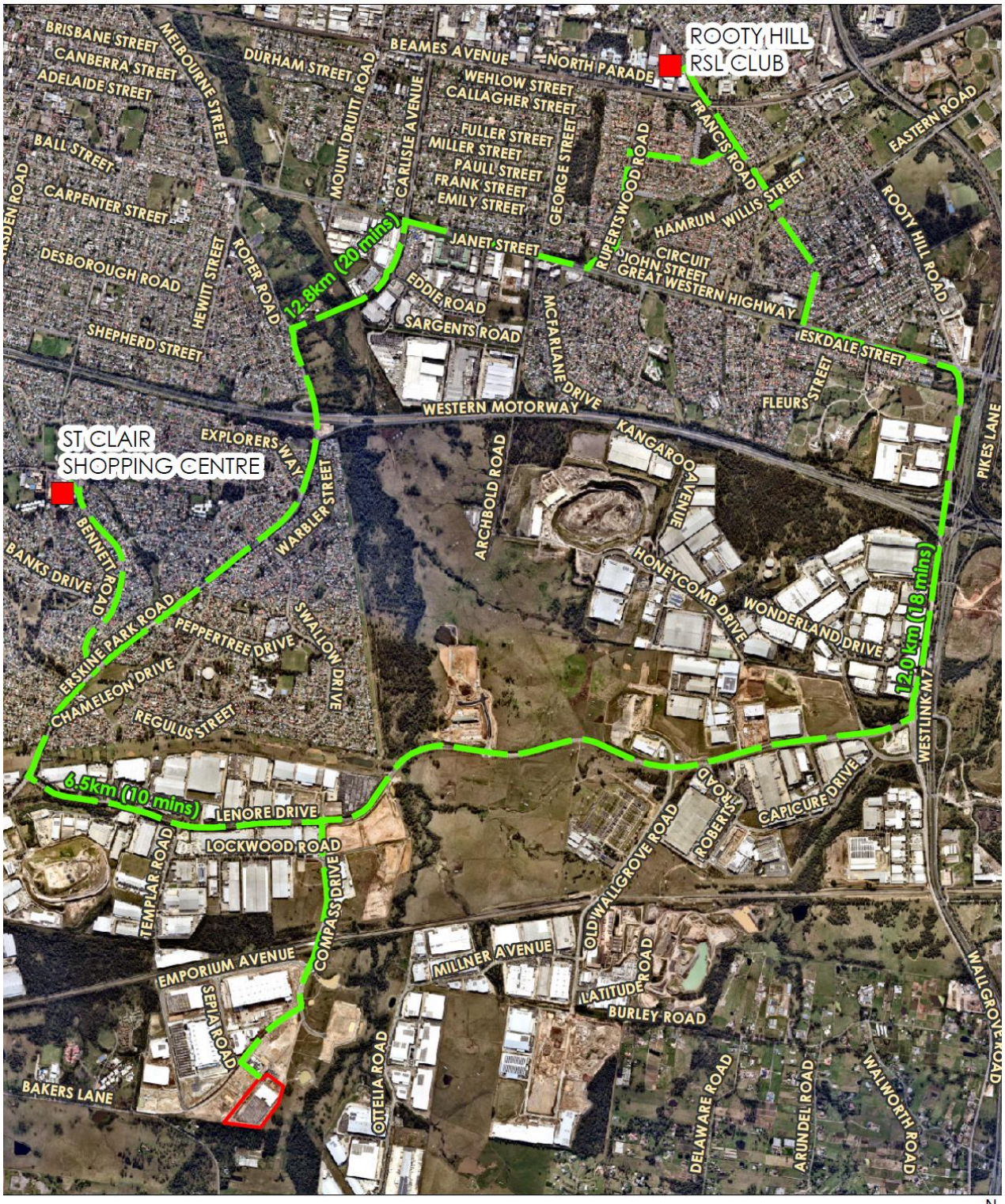


Figure 5: Offsite evacuation points and routes.

6.4. Authority to Evacuate

The Manager of Building 4E can initiate the emergency management procedures.

Authority to evacuate can be directed by:

- Instructions from the NSW Police or Fire Authority (NSW Rural Fire Service or Fire and Rescue NSW).

NSW Agencies with legislated authority to order an evacuation are:

a) Combat Agencies with appropriate legislation; and
b) the NSW Police Force.

A Combat Agency generally issues an order to evacuate; consideration should be given to how affected people may respond to such an order. Police Officers generally enforce such orders.

NSW Police Force may issue an evacuation order under Section 60L *State Emergency & Rescue Management Act 1989*. A senior police officer may, if satisfied that there are reasonable grounds for doing so for the purpose of protecting persons from injury or death threatened by an actual or imminent emergency, direct, or authorise another police officer to direct, a person to do any or all of the following once a danger areas is declared:

a) to leave any premises and to move outside the danger area,
b) to take any children or adults present in any premises who are in the person's care and to move them outside the danger area,
c) not to enter the danger area. A 'danger area' means the areas specified by a senior police officer as the area affected by an emergency.

Fire & Rescue NSW under Section 19 *Fire Brigades Act 1989* through the officer in charge at a fire or hazardous material incident may cause to be removed any person, vehicle, vessel or thing the presence of whom or which at or near a fire or hazardous material incident might, in the officer's opinion, interfere with the work of any fire brigade or the exercise of any of the officer's functions.

NSW Rural Fire Service Section 22A of the *Rural Fires Act 1997* provides that an officer of a rural fire brigade or group of rural fire brigades may cause to be removed any person, vehicle, vessel or thing the presence of whom or which at or near a fire, incident or other emergency might, in the officer's opinion, interfere with the work of any rural fire brigade or the exercise of any of the officer's function.

6.5. Evacuation Process

The evacuation process has been adapted from *NSW Evacuation Management Guidelines* (March 2014).

The decision to advise or direct evacuation should be considered whenever there is a potential need to move people to a safer place. This process should be constantly reviewed in changing circumstances.

The decision to evacuate people who are at immediate risk during an emergency is not always straightforward, as it is often based on incomplete or unverified information in a rapidly developing and dynamic situation. Timing of the decision is a significant factor.

The Manager of Building 4E must closely monitor conditions and act in accordance with the Triggers for Action in Section 8. Given the nature of the warehouse and its use, shelter in place is considered the primary and optimal bushfire emergency response and can also function as the assembly area for an evacuation.

Off-site evacuation should only be done when and as directed by the NSW Police or Combat Agency.

7. Emergency Management Procedures

7.1. Evacuation Preparedness

The Manager of Building 4E is responsible for implementing the following procedures to facilitate the objectives of this Plan:

- Ensure all staff are alerted of the Fire Danger Rating during the bushfire danger period;
- Ensure staff are trained and familiar with the shelter in place location (Office) and the Evacuation/Shelter Plan necessary for their efficient and effective operation in an emergency;
- Ensure staff and visitors are provided/shown the location of the shelter in place location and the written evacuation/shelter procedures; and
- Ensure evacuation/shelter procedures are displayed in strategic locations.

7.2. When to Evacuate

Off-site evacuation should only be done long before fires are near the warehouse or when and as directed by the NSW Police or Combat Agencies.

The decision when to evacuate is to be determined by the likelihood that a bushfire may impact the warehouse in a manner that may cause injury, undue stress, or other significant adverse effects (e.g., smoke induced medical problems).

7.3. Procedures for Evacuations

Evacuation involves relocating people to where they are safer and by a route that is relatively safe. Given the nature of the warehouse and its use, shelter in place is considered the primary and optimal bushfire emergency response. The Office have been identified as the shelter in place location and can also function as the assembly area for an evacuation.

The decision to evacuation is largely determined by the nature of the fire threat, the people involved and their location. Welfare of evacuees following evacuation is also an important consideration. Such procedures require careful and timely consideration of all factors.

Every bushfire attack scenario will be different. The response to each must therefore be specific and include consideration of the following:

- Location of fire;
- Fire behaviour including;
    - Rate and direction of spread;

    - Embers affecting the area;
    - Smoke affecting the area;
- Numbers of potential evacuees; and
- Availability of access.

The Manager of Building 4E, on becoming aware of a bushfire emergency, will take the following steps:

1. Ascertain the nature of the emergency or potential emergency situation and determine appropriate response using the Bushfire Emergency Management and Evacuation Plan;
2. Ensure each room is checked to ensure all visitors and staff are accounted for;
3. Utilise PA systems or the emergency system to alert all staff and visitors that a bushfire emergency has been declared;
4. Brief and co-operate with the Emergency Services personnel if/as required;
5. Check triggers for shelter in place and if appropriate move all staff and visitors to the designated area (office) and shut all windows and doors and activate air-conditioning;
6. If directed by NSW Police or the Combat Agency, evacuate off site to the St Clair Shopping Centre or alternative area as directed; and
7. If evacuation off site is not being undertaken, diligently maintain situational awareness and keep all staff and visitors within the Office until safe.

Evacuation Preparedness

1. Chief Warden (CW) is made aware of situation;
2. CW to consult the NSW RFS website or call NSW RFS for fire situation and updates;
3. CW has charged mobile phone and is contactable;
4. CW to arrange for fire situation to be communicated to staff and visitors; and
5. CW request visitors consider relocating to onsite shelter or another safe place offsite.

7.4. Observations / Situations

It's important that the Manager of Building 4E is aware of the various observations/situations and the associated triggers. These various situations each present a different level of risk to the site and when coupled with the Fire Danger on a particular day, trigger different management responses (see Section 8).

Figure 6 shows the key observation areas for the site.

Out of control fire <2km from site

Due to its proximity, any fires within 2km of the site are of concern and trigger immediate action. Depending on the weather, these fires have the potential to impact the site in a very short period of time and therefore make evacuating the site dangerous. In this scenario visitors and staff should be seeking shelter on-site.

Out of control fire within 10km of the site

While not currently close enough to cause immediate concern, gaining and maintaining good situational awareness is essential. On days of elevated fire danger, fires can move quickly through the landscape and can create spot fires a long way ahead of the main fire. On these elevated fire danger days, it may be safest to keep staff inside the warehouse.

Bushfires within region but not within 10km of site

No immediate threat to the warehouse, but good situation awareness is important. Monitoring the location of the fire and any new ignitions ensures quick and decisive action can be taken if required. On days of Catastrophic fire danger, the Manager may consider closing the Warehouse.

No Fires within Region

Nothing of concern, although good situation awareness is important, particularly on days of elevated fire danger as any new ignitions can quickly become a major threat to the site if quick and decisive action is not taken.

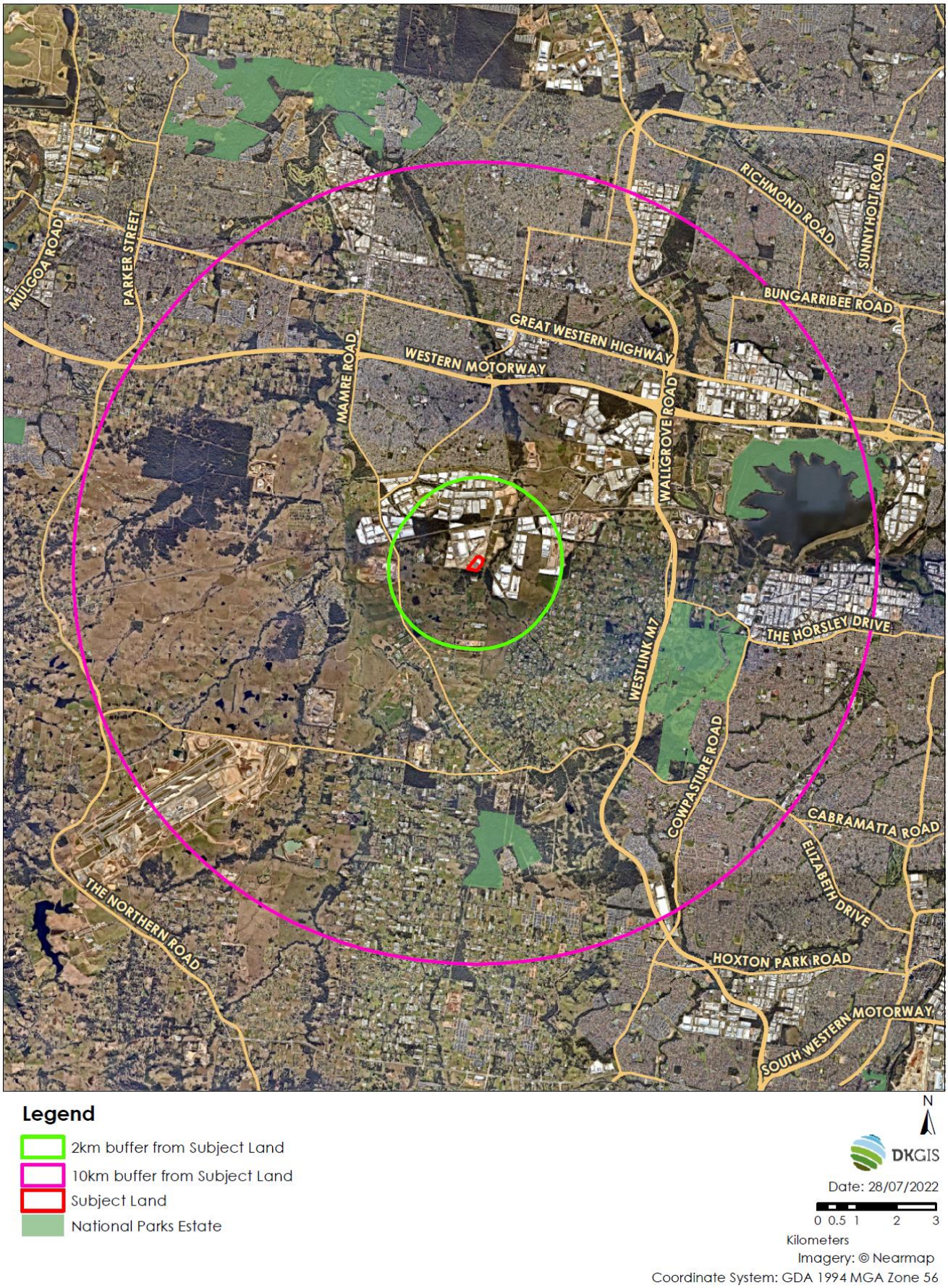


Figure 6: Observation areas.

8. Triggers for Action

The following is provided as a guide for action.

The staff and visitors to the warehouse should shelter on-site and only evacuate if safe to do so. Continued situational awareness is essential as is following instruction from emergency services.

Observation/ Situation	Fire Danger Rating						
	Low/ Moderate	High	Very High	TOTAL Fire Ban Declared	Severe	Extreme	Catastrophic
Out of control fire <2km from site	- Normal operation - Situational awareness - Be ready to move staff and visitors to Shelter in Place area	- Normal operation - Situational awareness - Be ready to move staff and visitors to Shelter in Place area	- Move staff and visitors to Shelter in Place area - Situational awareness		- Move staff and visitors to Shelter in Place area - Situational awareness	- Move staff and visitors to Shelter in Place area - Situational awareness	- Move staff and visitors to Shelter in Place area - Situational awareness
Out of control fire within 10km from site	- Normal operation - Situational awareness	- Normal operation - Situational awareness	- Normal operation - Situational awareness		- Normal operation - Situational awareness - Be ready to move staff and visitors to Shelter in Place area	- Normal operation - Situational awareness - Be ready to move staff and visitors to Shelter in Place area	- Move staff and visitors to Shelter in Place area - Situational awareness
Fires within Region but not within 10kms of site	- Normal operation - Situational awareness	- Normal operation - Situational awareness	- Normal operation - Situational awareness		- Normal operation - Situational awareness	- Normal operation - Situational awareness - Be ready to move staff and visitors to Shelter in Place area	- Normal operation - Situational awareness - Be ready to move staff and visitors to Shelter in Place area
No Fires within Region	- Normal operation	- Normal operation	- Normal operation		- Normal operation - Situational awareness	- Normal operation - Situational awareness	- Normal operation - Situational awareness

9. Post-bushfire Event Actions

The Manager of Building 4E decides when to re-open/ resume normal operations in the Warehouse, in consultation with local emergency services and based on review and confirmation of the safety of the site including:

- Confirm with Fire and Rescue NSW that utilities (water, electricity and gas) are safe to use;
- The air quality is safe and does not trigger health issues in visitors or staff; and
- All burnt areas and structures should be avoided until they have been checked for safety issues by a qualified person.

General housekeeping should include:

- Review buildings/structure integrity;
- Review tree integrity;
- Telecommunications/IT/equipment checks;
- Implement procedures to resume workplace activities including providing counselling and support to those affected by the incident; and
- Review Emergency Management and replenish First Aid stocks.

9.1. Debriefing

Debriefing after the event is critical to identify lessons learnt and to tighten procedures that will facilitate a better activation in future.

The aim of debriefing is to ensure that lessons learnt (both positive and negative) are applied for future bushfire events, not to lay blame on people for mistakes.

Debriefing should be conducted by an independent third party and should include key stakeholders activated during the event. The debrief should consider (at minimum):

- Fire behaviour and impact on the site and evacuation pathways;
- Activation procedures and trigger points;
- Communications;
- Implementation of the Evacuation Plan;
- Logistics;
- Performance of fire systems;
- Identification of training needs; and
- Information that can enhance the lessons learnt.

Debriefings should include a discussion of:

1. What you set out to do?
2. What actually happened?
3. Why things happened the why they did?
4. What could be done better next time?
5. What lessons can be applied across sites as a vulnerable community?

If the fire involved a critical incident, arrange for critical incident counselling.

Ensure injuries are recorded and reported.

Appendix 1 - Roles and Responsibilities

In accordance with Australian Standard AS 3745-2010, an Emergency Control Organisation (ECO) is to be established for the planning, preparation and implementation of the on-site evacuation and emergency procedures and is to consist of staff and or specialist providers with the following skills:

- Physical capability to perform the duties required;
- Strong leadership qualities;
- Maturity of judgement, good decision-making skills and capability to remain calm under pressure;
- Sound knowledge of the local area;
- Ability to be on site during the fire danger period; and
- Ability to complete the required training.

The ECO does not have a 'statutory standing'. It is to follow any instructions or advice from authorised Emergency Service personnel related to evacuation.

Each person in the ECO shall have clearly defined duties and responsibilities.

Implementation of the Evacuation Plan is the responsibility of the Manager of Building 4E with assistance and support from staff and NSW RFS and Emergency Services when required. The Manager of Building 4E will ensure that:

- The evacuation plan is updated annually;
- All staff are made aware of the existence of the Evacuation Plan and the Evacuation procedures to be adopted in the event of an emergency. Yearly training is to be provided for all staff in the implementation of the Evacuation Plan;
- The 'Evacuation Procedure' and map are displayed in strategic locations throughout site;
- Evacuation procedures are tested regularly. Evacuation Drills conducted twice a year and recorded;
- Deficiencies in the Evacuation Plan/evacuation management systems are reviewed, and changes implemented to address these deficiencies;
- Sirens (alarm system) on Fire units are tested and maintained on a regular basis; and
- A copy of the current plan is distributed to the Local Emergency Management Committee (LEMC) and emergency services.

The **Chief Warden** (Manager of Building 4E) is responsible for the following:

- Implementation of evacuation preparedness procedures;
- Management and overseeing of any evacuation; until relieved of this responsibility by the attending commanding officer of Emergency Services, or the Police;
- Supervision of the ECO;
- Ensuring the ECO achieves its responsibilities;
- Liaising with Emergency Services and maintaining the Emergency Service contact lists;
- Maintaining and displaying a current list of contact telephone numbers;
- Distributing a current 'Evacuation Plan' in August each year to the Local Emergency Management Committee (LEMC), the Local Emergency Management Officer (LEMO) and other appropriate authorities. (e.g. NSW Rural Fire Services, Fire and Rescue NSW); and
- Maintaining Chief Warden and Deputy Chief Wardens rosters.

Deputy Chief Warden

The appointment of the Deputy is to ensure continuity of the Chief Warden's functions during absences. The selection of the Deputy should be consistent with the selection criteria for the Chief Warden. The deputy should be fully trained and prepared to take over the primary role of the Deputy Chief Warden.

The Deputy Chief Warden is responsible for the following:

- Assisting with the notification and implementation of the evacuation;
- Assisting the Emergency Service personnel on their arrival, unless otherwise directed; and
- The Deputy Chief Warden will also be responsible for onsite evacuation and assembly areas, including setting up evacuee's registration system to check people into and out from Evacuation Areas.

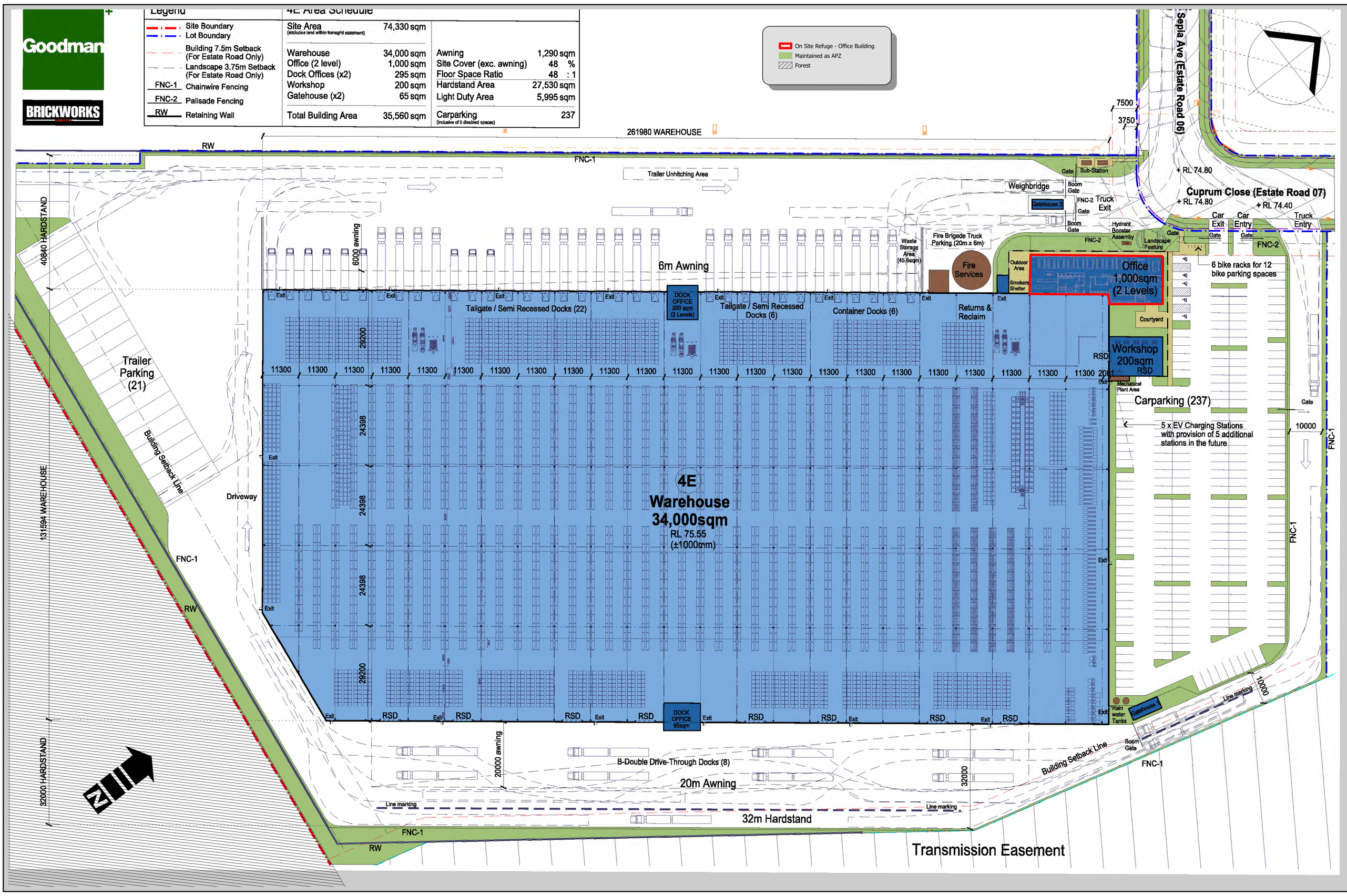
Appendix 2 - Glossary

assembly point	An area or building/structure that is used to assemble people for evacuation or that have evacuated from a site in an emergency situation.
Bushfire Attack	Attack by burning embers, radiant heat or flame generated by a bush fire.
District Emergency Management Officer (DEMO)	For emergency management purposes, NSW is divided into emergency management districts. Each Emergency Management District has a District Emergency Management Committee. The Committee is chaired by the District Emergency Operations Controller (DEOCON), supported by the District Emergency Management Officer (DEMO). The DEMO is also responsible for assisting local committees and communities within the relevant District on emergency management matters.
Emergency	An event that arises internally, or from external sources, which may adversely affect the occupants or visitors in a building, and which requires an immediate response.
Emergency Control Organisation (ECO)	The organisation formally responsible for managing a designated emergency or natural disaster incident
Emergency Planning Committee (EPC)	Persons responsible for the documentation and maintenance of an emergency plan.
Emergency warning and intercommunication system (EWIS)	A combined emergency warning and intercommunication system that facilitates both way communications and control during an emergency.
Evacuation	The orderly movement of people from a place of danger.
Fire Danger Index (FDI)	The chance of a fire starting, its rate of spread, its intensity and the difficulty of its suppression, according to various combinations of air temperature, relative humidity, wind speed and both the long- and short-term drought effects.
Local Emergency Management Officer (LEMO)	The State is divided into Local Government areas with a Local Emergency Management Committee for each area. This Committee is chaired by a senior representative of the council and is supported by a Council appointed Local Emergency Management Officer (LEMO).
Occupant	A person attending a building on a permanent or temporary basis, such as an employee, contractor, student, or resident, but not a visitor
On-site refuge	A building or open space within the premises that is able to accommodate the people that will shelter. The place is not under threat from a bushfire. The site provides a temporary refuge point within the site. Off-site evacuation should always be the first option.
Off-site evacuation point	A venue at another location some distance away that is able to accommodate all the people being evacuated. The place is not under threat from a bushfire.
Relocation	Movement of persons and/or organisations to an alternate area
State Environmental Planning Policy (SEPP)	State Environmental Planning Policy (SEPP) is a legislated policy that deals with issues significant to the state and people of New South Wales.
Sheltering	Procedures for a relevant situation where the safest course of action is to remain in a building or location.
Support needs	People with physical, intellectual, visual, or auditory disabilities or impairments, either temporary or permanent who require support. It also includes juveniles who are dependent on others for their care and wellbeing.

APPENDIX L

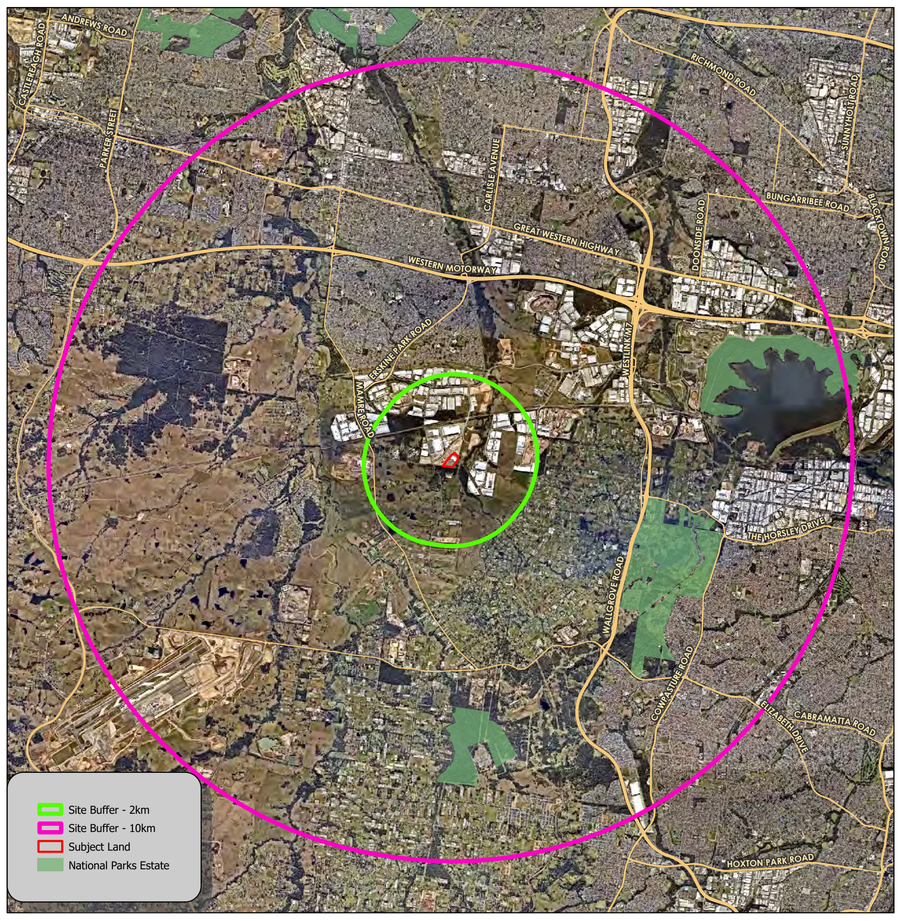
Fire Management Plan

Fire Management Plan
Building 4E Oakdale West



☒ Shelter ☐ Evacuate/Warehouse Closure

Type	Building 4E - Oakdale West Industrial Estate	
Contact Person	TBA Manager Building 4E	**Mobile:** TBA **Email:** TBA
	After Hours: TBA	**Phone:** TBA
On site shelter Location	Office	
Assembly point for off-site evacuation	Carpark	
Off-site evacuation	St Clair Shopping Centre	
Alternate off-site evacuation	Rooty Hill RSL Club	



Emergency Contacts

Organisation	Office	Phone
Emergency	General emergency number Fire/ Police/ Ambulance	**000**
NSW Police	St Marys Police Station, 38-42 King Street, St Marys	9677 7499 **000**
NSW Rural Fire Service (Cumberland)	8-12 Jeanette Street, Regentville	4734 7777 **000**
NSW Rural Fire Service (Nearest)	367-377 Cnr Mamre Road and Luddenham Road, Luddenham	9670 5353 **000**
NSW Rural Fire Service	Bushfire Information Line	1800 679 737
Fire and Rescue NSW (St Marys)	1 Marsden Road, St Marys	9493 1077 **000**
Fire and Rescue NSW (Mt Druitt)	81 Railway Street, Mount Druitt	9625 4403 **000**
Penrith City Council	Penrith Civic Centre, 601 High Street, Penrith	4732 7777
St Clair Shopping Centre	155 Bennett Road, St Clair	9834 5318
Rooty Hill RSL Club	33 Railway Street, Rooty Hill	9625 5500

Observation/ Situation	Fire Danger Rating						
	Low/ Moderate	High	Very High	TOTAL Fire Ban Declared	Severe	Extreme	Catastrophic
Out of control fire <2km from site	- Normal operation - Situational awareness - Be ready to move staff and visitors to Shelter in Place area	- Normal operation - Situational awareness - Be ready to move staff and visitors to Shelter in Place area	- Move staff and visitors to Shelter in Place area - Situational awareness		- Move staff and visitors to Shelter in Place area - Situational awareness	- Move staff and visitors to Shelter in Place area - Situational awareness	- Move staff and visitors to Shelter in Place area - Situational awareness
Out of control fire within 10km from site	- Normal operation - Situational awareness	- Normal operation - Situational awareness	- Normal operation - Situational awareness		- Normal operation - Situational awareness - Be ready to move staff and visitors to Shelter in Place area	- Normal operation - Situational awareness - Be ready to move staff and visitors to Shelter in Place area	- Move staff and visitors to Shelter in Place area - Situational awareness
Fires within Region but not within 10kms of site	- Normal operation - Situational awareness	- Normal operation - Situational awareness	- Normal operation - Situational awareness		- Normal operation - Situational awareness	- Normal operation - Situational awareness - Be ready to move staff and visitors to Shelter in Place area	- Normal operation - Situational awareness - Be ready to move staff and visitors to Shelter in Place area
No Fires within Region	- Normal operation	- Normal operation	- Normal operation		- Normal operation - Situational awareness	- Normal operation - Situational awareness	- Normal operation - Situational awareness

Decreasing risk - **Increasing risk**

APPENDIX M

Sustainability Management Plan

OAKDALE WEST - LOT 4E

Sustainability Management Plan

Prepared for:

Goodman Properties Services (Aust.) Pty Ltd
1-11 Hayes Road
Rosebery NSW 2018

SLR Ref: 610.30399-R01
Version No: v1.0
June 2021

PREPARED BY

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BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Goodman Properties Services (Aust.) Pty Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the610 agreed scope of the work.

DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
610.30399-R01-v1.0	24 June 2021	Dr Neihad Al-Khalidy	Horatio Cai	Dr Neihad Al-Khalidy
610.30399-R01-v1.0	10 June 2021	Dr Neihad Al-Khalidy	Horatio Cai	Dr Neihad Al-Khalidy

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1 INTRODUCTION

SLR Consulting Australia Pty Ltd (SLR) has been engaged by Goodman Property Services (Aust.) Pty Ltd to prepare a Sustainability Management Plan (SMP) for the proposed warehouse and distribution facilities, Building 4E of Oakdale West Industrial Estate (the Project).

The Oakdale West Estate Concept Proposal and Stage 1 DA is classified as State Significant Development (SSD) on the basis that it falls within the requirements of Clause 12 of Schedule 1 of State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP).

This report will form part of the Development Application to the Penrith City Council and this study has been prepared in accordance with the Secretary's Environmental Assessment Requirements (SEARs) for the State Significant.

1.1 Objectives of the Study

The principal objective of this Sustainability Management Plan is to identify all potential energy savings that may be realised during the operational phase of the Project, including a description of likely energy consumption levels and options for alternative energy sources such as solar power in accordance with Council requirements.

The specific objectives of this plan are as follows:

- To encourage energy use minimisation through the implementation of energy efficiency measures;
- To promote improved environmental outcomes through energy management;
- To ensure the appropriate management of high energy consumption aspects of the Project;
- To identify energy savings procedures for overall cost reduction, greenhouse gas emission reduction and effective energy management;
- To assist in ensuring that any environmental impacts during the operational life of the development comply with Council's development consent conditions and other relevant regulatory authorities; and
- To ensure the long-term sustainability of resource use through more efficient and cost-effective energy use practices for the life of the development

2 SUSTAINABILITY MANAGEMENT GUIDELINES AND LEGISLATION

2.1 Building Code of Australia

The Building Code of Australia (BCA) is produced and maintained by the Australian Building Codes Board (ABCB) on behalf of the Australian Government with the aim of achieving nationally consistent, minimum necessary standards of relevant health and safety, amenity and sustainability objectives efficiently. The BCA contains mandatory technical provisions for the design and construction of BCA class buildings.

Volume 1, Section J of the BCA outlines energy efficiency provisions required for BCA class buildings (including Class 7b Warehouses and Class 5 Offices). There are 8 Deemed-to-Satisfy subsections, J1 to J8, that focus on separate aspects of energy efficiency as follows:

- J1 - Building Fabric (i.e. the ability of the roof, walls and floor to resist heat transfer)
- J2 - External Glazing (i.e. the resistance to heat flow and solar radiation of the glazing)
- J3 - Building Sealing (i.e. how well parts of a building are sealed to ensure comfortable indoor environments are efficiently maintained)
- J4 - Air Movement (i.e. the provision of air movement for free cooling, in terms of opening and breeze paths)
- J5 - Air Conditioning and Ventilation Systems (i.e. the efficiency and energy saving features of heating, ventilation and air-conditioning systems)
- J6 - Artificial Lighting and Power (i.e. power allowances for lighting and electric power saving features)
- J7 - Hot Water Supply (i.e. the efficiency and energy saving features of hot water supply)
- J8 - Access for Maintenance (i.e. access to certain energy efficiency equipment for maintenance purposes)

2.2 SSD SEARs

The SEARs of the Oakdale Site include the following requirement:

- **Greenhouse Gas and Energy Efficiency** – including an assessment of the energy use on-site and all reasonable and feasible measures that would be implemented on-site to minimise the development's greenhouse gas emissions.
- **Ecologically Sustainable Development** – including a description of how the development will incorporate the principles of ecologically sustainable development in the design, construction and operation of the development.

3 DESCRIPTION OF THE PROJECT

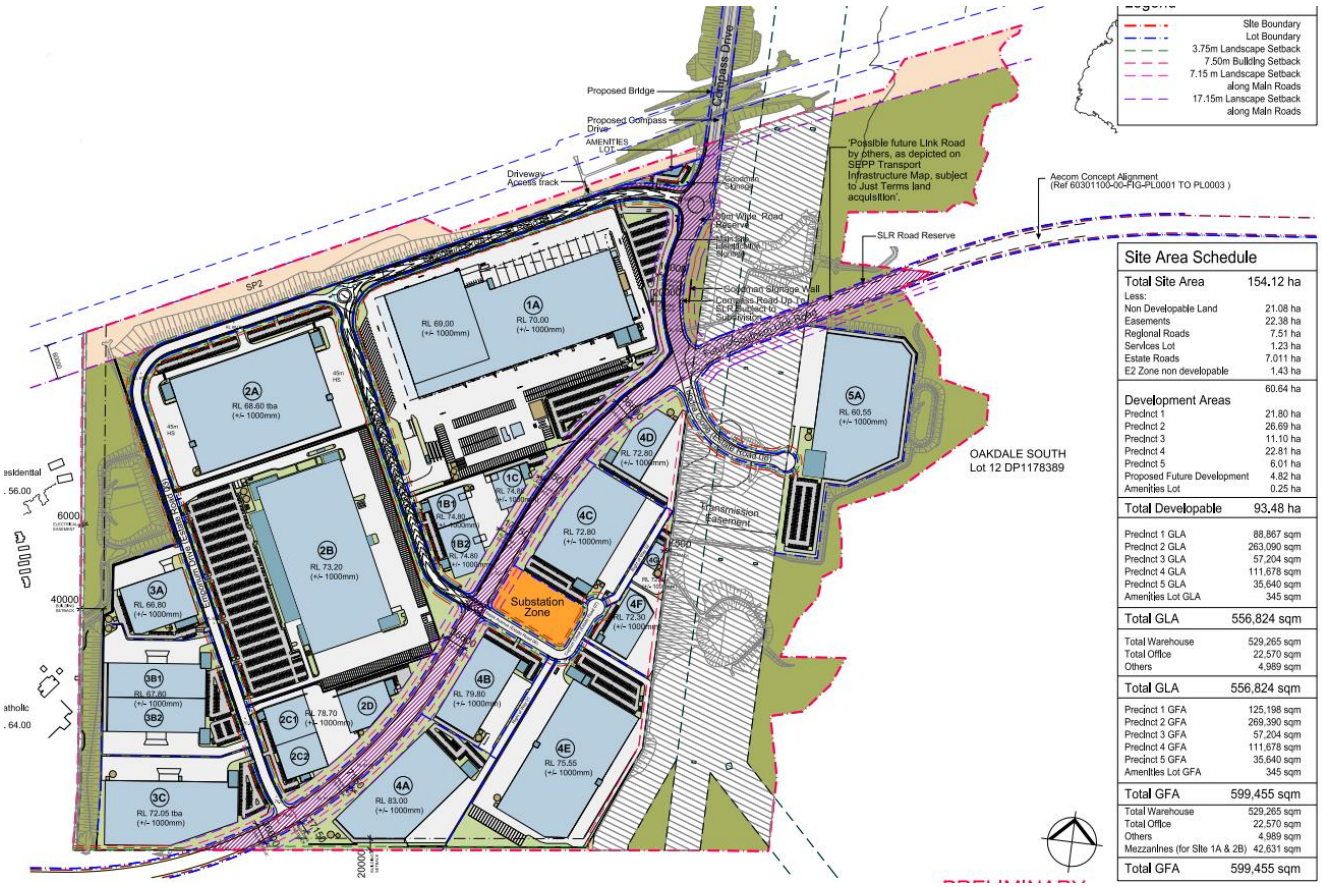
Goodman Property Services (Aust) Pty Ltd is developing the Oakdale West site at Lot 26 in DP 1269741 in Kemps Creek. This site will be comprised of Industrial warehouses and office precincts, including internal roads, car parking spaces and hardstand.

The proposed development comprises the construction of Building 4E within Precinct 4 of the Oakdale West Estate and its fit out and use as a warehouse and distribution centre with one tenancy. The proposal includes ancillary office space, car and truck parking, loading bays, landscaping, solar panels and signage for each tenancy. The proposed development will facilitate warehouse and distribution uses consistent with the IN1 General Industrial zone under the State Environmental Planning Policy (Western Sydney Employment Area) 2009.

The project is a staged development which includes bulk earthworks, civil works and the construction of infrastructure and stormwater management. The project is a staged development which includes bulk earthworks, civil works and the construction of infrastructure and stormwater management. The overall Oakdale West Masterplan is shown in **Figure 1**.

The current study covers the sustainability management plan and greenhouse gas reduction for the proposed warehouse and distribution facilities of Precinct 4, Lot 4E (the Project).

Figure 1 Oakdale West Estate Master Plan – MOD 7



3.1 Overview of Proposed Development

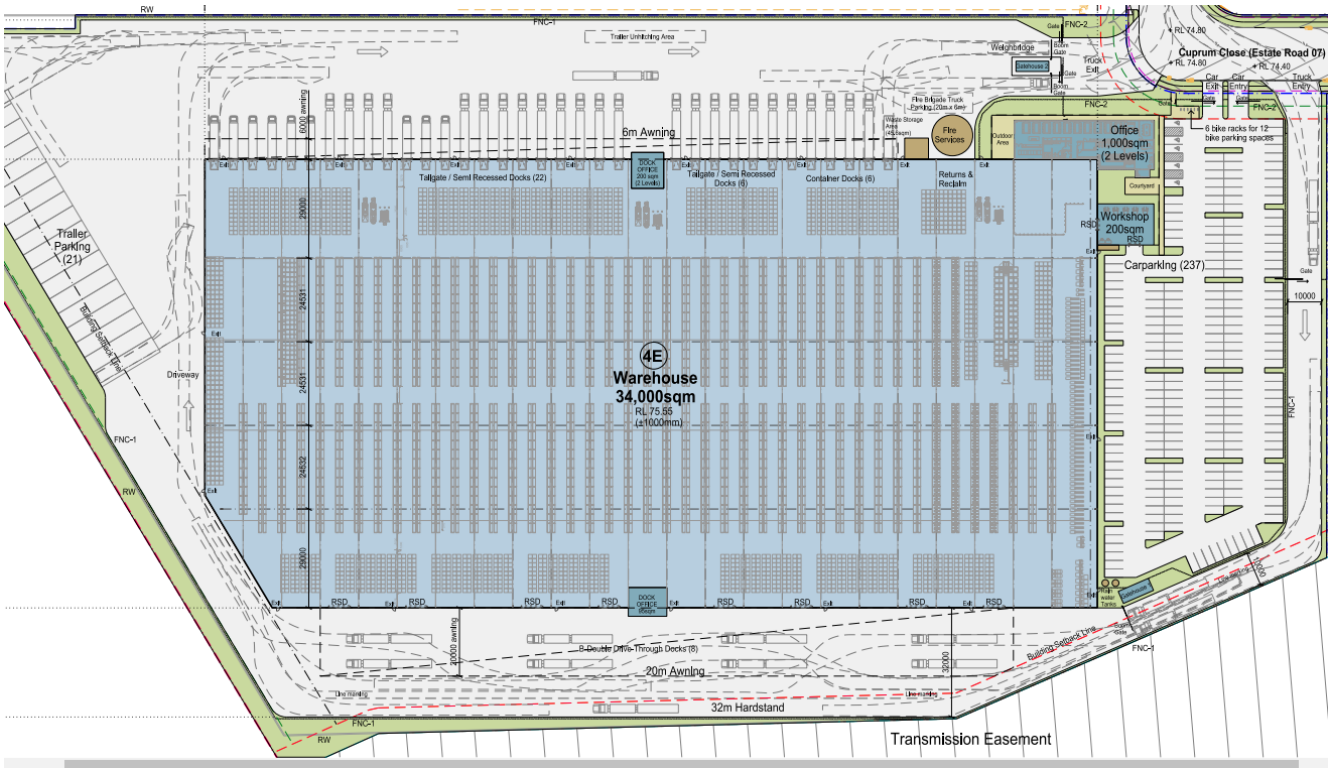
The site area comprises 74,330 m^2 and the total building area is 35,560 m^2. The Overall building areas are outlined in **Table 1**.

Table 1 Building Areas

Site Area	Lot 4E
Warehouse	34,000 m^2
Office (2 level)	1,000m^2
Dock Office (x2)	295 m^2
Gatehouse (x2)	65 m^2
Workshop	200 m^2
Awning	1,290 m^2
Hardstand Area	27,530 m^2
Light Duty Area	5,995 m^2
Car Parking	237

Further details of the Lot 4E development are shown in **Figures 2**

Figure 2 Oakdale West Estate: Building 4E



4 OPERATIONAL ENERGY MANAGEMENT

Ineffective energy management for industrial and commercial premises can lead to unnecessary growth in greenhouse gas emissions and consumption of natural resources. Effective energy management reduces costs using energy efficiency measures and improves environmental outcomes locally, regionally and globally.

Effective energy management is achieved through the implementation of a Sustainability Management Plan (SMP) for the operational life of the Project.

4.1 Identified Major Energy Use Components

The major energy use components of the Project Site have been identified below based on information available within the Project Design Brief.

- Lighting (include natural and artificial lighting and shading);
- Air Conditioning; AND
- Power.

4.2 Energy Sources

The main source of energy for the proposed site is electricity.

5 SUSTAINABILITY MEASURES COMMITMENTS

5.1 Documentation

The documentations used in this report is listed in **Table 2**.

Table 2 Project Documentation Sources

Document Type	Document Number	Issue Date
Architectural Drawing	OAK 4E DA 30 (A) Drawing Set	23/06/2021
	OAK 4E DA 31 - 34 (PA) Office Plan	24/06/2021
Goodman - Industrial - Design Brief - Base Building Rev 06	Project no 190119	04/06/2019

Energy Efficiency measures have been recommended and approved for project implementation and have informed the sustainability assessment of this project – they are listed in **Table 3**.

Table 3 ESD Assessment Summary

Category	Objective	Proposed Target	Proposed Strategy	Commitment	Comment
Design & Management	• Documentation of design intent and expected outcomes. • Appropriate commissioning.	• Communicate sustainability initiatives and operation to building users. • Commissioning and building tuning required by contractors and reviewed for 12 months after completion.	• Provision of Building Users Guide. • Investigate costs and viability of commissioning and building tuning requirements and appointing an independent commissioning agent. • Independent consultant to perform quarterly tuning of fire, mechanical, electrical, hydraulic services.	✓ ✓ ✓	• SLR recommends the preparation of Building User Guide that enables building users to optimise the building's environmental performance. • A sub-contractor will be engaged to maintain the facility in accordance with the operations and maintenance manuals during the 12-month defects liability period.
Façade Performance	• Optimised façade performance.	• Achieve minimum performance requirements under NCC Section J1 and J2. • Reduce heat gain through the warehouse façade.	• Meet or exceed NCC Section J1 and J2 façade performance for conditioned spaces. • Light coloured roofing with high reflectivity and appropriate insulation to reduce solar heat gain into the warehouse. • Daylight: evenly spaced translucent roof sheeting to warehouses areas. • Performance glazing in office spaces appropriate to the window size and orientation.	✓ ✓ ✓ ✓	• NCC Section J report needs to be prepared by a qualified ESD consultant. • This warehouse will comply with all the requirements specified within the report during construction stage. • Colourbond roof sheeting which has a higher solar reflectivity is proposed. • As per project NCC Section J report.

Category	Objective	Proposed Target	Proposed Strategy	Commitment	Comment
Social Sustainability	• Consider design with due regard to occupant satisfaction in accessibility, usability, Indoor air quality and public space utility.	• High level of occupant satisfaction. • Provide external as well as internal comfort.	• Flexibility of space for potential future configurations. • Use of Low VOC paints, carpets and sealants. • Consider Landscaping and dense planting. • Consider occupant user control eg A/C systems, glare reducing strategies, lighting etc.	✓ ✓ ✓ ✓	• The design will incorporate open offices, client rooms, meeting rooms, lunch room and outdoor seating area • Low VOC paints, carpet and sealant will be used • Refer proposed landscaping, Architectural Drawings • Selection of endemic and low maintenance landscaping species • Both AC and lighting control is provided to offices and warehouses.
Minimising Transport Impact	• Consider location with links to public transport and employee services. • Consider location to reduce operational transport. • Consider the impact of industrial trucks on local traffic.	• Reward drivers of fuel-efficient vehicles by providing spaces for small cars and or motorbikes. • Provide alternatives to single-occupancy vehicles. • Reduce operational fuel consumption through close proximity to major arterial roads. • Reduce the impact of operational traffic on local communities.	• Consider providing 10% of total parking spaces for small cars and 5% for motorbikes situated near the office entrance. • The site is located within close proximity (<5km) to both the M7 and M4 motorways. • The roads linking the site to the motorways are predominantly used for industrial traffic, as such the traffic is unlikely to impact on local areas.	✓ ✓	• SLR recommends providing spaces for small cars, electrical vehicle and/or motorbikes. • Due to the location of the site, it is considered that staff bicycle riding will be unlikely, although if staff surveys indicate a preference for cycling, consider appropriate amenities. • Car park numbers and provision for 5 disabled parking is provided in accordance with Consent Authority requirements. Refer Architectural Drawings

Category	Objective	Proposed Target	Proposed Strategy	Commitment	Comment
Optimising IEQ	• Optimise natural light to work environment. • Optimise fresh air ventilation. • Consider Thermal Comfort of occupants. • Consideration of noise transference in space planning. • Minimise use of materials that emit volatile organic compounds. • Create a pleasant working environment.	• Daylight: Daylight Factor (DF) of at least 2% at finished floor level under a uniform sky for at least 60% of the GLA. • Thermal comfort: 95% of office areas have PMV levels between -1 and +1 for 98% of the year; Warehouse spaces include passive thermal comfort strategies. • Finishes: 95% of all paints, adhesives & sealants and all carpet and flooring to be low-VOC finishes; use low-formaldehyde wood products. • Electric lighting levels: 95% of GLA has a lighting system that is flicker free and has a maintained illuminance of no more than 25% above those recommended in AS1680.2.4, 2.1 and 0.1. • Reduce visual glare.	• Daylight: rationalised glazing to offices; high performance glass. • Daylight: evenly spaced translucent roof sheeting to warehouses areas. • Thermal comfort: Office envelope and HVAC system designed to meet thermal comfort requirements; • Provide sufficient roof and wall insulation to the air-conditioned spaces; • Finishes: Specify and track correct finishes and wood products. • Provide pleasant indoor and outdoor breakout spaces with sufficient daylight and plants. • Lighting: Good light fixtures and well-designed layout. • Ventilation: Consider increased fan and duct sizing. • Provide sufficient shading and blinds with rationalised glazing for visual and thermal comfort.	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	• High performance glazing to all air-conditioned areas to satisfy Section J requirements • Translucent roof sheeting is recommended. • Refer Section 5.5 of this report for proposed set up temperatures • Insulation as per the NCC requirements • LED lighting and lighting controls to warehouse and offices. • Adequate ventilation will be supplied in accordance with AS1668. • Shown on the Architectural Drawings

Minimising Energy Use	• Consider passive design to minimise energy use such as orientation, ventilation, shading and floor plate design. • Appropriate sizing of plant and equipment in heating and cooling, lighting, control systems, • Building management systems and renewable energy sources. • Reduce reliance on connection to grid electricity and gas.	• Target a 20% reduction in Greenhouse gas emissions. • Energy sub-metering for all major uses greater than 100kVa; linked to monitoring system. • High efficiency warehouse lighting and controls. • Reduce energy for water heating. • Integrated building management. • Consider renewable energy generation for a portion of energy consumption and/or consider future-proofing the building for future installation. • Reduce urban heat island effect and heat load through the roof by providing a highly reflective roof. • Reduce office equipment load from 20W/m² to 15W/m². • Optimise insulation for energy and thermal comfort.	• Roof Insulation, External Wall Insulations, Reduced Glazing area and associated heat loss in winter. • Consider office air conditioning temperature set-points for an increased comfort band. • Provide energy efficient T5 lighting, with zoning and automatic controls where reasonable. • Consider LED lighting strategies and advanced controls. • Consider a solar hot water system or a heat pump. • Sub-metering: install appropriate metering; develop metering and tracking strategy to allow for self-assessment, problem solving and ongoing improvements during operations • Use roofing material that has a high Solar Reflective Index • Investigate current insulation design and determine proposed options.	✓ ✓ ✓ ✓ ✓ ✓ ✓	• Building fabric and insulation as per the NCC requirements • Design brief sets the temperature - Refer Section 5.5 of this report. • LED lighting to warehouse and offices. • Lighting controls to warehouse and offices. Solar hot water or heat pump system • Sub meters for major energy/water uses . • Colourbond roof sheeting which has a higher solar reflectivity is proposed. • As per project NCC Section J report.

Category	Objective	Proposed Target	Proposed Strategy	Commitment	Comment
Choosing Materials	• With consideration to energy inputs in manufacture. • Toxicity. • Consequential impacts – rain forest timbers. • Regional or local manufacturer employment support.	• Reduce steel and cement in internal slab (10% reduction in embodied energy). • Reduce embodied energy in concrete and plasterboard elements. • Consider 95% of timber to be AFS or FSC certified. • Reduce emissions associated with insulation and refrigerant. • Reduce environmental impact of materials for tiling, awning.	• Jointless fibre reinforced slab. • Use pre-cast concrete panels with recycled content.	✓ ✓	To minimise the environmental impacts of materials used by encouraging the use of materials with a favourable lifecycle assessment based on the following factors: • Fate of material • Recycling / re-use • Embodied energy • Biodiversity • Human health • Environmental toxicity • Environmental responsibility.

Category	Objective	Proposed Target	Proposed Strategy	Commitment	Comment
Minimising Waste	• By clever design. • Contracted to builder as a requirement on site for construction waste. • During the life of the building. • And in dealing with building end of life options.	• Reduce construction waste going to landfill by 90%. • Reduce operational waste going to landfill. • Consider a design that can be disassembled at the end of the building's life.	• Contractor is to develop and implement a Waste Management Plan and track all waste going offsite to show that 90% of all construction waste is re-used or recycled. • Waste storage and recycling facilities to be provided for different operational recycling streams such as paper, glass, plastics, metals, food waste etc. Consider operational waste plans and training for staff to provide incentive to reduce waste.	✓ ✓	• SLR recommends more than 70% of the predicted construction waste arising from development can be re-used (on-site or at another development) or recycled off-site. Refer project Waste Management Plan. • The following waste avoidance measures are recommended in the Waste Management Plan for the Project: - Provision of take back services to clients to reduce waste further along the supply chain.
Water Conservation and Reuse	• Monitoring of meters to track use. • Timely maintenance of fixtures and fittings. • Water sensitive landscape design. • Source potable water alternatives such as rain water harvesting, grey and black water treatment.	• Reduce potable water in internal fixtures. • Reduce potable water for irrigation. • Water efficient operation of appliances. • Utilise rainwater and/or recycled water.	• Water efficient sanitary taps and toilets. • Water efficient and drought tolerant landscaping. • Water and energy efficient dishwasher. • Rainwater collection for toilets, irrigation and truck wash down.	✓ ✓ ✓ ✓	• Low flow fixtures and fitting including taps and shower heads • Selection of endemic and low maintenance landscaping species • SLR recommends water efficient dishwashers • 40 kL Rainwater tanks have been proposed for rainwater harvesting and re-use for landscape irrigation and flushing of toilets.

Category	Objective	Proposed Target	Proposed Strategy	Commitment	Comment
Land Use and Ecology Impact	• Consider local biodiversity impacts of flora and fauna. • Look to specialist advice on land in development.	• Encourage biodiversity. • Reduce light pollution from the site. • Consider reducing impact of stormwater flows off the site into the natural watercourses including Ropes Creek adjacent to the site.	• Install indigenous plating appropriate to the area and the adjacent biodiversity lots. • Design external lighting to avoid emitting light into the night sky or beyond the site boundary. • Consider integrated stormwater management to minimise the impact on receiving waters of flow volumes and pollution content, eg bioswales, bio retention, OSD tanks and treatment. • Consider permeable concrete/paving for staff parking areas and footpaths, etc.	✓ ✓ ✓ ✓	Selection of endemic and low maintenance landscaping species LED lights have been proposed for all external lights to avoid emitting light The warehouse sustainability objectives include: • Reduce the impact of stormwater runoff and improve quality of stormwater runoff • Achieve best practice stormwater quality outcomes • Incorporate water sensitive urban design principles.

5.2 Baseline and Proposed Energy Consumption

An NCC Sections J Deem-to-Satisfy compliant building is used as the baseline building for energy consumption savings. NCC Section J provides the minimum requirement for energy efficiency and it is predicted that the proposed development will have more than 157% energy reduction - refer **Section 5.8** for the energy simulation results. The reduction has been enabled via:

- All luminaire shall be low energy LED type;
- Warehouse lighting is generally to be zonally controlled via motion sensor;
- Office lighting shall be controlled via dual technology infrared/ultrasonic sensor;
- Daylight harvesting function to office with external windows;
- Efficient air conditioning system; and
- Translucent sheets to the warehouse to receive daylight.

All building information and associated parameters are listed in the following sections of this report.

5.3 Artificial Lighting

In Section J6 of the NCC, the requirement for the total lighting power load within the proposed spaces of a building is to be no greater than a maximum illumination power load, measured in Watts (W). The maximum allowable building illumination power load is based on the total illumination power load calculated for each space.

For artificial lighting, the aggregate design illumination power load must not exceed the sum of the allowances. This may be obtained by multiplying the area of each space by the maximum illumination power density (as found in Table J6.2a of the NCC 2019 Volume One). The maximum illumination density for a storage warehouse is 4 W/m² as per Table J6.2a of the NCC 2019 Volume One.

The proposed warehouses will adopt the following energy efficiency measures to reduce the lighting energy consumptions:

Office lighting

- LED fitting for offices.
- Occupancy sensors to low occupancy areas e.g. office, toilets and lunch room.

Warehouse lighting

- LED fitting for warehouse.
- Occupancy sensors to low occupancy areas.

Outside lighting

- LED external lighting for all outside areas.
- External lighting will be controlled via daylight sensor (photocell).

Electrical lighting is the major energy reduction component for warehouse with a large footprint.

The lighting calculation for NCC reference building is based on the maximum illumination power density specified within NCC Table J6.2A as below:

- Warehouse = 4 W/m^2
- Offices = 4.5 W/m^2

The electrical lighting layout of the proposed building is not provided at the time of preparing this report. It is assumed the maximum design lighting power density will be achieved as below:

- Warehouse 3.5 W/m^2
- Offices 4 W/m^2

Therefore, the proposed building is likely to achieve a 12% lighting energy reduction when compared with reference building. Detailed calculation is shown in **Appendix A.**

5.4 Mechanical Air-Conditioning

The mechanical service design is not available at this stage. Performance reverse cycle package units to offices with individual controls. As per the mechanical specification of the Tenant Base Building Specification, air conditioning to be designed to the BCA/NCC section J and other statutory authorities and applicable Australian standards.

As per the mechanical specification of the Goodman's Tenant Base Building Specification, air conditioning to be designed to the BCA/NCC section J and other statutory authorities and applicable Australian standards.

Air-conditioning Temperature Control and Set point – refer Table 4

Table 4 AC Unit Temperature Control Range

Space Type	Temperature Control Range (°C)
Offices	22.5±1.5°CBD

Air-conditioning Energy Efficiency Requirements

2019 NCC Section J5.11 has specified the minimum energy efficiency ratios requirements for package air conditioning equipment.

Table 5 BCA Unitary Plant Requirement

Office Equipment	Minimum Energy Efficiency Ratio	
	NCC Requirement	Proposed System [1]
Cooling	2.9	4
Heating	2.9	4

Note 1: Detailed Mechanical design is not available at this stage. It is assumed that the proposed package system will achieve the performance requirements above.

When the air flow rate of a mechanical ventilation system is more than 1000L/s, the system must have a variable speed fan when its supply air quantity is capable of being varied.

Details or NCC Section J5 certification demonstrating compliance will need to be submitted with the application for a Construction Certificate

5.5 Building Fabric Requirements

Parts J1 to J3 of the BCA Section J contain the requirements of the Deemed-to-Satisfy compliance of the building fabric. The purpose of this subsection is to ensure that the building fabric will provide sufficient thermal insulation to minimise heating and cooling loads placed on the building and the commensurate energy consumption HVAC systems servicing internal building spaces.

All fabrics of the proposed building shall comply with NCC Section J. A Project Section J report will need to be submitted with the application for a Construction Certificate.

5.6 Domestic Hot Water (DHW)

The BCA specifies the thermal efficiency for hot water systems to be at least 80%. The solar hot water reticulation system shall be provided to all faucets' fittings, equipment and apparatus within the development. Hot water will be generated from the roof mounted solar water packaged plant.

With the installation of water efficient fixture, the hot water consumption will be decreased and thus the domestic hot water usage will also decrease. If the domestic hot water usage is less than the energy required to heat to the water also decreases. Moreover, the supplement natural gas consumption will be reduced by using the proposed solar hot water system.

The energy simulation in this analysis is assumed both reference and proposed building are using same gas fired boiler for DHW. The actual energy consumption will be reduced once solar hot water or electrical heat pump is adopted for the proposed building.

5.7 Estimated Annual Energy Consumption

- The proposed building is likely to achieve a 12% lighting energy reduction when compared with reference building. Refer **Section 5.3**
- At least 750 kW of PV solar system has been proposed.
    - The proposed 750 kW PV solar system will offset 1,040,250 kWh/year of energy usage
- The design of the air conditioning system for the proposed development is not progressed at this stage. SLR has previously modelled a number of warehouses for the Oakdale West site and it is anticipated that the energy usage for air-conditioning and mechanical ventilation system is between 25 – 35 kWh/m^2 for the reference building and 20 – 27 kWh/m^2 for the proposed building. Refer **Table 5** for energy efficiency requirements for the air conditioning system for the office component of the proposed development.

The predicted Total Annual Energy Consumption of the NCC Reference Building and the Proposed Building is summarised in **Table 6**.

Table 6 Comparison of Annual Energy Consumption Between the Reference and Proposed Building

Electricity Usage	Reference Building (MWh)	Proposed Building (MWh)
Heating/Cooling/Auxiliary	30	23.5
Lighting	694.4	609.11
Equipment[1]	assumed identical	assumed identical
DHW[1]	assumed identical	assumed identical
PV System	-	-1,040.25
Total	**694.4**	**-400.71**

Note 1 These items are specific to a tenant's Fitout -hence assumed to be the same for the Reference and Proposed Buildings

By implementing all energy efficiency measures described in **Section 6**, the project is predicted to achieve a 157% GHG emission reduction when compared with NCC Reference Building.

6 POTABLE WATER CONSUMPTION

It is proposed that the Project will have a number of sustainable water-saving measures, including:

- Rainwater reuse and reticulation system – Rainwater will be harvested from the roof and reuse for irrigation and toilet flushing. The reticulation will be a separate system to the domestic cold water with domestic water top up in the event of insufficient rainfall;
- Use of water saving plumbing devices; and
- Water sensitive landscape design.

Further to above sustainable water measures, the following items will be considered during the detailed design stage:

- Water efficient sanitary taps and toilets – install higher WELS Rating sanitary fixtures such as 4 stars for water taps, urinals and toilet.
- Water and energy efficient dishwashers with minimum 4-star WELS water rating.

By installing 4 star rated toilets, urinals and taps and the proposed rainwater harvesting facility, the proposed development will reduce its potable water demand by approximately 35%.

The quantities of each water fittings are calculated from the office plan drawings (Refer **Figure 3** and **Figure 4)** and listed in **Appendix B**.

Figure 3 Oakdale West Estate 4E Office Plan

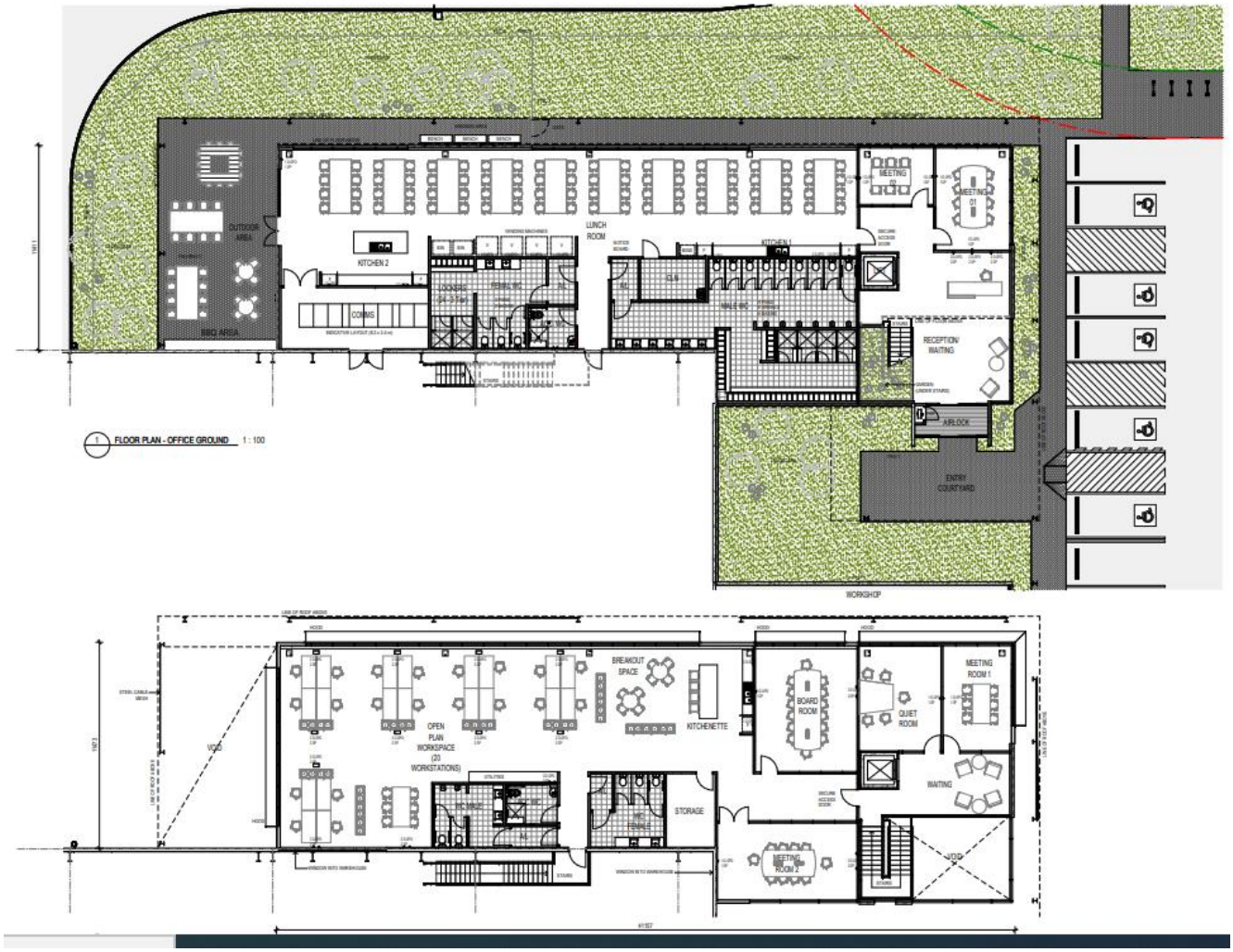
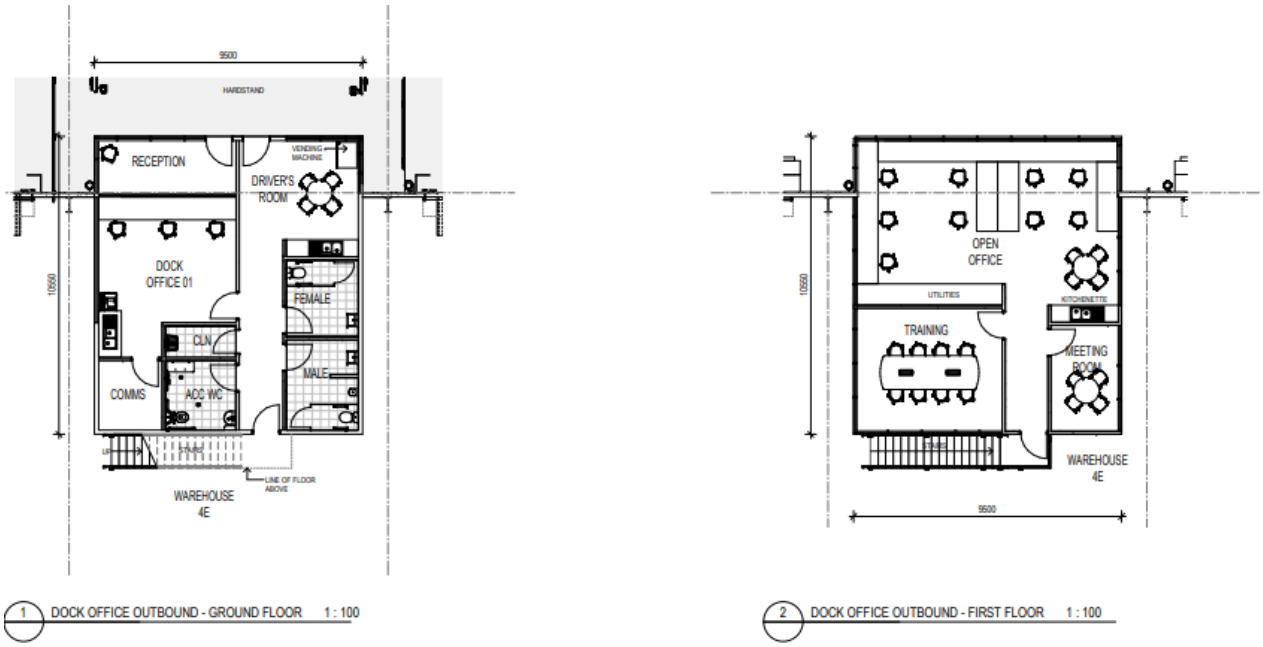
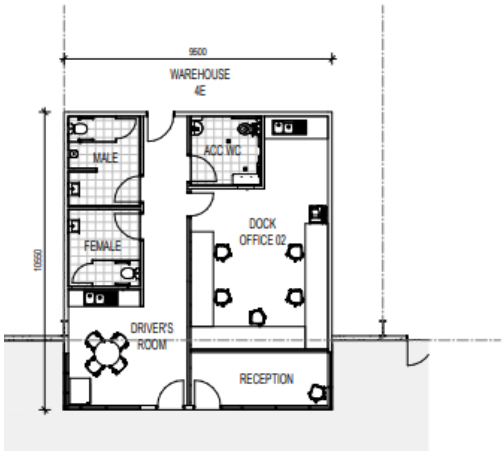


Figure 4 Oakdale West Estate 4E Dock Office





7 MONITORING AND REPORTING

All committed sustainability-related measures need to be commissioned and tuned once the project is completed, to ensure all services operate to their full potential and as designed.

As specified within the Tenant Base Building Specification, the building tuning will be provided by service contractors and overseen by an independent assessor, at least once a month within the Defects Liability Period (DLP) period to ensure that services are operating effectively and efficiently. Monthly reports to be provided to the tenant for DLP.

7.1 Energy Review and Audit

An energy usage review should be undertaken within the first few months of operation to ensure the Energy Management Plan is sufficient for the development's needs. A breakdown of energy usage per month at the Project Site will help to measure the development's baseline energy use and assess what appliances, equipment and processes are consuming energy.

An energy review is also necessary for the assessment of energy utilisation to further identify opportunities for improvement. Energy usage data obtained during the review process may be used to establish key performance indicators and annual energy targets for the Project.

Energy usage to be included in the review should include all purchased electricity and energy which is consumed by stationary equipment on site. Energy consumed by mobile equipment (e.g. forklifts) should also be examined as this will identify variations in warehouse operation efficiency. (Refer to 'Guidelines for Energy Savings Action Plans' (2005) (as developed by the former Department of Energy, Utilities and Sustainability) for reporting templates and further information.)

An energy audit and management review should also be undertaken on a half-yearly basis to ensure employees are following energy savings procedures correctly. Where audits show that energy savings procedures are not carried out effectively, additional employee training should be undertaken and signage and procedures re-examined.

The Energy Management Plan should be progressively improved and updated on an annual basis, or as required, to reflect changes to the Energy Management System and to promote continual improvement of energy management at the Project Site.

7.2 Energy Metering and Monitoring

To enable effective review of energy usage by the project, sub-metering should be implemented for all major energy consuming processes or items of equipment including sub-metering for all loads greater than 100 kVA.

Electrical equipment should be maintained to Australian Standards to ensure unnecessary energy wastage is minimised. Roof access system is proposed for third party access to roof for carry out necessary maintenance as required.

In accordance with the Goodman's Industrial Building Specification, a Building Users' Guide is to be prepared for the Project. The Building Users' Guide provides details regarding the everyday operation of a building and should include energy minimisation initiatives such as natural ventilation strategies, user comfort control, maintenance of air conditioning units and other electrical devices to ensure maximum operating efficiency, and lighting zoning strategies.

An effective Building Users' Guide will ensure that:

- Facility managers understand in detail their responsibilities for the efficient operation of the facility and any additional building tuning necessary to continuously improve energy management.
- Maintenance contractors understand how to service the particular systems to maintain reliable operations and maximum energy efficiency.
- Employees understand energy minimisation procedures and working limitations required to maintain design performance for energy efficiency.
- Future fit-out / refurbishment designers understand the design basis for the building and the systems so that these are not compromised in any changes.

7.3 Roles and Responsibilities

It is the responsibility of the facility manager to routinely check energy savings procedures are undertaken correctly (i.e. lighting turned off while areas of the development are not in use). The facility manager should also ensure all monitoring and audit results are well documented and carried out as specified in the Energy Management Plan.

Senior management should also be involved in energy management planning as an indication of the organisation's commitment to the Energy Management Plan

8 CONCLUSIONS

SLR Consulting Australia Pty Ltd (SLR) has been engaged by Goodman Property Services (Aust.) Pty Ltd (Goodman) to provide a Sustainability Management Plan (SMP) for the warehouse and distribution facilities of Precinct 4, Lot 4E Oakdale West Industrial Estate (the Project).

This study has been prepared in accordance with the Secretary's Environmental Assessment Requirements (SEARs) for the State Significant application:

- **Greenhouse Gas and Energy Efficiency** – including an assessment of the energy use on-site and all reasonable and feasible measures that would be implemented on-site to minimise the development's greenhouse gas emissions.
- **Ecologically Sustainable Development** – including a description of how the development will incorporate the principles of ecologically sustainable development in the design, construction and operation of the development.

The principal objective of this Sustainability Management Plan is to identify all potential energy savings that may be realised during the operational phase of the project, including a description of likely energy consumption levels and options for alternative energy sources such as PV solar power.

A BCA Sections J Deem-to-Satisfy compliant building is used as the baseline building for energy consumption savings. BCA Section J provides the minimum requirement for energy efficiency and it is expected that the proposed development will operate energy efficiently via:

- 750 kW PV Solar system;
  - The proposed 750 kW PV solar system will offset 1,040,250 kWh/year of energy usage
  - The estimated greenhouse gas CO2 emission saving is approximately 838,962 kgCO2/annum
- Daylight controlled LED lighting for the warehouse instead of metal halide, resulting in a considerable energy reduction and reduced maintenance;
- Motion sensors to all LED lights within the warehouse, and offices;
- Roof and external wall insulation as per the NCC requirements;
- High performance glazing to all air-conditioned areas or minimum NCC requirements;
- Passive solar design for external outdoor areas;
- Efficient air conditioning system;
- Power sub-metering to enable continued review of power consumption for the offices, and warehouse;
- Selection of endemic and low maintenance landscaping species;
- 40 kL Rainwater tanks for rainwater harvesting and re-use for landscape irrigation and toilet flushing;
- Low flow fixtures and fittings including taps and shower heads;
- Low VOC paints, carpet and sealant; and
- Other measures as detailed in this report.

By implementing all energy efficiency measures described in Section 6 of this report, the project is predicted to achieve a 157% GHG emission reduction when compared with NCC Reference Building.

By installing 4-star rated toilets, urinals and taps and the proposed rainwater harvesting facility the proposed development will reduce its potable water demand by approximately 35%.

In conclusion, the relevant ESD initiatives and Energy Efficiency measures outlined in this report are incorporated into the proposed building and development details. The proposed ESD initiatives will help to achieve significant reductions in the energy required by the development both in building and operation.

Building tuning will be conducted by builder and SLR recommends that quarterly reviews of actual building energy and water consumption be carried out once the warehouses are operational to check the actual energy usage and energy savings and verify that all systems are performing at their optimum efficiency. This will provide an opportunity for the systems to be tuned to optimise time schedules to best match occupant needs and system performance while satisfying the sustainability target for the project.

APPENDIX A

Energy Saving Lighting Design Recommendations

BCA Lighting Requirements Oakdale West, 4E								
BCA Compliance Building	BCA Requirements		Area	Operating Hrs	Lighting Control			Total Annual Energy Consumption (kWh)
	Warehouse W/m2	4	34000	Monday to saturday 24 hours	Motion Detector, Daylight Sensc	0.9	0.6	641572
	Offices W/m2	4.5	1295	Monday to saturday 24 hours	Motion Detector	0.9	1	45818
	Workshop	4	200	Monday to saturday 24 hours				7008
	Gatehuse	4	65	Monday to saturday 24 hours				2278
			35560				**Total**	**694398**
							kWh/m2	**19.53**

Proposed Lighting Requirements Oakdale West, 4E								
BCA Compliance Building	BCA Requirements		Area	Operating Hrs	Lighting Control			Total Annual Energy Consumption (kWh)
	Warehouse W/m2	3.5	34000	Monday to saturday 24 hours	Motion Detector, Daylight Sensc	0.9	0.6	561375
	Offices W/m2	4	1295	Monday to saturday 24 hours	Motion Detector	0.9	1	40727
	Workshop	4	200	Monday to saturday 24 hours				7008
	Gatehuse	4	65	Monday to saturday 24 hours				2278
			35560				**Total**	**609111**
							kWh/m2	**17.13**

APPENDIX B

Water Saving Recommendations

WATER SAVINGS CALCULATION OAKDALE WEST, BUILDING 4E

Table B1 - Number of fixtures

Area	Toilets	Urinal	Basins	owers
Amenities	25	10	28	6
Total	25	10	28	6

Assume 70% of toilet water usage is supplied by rainwater

Fraction not supplie	0.3

Table B2 - Results

No water saving measures		**Max water usage rate** [1]	
Toilet	Adopt 3* Average Flush Usage in Table C3	100	L/s
Tap	Adopt 3* Tap Usage in Table C3	252	L/s
Urinal	Adopt 3* Urinal Usage in Table C3	20	L/s
Water reuse measures (4*) with RWH		**Max water usage rate** [1]	
Toilet	Adopt 4* Average Flush Usage in Table C3	87.5	L/s
Tap	Adopt 4* Tap Usage in Table C3	210	L/s
Urinal	Adopt 4* Urinal Usage in Table C3	15	L/s
Water reuse measures (5*) with RWH		**Max water usage rate** [1]	
Toilet	Adopt 5* Average Flush Usage in Table C3	75	L/s
Tap	Adopt 5* Tap Usage in Table C3	168	L/s
Urinal	Adopt 5* Urinal Usage in Table C3	10	L/s

	3* with RWH	4* with RW	5* with RWH
Improvement Pe	**23**	**35**	**48**

Calculation Notes

[1] *Water usage rate per use = Number of items in Table C1.x Usage rate*

[2] *Assume total water usage is proportional to max water usage rate*

[3] *Improvement percentage = % difference between 3* rated fixtures max water usage rate with no rainwater harvesting and design fixture max water usage rate with 70%*

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