



Construction Environmental Management Plan

**SSD-37486043: Oakdale East Industrial Estate
2-10 Old Wallgrove Road, Horsley Park**

Goodman Property Services (Aust) Pty Ltd

The Hayesbery
1-11 Hayes Road
Rosebery NSW

Prepared by:

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Australia

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Basis of Report

This report has been prepared by SLR Consulting Australia (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.



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1.0 Introduction

1.1 Development Overview

This Construction Environmental Management Plan (CEMP) has been prepared by SLR Consulting Australia Pty Ltd (SLR) for the Goodman Property Services (Aust) Pty Ltd (Goodman) Oakdale East Industrial Estate (OEIE) (the site) (**Figure 1**). OEIE is located at 2-10 Wallgrove Road, Horsley Park within the Fairfield Local Government Area (LGA). The land is legally described as Lot 102 and Lot 103 in DP 1268366.

State Significant Development (SSD) 37486043 for the OEIE Concept Plan and Stage 2 was approved on the 11th of October 2023 by the Department of Planning and Environment (DPE). The OEIE includes the following as shown on the Masterplan (**Figure 2**) and the Staging Plan (**Figure 3**)

- Clearing of 2.28 ha of vegetation.
- Completion of retaining walls across OEIE.
- Completion of lead-in infrastructure works including intersection works at Millner Ave / Old Wallgrove Road and Lenore Drive / Old Wallgrove Road.
- Completion of the internal road network (excluding the proposed private driveway providing access to Precinct 5).
- Reticulation of services infrastructure to provide serviced development pads to all precincts.
- Completion of Building works to Precinct 1 expansion and Precinct 3 including any ancillary on lot infrastructure and detailed civil works required.

This CEMP has been prepared for stage 2 works to ensure appropriate management practices are followed during the site's construction in accordance with the mitigation measures presented within the specialist technical reports. The Environmental Impact Statement and SSD-37486043 Consent can be found on the [DPE Major Projects website](#).



Figure 1: Site Overview



Figure 2: Oakdale East Estate Concept Masterplan (Source: SBA Architects)

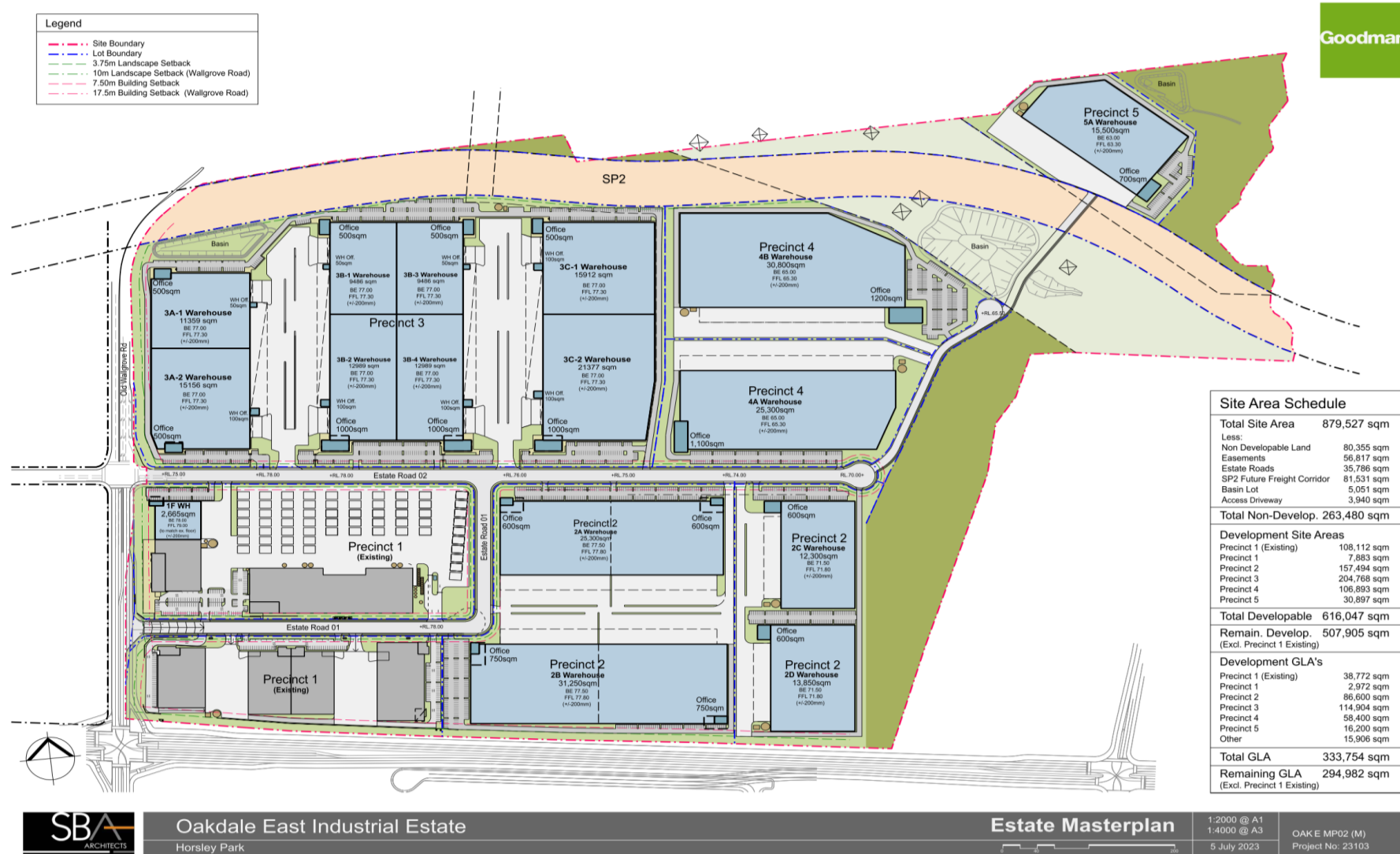
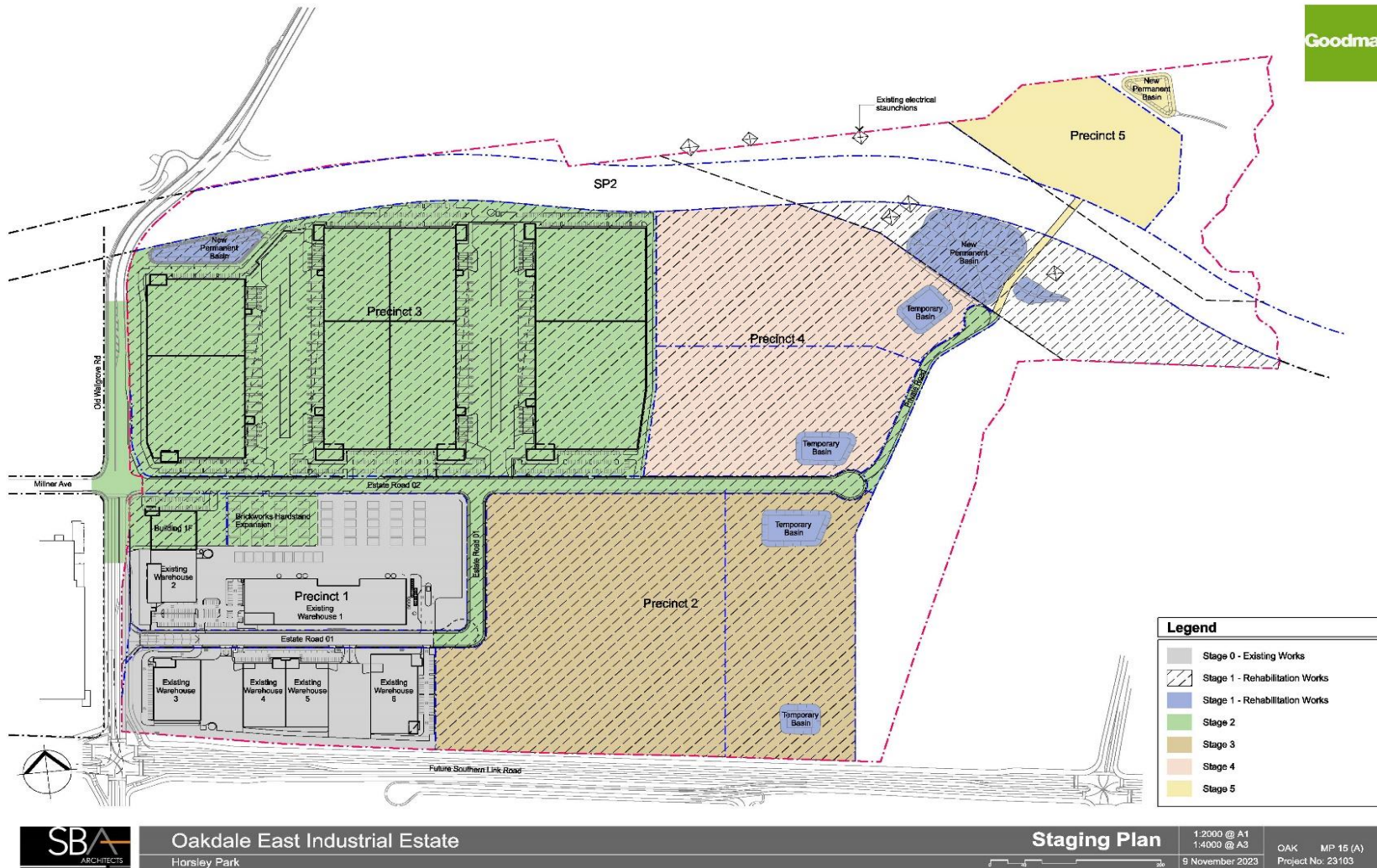


Figure 3: Oakdale East Industrial Estate Staging Plan(refer to Stage 2)



1.2 CEMP Context

This CEMP has been prepared to address the scope and objectives listed below for the construction of the site and in consideration of Guideline for the Preparation of Environmental Management Plans (Department of Infrastructure, Planning and Natural Resources 2004).

This CEMP 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.

The following specialist management plans have been prepared to support this CEMP:

- Construction Air Quality Management Plan (CAQMP).
- Community Consultation and Complaint Handling Strategy (CCCHS).
- Construction Noise and Vibration Management Plan (CNVMP).
- Construction Traffic Management Plan (CTMP).
- Erosion and Sediment Control Plan (ESCP).
- Flora and Fauna Management Plan (FFMP).
- Soil and Water Management Plan (SWMP).
- Waste Management Plan (WMP).

1.3 Scope

This CEMP has been prepared to satisfy E1 - E4 of SSD-37486043. The specific requirements of these consent conditions, along with where these requirements have been addressed within this CEMP, are listed in **Table 1**.

Table 1: CEMP Scope

SSD-37486043	CEMP Section
<i>E1. Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:</i>	
<i>a) detailed baseline data;</i>	<i>Section 4 and Sub-plans</i>
<i>b) details of:</i> <ul style="list-style-type: none"> <i>(i) the relevant statutory requirements (including any relevant approval, licence or lease conditions);</i> <i>(ii) any relevant limits or performance measures and criteria; and</i> <i>(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> 	<ul style="list-style-type: none"> <i>(i) Section 3.4.</i> <i>(ii) Section 3.4</i> <i>(iii) Refer to specialist management plans</i>
<i>c) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;</i>	<i>Sections 4 and Section 5</i>



SSD-37486043	CEMP Section
d) a program to monitor and report on the: <ul style="list-style-type: none"> (i) impacts and environmental performance of the Stage 2 development; and (ii) effectiveness of the management measures set out pursuant to paragraph (c) above. 	Section 5
e) 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
f) a program to investigate and implement ways to improve the environmental performance of the Stage 2 development over time;	Sections 7
g) a protocol for managing and reporting any: <ul style="list-style-type: none"> (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 3.6 (ii) Section 3.7 (iii) Section 3.6.4
(h) 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
E2. 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.	This Plan
E3. As part of the CEMP required under Condition C2 of this consent, the Applicant must include the following:	
a) Construction Noise and Vibration Management Plan (see condition D4);	Section 4.2 Appendix E
b) Vibration Monitoring Plan (see condition D18);	Section 4.2 and Section 5 Appendix E
c) Flora and Fauna Management Plan (see condition D23);	Section 4.7 Appendix K
d) Construction Traffic Management Plan (see condition D28);	Section 4.4 Appendix G
e) Erosion and Sediment Control Plan (see condition D56);	Section 4.5 Appendix H
f) Community Consultation and Complaints Handling.	Section 4.13 Appendix D
E4. The Applicant must: <ul style="list-style-type: none"> 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. 	Noted

1.4 Objectives

The objectives of this CEMP are the following:

- Establish the framework for managing and mitigating the potential for adverse environmental impacts as a result of the construction of the development.



- Clearly and concisely document the commitments made in the EIS (Keylan Consulting, 2022) and Response to Submissions (RTS) (Keylan Consulting, 2022), including relevant management plans, that are required to be implemented with during construction.
- Demonstrate to DPE how the applicant proposes to meet all of its regulatory obligations including those outlined in the Conditions of Consent.
- Outlines the controls to be implemented by the contractor in order to meet those obligations.
- Clearly and concisely document the conditions imposed by SSD-37486043 that are required to be implemented and/or complied with during the construction phase.
- Assist to establish the development at OEIE in a manner that avoids (where possible) or minimises impact to the surrounding environment and populace.

1.5 Preparation

This CEMP has been prepared by 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 2** below:

Table 2: Author Qualifications

Name, Roles & Division	Qualifications	Experience
Alanna Ryan Principal Consultant	Bachelor of Environmental Science Graduate Certificate of Community Engagement	Alanna is a Principal Environmental Consultant with over 15 years industry experience. Experience Alanna has included Environmental Management systems (including risk assessment/management, strategies, management plans, inspections, and auditing) and statutory reporting. Since joining SLR Alanna has been involved in delivering a range of projects including Construction Environmental Management Plans and Operational Environmental Management Plans.
Jessica Keegan Project Consultant	Master of Environmental Management and Sustainability Bachelor of Social Work/Arts	Prior to SLR Jessica has experience working in Sand and Hard Rock Quarries as an Environment, Sustainability, and Safety Graduate. Jessica previously worked as a Hospital and Community Social Worker for 8 years. Her most recent Social Work role was as a Senior Community Palliative Care Social Worker. Jessica has gained experience in Environmental Reporting, Site Compliance Monitoring and Reporting, Water Consumption Management Plans, Surface Water Monitoring, and Environmental Management Plans. She also has extensive experience in Government, Stakeholder Consultation, Stakeholder and Community Engagement, Psychosocial assessments, and culturally competent practice.
Alexis Parmenter Graduate Consultant	Bachelor of Environmental Science and Management (Major Marine Science)	Alexis has over 7 months experience in Consulting and has worked on a variety of projects including assisting on EIS', audits, annual reviews, RMPs, MMPs and management plans.

1.6 Consultation

Consultation for this CEMP has been undertaken in accordance with SSD-37486043. Consultation has been undertaken with the applicable stakeholders which is summarised in **Table 3** and is attached as **Appendix B**.



Table 3: Consultation

Condition	Comment
<p>C8 Evidence of Consultation Where conditions of this consent require consultation with an identified party, the Applicant must:</p> <p>(a) consult with the relevant party prior to submitting the subject document to the Planning Secretary for approval; and</p> <p>(b) provide details of the consultation undertaken including:</p> <p>i. the outcome of that consultation, matters resolved and unresolved; and</p> <p>ii. details of any disagreement remaining between the party consulted and the Applicant and how the Applicant has addressed the matters not resolved.</p>	<p>Noted. Evidence of consultation including the outcome and any required details are included within the relevant sub-plans as well as Appendix B.</p>
<p>Construction Noise and Vibration Management Plan D4. The Applicant must prepare a Construction Noise and Vibration Management Plan (CNVMP) for the Stage 2 development to the satisfaction of the Planning Secretary. The CNVMP must form part of a CEMP in accordance with condition E2 and must:</p> <ul style="list-style-type: none"> include strategies that have been developed with the community for managing high noise generating works; and describe the community consultation undertaken to develop the strategies in condition D4(d). 	<p>Community consultation has been undertaken by the CCLR to meet this requirement. A consultation summary report has been prepared that confirms we have satisfied the conditions required for the CNVMP. Evidence of consultation is included in Appendix B.</p>
<p>Vibration Monitoring Plan D18. The Applicant must prepare a Vibration Monitoring Plan (VMP) for the Stage 2 development to the satisfaction of the Planning Secretary. The VMP must form part of the CEMP in accordance with condition E2 and must:</p> <p>(b) be prepared in consultation with Water NSW</p>	<p>The Vibration Monitoring Plan has been prepared in consultation with Water NSW. Evidence of consultation with Water NSW and subsequent approval is included within Appendix B.</p>
<p>Construction Traffic Management Plan D28. Prior to the commencement of construction of the development, the Applicant must prepare a Construction Traffic Management Plan for the development to the satisfaction of the Planning Secretary. The plan must form part of the CEMP required by condition E2 and must:</p> <p>(b) be prepared in consultation with Council, TfNSW and Water NSW</p>	<p>The Construction Traffic Management Plan has been prepared in consultation with Fairfield City Council, TfNSW and Water NSW. All agencies have approved the CTMP. Evidence of consultation with Fairfield City Council, TfNSW and Water NSW is included within Appendix B and actioned in the CTMP in Appendix G.</p>
<p>Waste Storage and Processing D77. Prior to the commencement of construction of the Stage 2 development, the Applicant must obtain agreement from Council for the design of the waste storage area for the Stage 2 development.</p>	<p>Agreement from Fairfield City Council has been obtained, evidence of this is included within Appendix B.</p>
<p>Appendix 3: Applicant's Management and Mitigation Measures Noise and Vibration Pre-construction consultation with receivers R01, R03, R04, R05, R06 and R09 to clearly and transparently explain the proposed works and the potential for construction noise impacts must be undertaken.</p>	<p>This has been satisfied under CNVMP consultation requirements. Evidence of consultation with receivers is included within Appendix B.</p>
<p>Appendix 3: Applicant's Management and Mitigation Measures</p>	<p>Evidence of consultation with the Council is included within Appendix B.</p>



Condition	Comment
<p>Traffic and Transport</p> <ul style="list-style-type: none">• consult with Council during detailed design to ensure driveway access conforms with the relevant requirements• proposed signage and line-marking to be referred to Council and an accompanying Traffic Management Plan (TMP) to be prepared for the Council traffic committees to review and approve• Street lighting will be reviewed during detailed design in consultation with Council.	



2.0 Development Description

2.1 Location

The land to which this relates is recognised as 2-10 Wallgrove Road, Horsley Park, within the Fairfield Local Government Area (LGA). The site occupies a sign land allotment and is legally described as Lot 102 and Lot 103 in DP1268366. The site location is shown in **Figure 4**.

The site forms the eastern extent of the 421-hectare (ha) Oakdale Industrial Estate and is located within the Western Sydney Employment Area (WSEA). The net developable area of the OEIE site is approximately 52.5 ha with approximately 24.6 ha associated with non-developable areas including easements, estate roads, infrastructure, vegetation management and the SP2 zoned infrastructure corridor.

The site was previously operated by Austral as a brick plant and quarry under a permit granted in 1971 by Blacktown City Council (Permit No 1340). Subsequent development consents were issued for expansion of the quarry and modifications to the brick manufacturing plant (Plant 23).

Figure 4: Site Location



2.2 Hours of Construction

Construction hours will be in accordance with Conditions D1 and D2 of SSD-37486043. D3 is reproduced below:

D3. The Stage 2 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 CNVMP required by condition D4.

Table 4 outlines the hours of work, under Condition D1, that must be complied with, unless otherwise agreed in writing by the Planning Secretary.



Table 4: Hours of Work

Activity	Day	Time
Earthworks and construction	Monday - Friday	7am -6pm
	Saturday	8am -1pm
	No work is permitted on Sundays and Public Holidays	

The provisions of the *Protection of the Environment Operations Act 1997* in regulating offensive noise also apply to all works. 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.

2.3 Site Access

Access to the site shall be available on Old Wallgrove Road in a left-in/right-out arrangement as shown in **Figure 5**. An alternative access arrangement during the Stage 4 – Milner Ave/Old Wallgrove Road Intersectionworks as shown in **Figure 6**. Access to each precinct shall be provided via the future Estate Road 1 and Estate Road 2.

Figure 5: Site Access Arrangements

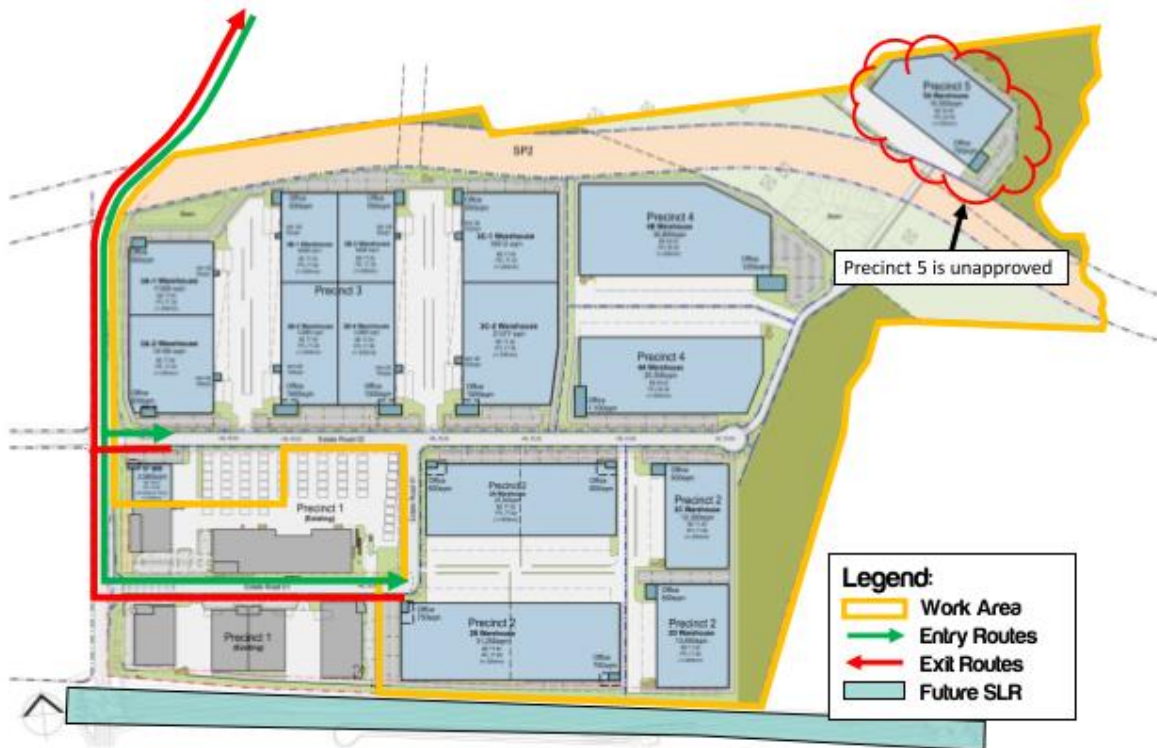
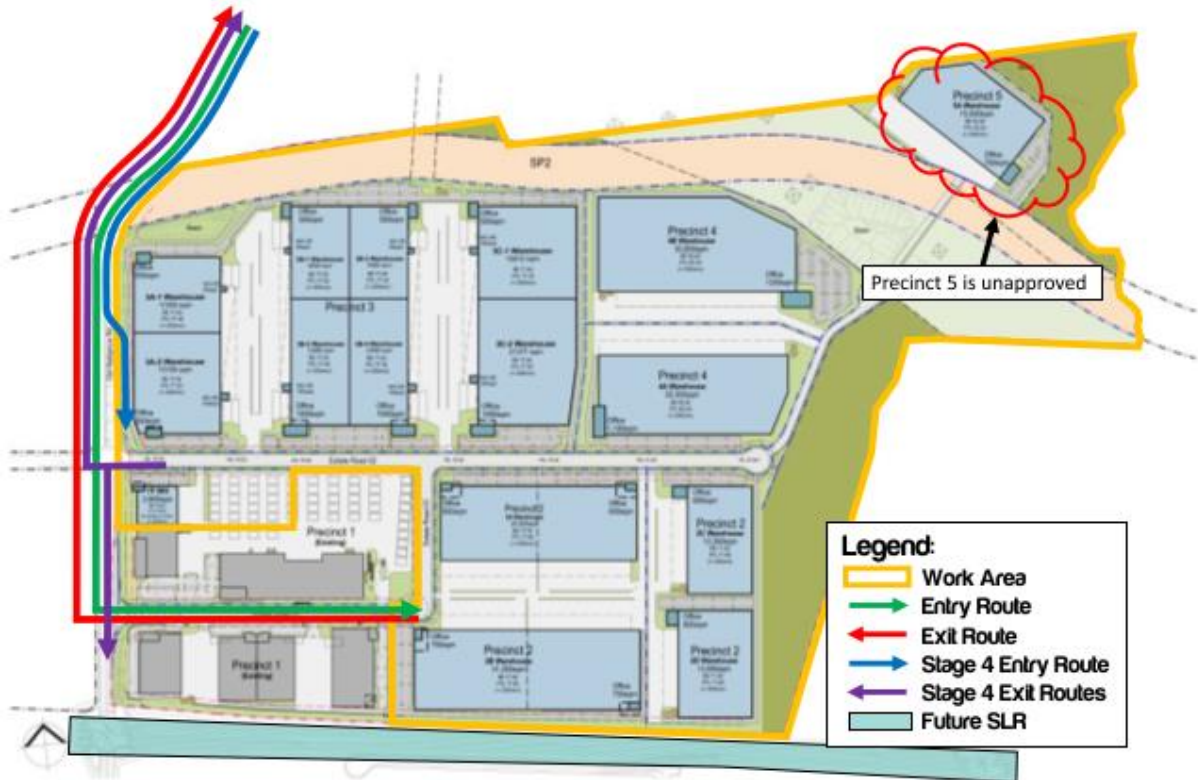


Figure 6: Access Arrangements (During Stage 4 – Milner Ave/Old Wallgrove Road Intersection)



2.4 Contact Details

Table 5 lists the key contacts during construction.

Table 5: Contact Details

Role	Name	Contact Details
Goodman Project Manager	Lachlan O'Reilly	Goodman Property Services (Aust) Pty Ltd Ph: 0481 254 556
Superintendent	Edmund Tsang	Orion Consulting Engineers Pty Ltd Ph: 0418 758 184
Site Manager	Bassel Assaf	Mulgoa Quarries Burtens Contractors JV Ph: 0412 024 491
Contractor's Project Manager	David Claxton	Mulgoa Quarries Burtens Contractors JV Ph: 0418 286 093
Contractor's WHS&E Advisor	Faten Samaan	Mulgoa Quarries Burtens Contractors JV Ph: 02 9581 5550
Environmental Consultant	Carl Vincent	ErSed Environmental Pty Ltd Ph: 0424 203 046
Communications and Community Liaison Representative	Jessica Keegan	SLR Consulting Australia Pty Ltd Ph: 1300 004 917



2.5 Construction Staging

This CEMP relates to Stage 2 as shown in **Figure 3**. The project phases are shown in **Table 6** below. Stage 2 is forecast to commence in November 2023 and forecast to conclude in December 2025.

The description of works under Stage 2 are as following:

- Infrastructure Works, Intersection Works, vegetation clearing and biodiversity offsets, vegetation management and landscaping, Precinct 1 hardstand expansion works.
- Precinct 1 and 3 building works.

Table 6: Project Stages

Project Phase	Proposed Construction Activities	Forecast Commencement	Forecast Duration	Forecast Completion
Infrastructure Works	Internal Estate Roads, Services, Retaining Walls, Lenore Dr/Old Wallgrove Road & Milner Avenue / Old Wall Grove Road intersection upgrades	Nov 23	22 Months	April 25
Building Works	Precinct 1 Expansion and Precinct 3 Buildings	May 24	21 Months	Dec 25



3.0 Environmental Management Framework

3.1 Environmental Policy

The Construction Contractor, and all sub-contractors engaged by the Construction Contractor, will implement their Environmental Policy throughout the duration of construction.

3.2 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.
- Create a directive to engage with our supply chain to support Goodman in achieving innovative and sustainable outcomes.

3.3 Roles and Responsibilities

The key personnel responsible for environmental management are listed in **Table 7**.

Table 7: Personnel Responsible for Environmental Management

Role	Responsibilities
Goodman Project Manager	<ul style="list-style-type: none"> • Environmental reporting responsibility associated with the development (pending receipt of documents from the Contractors Project Manager). • Work with the Contractors Project Manager to record, notify, investigate, and respond to any environmental incidents and, where necessary, develop and implement corrective actions. • Overall responsibility for compliance with approval requirements. • Liaise with the relevant stakeholders to keep them informed of the project’s progress. • Provide adequate environmental inductions/training to the Contractors regarding their requirements under this CEMP. • Liaise with property owners, in consultation with CCLR, to co-ordinate access and to deal with specific property related issues arising from the upgrade works.
Superintendent	<ul style="list-style-type: none"> • Act as primary contact overseeing the day-to-day operations at the site and primary contact for all personnel in relation to site works and environmental management. • Review risks and identify potential opportunities and issues with the project. • Monitor and inspect site activities for compliance with relevant environmental requirements, including ensuring management plans have been submitted and approved prior to commencement of works. • Ensure environmental incidents and non-compliances are reported and investigated within the SSD approved timelines.



Role	Responsibilities
Site Manager	<ul style="list-style-type: none"> • Implement the CEMP. • Ensure site inductions and training requirements are completed as required. • Ensure compliance of all site activities with CEMP. • Ensure all subcontractors are informed of CEMP requirements prior to engagement and commencement of works. • Ensure all environmental incidents are reported and investigated in accordance with CEMP. • Regularly monitor the implementation of the CEMP to ensure implementation is being carried out in accordance with the document and the terms of this consent. • Point of daily contact for complaints and provide a handover to Goodman's Representative to commence proceedings.
Contractor's Project Manager	<ul style="list-style-type: none"> • Manage all the responsibilities attributed to the Construction Contractor throughout this CEMP. • Consult and engage with any subcontractors or interfacing contractors regarding the environmental management of the Site. • Record, notify, investigate, and respond to any environmental incidents and, where necessary, develop and implement corrective actions. • Provide adequate environmental inductions/training to employees and contractors regarding their requirements under this CEMP. • Environmental reporting responsibility associated with the development. • Ensuring that the appropriate management response and handling procedures are instigated and carried through in the event of an incident and/or non-compliance. • Regularly monitor the implementation of the CEMP to ensure implementation is being carried out in accordance with the document and the terms of this consent.
Contractor's WHS&E Advisor	<ul style="list-style-type: none"> • Ensure the legislative and corporate safety, health and environment management measures and controls are implemented and maintained. • Participate in risk and hazard identification and control. • Participate in incident investigations and management. • Participate in health and safety inspections.
Environmental Consultant	<ul style="list-style-type: none"> • Provide the Superintendent advice and guidance relating to Environmental reporting responsibilities associated with the development. • Provide the Superintendent advice and guidance relating to environmental management and compliance and relevant legislation. • Provide guidance for the reporting, notification, investigation, and response to any environmental incidents and, where necessary, develop and implement corrective actions. • Providing advice to the Superintendent in relation to any subcontractors or interfacing contractors regarding the environmental management of the Site.
Communications and Community Liaison Representative	<ul style="list-style-type: none"> • Lead and manage the community involvement activities, including liaison with property owners and key stakeholders. • Available as a daily contact to the public handling of enquiries / complaints management / interface issues. • Maintain the complaints register and make available the complaints register to the Contractors Project Manager on a daily basis. • Be available for contact by local residents and the community at all reasonable times to answer any questions. • Site support to liaise with property owners to co-ordinate access and to deal with specific property related issues arising from the upgrade works. • Lead the delivery of communication and community engagement strategies and plans. • Facilitate meetings, forums and arranging interviews to address concerns from community.



Role	Responsibilities
	<ul style="list-style-type: none"> • Provide advice and participate with the project teams to improve and enhance the delivery of communication services to the community. • Build, maintain collaborative and consultative working relationships with internal and external stakeholders. • Be available for contact by local residents, key stakeholders, and community representatives to answer queries and provide more information or feedback.
All employees, contractors, and subcontractors	<ul style="list-style-type: none"> • Ensure familiarity, implementation and compliance with this CEMP and appended management plans. • Support the Proponent's commitment to sustainability, environmental management, and compliance. • Work in a manner that will not harm the environment or impact on surrounding receptors. • Report all environmental incidents, non-compliances, and complaints to the Project Manager without delay. • Immediately notify the Contractor's Project Manager of any hazard or potential hazard that may result in an incident and/or non-compliance, regardless of the nature or scale. • 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. • Report any inappropriate construction practices and/or environmental management practices to the Project Manager without delay.

3.4 Statutory Requirements

3.4.1 SSD-37486043

The Development will be constructed in accordance with Condition C2 of SSD-37486043, The Stage 2 Development will 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, RTS and AR.
- d) in accordance with the Development Layout in Appendix 2.
- e) in accordance with the management and mitigation measures in Appendix 3.

In accordance with Condition C3 of SSD-37486043, 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.
- b) the implementation of any actions or measures contained in any such document referred to in condition C2(a).

In accordance with Condition C4 of SSD-37486043, 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 C2(c) or C2(e). In the event of an inconsistency, ambiguity or conflict between any of the documents listed in condition C2(c) or C2(e), the most recent document prevails to the extent of the inconsistency, ambiguity or conflict. The Goodman Project Manager will be notified if any inconsistencies are identified.



In accordance with C7, the date of construction commencement 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.

SSD-37486043 imposes a number of environmental performance and management requirements applicable to the construction.

A copy of the relevant consent conditions for SSD-37486043 is attached at **Appendix A**.

3.4.2 Additional Licences, Permits, Approvals and Consents

Table 8 summarises the additional licences, permits, approvals and consents required throughout these works. This information has been summarised from the SSD-37486043 Consent Conditions, the EIS (Keylan, 2022), and contributions from Goodman.

It is the Construction Contractor's responsibility to ensure that any license, permit, approvals listed in (but not limited to) **Table 8**, has been obtained in the required timeframe.

Table 8: Other Licences, Permits, Approvals and Consents

Licence, Permit, Approval, or Consent	Person Responsible	Timing	References / Notes
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 consent.	Contractor's Project Manager	Ongoing	SSD-37486043 Condition AN1
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: <ul style="list-style-type: none"> (a) the installation of fibre-ready facilities to all individual lots and/or premises in the development to enable fibre to be readily connected to any premises that is being or may be constructed on those lots; and (b) the provision of fixed-line telecommunications infrastructure in the fibre-ready facilities to all individual lots and/or premises in the development demonstrated through an agreement with a carrier 	Contractor's Project Manager	Prior to construction/occupation	SSD-37486043 Condition C15
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.	Contractor's Project Manager	Prior to the issue of the Construction Certificate	SSD-37486043 Condition C22
All relevant approvals from utility service providers. 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.	Goodman Project Manager, Contractor's Project Manager	Before construction of any utility works	SSD-37486043 Condition C26



Licence, Permit, Approval, or Consent	Person Responsible	Timing	References / Notes
Should any public utility adjustment / relocation works be required adjacent to a classified road, plans are to be submitted to TfNSW for approval, prior to the commencement of any works. Please send all documentation to development.sydney@transport.nsw.gov.au .	Goodman Project Manager, Contractor's Project Manager	If any public utility adjustment/relocation works be required adjacent to a classified road	SSD-37486043 Condition D32
The Applicant must submit detailed design plans and hydraulic calculations to TfNSW detailing any changes to the stormwater drainage system adjacent to the road network. The Applicant must obtain approval from TfNSW for changes to the stormwater drainage system, prior to the commencement of any road works.	Goodman Project Manager, Contractor's Project Manager	If any changes to the stormwater drainage system adjacent to the road network required.	SSD-37486043 Condition D33
Obtain a Road Occupancy Licence (ROL) from the Transport Management Centre for any works that may impact on traffic flows on Old Wallgrove Road during earthworks and construction.	Contractor's Project Manager	As required for any works that may impact on traffic flows on Old Wallgrove Road during earthworks and construction.	SSD-37486043 Condition D36
The Applicant must obtain approval from TfNSW for the TCS plans, prior to the commencement of any intersection works.	Goodman Project Manager, Contractor's Project Manager	Prior to the commencement of any road works.	SSD-37486043 Condition D38
Confirm in writing to the Relevant Roads Authority that the design complies with the sight distance requirements of the Austroads Guidelines for all roads, bends and intersections within the site.	Goodman Project Manager	Prior to the commencement of any estate road works.	SSD-37486043 Condition D39
Obtain agreement from Council for the design of the waste storage area for the Stage 2 development.	Goodman Project Manager	Prior to construction	SSD-37486043 Condition D38
Approval from TfNSW under section 138 of the Roads Act 1993 (Roads Act) upgrading of the Old Wallgrove Road and Millner Avenue intersection and the Lenore Drive and Old Wallgrove Road intersection. Approval from Council for the works on Old Wallgrove Road under under section 138 of the Roads Act.	Goodman Project Manager	Prior to the commencement of construction of road upgrades	<i>Roads Act 1993</i>
Compliance with water management works approvals	Goodman Project Manager	Prior to construction	<i>Water Management Act 2000</i>
Sydney Water Act 1994 - Compliance with Section 73 Compliance Certificate.	Goodman Project Manager	Prior to construction	<i>Sydney Water Act 1994</i>

3.5 Environmental Training

The Contractor's Project Manager will ensure that all employees and contractors involved in the project are appropriately inducted and trained prior to commencing work on site. Training in relation to environmental responsibilities and implementation of this CEMP will take place initially through the site induction training and then on an ongoing basis through 'toolbox talks' (or similar).



All employees, contractors (and their sub-contractors) conducting environmental training and site staff assigning work activities will demonstrate that they are competent and appropriately trained to train and manage construction site specific environmental issues.

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 works.

3.5.1 Environmental Induction Training

The environmental induction training will cover all elements of the CEMP and will include, as a minimum, the information in **Table 9**.

Table 9: Environmental Induction Training

Inductions and Environmental Training	Reference / Notes
Purpose and objectives of the CEMP.	Section 1.2
Hours of Construction	Section 2.2
Requirements of due diligence and duty of care	Section 3.1
Conditions of any environmental licences, permits and consent approvals	Section 3.4.2
Potential environmental emergencies on site and the emergency response procedures (including the Emergency Spill Response Plan), locations and training in the use of emergency spill kits for spills on water and on land	Section 3.5 and Section 4.0
Reporting, and notification and management requirements for pollution, contamination, and other environmental incidents, and for damage and maintenance to environmental controls	Section 3.5 and Section 5.0
Community Complaints Handling Procedures	Section 3.7
High-risk activities and associated environmental safeguards	Section 4.0
Noise, vibration, and air quality management controls	Section 4.2
Construction Traffic Management	Section 4.4
Sound erosion and sediment control practices, water quality controls and sediment basin management	Section 4.5
Waste minimisation principles	Section 4.6
Induction requirements as per the UFP – Contamination	Appendix A
Stop work protocol in the event of the discovery of Aboriginal or Historic item or object of significance	Appendix A

3.5.2 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 (including fauna or flora).
- Outline the mitigations measures for the works and the area (see **Section 4.0**).



3.6 Incident and Non-Compliance Response and Handling Procedure

3.6.1 Performance Objective

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

3.6.2 Definitions

For the purposes of this CEMP, 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 the consent.

Material Harm is defined under the Protection of the Environment Operations Act 1997 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 Section 3.5 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 the Development Consent.

3.6.3 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.

3.6.4 Notification Requirements

In the instance of an incident or non-compliance, the notification protocols outlined in **Table 10** below shall be adhered to. An Event Notification Report template is attached as **Appendix C**.

Table 10: Material Harm and Incident and Non-Compliance Notification

Notification Requirement	Responsible	Timeframe Reference
Incidents		
Upon awareness of an incident, the Contractors Project Manager 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 construction	Immediately after becoming aware of a potential or actual incident



Notification Requirement	Responsible	Timeframe Reference
The Contractor's Project Manager will notify Goodman of any incident including all relevant information pertaining to the incident.	Contractor's Project Manager	Immediately after becoming aware of a potential or actual incident
Goodman will notify DPE of an incident in writing via the Major Projects Website.	Goodman Project Manager	Immediately
The Contractor's Project Manager will provide written notification to Goodman.	Contractor's Project Manager	Within 5 days
An Event Notification Report will be completed and provided to Goodman.	Contractor's Project Manager	Within 24 hours
Goodman will provide a formal written notification of an incident to DPE via the Major Projects Website.	Goodman Project Manager	Within 7 days after becoming aware of incident
The Contractor's Project Manager will provide Goodman a detailed report on the incident.	Contractor's Project Manager	Within 25 days of the incident occurring
Goodman will provide DPE and any relevant public authorities a detailed report on the incident.	Goodman Project Manager	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 Project Manager	Within 7 days after becoming aware of non-compliance

Under the *Protection of the Environment Operation Act 1997* (NSW), "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.
- Fire and Rescue NSW.

In accordance with Condition C17 (d) of SSD-37486043, all incidents that affect or could affect the water pipelines corridor are to be reported to Water NSW on the 24-hour incident notification number 1800 061 069, as a matter of urgency.

Table 11 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.
- Details of any required assistance.



Table 11: Regulatory Authority Contact List

Regulatory Authority / Stakeholder	Key Contact	Contact Details	
Department of Planning and Environment (DPE)	Compliance Unit	1300 305 695 or 02 9228 6111 compliance@planning.nsw.gov.au	
Environment Protection Authority	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	
Fairfield City Council	Main switchboard	02 9725 0222 mail@fairfieldcity.nsw.gov.au	
Water NSW	Main Switchboard	1300662 077	
	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 Rescue NSW Ambulance Services	131 444 1300 729 579	In case of emergency - 000

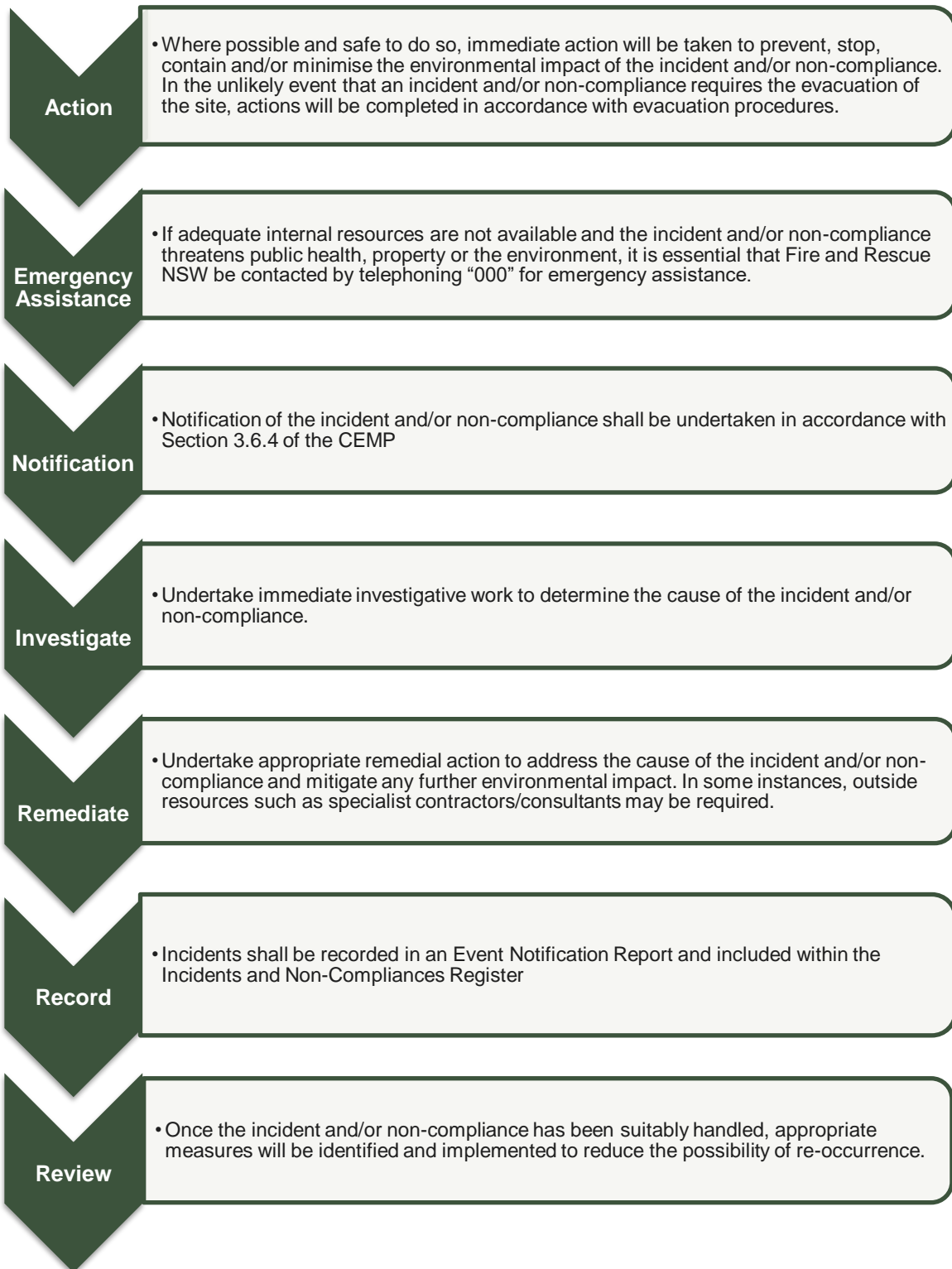
3.6.4.1 Non-Compliance Notification

A non-compliance notification will 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. A non-compliance which has been notified as an incident will not also be notified as a non-compliance.

Incidents and Non-Compliance Handling Procedure is outlined below in **Figure 7**.



Figure 7: Incidents and Non-Compliance Handling Procedure



3.7 Complaints Response and Handling Procedure

Figure 8 outlines the complaints response and handling procedure, 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 Site Manager, who will then contact Goodman's Representative to commence proceedings. All complaints will be handled in accordance with the Oakdale East Community Consultation and Complaints Handling Strategy (SLR, 2023) attached as **Appendix D**.

3.7.1 Complaints Register

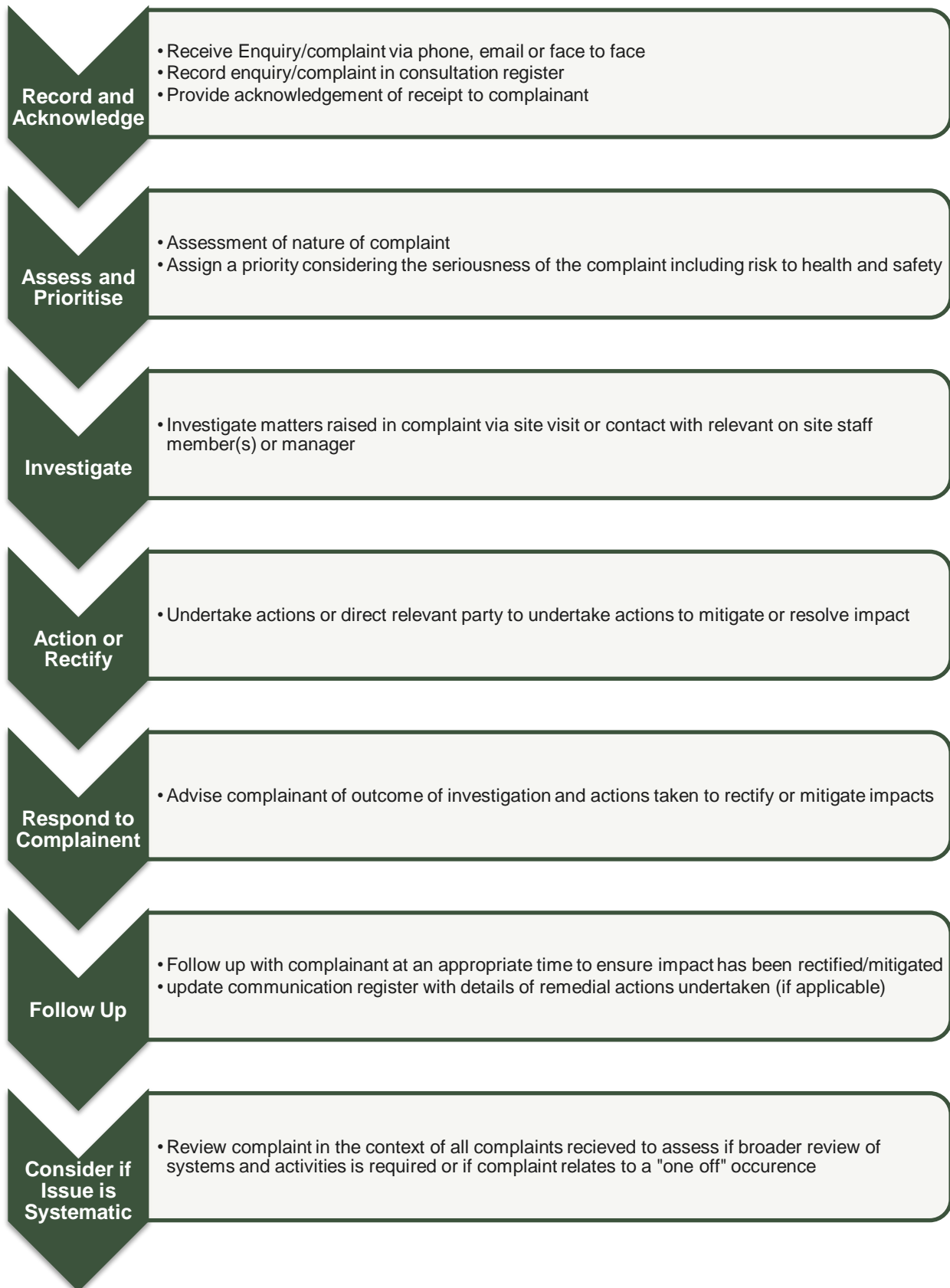
A Complaints Register will be maintained for the duration of construction and will contain the following:

- A copy of the environmental complaint handling procedure contained in Section 3.7.
- A separate reference sheet containing the contact details listed in Table 4.
- Blank hard copies of the Community Correspondence Register.
- Copies of all completed Community Correspondence Register, which are to be maintained for at least five years after the event to which they relate.

The Complaints Handling Procedure is outlined in **Figure 8** below.



Figure 8: Complaints Handling Procedure



4.0 Environmental Management Commitments

Environmental aspects with the potential to be impacted by construction of the site 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. A copy of the relevant consent conditions for each environmental control area can be found at **Appendix A**. These are to be adhered to in conjunction with the management controls outlined in each specialist management plan.

4.1 General

Table 12 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 12: General Environmental Management Controls

Environmental Management Control	Person Responsible	Timing / Frequency	Reference / Notes
Construction employees and contractors will be suitably inducted and trained in accordance with Section 3.5 of this CEMP.	Contractor's Project Manager	Prior to commencing construction and ongoing	Best Practice
The incidents and complaints will be promptly and effectively addressed in accordance with the management strategies contained within Sections 3.5 and 3.6 of this CEMP.	Contractor's Project Manager	Ongoing	CEMP Sections 3.5 and 3.6.
The Contractor's Project Manager will be notified if any inconsistencies are identified between the documents listed in Section 3.3 of this CEMP.	Contractor's Project Manager	Contractor's Project Manager	Best Practice
All monitoring records will be maintained to demonstrate compliance with the CEMP, including: <ul style="list-style-type: none"> • Site environmental inspection reports • Environmental monitoring data and • Internal and external audit reports • Reports of environmental incidents, environmental, associated actions taken, and follow-up actions. • Minutes of management review meetings • Induction and training records. 	Contractor's Project Manager	For 5 years after completion date	Section 3.6, Section 3.5 and Section 5 of this CEMP

4.2 Noise and Vibration

Construction noise and vibration will be managed in accordance with the Construction Noise and Vibration Management Plan (CNVMP) (SLR, 2023), attached as **Appendix E**. The Construction Noise and Vibration Management Plan includes a Vibration Monitoring Plan to satisfy condition D18 of SSD-37484043. The relevant consent conditions for noise and vibration can be found within the relevant section in **Appendix A**.

All listed mitigation and management measures outlined in Section 7.2 of the CNVMP will be implemented throughout construction. The Contractor's Project Manager is responsible for these on an ongoing basis. The mitigation measures cover the following activities:

- Project Planning



- Scheduling for high noise and vibration generating activities.
- Site Layout
- Training
- Plant and Equipment Source Mitigation
- Screening
- Community Consultation
- Monitoring
- Vibration
- Vibration Monitoring Plan (VMP)

4.3 Air Quality

Construction air quality will be managed in accordance with the Construction Air Quality Management Plan (CAQMP) (SLR, 2023), attached as **Appendix F**. The relevant consent conditions for air quality can be found within the relevant section in **Appendix A**.

All required and highly recommended Dust and Odour Mitigation measures outlined in Section 4 of the AQMP will be implemented throughout construction. The Contractor's Project Manager is responsible for these on an ongoing basis. These mitigation measures cover the following activities:

- Communications
- Site Management
- Preparing and Maintaining the Site
- Operating Vehicle/Machinery and Sustainable Travel
- Operations
- Waste Management
- Earthworks
- Construction
- Track out

Desirable mitigation measures will be considered and implemented where it is a reasonable step to minimise dust generated during work.

4.4 Traffic

Construction traffic will be managed in accordance with the Construction Traffic Management Plan (CTMP) (Ason, 2023), attached as **Appendix G**. The relevant consent conditions for traffic can be found within the relevant section in **Appendix A**.

The Contractor's Project Manager is responsible for the implementation of Construction Traffic Management Measures in the CTMP on an ongoing basis. All listed mitigation and management measures outlined in CTMP will be implemented throughout construction. These mitigation measures cover the following activities:

- Traffic Movements
- Construction Vehicle Traffic Generation
- Minimising Traffic Impacts on Surrounding
- Vehicle Management
- Truck Movements & Contractor Parking
- Pedestrian and Cyclist Management



- Fencing Requirements
- Traffic Guidance Scheme
- Driver Awareness & Code of Conduct
- Access Road Management
- Loading & Materials Handling
- Work Zone Requirements
- Worker Induction

Table 13 and **Figure 9** below outlines the proposed traffic volumes for each of the construction phases for light and heavy vehicles. Refer to **Section 2.1** of the CTMP for further detail.

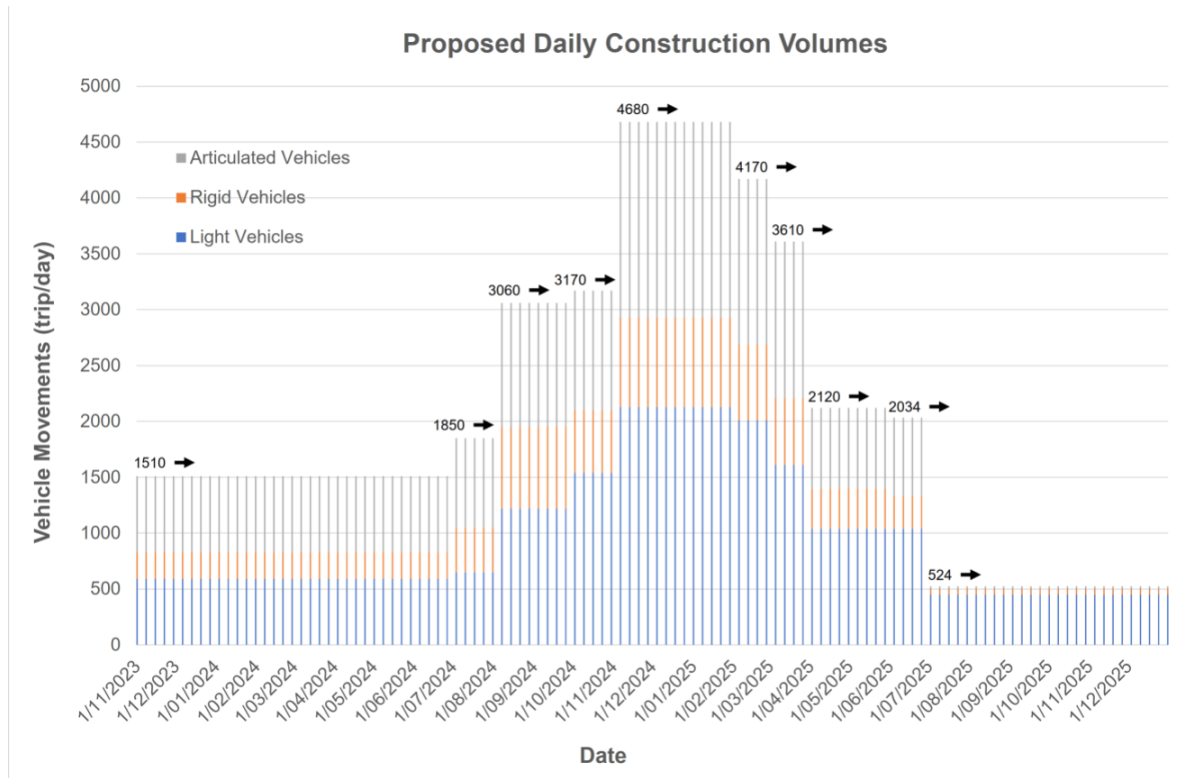
Table13 Proposed Traffic Volume Summary

Project Phase	Proposed Construction Activities	Time Period (Estimate)	Proposed LV Movement	Proposed HV	Cumulative
Infrastructure Works – Stage 1	Retaining Wall Works	35 weeks (01/11/2024 – 01/07/2025)	590	920	1510
Infrastructure Works – Stage 2	Construction of Internal Road 1 & 2 to Edge of Precinct 3 & 4)	35 weeks (01/11/2023 – 01/07/2024)	590	920	1510
Infrastructure Works – Stage 3	Construction of Internal Road 2 from Edge of Precinct 3 & 4 to Private Access Road Adjacent to Precinct 4	40 weeks (01/07/2024 – 01/04/2025)	570	920	1490
Infrastructure Works – Stage 4	Milner Avenue/Old Wallgrove Road Intersection	9 weeks (01/08/2024 – 01/10/2024)	570	640	1210
Infrastructure Works – Stage 5	Lenore Drive/Old Wallgrove Road Intersection	18 weeks (01/10/2024 – 01/02/2025)	570	550	1120
Building Works – Stage 1	Precinct 1 and 3 Site Establishment and Detail Earthworks)	13 weeks (01/07/2024 – 30/09/2024)	80	280	360
Building Works – Stage 2	Precinct 1 and 3 Structural Steel, Roofing & Cladding	22 weeks (30/09/2024 – 28/02/2025)	400	160	560
Building Works – Stage 3	Precinct 1 and 3 Internal and External Slabs	18 weeks (31/01/2025 – 31/05/2025)	450	160	610
Building Works – Stage 3	Precinct 1 and 3 Fitout of services, fixture, landscaping and completion works	31 weeks (31/05/2025 – 31/12/2025)	450	74	524

It is to be noted that the above numbers have been modelled by ASON via SIDRA modelling, which confirms that the proposed figures work with the current intersection configurations at Old Wallgrove Rd/Lenore Drive and Milner Avenue/Old Wallgrove Road intersections. Refer to the CTMP in Appendix G for further details.



Figure 9 : Construction Vehicle Volumes



4.5 Soil and Water

Soil and Water will be managed in accordance with the Erosion and Sediment Control Plan (ESCP) and Soil (Rubicon, 2023) and Soil and Water Management Plan (SWMP) (Rubicon, 2023), attached as **Appendix H** and **Appendix I** respectively. The relevant consent conditions for soil and water can be found within the relevant section in **Appendix A**.

The Contractor’s Project Manager is responsible for the implementation of an Erosion and Sediment Control Plan on an ongoing basis. All listed mitigation and management measures outlined in the ESCP will be implemented throughout construction. These mitigation measures cover the following activities:

- Erosion Control Measures and Sediment Control Methods
- Erosion control- Raindrop Impact
- Erosion control-Concentrated Water Flow
- Sediment controls-Sheet and Concentrated Flows
- Planning, permits and personnel
- Clearing, site establishment, topsoil stripping and stockpiling
- Drainage and water management
- Sediment Controls
- Soil Contamination
- Soil and water pollution control
- Stabilisation
- Training

The Contractor’s Project Manager is responsible for the implementation of a Soil and Water Management Plan on an ongoing basis. All listed mitigation and management measures



outlined in Section 6 of the SWMP will be implemented throughout construction. These mitigation measures cover the following activities:

- General controls
- Erosion and sediment controls
- Stockpiles
- Sediment basins
- Dewatering
- Licences and permits
- Weather monitoring
- Site stabilisation and restoration Spill prevention and response
- Monitoring and Inspections
- Training

4.6 Waste

Waste will be managed in accordance with the Waste Management Plan (WMP) (SLR, 2023), attached as **Appendix J**. The relevant consent conditions for waste can be found within the relevant section in **Appendix A**.

The Contractor's Project Manager is responsible for the implementation of Construction Waste Management Measures in the WMP on an ongoing basis. All listed mitigation and management measures outlined in WMP will be implemented throughout construction. These mitigation measures cover the following activities:

- Targets for Resource Recovery.
- Waste Streams and Classifications.
- Construction Waste Types and Quantities.
- Waste Avoidance.
- Reuse, Recycle and Disposal.
- Waste Storage and Servicing.
- Waste Segregation and Storage.
- Waste Storage Areas.
- Waste Servicing and Record Keeping.
- Site Inductions.
- Signage.
- Monitoring and Reporting.
- Roles and Responsibilities.

4.7 Biodiversity

Biodiversity will be managed in accordance with the Flora and Fauna Management Plan (FFMP) (Ecologique,2023) attached as **Appendix K**. The relevant consent conditions for biodiversity can be found within the relevant section in **Appendix A**.

A Biodiversity Development Assessment Report (BDAR) Waiver has been issued and there is not likely to be any significant impact on biodiversity values.

The Contractor's Project Manager is responsible for the Implementation of a FFMP on an ongoing basis. All listed mitigation and management measures outlined in FFMP will be



implemented throughout construction. These mitigation measures cover the following activities:

- General
- Vegetation clearing, protection and management
- Sediment and erosion control
- Terrestrial wildlife protection
- Aquatic fauna protection
- Native vegetation
- Pre-clearance and clearance management.
- Protection of riparian corridor
- Fauna rescue and release protocol
- Weed and pathogen management
- Unexpected finds protocol.
- Monitoring and reporting strategies.
- Mitigate the potential for introduction and/or spread of soil borne pathogens, weeds, and pest species during construction.

4.8 Visual Amenity

The environmental controls **Appendix A** will be implemented to minimise the visual impact of the development.

4.9 Contamination Land

The environmental controls in **Appendix A** lists the management strategies for contaminated land.

4.10 Aboriginal Cultural Heritage and Cultural Heritage

The management controls in **Appendix A** will be implemented to minimise the potential Aboriginal cultural heritage impacts from construction.

4.11 Fire Safety

Appendix A lists the management strategies for fire safety in accordance with SSD-37486043.

4.12 Flood

Appendix A lists the management strategies for flooding in accordance with SSD-37486043.

4.13 Community

The community will be managed in accordance with the Community Consultation and Complaints Handling Strategy (CCCHS) (SLR, 2023), attached as **Appendix D**. The relevant consent conditions for the community can be found within the relevant section in **Appendix A**.

The responsible persons for the for the implementation of the Community Consultation and Complaints Handling Strategy are outlined in Section 4 of the CCCHS. All listed mitigation



and management measures outlined in CCCHS will be implemented throughout construction.



5.0 Monitoring, Reporting and Auditing

Table 13 summarises the monitoring, reporting, and auditing requirements for construction.

Prior to the commencement of construction, the Construction Contractor will ensure their Project Management Plan includes a detailed Monitoring and Reporting Matrix to clearly document the specific applicable forms, registers or reports that will be used (this might include Supervisor Diary, Weekly Environmental Inspection Checklist, Waste Register, Complaints Register etc). The Construction Contractor will provide a copy of this matrix to Goodman.

The Construction Contractor will ensure the checklists included in the Project Management Plan, including the Daily Observations Checklist and Weekly Environmental Checklist, address all relevant monitoring and reporting commitments outlined in the CEMP and appended management plans.

Table 13: Monitoring, Reporting, Auditing Requirements

Aspect	Monitoring, Reporting and Auditing Requirements	Person Responsible	Timing / Frequency	References / Notes
Daily				
General	Daily observation will be recorded in Supervisor's Diary or similar, including plant and equipment prestart checks that include environmental observations.	Contractor's Project Manager	Daily	Best Practice
Soil and Water	Personnel to ensure visual dust monitoring is maintained during works, and dust suppression is undertaken regularly	Contractor's Project Manager	Daily	ESCP
Waste	Daily visual inspections of waste storage areas 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.	Contractor's Project Manager	Daily	WMP
Pests, Vermin, Weeds	Pests, Vermin and Priority Weed Management visual inspections to ensure measures are working effectively, and that pests, vermin or priority weeds are not present on site in sufficient numbers to pose an environmental hazard or cause the loss of amenity in the surrounding area.	Contractor's Project Manager	Daily	SSD-37486043 Condition D80
Traffic	Tracking deliveries against the volumes outlined within report. Deliveries will be tracked against approved volumes and a vehicle log is to be maintained - including registration at time of entry.	Contractor's Project Manager	Daily	CTMP Section 6.1
Air Quality	Air quality monitoring program (to start 3 months prior to construction including: <ul style="list-style-type: none"> visually assessing the dust levels and the effectiveness of any dust controls Daily real time monitoring and recording of deposited dust using DDG 	Contractor's Project Manager	Daily	CAQMP Section 9



Aspect	Monitoring, Reporting and Auditing Requirements	Person Responsible	Timing / Frequency	References / Notes
Weekly				
General	A Weekly Environmental Checklist will be completed as part of general environmental site inspection to ensure all relevant environmental controls listed in this CEMP are in place and any required maintenance and/or remediation works are identified and undertaken.	Contractor's Project Manager	Weekly	Best Practice
General	The Construction Contractor will report environmental performance during regular management meetings and/or 'toolbox talks'. Items to be discussed include: <ul style="list-style-type: none"> • Results of any monitoring activities undertaken • 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. 	Contractor's Project Manager	Weekly	Section 3.4
Soil and Water	All sediment basins will be inspected on a weekly basis as a minimum, with any defects or maintenance requirements as listed in the ESCP reported immediately.	Contractor's Project Manager, Contractor's Environmental Advisor	Weekly	ESCP Section 2
Soil and Water	Monitoring and inspections to include, but not be limited to: <ul style="list-style-type: none"> • Weekly and post rainfall inspections to evaluate the effectiveness of erosion and sediment controls measures 	Contractor's Project Manager, Contractor's Environmental Advisor	Weekly and post rainfall	SWMP
Vibration	Geophones will be installed by an acoustic consultant at the closest points of the sensitive structure to the vibration intensive works to continuously monitor vibration for the duration of the works.	Contractor's Project Manager	Ongoing	CNVMP Section 7.2
Air Quality	Adhere to the ongoing monitoring requirements of the two SiteHive units and the procedures in response to air quality exceedances. Locations of SiteHive units are outlined in the CAQMP. From time to time, and without notice to DPE, Goodman may amend or replace the real-time monitoring equipment with alternative solutions to similar effect should the SiteHive units not be available or are required to be replaced.	Contractor's Project Manager	Ongoing	CAQMP



Aspect	Monitoring, Reporting and Auditing Requirements	Person Responsible	Timing / Frequency	References / Notes
Noise	Adhere to the ongoing monitoring requirements of the two SiteHive units and the procedures in response to noise exceedances. Locations of SiteHive units are outlined in the CNVMP. From time to time, and without notice to DPE, Goodman may amend or replace the real-time monitoring equipment with alternative solutions to similar effect should the SiteHive units not be available or are required to be replaced.	Contractor's Project Manager	Ongoing	CNVMP
Fortnightly				
Traffic	Reporting and monitoring of movements to ensure drivers are adhering to the approved construction hours, and to ensure that the approved traffic generation, and subsequent impacts on the road network, are in line with those approved.	Contractor's Project Manager	Fortnightly	CTMP Section 6.1
Monthly				
Soil	Monthly audits of erosion and sediment controls shall be undertaken by CPESC and kept on record for the duration of the construction and an additional 12 months following construction works.	Principal's Environmental Consultant	Monthly	SWMP
Noise	Monthly monitoring reports will be prepared for the real-time monitor.	Contractor's Project Manager	Monthly	CNVMP Section 7.2
Vibration	Vibration monitoring data to be downloaded and reported.	Contractor's Project Manager	Monthly during works (at a minimum)	CNVMP Section 7.2
Traffic	As a minimum, review of the CTMP shall occur monthly following the key considerations regarding the review of the CTMP. Table 20 of CTMP provides triggers to monitor and review the CTMP.	Contractor's Project Manager	Monthly	CTMP Section 6.1
Traffic	A Dilapidation report to assess the condition of the road and note whether there has been any reduction in quality of the road as result of construction vehicles.	Contractor's Project Manager	Monthly	CTMP Section 6.1
Air Quality	Dust gauges to be changed every 30 days.	Contractor's Project Manager	Every 30 Days	CAQMP Section 9
Event-Based				
Incident / Non-Compliance	In the event of an Incident or Non-Compliance, an Event Notification Report will be completed, as outlined in Section 3.5 of the CEMP.	Goodman Project Manager, Contractor's Project Manager	Immediately in the event of an Incident or Non-Compliance	Section 3.5



Aspect	Monitoring, Reporting and Auditing Requirements	Person Responsible	Timing / Frequency	References / Notes
Noise	Prepare a Design Noise Verification Report for the temporary noise barrier shown on Figure 6 in Appendix 4 of SSD, to the satisfaction of the Planning Secretary.	Goodman Project Manager	Within three months of the commencement of earthworks.	SSD-37486043 Condition D7
Noise	Prepare a Design Noise Verification Report detailing permanent noise mitigation measures, to the satisfaction of the Planning Secretary.	Goodman Project Manager	Within 12 months of the commencement of earthworks.	SSD-37486043 Condition D9
Noise	Attended noise measurements to be undertaken at the start of noise intensive works that are near to sensitive receivers to verify the levels are as predicted and/or don't exceed the NMLS, and to check the effectiveness of mitigation and management measures.	Contractor's Project Manager	Ongoing	CNVMP Section 7.2
Vibration	Attended vibration measurements will be undertaken at the start of vibration intensive works within the minimum working distances to confirm the levels of vibration are below the applicable vibration limits.	Contractor's Project Manager	Ongoing	CNVMP Section 7.2
Vibration	Where vibration intensive works (such as rock breaking or vibratory rolling) are required within the minimum working distances of sensitive receivers or structures. Vibration will be monitored continuously for the duration of works within the minimum working distances.	Contractor's Project Manager	Ongoing	CNVMP Section 7.2
Vibration	Vibration monitoring data will be downloaded and reported as required from the real time system.	Contractor's Project Manager	Ongoing. Data is to be available within 24 hours.	CNVMP Section 7.2
Traffic	Undertake a Road Safety Audit to the satisfaction of the Relevant Roads Authority.	Contractor's Project Manager	Prior to the commencement of construction of the estate roads	SSD-37486043 Condition D9
Traffic	The change generated review must be undertaken when implementing new traffic stages, switches, or other construction-based activities, as per considerations listed in the CTMP.	Contractor's Project Manager	Traffic stages, switches or other construction-based activity changes	CTMP Section 6.1
Traffic	The Non-Compliance, post-incident or near miss review must be undertaken. Any non-compliance and all workplace incidents must be reported to immediately to the supervisor. The incident and investigation must also be recorded in the incident reporting system of Transport.	Contractor's Project Manager	Following an incident or near miss	CTMP Section 6.1
Traffic	Prior to the commencement of construction of the estate roads within the Stage 2 development, the Applicant must undertake a Road Safety Audit to the satisfaction of the Relevant Roads Authority.	Goodman Project Manager, Contractor's Project Manager	Prior to the commencement of construction of the estate roads within Stage 2	SSD-37486043 Condition D35



Aspect	Monitoring, Reporting and Auditing Requirements	Person Responsible	Timing / Frequency	References / Notes
Soil and Water	Sediment basins will be inspected immediately after rainfall events to assess: <ul style="list-style-type: none"> Water Storage capacity and water quality treatment requirements prior to discharge Following treatment and discharge from the sediment basin the sediment storage capacity and requirement for clean out will be assessed. 	Contractor's Project Manager	Immediately after rainfall events	ESCP
Soil and Water	All discharges will be recorded on a discharge permit which will include: <ul style="list-style-type: none"> Volume to be discharged Treatment details (e.g. Coagulant/flocculant used, dosage, duration and treatment date) Water quality monitoring results (including date and time of testing) Discharge water quality results Date and time of discharge 	Contractor's Project Manager	All discharges	ESCP
Soil and Water	Monitoring and inspections will include, but not be limited to: <ul style="list-style-type: none"> Immediate areas and drainage lines adjacent to the Project area Construction sediment basin water quality prior to discharge. 	Contractor's Project Manager	Ongoing as required	SWMP
Soil and Water	Inspections of erosion and sediment controls will occur following rainfall events >10mm (daily on workdays or as soon as practical. During site shutdown periods), with any necessary repairs implemented as soon as possible.	Contractor's Project Manager	Following rainfall events >10mm	ESCP and SWMP
Soil and Water	Relevant checklists and records to be maintained noting details such as rainfall received, repairs to controls and amounts of sediments cleaned from controls.	Contractor's Project Manager	Ongoing	ESCP
Soil and Water	Rainfall Inspection (10mm or greater rainfall) Site inspection log Records to be kept of the rainfall events, inspections undertaken, field tests undertaken, dosage rates and when basin water is released.	Contractor's Project Manager, Contractor's Environmental Advisor	Ongoing	ESCP and SWMP
Soil and Water	Following the onset of a significant storm event or rainfall event, the site controls to be inspected as soon as site conditions and safety requirements allow. The inspection to focus on high-risk areas to review the function and status of the installed erosion and sediment controls.	Contractor's Project Manager, Contractor's Environmental Advisor	Following the onset of a significant storm event or rainfall event	ESCP



Aspect	Monitoring, Reporting and Auditing Requirements	Person Responsible	Timing / Frequency	References / Notes
Biodiversity	The ecologist shall prepare a summary report for submission to the consent authority within seven days of completing the aquatic fauna relocation works	Contractor's Project Manager	Within seven days of completing the aquatic fauna relocation work	FFMP
Other				
Noise	Attended noise monitoring undertaken in response to any formal complaints. All monitoring will be completed by suitably qualified acoustic specialists. The location and extent of attended monitoring will be determined in consultation with project staff and would be dependent on the activities taking place.	Contractor's Project Manager	In Response to any formal complaint	CNVMP Section 7.2
Noise	A noise monitoring report will be prepared after each attended monitoring survey.	Contractor's Project Manager	After each attended monitoring survey	CNVMP Section 7.2
Air Quality	All dust and air quality incidents and complaints will be investigated and responded to as per CAQMP.	Contractor's Project Manager	As required	CAQMP Section 8.3
Traffic	Monitoring and review of the CTMP and onsite traffic management effectiveness shall be undertaken in accordance with the CTMP	Contractor's Project Manager	Ongoing	CTMP (Section 6.1)
Traffic	Regular checks undertaken to ensure all loads are entering and leaving site covered as outlined within the CTMP.	Contractor's Project Manager	Ongoing	CTMP (Section 6.1)
Contamination	Keep accurate records of the volume and type of fill to be used and make these records available to the Planning Secretary upon request.	Contractor's Project Manager	Ongoing when importing fill	Best Practice
Soil and Water	Pumped discharge of any water off site will be monitored regularly to ensure that tested water quality meets all applicable criteria.	Contractor's Project Manager	Ongoing	ESCP
Soil and Water	Relevant checklists and records to be maintained noting details such as rainfall received, repairs to controls and amounts of sediments cleaned from controls.	Contractor's Project Manager	Ongoing	ESCP
Soil and Water	All site personnel to report any spill, leaks, or other failure to relevant response staff as soon as possible.	Contractor's Project Manager	Ongoing	ESCP
Soil and Water	Records to be kept of the rainfall events, inspections undertaken, field tests undertaken, dosage rates and when basin water is released.	Contractor's Project Manager, Contractor's Environmental Advisor	Ongoing	ESCP
Soil and Water	The results of all inspections, including inspection reports will be retained in the site environmental inspection register.	Contractor's Project Manager, Contractor's	Ongoing	ESCP



Aspect	Monitoring, Reporting and Auditing Requirements	Person Responsible	Timing / Frequency	References / Notes
		Environmental Advisor		
Contamination	Any material identified as contaminated including asbestos will be monitored, disposed off-site, with the disposal location and results of testing submitted to the Planning Secretary, prior to its removal from the site.	Contractor's Project Manager	As required	Best Practice
Contamination	An Unexpected Finds Register is to be made available on site allow initial documentation of any Unexpected Finds and to provide a record.	Contractor's Project Manager	As required	Best Practice
Contamination	Environmental Consultant to undertake detailed inspection and sampling and analysis where required in accordance with relevant EPA guidelines. Environmental Consultant to assess field inspection outcomes and/or analytical results against documented site assessment criteria	Contractor's Project Manager	As required	Best Practice
Contamination	Random Source Site inspections and sampling during importation of material to the site.	Contractor's Project Manager	Ongoing	Best Practice
Waste	Waste management documentation, logbook, and associated dockets and receipts will be made available for inspection by authorised Council Officer at any time during site works.	Contractor's Project Manager	Ongoing	WMP
Waste	The following monitoring practices are to be undertaken to improve site preparation and construction waste management and to obtain accurate waste generation figures: <ul style="list-style-type: none"> • 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. 	Contractor's Project Manager	Ongoing	WMP
Waste	Maintain waste disposal documentation detailing, at a minimum: <ul style="list-style-type: none"> • 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 	Contractor's Project Manager	Ongoing	WMP



Aspect	Monitoring, Reporting and Auditing Requirements	Person Responsible	Timing / Frequency	References / Notes
	<ul style="list-style-type: none"> removed, licence plate of collection vehicles, tip docket from receiving facility 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 Remove waste during hours approved by Council. 			
Heritage	Unexpected finds must be evaluated and recorded in accordance with the requirements of Heritage NSW, Department of Planning & Environment.	Contractor's Project Manager	Ongoing	Best Practice
Heritage	Record of measures taken, in accordance with the provisions of Part 6 of the National Parks and Wildlife Act 1974, when recommencing work in the immediate vicinity of the Aboriginal item or object.	Contractor's Project Manager	Ongoing	Best Practice
Heritage	Record of measures taken, in accordance with the s146 provisions of the Heritage Act 1977, when recommencing work following the discovery of a 'relic'.	Contractor's Project Manager	Ongoing	Best Practice
Plant and Equipment	Inspections and maintenance of all plant and equipment items to ensure optimal operating condition.	Contractor's Project Manager	As specified by the manufacturer / supplier	Best Practice
Traffic	All incoming and outgoing traffic movement to be monitored and recorded to ensure adherence to the approved construction hours.	Contractor's Project Manager	Ongoing	CTMP



6.0 Contingency Management Plan

Table 14 lists the actions to be implemented if inspections, monitoring and/or auditing indicate that the mitigation measures listed in **Section 4.0** and the specialist management plans are not effective in managing environmental impacts.

Table 14: Contingency Plan

Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
Noise and Vibration				
Noise impacts at sensitive receiver locations	Trigger	Noise levels do not exceed applicable NMLs	Noise levels exceed applicable NMLs	Noise levels exceed Highly Noise Affected criteria (75 dBA)
	Response	On-going best practice management measures to minimise noise emissions	Undertake all feasible and reasonable mitigation and management measures to minimise noise impacts (aiming to achieve NMLs)	Works exceeding the Highly Noise Affected criteria will be managed in accordance with the strategies for high noise generating works detailed in Section 7.1 of the CNVMP such as scheduling respite periods. (It is noted that no works are predicted to result in highly noise affected levels).
Vibration impacts at sensitive receiver locations	Trigger	Vibration intensive works undertaken outside minimum working distance for the specific equipment in use	Vibration intensive works undertaken within minimum working distance for the specific equipment in use	Vibration levels exceed applicable vibration limits
	Response	On-going best practice management measures to minimise vibration emissions	Undertake vibration monitoring for the duration of the works to confirm vibration levels.	Stop work. Undertake all feasible and reasonable mitigation and management measures to ensure vibration levels are below applicable limits. If vibration levels cannot be kept below applicable limits, then a different construction method or equipment must be utilised.
Vibration impacts on WaterNSW pipelines	Trigger	Vibration intensive works undertaken more than 50 m from the closest point of the pipeline	Vibration intensive works undertaken within 50 m of the closest point of the pipeline	Monitored vibration levels on pipeline exceed applicable vibration limits
	Response	On-going best practice Management measures to minimise vibration emissions	Undertake vibration monitoring for the duration of the works to confirm vibration levels.	Stop work. Undertake all feasible and reasonable mitigation and management measures to ensure vibration levels are below applicable limits. If vibration levels cannot be kept below applicable



Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
				limits then different construction method or equipment must be utilised.
Air Quality				
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. Review weather conditions including wind speed. Where appropriate, implement additional remedial measures, such as: <ul style="list-style-type: none"> Deployment of additional water sprays, water trucks etc 	In addition to condition amber, stop the dust generating activities and stop work during high wind speeds.
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.	Goodman Project Managers 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.	Goodman Project Managers to review and investigate construction activities and respective control measures for the monitoring period. If it is concluded that construction activities 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 and stop dust generating works.
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.



Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
	Response	Continue monitoring program as normal.	Report the complaint to the regulator, in line with complaints handling procedure (See Section 8.0). Review and investigate construction activities and increase dust suppression measures (additional watering, covering stockpiles etc), where appropriate.	Including real time monitors to measure PM10 and PM2.5. Review real-time monitoring data at the existing continuous monitors to investigate the likelihood of onsite activities contributing (see Appendix C of CAQMP).
Traffic				
Construction movements	Trigger	Construction traffic volume is in accordance with permissible and programmed volume and time constraints.	Construction traffic volumes exceeds programmed volume but is within permissible volume constraints.	Construction traffic volumes exceeds permissible volume and time constraints.
	Response	No response required. Continue monitoring program.	Review and investigate construction activities, and where appropriate, implement additional remediation measures such as: <ul style="list-style-type: none"> Review CTMP and update where necessary Provide additional training 	As with Condition Amber, plus: <ul style="list-style-type: none"> If it is concluded that construction activities were directly responsible for the exceedance, submit an incident report to government agencies. Stop all transportation into and out of the site.
Queuing	Trigger	No queuing identified.	Queuing identified within site.	Queuing identified on the public road.



Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
	Response	No response required. Continue monitoring program.	Review the delivery schedule prepared by the builder. If drivers are not following the correct schedule, then they should be provided with additional training and an extra copy of the Driver Code of Conduct.	As with Condition Amber, plus <ul style="list-style-type: none"> Review and investigate construction activities. If it is concluded that construction activities were directly responsible for the exceedance, submit an incident report to government agencies. Temporary halting of activities and resuming when conditions have improved. Stop all transportation into and out of the site. Review CTMP and update where necessary, provide additional training.
Traffic noise	Trigger	Noise levels do not exceed imposed noise constraints	Noise levels in minor excess of imposed noise constraints	Noise levels greatly in excess of imposed noise constraints
	Response	No response required	Undertake all feasible and reasonable mitigation and management measures to minimise noise impacts.	As with Condition Amber: <ul style="list-style-type: none"> If noise levels cannot be kept below applicable limits, then a different construction method or equipment must be utilised.
Traffic Guidance Scheme	Trigger	No observable issues	Minor inconsistencies with TGS to onsite operations	Near miss or incident occurring regardless of / as a result of the TGS being implemented
	Response	No response required. Continue monitoring TGSs.	Traffic Controller to amend TGS on site and to keep a log of all changes.	Stop work until an investigation has been undertaken into the incident. There are to be changes made to the TGS to ensure that the safety of all workers, students and civilians are catered for.
Traffic Dust	Trigger	No observable dust	Minor quantities of dust in the air and tracking on to the road.	Large quantities of dust in the air and tracking on to the road.



Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
	Response	No response required	<p>Review and investigate.</p> <p>Construction activities and respective control measures, where appropriate.</p> <p>Implement additional remedial measures, such as:</p> <ul style="list-style-type: none"> • Deployment of additional water sprays • Relocation or modification of dust-generating sources • Check condition of vibrating grids to ensure they are functioning correctly. • Temporary halting of activities and resuming when conditions have improved 	<p>As with Condition Amber.</p> <ul style="list-style-type: none"> • If it is concluded that construction activities were directly responsible for the exceedance, submit an incident report to government agencies. • Implement relevant responses and undertake immediate review to avoid such occurrence in future
Water and Soil				
Soil / dust / mud on public road network	Trigger	No soil / dust / mud tracked onto the public road network.	Evidence of soil / dust / mud at entry but none tracked onto public roads.	Evidence of soil / dust / mud tracked onto the public roads.
	Response	Continue ESCP/CEMP implementation.	Check condition of wheel wash facility to ensure it is functioning correctly.	Check condition of wheel wash facility to ensure it is functioning correctly. Stop work and clean soil / dust / mud off road network (e.g. engage street sweeper).
Erosion	Trigger	No evidence of erosion.	Minor gully or tunnel erosions present and/or rilling. Evidence of sediment or sediment laden water leaving the site.	Significant gully or tunnel erosions present and/or rilling. Evidence of sediment or sediment laden water leaving the site.
	Response	Continue ESCP / CEMP implementation.	A suitably trained person to inspect the site. Review of erosions and sediment structures. Remediate as appropriate.	A suitably trained person to inspect the site. Review of erosion and sediment structures. Remediate as soon as practical.



Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
Water management structures	Trigger	Water management structures have been designed, constructed and managed in accordance with the Blue Book and the ESCPs.	Inspections indicate that water management structures illustrate minor non-compliance with the Blue Book and the ESCPs.	Inspections indicate a failure of the water management structures.
	Response	Continue ESCP / CEMP implementation.	A suitably trained person to inspect the site. Review of water management structures. Remediate as appropriate.	A suitably trained person to inspect the site. Remediate as soon as practical. Review of engineering design and revise ESCPs.
Storm event / wet weather events	Trigger	No forecast storm events.	Storm event is forecasted.	Extreme storm event imminent/underway.
	Response	Continue ESCP / CEMP implementation.	Monitor forecast. Continue ESCP / CEMP implementation. Pre-emptive inspections of water management structures and systems. Confirm water sampling equipment is on standby. Follow the Wet Weather Contingency & Management Procedures. Appendix D of ESCP. Post-Rainfall/Storm Procedure Appendix D of ESCP.	Continue ESCP / CEMP implementation. Continue inspections of water management structures and systems. Undertake water sampling as required. Initiate emergency procedures if required. Follow the Wet Weather Contingency & Management Procedures. Appendix D of ESCP. Post-Rainfall/Storm Procedure Appendix D of ESCP.
Waste				
Waste	Trigger	Inspections identified no waste outside of dedicated bins and stockpiles.	Inspections identified minimal waste outside of dedicated bins and stockpiles.	Inspections identified large quantities of waste outside of dedicated bins and stockpiles. Complaints received regarding waste.
	Response	Continue WMP / CEMP implementation.	The waste is cleaned up immediately.	The waste is cleaned up immediately. The Communications and Community Liaison Representative is also notified and the complaints handling process outlined in Section 3.6 is implemented.



Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
Biodiversity				
Native vegetation clearance	Trigger	Clearing limits are clearly marked and disturbance is restricted to the delineated clearance areas. No stockpiling of equipment, soils, or machinery occurs beyond the clearance boundary. No encroachment of vehicles, equipment or works occurs beyond the clearance boundary.	Monitoring verifies that demarcation of clearing limits is not functioning in accordance with their design intent, OR Works activities / vehicle or plant movements have encroached beyond clearing limits.	Monitoring verifies clearing of native vegetation has occurred beyond clearing limits, OR Works activities / vehicle or plant movements that have encroached beyond clearing limits have caused damage to protected areas of vegetation.
	Response	No response required. Continue Monitoring Program.	Remediate immediately OR Review work practices of contractors / personnel responsible and provide further site induction to ensure responsibilities are understood.	Reporting to government agencies. Implement relevant responses and undertake immediate review to determine source of issues and implement remediation measures identified as soon as practicable.
Fauna protection	Trigger	Clearing of native vegetation and habitat features is completed in accordance with Clearance protocols. All fauna species encountered during construction are handled humanely in accordance with industry standards	Monitoring/review of reporting procedures verifies that Clearing of habitat features is undertaken in the absence of Clearance protocols, but no fauna species encountered.	Monitoring/review of reporting procedures verifies that clearing of habitat features is undertaken in the absence of Clearance protocols, and results in death or injury of fauna species encountered.
	Response	No response required	Review work practices of contractors / personnel responsible. Further clearance of native vegetation is to cease until further site induction undertaken to ensure responsibilities are understood.	Reporting to government agencies. Implement relevant responses and undertake immediate review to determine source of issues and implement remediation measures identified as soon as practicable.
Native vegetation protection	Trigger	Exclusion fencing and protection measures are installed and are functioning in accordance with their design intent.	Monitoring verifies that exclusion fencing and protection measures are not functioning in accordance with their design intent.	Monitoring verifies that works activities / vehicle or plant movements have impacted on areas of native vegetation to be protected.



Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
	Response	No response required	Remediate Immediately	Reporting to government agencies. Implement relevant responses and undertake immediate review to determine source of issues and implement remediation measures as soon as practicable.
Dam decommissioning	Trigger	All aquatic fauna species encountered during construction are handled humanly in accordance with industry standards. No introduction or spread of biosecurity risks within the Project area. No pollution or siltation enters biodiversity conservation areas.	Monitoring verifies that dewatering of dams commences or continues in the absence of project ecologist OR biosecurity risk identified OR Sediment and erosion controls are not installed correctly	Monitoring verifies that dewatering of dams commences or continues in the absence of project ecologist, and aquatic fauna are harmed or killed OR Sediment and erosion controls failed, and pollution or siltation discharge occurs.
	Response	No response required. Continue monitoring program.	Stop work immediately and implement remediation actions OR Review work practices of contractors/personnel responsible and provide further site induction to ensure responsibilities are understood.	Reporting to government agencies. Implement relevant responses and undertake immediate review to determine source of issues and implement remediation measures identified as soon as practicable.
Heritage				
Human Remains	Trigger	Not uncovered during earthworks.	Areas of possible Human remains uncovered.	Human remains uncovered
	Response	Continue works in accordance with approved project documentation	Stop work immediately. Follow protocols of UFP- archaeological items. If confirmed to be human remains continue UFP under Humans remains	Stop work immediately and follow the protocol as per UFP- archaeological items.
Aboriginal archaeological material	Trigger	No Aboriginal archaeological material during earthworks.	Suspected Aboriginal archaeological material is identified	Archaeological material is identified.
	Response	Continue works in accordance with approved project documentation	Stop work immediately and assess according to the UFP - archaeological items.	Stop work immediately and assess according to the UFP – archaeological items.



Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
Historical archaeological material	Trigger	Not uncovered during earthworks	Areas of possible Historical material uncovered.	Historical archaeological material was uncovered.
	Response	Continue works in accordance with approved project documentation	Stop work immediately and assess according to the UFP – Archaeological items.	Stop work immediately. Assess according to the UFP.
Hazardous Goods and Contamination				
Unexpected Contamination	Trigger	No contamination uncovered during earthworks.	Areas of possible contamination uncovered.	Areas of contamination uncovered.
	Response	Continue CEMP implementation.	Stop work immediately and the contamination assessed according to the UFP.	Stop work immediately. A validation report is to be prepared following remediation.
Community				
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 Complaints Register. No further response required.	Acknowledge receipt and record in Complaints Register. Direct enquiry to relevant person for actioning and response within 5 days.	Acknowledge receipt and record in Complaints 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	<ul style="list-style-type: none"> Record in Complaints Register and advise the proponent media/marketing team. No further response required. 	<ul style="list-style-type: none"> Record in Complaints Register and advise the proponent media/marketing team. No further response required. 	<ul style="list-style-type: none"> Record in Complaints Register and advise the proponent 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 such as a near	Event occurring outside of plan or schedule with major impact or potential impact such as an emergency or an incident



Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
			miss or minor incident.	causing harm or natural disaster.
	Response	<ul style="list-style-type: none"> No response required. Identify opportunities for improvement to manage potential future events. 	<ul style="list-style-type: none"> Follow incident response. Contact relevant person for actioning and response within 48 hours. Acknowledge in Complaints Register. Identify opportunities for improvement to manage potential future events. 	<ul style="list-style-type: none"> Stop work. Follow incident response. Contact relevant person for actioning and response immediately acknowledge in Complaints 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	CCLR in conjunction with The Proponent Project Team to prepare and provide response or assign response task to relevant staff member for comment. Record in Complaints Register.	CCLR in conjunction with the proponent Project Team to prepare and provide response within 48 hours. Record in Complaints Register.	CCLR in conjunction with the proponent Project Team to prepare and provide response within 24 hours. Record in Complaints Register.



7.0 Review

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

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

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

- a) Where there is any change to the scope of the construction activities and/or disturbance footprint.
- b) Where it is identified that the environmental performance is not meeting the objectives of the CEMP.
- c) At the request of a relevant regulatory authority.



8.0 References

Affinity (2022) Fire Safety Strategy

Ason (2023) Construction Traffic Management Plan

BlackAsh (2022) Bushfire Risk Assessment

Department of Infrastructure, Planning and Natural Resources (2004) Guideline for the Preparation of Environmental Management Plans

Ecologique (2023) Flora and Fauna Management Plan

Keylan Consulting (2022) Environmental Impact Statement (EIS) State Significant Development Application (SSD 37486043)

Rubicon (2023) Erosion and Sediment Control Plan

Rubicon (2023) Soil and Water Management Plan

SLR (2023) Construction Air Quality Management Plan

SLR (2023) Construction Noise and Vibration Management Plan SLR

SLR (2023) Flood Emergency Response Plan

SLR (2023) Oakdale East Community Consultation and Complaints Handling Strategy

SLR (2023) Waste Management Plan



Appendix A Relevant Consent Conditions SSD- 37486043

Construction Environmental Management Plan

**SSD-37486043: Oakdale East Industrial Estate
2-10 Old Wallgrove Road, Horsley Park**

Goodman Property Services (Aust) Pty Ltd

SLR Project No.: 630.V10611.00001

13 November 2023

Appendix A: Relevant Conditions of Consent: SSD-37486043

Relevant Consent Conditions		
Environmental Management Control	Person Responsible	Timing / Frequency
Terms of Consent		
<p>C2. The Stage 2 development may only be carried out:</p> <p>a) in compliance with the conditions of this consent;</p> <p>b) in accordance with all written directions of the Planning Secretary;</p> <p>c) in accordance with the EIS, RTS and AR;</p> <p>d) in accordance with the Development Layout in Appendix 2; and</p> <p>e) in accordance with the management and mitigation measures in Appendix 3.</p>	<p>Goodman Project Manager, Contractor's Project Manager</p>	<p>Ongoing</p>
<p>C3. Consistent with the requirements in this consent, the Planning Secretary may make written directions to the Applicant in relation to:</p> <p>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</p> <p>b) the implementation of any actions or measures contained in any such document referred to in condition C2(a).</p>	<p>Goodman Project Manager, Contractor's Project Manager</p>	<p>Ongoing</p>
<p>C4. 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 C2(c) or C2(e). In the event of an inconsistency, ambiguity or conflict between any of the documents listed in condition C2(c) or C2(e), the most recent document prevails to the extent of the inconsistency, ambiguity or conflict.</p>	<p>Goodman Project Manager, Contractor's Project Manager</p>	<p>Ongoing</p>
Consultation (to be completed during Stage 2 construction)		
<p>C12. Before the commencement of Intersection works for the development, the Applicant must:</p> <ul style="list-style-type: none"> consult with the relevant owner and provider of services that are likely to be affected by the Stage 2 development to make suitable arrangements for access to, diversion, protection and support of the affected infrastructure. 	<p>Goodman Project Manager</p>	<p>Before the commencement of Intersection works for the development</p>
<p>Temporary Noise Barrier</p> <p>D8 Within three months of the commencement of earthworks for the development, the Applicant must prepare a Design Noise</p>	<p>Goodman Project Manager</p>	<p>Within three months of the commencement of earthworks.</p>

Relevant Consent Conditions		
<p>Verification Report for the temporary noise barrier shown on Figure 6 in Appendix 4, to the satisfaction of the Planning Secretary. The report must:.....</p> <p>(f) describe the community consultation undertaken with the sensitive receivers shown on Figure 5 in Appendix 3</p>		
<p>Permanent Noise Mitigation</p> <p>D9. Within 12 months of the commencement of earthworks for the Stage 2 development, or as part of a subsequent DA for the site, whichever occurs sooner, the Applicant must prepare a Design Noise Verification Report detailing permanent noise mitigation measures, to the satisfaction of the Planning Secretary. The report must.</p> <p>(e) describe the community consultation undertaken with the sensitive receivers shown on Figure 5 in Appendix 3 in relation to the adopted noise mitigation measures.</p>	Goodman Project Manager	Within 12 months of the commencement of earthworks
<p>D35. The Applicant must submit detailed design drawings to TfNSW detailing excavation of the site and support structures adjacent to Old Wallgrove Road, at least 6 weeks prior to commencement of earthworks adjacent to Old Wallgrove Road.</p>	Goodman Project Manager	At least 6 weeks prior to commencement of earthworks adjacent to Old Wallgrove Road.
<p>Estate Roads</p> <p>D40. Prior to the commencement of construction of the estate roads within the Stage 2 development, the Applicant must undertake a Road Safety Audit to the satisfaction of the Relevant Roads Authority. The Road Safety Audit must:</p> <p>(b) be prepared in consultation with Council</p>	Goodman Project Manager	Prior to the commencement of construction of the estate roads.
<p>Stormwater Management System Design</p> <p>D58. Prior to the commencement of construction of the Stage 2 development, the Applicant must finalise the detailed design of the stormwater management system, including any temporary stormwater management measures (to satisfy the Staging Plan). The stormwater management system must:</p> <p>(b) be designed in consultation with Council</p>	Goodman Project Manager	Completed prior to commencement of construction

Relevant Consent Conditions		
General		
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 consent.	Goodman Project Manager, Contractor's Project Manager	As required
A18. Transgrid Easement: (a) provide safe and unobstructed access for TransGrid plant and personnel to access the transmission towers, lines and easements 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	Contractor's Project Manager	Ongoing
C1. 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.	Contractor's Project Manager	Ongoing
C27. 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.	Goodman Project Manager, Contractor's Project Manager	Ongoing
C30. All plant and equipment used on-site, or to monitor the performance of the Stage 2 development, must be: <ul style="list-style-type: none"> • maintained in a proper and efficient condition; and • operated in a proper and efficient manner 	Contractor's Project Manager	Ongoing
D53. All signage and fencing must be erected in accordance with the development plans <i>Note: This condition does not apply to temporary construction and safety related signage and fencing.</i>	Contractor's Project Manager	Ongoing
Noise and Vibration		
A15. The Applicant must ensure that noise generated by any activity on the site does not exceed a sound power level of LAMax 115 dB(A) or result in annoying noise characteristics as determined in accordance with the Noise Policy for	Contractor's Project Manager	Ongoing

Relevant Consent Conditions		
Industry (EPA, 2017) and Australian Standard AS 1055:2018 Acoustics – Description and measurement of environmental noise (Standards Australia, 2018).		
B16. 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 of the SSD.	Contractor's Project Manager	Ongoing
D9. The Applicant must: (a) not commence construction of any warehouse building in the Stage 2 development until the Design Noise Verification Report required by condition D8 is approved by the Planning Secretary; (b) install the temporary noise mitigation measures, prior to the commencement of operation of the first warehousing building in the Stage 2 development; and (c) maintain the temporary noise mitigation measures until such time as the permanent noise mitigation measures developed in accordance with condition D10 are implemented.	Contractor's Project Manager	Ongoing
D11. The Applicant must install the permanent noise mitigation measures in accordance with condition D10 to the satisfaction of the Planning Secretary. The Applicant must provide written evidence demonstrating that the permanent noise mitigation measures have been installed in accordance with this condition..	Goodman Project Manager, Contractor's Project Manager	Ongoing
D15. Vibration caused by construction of the development, at any residence or structure outside the site, must be limited to: (a) for structural damage, the latest version of <i>DIN 4150-3 (1992-02) Structural vibration - Effects of vibration on structures</i> (German Institute for Standardisation, 1999); and (b) for human exposure, the acceptable vibration values set out in the <i>Environmental Noise Management Assessing Vibration: a technical guideline</i> (DEC, 2006) (as may be updated or replaced from time to time).	Goodman Project Manager, Contractor's Project Manager	Ongoing
D16. 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 D15.	Contractor's Project Manager	Ongoing

Relevant Consent Conditions		
<p>Appendix 3: Applicant's Management and Mitigation Measures</p> <p>Construction noise mitigation:</p> <ul style="list-style-type: none"> • minimising the coinciding use of multiple noisy plant items • equipment which is used intermittently is to be shut down when not in use • equipment with directional noise emissions would be oriented away from sensitive receivers as much as practicable • regular compliance checks on the noise emissions of all plant and machinery used for the proposal would indicate whether noise emissions from plant items were higher than predicted. This also identifies defective silencing equipment on the items of plant • non-tonal reversing alarms should be used on all items of plants and heavy vehicles used for construction • pre-construction consultation with receivers R01, R03, R04, R05, R06 and R09 to clearly and transparently explain the proposed works and the potential for construction noise impacts • provision of regular on-going updates to these receivers throughout the works in order to understand and address as far as practicable any noise related concerns of the receivers. • development of a Construction Noise and Vibration Management Plan (CNVMP) by the construction contractor prior to commencement of site works. The CNVMP will form part of the CEMP for the development and include: <ul style="list-style-type: none"> ○ confirm that the results presented in the NVIA are representative of the final construction methodology ○ identify the most sensitive receivers potentially impacted by construction noise ○ provide details of all reasonable and feasible noise mitigation measures required ○ inform site staff of this sensitivity and methods to reduce construction noise. 	Contractor's Project Manager	Ongoing
Air Quality		
<p>Dust Minimisation</p> <p>D63. The Applicant must take all reasonable steps to minimise dust generated during all works authorised by this consent.</p>	Contractor's Project Manager	Ongoing

Relevant Consent Conditions		
<p>D64. During construction, the Applicant must ensure that:</p> <p>(a) exposed surfaces and stockpiles are suppressed by regular watering;</p> <p>(b) all trucks entering or leaving the site with loads have their loads covered;</p> <p>(c) trucks associated with the Stage 2 development do not track dirt onto the public road network;</p> <p>(d) public roads used by these trucks are kept clean; and</p> <p>(e) land stabilisation works are carried out progressively on site to minimise exposed surfaces.</p>		
<p>Odour Management</p> <p>D65. The Applicant must ensure the development does not cause or permit the emission of any offensive odour (as defined in the POEO Act).</p>	<p>Contractor's Project Manager</p>	<p>Ongoing</p>
<p>Appendix 3: Applicant's Management and Mitigation Measures</p> <ul style="list-style-type: none"> • display the name and contact details of person(s) accountable for air quality and dust issues on the boundary of each tenancy (i.e. the tenant's representative/environment manager/engineer or the site superintendent etc), along with the head/regional office contact information • dust suppression including covering or stabilizing stockpiled materials and wetting exposed surfaces • site management, site inspections and monitoring procedures, including observation of speed limits, • all dust and air quality complaints will be recorded and identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken • record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the Site Incident Register • revegetating disturbed surfaces will occur as soon as practicable • minimise dust generating activities in areas close to receptors • in case of exposed surfaces, land stabilisation works are to be carried out progressively on site to minimise the impact of exposed surfaces • wind erosion from exposed surfaces and stockpiles is to be suppressed by regular watering, as required 	<p>Contractor's Project Manager</p>	<p>Ongoing</p>

Relevant Consent Conditions

<ul style="list-style-type: none"> • keep site fencing, barriers and scaffolding clean using wet methods • remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site • erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site • ensure all on-road vehicles comply with relevant vehicle emission standards (where applicable), and maintain vehicles in good condition and in accordance with manufacturer's specifications, and so that the exhaust emissions comply with the Protection of the Environment Operations Act 1997 • stationary trucks are to switch off engines if idling time on-site is likely to exceed 5 minutes • vehicle speed limit restrictions are to be implemented on site • minimise truck queuing and unnecessary trips through effective logistical planning • only use cutting, grinding or sawing equipment fitted with suitable dust suppression systems, such as water sprays • ensure an adequate water supply on the site for effective dust/particulate matter suppression/ mitigation, using non-potable water • use a watercart or sprays to suppress dust emissions from unsealed roads (if relevant) 		
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Traffic

<p>Road Traffic Noise D13. Prior to the commencement of construction of the Stage 2 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.</p>	<p>Contractor's Project Manager</p>	<p>Ongoing</p>
<p>D14. The Applicant must ensure the largest vehicle permitted to enter the site is a 30 m super B-double.</p>	<p>Contractor's Project Manager</p>	<p>Ongoing</p>
<p>D31. Prior to the commencement of construction works for the intersection upgrade of Old Wallgrove Road / Lenore Drive, the Applicant must enter into a Works Authorisation Deed with TfNSW. TfNSW fees for administration, plan checking, civil works inspections and project management shall be</p>	<p>Goodman Project Manager</p>	<p>Prior to construction of the intersection upgrade of Old Wallgrove Road / Lenore Drive</p>

Relevant Consent Conditions		
paid by the Applicant prior to the commencement of works		
D34. The Applicant must ensure all structures along the Old Wallgrove Road boundary are erected clear of land required for the road and are wholly located within the site boundary.	Contractor's Project Manager	Ongoing
<p>Traffic Control Signals</p> <p>D37. Prior to the commencement of construction of the Stage 2 development, the Applicant must prepare Traffic Control Signal (TCS) plans for the modifications to the traffic control signals at Old Wallgrove Road and Lenore Drive, and Old Wallgrove Road and Millner Avenue. The TCS plans must:</p> <p>(a) be prepared by suitably qualified and experienced person(s);</p> <p>(b) be prepared in accordance with the requirements of TfNSW; and</p> <p>(c) be in accordance with the Austroads Guide to Road Design and relevant TfNSW supplements; and</p> <p>(d) detail the dedication of land as public road for the maintenance of the TCS and associated infrastructure.</p>	Contractor's Project Manager	Prior to construction
D41. The Applicant must incorporate the recommendations of the Road Safety Audit undertaken in accordance with Condition D40 into the detailed design and construction of the estate roads, to the satisfaction of the Relevant Roads Authority.	Goodman Project Manager, Contractor's Project Manager	Ongoing
<p>Appendix 3: Applicant's Management and Mitigation Measures</p> <ul style="list-style-type: none"> • a construction traffic management plan to be prepared and submitted to Council separate to this DA, in response to any future conditions of consent. • proposed signage and line-marking to be referred to Council and an accompanying Traffic Management Plan (TMP) to be prepared for the Council traffic committees to review and approve. • traffic control will manage and regulate traffic movements into and out of the site during construction • disruption to road users will be kept to a minimum by scheduling intensive delivery activities outside of peak network hours 	Contractor's Project Manager	Ongoing
Soil and Water		
<p>WATER NSW PIPELINES CORRIDOR</p> <p>A17. The Applicant must:</p> <p>(a) provide safe and unobstructed access for Water NSW plant and personnel to the water</p>	Contractor's Project Manager	Ongoing

Relevant Consent Conditions		
<p>pipelines corridor adjacent the site, 24 hours a day, 7 days a week;</p> <p>(b) comply with the requirements of Water NSW for any works adjacent to or over, the water pipelines corridor;</p> <p>and</p> <p>(c) advise Water NSW of any proposed amended or modified encroachment into the water pipelines corridor.</p>		
<p>C18. The Applicant must ensure:</p> <p>(a) all works adjacent to the water pipelines corridor is consistent with the Guideline for development adjacent to the Upper Canal and Warragamba Pipelines (Water NSW, 2021);</p> <p>(b) post-development flows do not exceed pre-development flows into and through the water pipelines corridor;</p> <p>(c) stockpiles are not placed in a position where they may interfere with or impede Water NSW drainage infrastructure;</p> <p>(d) boundary identification fencing is installed prior to commencing construction and is maintained for the duration of construction;</p> <p>(e) permanent fencing is installed along the length of the boundary with Water NSW, prior to the commencement of operation of the development. Design and installation of the fencing is to be agreed with Water NSW prior to installation; and</p> <p>(f) all retaining walls adjacent to the water pipelines corridor are set back from the boundary with all footings and supporting structures contained wholly within the site.</p>	Contractor's Project Manager	Ongoing
<p>SOILS, WATER QUALITY AND HYDROLOGY Imported Soil</p> <p>D54. The Applicant must:</p> <p>(a) ensure that only VENM, ENM, or other material approved in writing by EPA is brought onto the site;</p> <p>(b) keep accurate records of the volume and type of fill to be used; and</p> <p>(c) make these records available to the Planning Secretary upon request.</p>	Contractor's Project Manager	Ongoing
<p>Erosion and Sediment Control</p> <p>D55. Prior to the commencement of earthworks for the Stage 2 development, the Applicant must install 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 E2.</p>	Contractor's Project Manager	Prior to the commencement of earthworks
<p>D56. The Applicant must maintain the erosion and sediment control measures installed on-site</p>	Contractor's Project Manager	Ongoing

Relevant Consent Conditions		
in accordance with condition D55 for the duration of earthworks and construction of the development		
Discharge Limits D57. The Stage 2 development must comply with section 120 of the POEO Act, which prohibits the pollution of waters, except as expressly provided for in an EPL.	Contractor's Project Manager	Ongoing
D58. Prior to the commencement of construction of the Stage 2 development, the Applicant must finalise the detailed design of the stormwater management system, including any temporary stormwater management measures (to satisfy the Staging Plan).	Goodman Project Manager, Contractor's Project Manager	Prior to construction
D59. The Applicant must install the stormwater management system in accordance with the finalised detailed design (as required by condition D58 and in accordance with any approved Staging Plan under condition A11) and ensure the system is operational.	Goodman Project Manager, Contractor's Project Manager	Ongoing
D60. The Applicant must maintain the stormwater management system installed on the site under condition D59 for the duration of the development.	Goodman Project Manager, Contractor's Project Manager	Ongoing
Appendix 3: Applicant's Management and Mitigation Measures <ul style="list-style-type: none"> • overland flowpaths shall maintain a minimum of 3000mm freeboard to all habitable floor levels • to assist in maintaining embankment stability, any batters steeper than 1 in 5 will be vegetated and all external batters to the development have been limited to 1 in 4 as a minimum generally, with the maximum being 1 in 3. Any temporary batters constructed during the works will be in accordance with the geotechnical report and ongoing advice from the Level 1 supervisor • an erosion and sediment control plan will be prepared prior to commencing construction 	Contractor's Project Manager	Ongoing
Waste		
D76. The Applicant must implement the Waste Management Plan for the duration of construction and operation.	Contractor's Project Manager	Ongoing
Waste Storage and Processing D78. 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.	Contractor's Project Manager	Ongoing
Statutory Requirements D79. The Applicant must assess and classify all liquid and non-liquid wastes to be taken off site	Contractor's Project Manager	Ongoing

Relevant Consent Conditions		
<p>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 waste management facility or premises lawfully permitted to accept the waste</p>		
<p>Appendix 3: Applicant's Management and Mitigation Measures</p> <ul style="list-style-type: none"> • implementation of a waste management plan for the development • maximise resource recovery by reuse and recycling • minimise the generation of waste to landfill • minimise waste material avoidance and reuse on the site • establish record keeping, monitoring and reporting procedures • comply with the requirements of the relevant statutory Authorities • adopt an ongoing improvement approach to improve on best practice waste management principles • waste storage areas will be adequately sized to comfortably accommodate the required number of bins associated with the development • waste storage areas will be designed with sufficient space for convenient access and manoeuvring and additional specialised waste areas • waste storage areas will be designed with drainage connection to sewer to prevent potential contamination in stormwater • all staff are trained in correct waste separation and management procedures • directional signage to show location of and routes to waste storage area • general waste and co-mingled recycling bins will be clearly labelled and colour-coded to ensure no cross contamination, where applicable • repair signs and labels promptly to avoid breakdown of communications 	Contractor's Project Manager	Ongoing
Biodiversity		
<p>Offsets D20. Prior to any clearing or construction works for the development, the Applicant must purchase and retire the ecosystem and species credits in Tables 6 and 7 of SDD-37486043 to offset the removal/disturbance of native vegetation at the site. The ecosystem and species credits must be retired in accordance with the requirements of EHG's Biodiversity</p>	Contractor's Project Manager	Prior to construction

Relevant Consent Conditions		
Offsets Scheme and the Biodiversity Conservation Act 2016.		
D22. The Applicant must provide the Planning Secretary with evidence that: (a) the retirement of ecosystem credits has been completed (see condition D20); or (b) a payment has been made to the Biodiversity Conservation Fund (see condition D21), prior to undertaking any clearing or construction works for the development.	Contractor's Project Manager	Prior to construction
Vegetation Management Plan – Riparian Corridor D25. Prior to the commencement of any clearing or construction works, the Applicant must update the Vegetation Management Plan (VMP) prepared by ecologue dated 22 March 2023 to include a detailed map showing the area of each vegetation community that will be revegetated on the site.	Contractor's Project Manager	Prior to any clearing or construction
Biosecurity Management Plan D27. The Applicant must implement the Biosecurity Management Plan prepared by ecologue dated 28 September 2022 for the duration of the development.	Goodman Project Manager, Contractor's Project Manager	Ongoing
Pests, Vermin and Priority Weed Management D80. The Applicant must: (a) implement suitable measures to manage pests, vermin and declared priority 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 priority 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, priority weed has the same definition of the term in the Biosecurity Act 2015.	Goodman Project Manager, Contractor's Project Manager	Ongoing
Appendix 3: Applicant's Management and Mitigation Measures <ul style="list-style-type: none"> preparation and implementation of a construction Flora and Fauna Management Plan weed control and protocols to prevent the introduction or spread of pest species, disease and pathogens in accordance with the Oakdale East Estate Biosecurity Management Plan 	Contractor's Project Manager	Ongoing

Relevant Consent Conditions		
<ul style="list-style-type: none"> • revegetation and assisted regeneration of the Reedy Creek riparian corridor in accordance with the Oakdale East Estate Vegetation Management Plan 		
Visual Amenity		
<p>Lighting D52. The Applicant must ensure the lighting associated with the development:</p> <p>(a) complies with the latest version of AS 4282-2019 - Control of the obtrusive effects of outdoor lighting (Standards Australia, 2019); and</p> <p>(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.</p>	Contractor's Project Manager	Ongoing
<p>Signage and Fencing D53. All signage and fencing must be erected in accordance with the development plans included in the AR.</p> <p>Note: This condition does not apply to temporary construction and safety related signage and fencing.</p>	Contractor's Project Manager	Ongoing
<p>Appendix 3: Applicant's Management and Mitigation Measures</p> <ul style="list-style-type: none"> • mature vegetation between Burley Road and the site will filter views of the site from adjoining rural residential properties • landscaped areas will be maintained to ensure visual screening is provided, with the replacement of any trees which fail to establish 	Goodman Project Manager	Ongoing
Contaminated Land		
<p>Imported Soil D54. The Applicant must:</p> <p>(a) ensure that only VENM, ENM, or other material approved in writing by EPA is brought onto the site;</p> <p>(b) keep accurate records of the volume and type of fill to be used; and</p> <p>(c) make these records available to the Planning Secretary upon request.</p>	Contractor's Project Manager	Prior to construction and ongoing
<p>Asbestos D70. The Applicant must ensure that any asbestos encountered during earthworks and construction works for the development is monitored, handled, transported and disposed of by appropriately qualified and licensed contractors in accordance with the requirements of SafeWork NSW and relevant guidelines, including:</p>	Contractor's Project Manager	Ongoing

Relevant Consent Conditions		
(a) Work Health and Safety Regulation 2017; (b) SafeWork NSW Code of Practice – How to Manage and Control Asbestos in the Workplace September 2016; (c) SafeWork NSW Code of Practice – How to Safely Remove Asbestos September 2016; and (d) Protection of the Environment Operations (Waste) Regulation 2014.		
HAZARDS AND RISK Dangerous Goods D71. The quantities of dangerous goods stored and handled in the Stage 2 development must be below the threshold quantities listed in the Department's Hazardous and Offensive Development Application Guidelines – Applying SEPP 33 at all times.	Contractor's Project Manager	Ongoing
Bundling D72. The Applicant must store all chemicals, fuels and oils used on-site in accordance with: (a) the requirements of all relevant Australian Standards; and (b) for liquids, the NSW EPA's Storing and Handling of Liquids: Environmental Protection – Participants Manual (Department of Environment and Climate Change, 2007).	Contractor's Project Manager	Ongoing
D73. In the event of an inconsistency between the requirements of conditions D72(a) and D72(b), the most stringent requirement must prevail to the extent of the inconsistency.	Contractor's Project Manager	Ongoing
Appendix 3: Applicant's Management and Mitigation Measures <ul style="list-style-type: none"> the site shall be designed to contain any spills or contaminated water from a fire incident within the boundaries of the site multiple spill kits be provided around the DG storage area to ensure spills can be cleaned up immediately following identification 	Contractor's Project Manager	Ongoing
Aboriginal Cultural Heritage and Cultural Heritage		
Archaeological Protection D66. The Applicant must ensure the artefact scatter and potential archaeological deposit (PAD) in the riparian corridor is protected for the duration of earthworks, construction and operation.	Contractor's Project Manager	Ongoing
Unexpected Finds Protocol D67. 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;	Contractor's Project Manager	Ongoing

Relevant Consent Conditions		
(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.		
D68. 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.	Contractor's Project Manager	Ongoing
D69. If any archaeological relics are uncovered during earthworks or construction, then all works must cease immediately in that area. Unexpected finds must be evaluated and recorded in accordance with the requirements of Heritage NSW.	Contractor's Project Manager	Ongoing
<p>Appendix 3: Applicant's Management and Mitigation Measures</p> <ul style="list-style-type: none"> if changes are made to the proposal that may result in impacts to OEAS1 which have not been assessed by this ACHAR, further investigation in the form of test excavation will occur unexpected Aboriginal objects remain protected by the National Parks Wildlife 1974. If any such objects, or potential objects are uncovered in the course of the activity, all work in the vicinity will cease immediately. A qualified archaeologist will be contacted to assess the findings and Heritage NSW and Deerubbin LALC will be notified if human remains, or suspected human remains, are found in the course of the activity, all work in the vicinity will cease, the site will be secured, and the NSW Police and Heritage NSW will be notified 	Contractor's Project Manager	Ongoing
Fire Safety		
A16. Ensure the development complies with <ul style="list-style-type: none"> a) the relevant provisions of Planning for Bushfire Protection (NSW RFS, 2019); b) the construction standards and asset protection zone requirements recommended in the Bushfire Hazard Assessment for the Oakdale East Industrial Estate, prepared by Blackash Bushfire Consulting, dated 23 March 2023; and c) Australian Standard AS2419.1-2005 Fire hydrant installations System design, installation, and commissioning 	Goodman Project Manager, Contractor's Project Manager	Ongoing
BUSHFIRE PROTECTION D74. The Applicant must ensure the Stage 2 development complies with:	Goodman Project Manager, Contractor's Project Manager	Ongoing

Relevant Consent Conditions		
<p>(a) the relevant provisions of Planning for Bushfire Protection (NSW RFS, 2019);</p> <p>(b) the construction standards and asset protection zone requirements recommended in the Bushfire Hazard Assessment for the Oakdale East Industrial Estate, prepared by Blackash Bushfire Consulting, dated 23 March 2023; and</p> <p>(c) Australian Standard AS2419.1-:2021 Fire hydrant installations System design, installation, and commissioning or a Performance Requirement E1P3 of the National Construction Code Building Code of Australia Volume 1 for hydrant systems.</p>		
<p>Appendix 3: Applicant's Management and Mitigation Measures</p> <ul style="list-style-type: none"> • asset protection zones to be established around the site and managed in perpetuity • landscaping to be established and managed in accordance with Planning for Bush Fire Protection (RFS 2019) • design and construction measures in accordance with AS 3959 or the National Association of Steel-framed Housing (NASH) standard and Section 7.5 of Planning for Bush Fire Protection 2019 (PBP 2019) 	Contractor's Project Manager	Ongoing
Flood		
<p>Flood Management</p> <p>D61. All floor levels must be no lower than the 1% Annual Exceedance Probability flood plus 500 mm of freeboard.</p>	Goodman Project Manager, Contractor's Project Manager	Ongoing
<p>D62. Any structures below the 1% Annual Exceedance Probability plus 500 mm of freeboard must be constructed from flood compatible building components.</p>	Goodman Project Manager, Contractor's Project Manager	Ongoing
Community		
<p>ACCESS TO INFORMATION</p> <p>E17. At least 48 hours before the commencement of construction of the Stage 2 development and for the life of the development, the Applicant must:</p> <p>(a) make the following information and documents (as they are obtained or approved) publicly available on its website:</p> <p>(i) the documents referred to in condition A1 of this consent;</p> <p>(ii) all current statutory approvals for the development;</p> <p>(iii) all approved strategies, plans and programs required under the conditions of this consent;</p>	Goodman Project Manager	Ongoing

Relevant Consent Conditions		
<p>(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;</p> <p>(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;</p> <p>(vi) a summary of the current stage and progress of the development;</p> <p>(vii) contact details to enquire about the development or to make a complaint;</p> <p>(viii) a complaints register, updated monthly;</p> <p>(ix) the Compliance Report of the development;</p> <p>(x) any other matter required by the Planning Secretary; and</p> <p>(b) keep such information up to date, to the satisfaction of the Planning Secretary.</p>		
<p>Appendix 3: Applicant's Management and Mitigation Measures</p> <ul style="list-style-type: none"> incorporate the recommendations outlined in the acoustic impact assessment during the construction phase incorporate the recommendation in the CSPA to prepare a Community Consultation Strategy to identify and track engagement with the community and resolve complaints and enquiries during the construction and operation phases future detailed landscape plans for Precinct 2 should incorporate tall and fast-growing tree species to provide additional screening of the warehouse buildings from the residential area 	Goodman Project Manager	Ongoing
Monitoring, Reporting and Auditing Requirement	Person Responsible	Timing / Frequency
<p>E14. Within six months after the commencement of construction of the Stage 2 development, and in the same month each subsequent year (or such other timing as agreed by the Planning Secretary) for the duration of construction works, 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:</p> <p>(a) identify any trends in the monitoring data;</p>	Goodman Project Manager	Within 6 months after the commencement of construction and in the same month each subsequent year (or such other timing as agreed by the Planning Secretary) for the duration of construction works

Relevant Consent Conditions

<p>(b) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and (c) describe what measures will be implemented over the next year to improve the environmental performance of the development.</p>		
<p>E15. 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.</p>	<p>Goodman Project Manager</p>	<p>As required. 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.</p>
<p>E16. 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.</p> <p>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.</p>	<p>Goodman Project Manager</p>	<p>Ongoing</p>
<p>E17. At least 48 hours before the commencement of construction of the Stage 2 development and for the life of the development, the Applicant must:</p> <p>(a) make the following information and documents (as they are obtained or approved) publicly available on its website:</p> <p>(i) the documents referred to in condition A1 of this consent;</p> <p>(ii) all current statutory approvals for the development;</p> <p>(iii) all approved strategies, plans and programs required under the conditions of this consent;</p> <p>(iv) regular reporting on the environmental performance of the development in accordance with the</p>	<p>Goodman Project Manager</p>	<p>Ongoing</p>

Relevant Consent Conditions

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 B Consultation

Construction Environmental Management Plan

SSD-37486043: Oakdale East Industrial Estate
2-10 Old Wallgrove Road, Horsley Park

Goodman Property Services (Aust) Pty Ltd

SLR Project No.: 630.V10611.00001

13 November 2023

Lachlan O'Reilly

From: Justine Clarke <Justine.Clarke@waternsw.com.au>
Sent: Thursday, 26 October 2023 3:11 PM
To: Lachlan O'Reilly
Cc: Stephanie Partridge; Luke Ridley; Alanna Ryan; Jessica Keegan
Subject: RE: Oakdale East Estate | SSD 37486043 CTMP/ CNVMP and Staging Plan Consultation - WaterNSW

Hi Lachlan

Thank you for reviewing our comments and responding. We are supportive of your proposed changes and they satisfy our requirements.

Agree that this is sufficient and closes your consultation requirement with WaterNSW.

Can we please request final copies of the revised documents when approved by the department (for our records).

Regards

Justine Clarke
Catchment and Asset Protection Adviser



Level 14, 169 Macquarie Street
PO Box 398
Parramatta NSW 2150
M: 0457 535 955
justine.clarke@waternsw.com.au
www.waternsw.com.au

From: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>
Sent: Thursday, October 26, 2023 11:28 AM
To: Justine Clarke <Justine.Clarke@waternsw.com.au>
Cc: Stephanie Partridge <Stephanie.Partridge@goodman.com>; Luke Ridley <Luke.Ridley@goodman.com>; Alanna Ryan <aryan@slrconsulting.com>; Jessica Keegan <jkeegan@slrconsulting.com>
Subject: [EXTERNAL] RE: Oakdale East Estate | SSD 37486043 CTMP/ CNVMP and Staging Plan Consultation - WaterNSW

This message is from an External Sender. Be careful opening emails, attachments and links from unknown senders.

Hi Justine,

Thanks for the below and your time on the phone yesterday.

Further to the below, and our discussion, please see comments in Red.

Please let me know if you have any queries, otherwise we will make the amended changes and deem this will suffice WaterNSW to confirm consultation can be closed.

Any issues with this approach please let me know.

Regards,
Lachie



Lachlan O'Reilly
Project Manager
Lachlan.OReilly@goodman.com

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Goodman Limited ABN 69 000 123 071

Goodman Funds Management Limited ABN 48 067 796 641 AFSL Number 223621

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From: Justine Clarke <Justine.Clarke@waterNSW.com.au>

Sent: Wednesday, 25 October 2023 1:46 PM

To: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>

Subject: Oakdale East Estate | SSD 37486043 CTMP/ CNVMP and Staging Plan Consultation - WaterNSW

Dear Lachlan

Thank you for your consultation request with WaterNSW related to the Oakdale East Industrial Estate (OEIE) approval conditions and Stage 2 development under SSD 37486043. WaterNSW appreciates being involved early in this project and the continued consultation.

WaterNSW acknowledges receipt of the following documents, related to Condition A11 (a), Condition D27 (b), and Condition D21 (b) respectively.

- Staging Plan
- Construction Traffic Management Plan (CTMP)
- Vibration Monitoring Plan (VMP)

Construction Traffic Management Plan

It is noted that **no** access to the site is proposed via the WaterNSW pipeline corridor. All access is via Old Wallgrove Road as identified in Section 3.1 of the CTMP report (Ason, 6/10/2023).

WaterNSW has reviewed the CTMP and advise the following:

- WaterNSW affirm that no access to the WaterNSW pipelines corridor is allowed without written approval of WaterNSW **GMG confirm no access will be provided to the WaterNSW Corridor without prior approval. Furthermore Figure 4 of the CTMP confirms the access to site which is via Latitude Drive and/or Milner Ave. As such, GMG consider this closed.**
- It is acknowledged that the CTMP does not allow queuing to occur on the public road network (section 4.1.3). This is essential, as it will ensure that access the WaterNSW pipelines corridor from Old Wallgrove Road will not be impeded. **GMG are aligned with this, and as such GMG consider this closed.**

Vibration Management Plan (VMP)

WaterNSW has reviewed the VMP (SLR, 9/10/2023) and provides the following comments:

- Vibration mitigation measures are to be implemented as per the approved VMP (including any prescribed changes post consultation), especially the proposed mitigation and management measures listed in section 7 (table 12). **Confirmed and GMG will implement measures as per the VMP, once approved by DPE.**

- WaterNSW accepts the current German Standard DIN 4150-3:2016 when addressing vibration. Specifically Part 3 - “Structural Vibration Part 3: Effects of vibration in structures”. **Noted and will be implemented. GMG consider closed**
- It is understood that to ensure consistency with the Oakdale West Industrial Estate vibration requirements, SLR have proposed to use the same vibration acceptance criteria, being 15 mm/s PPC (peak particle velocity), for all vibration intensive works within 50m of the Warragamba to Prospect Pipelines (including the buried section). And while these levels were no where near reached for Oakdale West and specifically the construction of the North South Link Road over the pipelines, WaterNSW requests that the vibration values prescribes in line 3 of Table 1 within the German Standard DIN 4150-3:2016 be adopted instead. We are confident that these levels will not be reached (from past adjacent vibration intensive development). This change to the VMP will then ensures consistency with our own Guideline (*Guideline for Development Adjacent to the Upper Canal and Warragamba Pipelines*) (WaterNSW, September 2021). **Noted and GMG will ammend the plan accordingly. GMG consider this closed on the basis we ammend the plan accordingly.**
- It is preferred that all vibration monitoring equipment required to measure vibration levels from construction be placed within the OEIE, that being at the property boundary. However, WaterNSW will accept the vibration monitoring methodology set out in the VMP (section [7.2.2.1](#)). Access to set-up the monitoring equipment will require written access approval from WaterNSW. It is recommended that this application is submitted as early as possible (greater than 28 business days) to ensure its approval inline with the construction schedule. Applications can be made via the WaterNSW website at [Special Areas and Controlled Areas Consent Application form - WaterNSW](#) **Since the issue of the CNVMP, GMG have identified some proprietary systems that do not require monitoring on top of the WaterNSW pipeline, and can be installed on the perimeter of the GMG site, within our boundary. Please refer to Figure 1 for details of this system and confirmation it monitors in accordance with DIN 4150-3 Standard. As such, to meet WaterNSW preferred method of vibration by containing within the site, GMG propose to ammend the plan to reflect this system. Criteria thresholds will be as per the comment above and will be measured closer than the pipeline itself, thus a better outcome GMG deem. GMG consider this closed on the basis we ammend the plan accordingly.**
- WaterNSW requests that Goodman (or its consultants) consult with WaterNSW on the vibration monitoring locations prior to their installation. **Please refer to the below. On the basis these are within our site, GMG deem this closed.**
- WaterNSW requests to receive the monthly vibration monitoring reports for any vibration monitoring set up to monitor the WaterNSW pipelines. **Noted. We will work with the team to have these issued once works commence.**

Staging Plan

- WaterNSW acknowledge receipt of this document and has no specific comment to make. **Noted. Thankyou and GMG consider this closed**

Erosion and sediment control

- In addition, WaterNSW would like to see (for our records) the project construction erosion and control plan (ESCP), to ensure no predicted impacts to our adjacent land. **Please see attached ESCP for your records as relevant under the SSDA. As such GMG consider this closed.**

I trust this information enables you to meet your consultation requirements. WaterNSW requests that our consultation comments be considered and the plans updated as required.

If you have any questions regarding this response, please reach out.


Regards

Justine Clarke

Catchment and Asset Protection Adviser


Figure 1

Choose from the SiteHive Hexanode family




SiteHive Hexanode Multi
 Innovative noise and dust monitoring in a single, compact device.

- NATA-certified sound level meter (IEC 61672)
- Sound and dust direction of arrival
- Images and audio capture
- Optical particle counter (PM2.5 & PM10)
- See pricing



SiteHive Hexanode Noise
 A noise monitoring device that's small and lightweight, with very low power requirements.

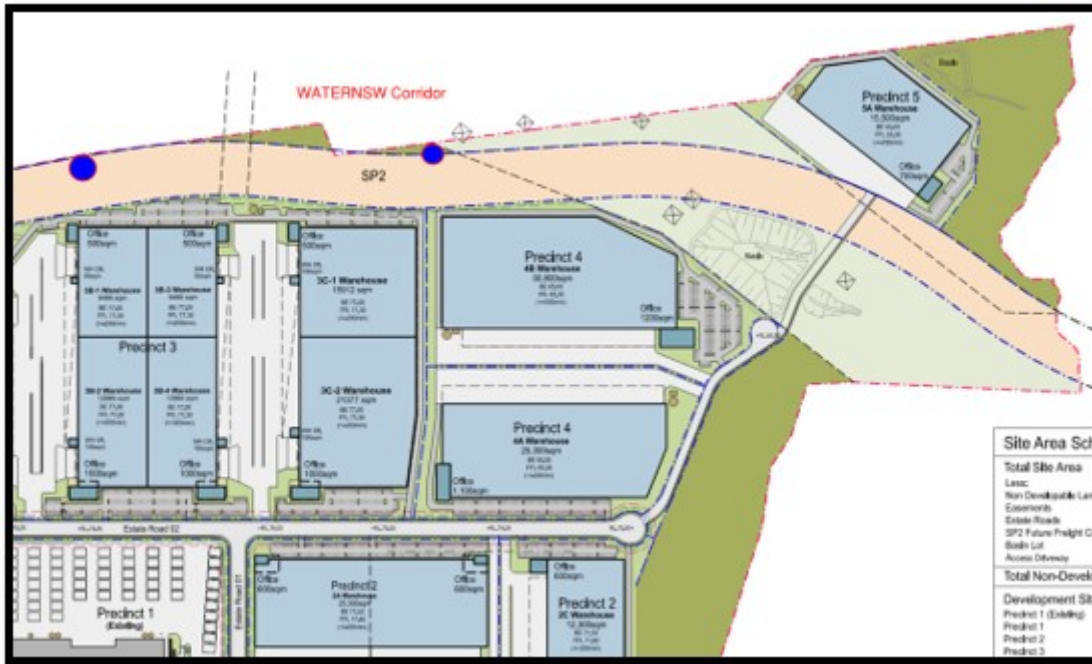
- NATA-certified sound level meter (IEC 61672)
- Sound direction of arrival
- Images and audio capture
- See pricing



SiteHive Hexanode Vibration
 Small, compact and automated vibration monitor, lasting months on a single battery.

- Structural damage PPV (DIN 4150-3, BS 7385-2)
- Human comfort VDV (DIN 4150-2, BS 6472)
- Ground-borne noise (Leq)
- See pricing

Figure 2



Lachlan O'Reilly

From: Lachlan O'Reilly
Sent: Monday, 6 November 2023 4:22 PM
To: Patrick Warren
Cc: Stephanie Partridge; Luke Ridley
Subject: RE: Oakdale East Industrial Estate | SSD 37486043 CEMP Consultation - Fairfield City Council
Attachments: RE: Oakdale East Industrial Estate | SSD 37486043 CEMP Consultation - Fairfield City Council

Hi Patrick,

I hope you are well.

I tried to leave you a message earlier.

I am finalising the CEMP and Staging plan today.

Noting we have not received any comments on the CEMP or staging plan by the 1 November as noted, Goodman deem the consultation closed.

Please let me know if you have any comments by COB today, otherwise we will assume the plans as submitted are acceptable to Fairfield City Council.

Regards,
Lachie

From: Lachlan O'Reilly
Sent: Friday, 3 November 2023 4:15 PM
To: Patrick Warren <PWarren@fairfieldcity.nsw.gov.au>
Cc: Stephanie Partridge <Stephanie.Partridge@goodman.com>; Luke Ridley <Luke.Ridley@goodman.com>
Subject: RE: Oakdale East Industrial Estate | SSD 37486043 CEMP Consultation - Fairfield City Council

Hi Patrick,

Thanks for your time on the phone yesterday.

I just wanted to touch base on the status of FCC comments on the Staging Plan and CTMP ?

Could you please share these across at your earliest convenience as these are now critical for construction certification.

Thanks in advance and any issues please give me a call.

Regards,
Lachie

From: Lachlan O'Reilly
Sent: Thursday, 26 October 2023 8:42 PM

To: Patrick Warren <PWarren@fairfieldcity.nsw.gov.au>

Subject: RE: Oakdale East Industrial Estate | SSD 37486043 CEMP Consultation - Fairfield City Council

Hi Patrick,

I hope you have had a good week.

I just want to touch base on the CTMP.

Have you had any feedback and is a response still on track for 1 November 2023 ?

If there is any ability to have this plan and the staging plan closed earlier that would be greatly appreciated.

Any queries please reach out.

Regards,

Lachie

From: Patrick Warren <PWarren@fairfieldcity.nsw.gov.au>

Sent: Wednesday, 18 October 2023 10:01 AM

To: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>

Subject: RE: Oakdale East Industrial Estate | SSD 37486043 CEMP Consultation - Fairfield City Council

Hi Lachlan,

The waste management plan and Construction traffic management plan have been referred out to the following teams.

- Traffic and transport team
- Waste Management and cleansing operations

I have provided your details to the coordinators of these teams who will delegate review and feedback to an officer for review.

Should they have comments/concerns they will forward them to directly by 01 November 2023.

I also note the other plans yet to be submitted.

Kind Regards

Patrick Warren

Senior Strategic Land Use Planner | Strategic Land Use Planning

02 9725 0215 | pwarren@fairfieldcity.nsw.gov.au

Customer Service: 9725 0222 | PO Box 21 Fairfield NSW 1860

www.fairfieldcity.nsw.gov.au

mail@fairfieldcity.nsw.gov.au



*We acknowledge the Cabrogal of the Darug Nation who are the Traditional Custodians of this Land.
We also pay our respect to the Elders both past, present and emerging of the Darug Nation.*



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From: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>
Sent: Tuesday, 17 October 2023 6:27 PM
To: Patrick Warren <PWarren@fairfieldcity.nsw.gov.au>
Cc: Stephanie Partridge <Stephanie.Partridge@goodman.com>; Luke Ridley <Luke.Ridley@goodman.com>
Subject: Oakdale East Industrial Estate | SSD 37486043 CEMP Consultation - Fairfield City Council
Importance: High

Hi Patrick,

Thanks for your time on the phone this afternoon.

As discussed, SSD 37486043 was approved by DPE on 11 October 2023.

As part of the SSD 37486043 Consent, we are required to consult with yourself in respect of the following plans prior to the commencement of Construction.

- Staging Plan (Condition A11 (a));
- Construction Traffic Management Plan (Condition D28 (b));
- Road Safety Audit (Internal Estate Roads) (Condition D40 (b));
- Stormwater Management System Design (Condition D58 (b));
- Waste Management Plan (Condition D77)

A summary of the relevant consent conditions in respect of each plan is as follows:

Construction Traffic Management Plan

Please see attached Construction Traffic Management Plan ('CTMP') in respect of the SSDA works.

The below extract from SSD 37486043 outlines the requirement for consultation to occur with Council

Construction Traffic Management Plan

- D28. Prior to the commencement of construction of the development, the Applicant must prepare a Construction Traffic Management Plan for the development to the satisfaction of the Planning Secretary. The plan must form part of the CEMP required by condition E2 and must:
- (a) be prepared by a suitably qualified and experienced person(s);
 - (b) be prepared in consultation with Council, TfNSW and Water NSW;
 - (c) detail the measures to be implemented to ensure safe and efficient access to the site during construction both on-site and for the external road upgrades;
 - (d) detail truck numbers, hours of operation, heavy vehicle routes, access arrangements, traffic controls and parking;
 - (e) 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;
 - (iii) minimise road traffic noise; and
 - (iv) ensure truck drivers use specified routes;
 - (f) include a program to monitor the effectiveness of these measures; and

Please note, this plan has been prepared by Ason Group and follows the same principles as per the endorsed Rehabilitation CTMP

Based on the above, can you please review the plan and confirm if you have any changes or comments? A 'no comment' response is also satisfactory to close out our consultation requirement.

Waste Management Plan

Please see attached Waste Management Plan ('WMP').

The below extract from SSD 37486043 outlines that we are required to obtain agreement with Council on the Waste Storage Area design.

Waste Management Plan

- D75. Prior to the commencement of construction of the Stage 2 development, the Applicant must update the Waste Management Plan included in the EIS for the development. The Plan must:
- (a) detail the type and quantity of waste to be generated during construction and operation of the Stage 2 development;
 - (b) describe the handling, storage and disposal of all waste streams generated on site, consistent with the *Protection of the Environment Operations Act 1997*, *Protection of the Environment Operations (Waste) Regulation 2014* and the *Waste Classification Guideline* (Environment Protection Authority, 2014); and
 - (c) detail the materials to be reused or recycled, either on or off site.
- D76. The Applicant must implement the Waste Management Plan for the duration of construction and operation.

Waste Storage and Processing

- D77. Prior to the commencement of construction of the Stage 2 development, the Applicant must obtain agreement from Council for the design of the waste storage area for the Stage 2 development.

Please note, this plan is the same plan that Council have seen as part of the SSDA referral process, however it has been updated to now include the specific conditions within the SSD.

Furthermore, Condition D77 is responded to via Section 5.6.2, 6.4 and Figure 6 of the attached, where the FCC requirements are outlined and will be adhered to.

Based on the above, can you please review the plan and confirm if you have any changes or comments? A 'no comment' response is also satisfactory to close out our consultation requirement.

In respect of the following plans, these will be shared once we finalise them imminently:

- Staging Plan (Condition A11 (a));
- Road Safety Audit (Internal Estate Roads) (Condition D40 (b));
- Stormwater Management System Design (Condition D58 (b));

As per our conversation, could you please forward this thread and/or point me in the right direction to the correct individuals in FCC ?

We are seeking to commence works as soon as possible, thus would it be possible at all to receive your comments back by **COB 27 October 23** ?

Really do appreciate your help with this, and any issues please give me a call.

Regards,

Lachie



Lachlan O'Reilly
Project Manager
Lachlan.OReilly@goodman.com

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Lachlan O'Reilly

From: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>
Sent: Wednesday, 1 November 2023 4:37 PM
To: Lachlan O'Reilly; Development CTMP CJP
Cc: Luke Ridley; Stephanie Partridge
Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

Thank you Lachlan.

Kind Regards,

Heather Trengove
Principal Transport Planner
Customer Journey Planning
Greater Sydney
Transport for NSW

T: 0481 482 667
231 Elizabeth Street, Sydney 2000
Note: I work Mon, Tue, Wed

OFFICIAL

From: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>
Sent: Wednesday, 1 November 2023 4:30 PM
To: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>
Cc: Luke Ridley <Luke.Ridley@goodman.com>; Stephanie Partridge <Stephanie.Partridge@goodman.com>
Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

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Thanks Heather and noted regarding the below.

Confirming that the CTMP currently endorsed by TfNSW captures the following stages highlighted yellow:

Stage	Description	Planning Status	Anticipated / Actual Construction Commencement
0	Precinct 1 – Building Works Latitude Drive (Estate Road 01). Refer to Figure 1 below.	Approved (DA No. 93.1/2019)	Completed
1	Rehabilitation Works	Approved (DA No. 347.1/2921)	Underway
2a	Estate-wide Infrastructure Works – temporary erosion and sediment control basins (per condition D58), revegetation of riparian corridor and biodiversity offsets, estate road construction and completion of services (see Section 4.1 below). Intersection Works – Old Wallgrove Road / Lenore Drive and Old Wallgrove Road / Millner Avenue Precinct 1 – Hardstand expansion works and Retaining Wall Works Estate-wide subdivision	Approved (SSD 37486043)	November 2023
2b	Precinct 3 – Building Works	Approved (SSD 37486043)	April 2024
2c	Precinct 1 – Building Works	Approved (SSD 37486043)	February 2025
3	Precinct 2 - Building works	Future DA or SSDA	DA / SSDA yet to be lodged. Construction commencement to be confirmed.
4	Precinct 4 - Building works and completion of Noise Walls	Future DA or SSDA	DA / SSDA yet to be lodged. Construction commencement to be confirmed.
5	Precinct 5 bulk earthworks, retaining wall works and Basin D Building 5 - Building works	Future DA or SSDA	DA / SSDA yet to be lodged. Construction commencement to be confirmed.

Based on this, we would then consult with TfNSW on amended CTMP for Stage 3-5 as they are not approved yet and would be subject to future DA or SSDA as noted.

On the basis we consider you are aligned with this approach, we will close this consultation.

Thanks in advance and any issues please reach out.

Regards,
Lachie

OFFICIAL

From: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>

Sent: Wednesday, 1 November 2023 4:12 PM

To: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>; Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>

Cc: Luke Ridley <Luke.Ridley@goodman.com>; Stephanie Partridge <Stephanie.Partridge@goodman.com>

Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

Hi Lachlan,

Sorry for not responding to the staging plan. The only comment would be that for each subsequent stage TfNSW will require an updated CTMP. If nothing has changed and the current CTMP is still valid, the CTMP will still need to be submitted to us for endorsement with a note stating that the CTMP has not changed between stages.

Kind Regards,

Heather Trengove
Principal Transport Planner
Customer Journey Planning
Greater Sydney
Transport for NSW

T: 0481 482 667
231 Elizabeth Street, Sydney 2000
Note: I work Mon, Tue, Wed

OFFICIAL

From: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>
Sent: Wednesday, 1 November 2023 3:58 PM
To: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>
Cc: Luke Ridley <Luke.Ridley@goodman.com>; Stephanie Partridge <Stephanie.Partridge@goodman.com>
Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

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Thanks Heather,

Greatly appreciated and will have the below noted and tracked in the CEMP/CTMP for consistency.

May I please ask also if you could provide an update on the Staging Plan issued separately ? Does TfNSW have any objections with this ?

Attached again for ease.

Any issues please reach out.

Regards,
Lachie

OFFICIAL

From: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>
Sent: Wednesday, 1 November 2023 2:20 PM
To: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>; Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>
Cc: Luke Ridley <Luke.Ridley@goodman.com>; Stephanie Partridge <Stephanie.Partridge@goodman.com>
Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

Hi Lachlan,

My apologies in our delay in responding to you. However, I am happy to advise that TfNSW has endorsed the attached CTMP as per the below.

Transport for NSW (TfNSW), Greater Sydney Division has reviewed the CTMP and endorse the proposed temporary construction arrangements, subject to the following conditions:

- Any Traffic Guidance Schemes (TGS) prepared are to comply with AS1742.3 and Transport for NSW's "Traffic Control at Worksites" manual and be signed by a person with TfNSW certification to prepare a TGS.
- Traffic volumes utilising the westbound slip lane off Old Wallgrove Road will not support daytime occupancy during the week.
- Proponent must apply and obtain approval from the Transport Management Centre for a Road Occupancy Licence (ROL) for any required lane closures and/or Speed Zone Authorisations as part of the ROL that may impact the state road network or is within 100m of traffic signals.
- Access to be maintained for residents, businesses and emergency vehicles at all times.
- No marshalling or queuing of construction vehicles is to occur on public roads. Arriving vehicles that are not able to use parking bay/work zone must continue to a holding point until space becomes available.
- When heavy vehicles are entering or leaving the site a traffic controller is to be provided to manage any conflicts between pedestrians and heavy vehicles.
- Access to the site should be at the farthest point from the intersection as practicable to reduce additional conflicting vehicle manoeuvres.
- Transport for New South Wales reserve the right to alter the CTMP Conditions at any time to maintain safe and efficient traffic and pedestrian movements in this area.
- Any approved Works Zone should only be used for work activities. No infrastructure, including bins, tanks or traffic control equipment should be left on the road when the works zone is not in use by a vehicle. All non-vehicular items must be contained with the work area and not on the carriageway. When a work zone is not in use, the area/lane must be opened up to allow for normal trafficable conditions
- Should TfNSW Network and Asset Management, Network Operations, CJP Operations, Network and Safety or other TfNSW business area determine that that more information is to be provided for review and acceptance, including other TCS locations, this information must be submitted prior to the CTMP being implemented, or otherwise agreed upon.
- Any traffic control devices, including signage and line marking, should be installed by the proponent and must conform with Australian Standards 1742

Endorsement of the CTMP is not an approval to the type of traffic management or delineation devices used, nor is it an approval to any traffic guidance schemes depicted within the CTMP. It is assumed that the proponent has used type approved devices and has developed its traffic guidance schemes in accordance with the relevant Australian Standards and Guidelines.

The proponent is to ensure local residents, businesses, schools and other stakeholders in the affected area as well as emergency service organisations are notified of the changes associated with the CTMP, prior to its implementation.

Please ensure this CTMP is shared and adhered to by all contractors.

Kind Regards,

Heather Trengove
Principal Transport Planner
Customer Journey Planning
Greater Sydney
Transport for NSW

T: 0481 482 667
231 Elizabeth Street, Sydney 2000

Note: I work Mon, Tue, Wed

OFFICIAL

From: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>
Sent: Tuesday, 31 October 2023 3:59 PM
To: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>
Cc: Luke Ridley <Luke.Ridley@goodman.com>; Stephanie Partridge <Stephanie.Partridge@goodman.com>
Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

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Hi Heather et TfNSW team,

I hope the week has started well.

Apologies, I have tried to call to discuss the below.

Would you please be able to provide an updated on the CTMP and Staging plan issued for consultation?

We have received majority of the consultation comments on all the plans required under the SSD, and keen to address any comments from TfNSW.

Appreciate your help in advance, and any issues please advise.

Regards,
Lachie

OFFICIAL

From: Lachlan O'Reilly
Sent: Thursday, 26 October 2023 8:48 PM
To: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>
Cc: Luke Ridley <Luke.Ridley@goodman.com>; Stephanie Partridge <Stephanie.Partridge@goodman.com>
Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

Hi Heather,

I hope you have had a great week.

Just following up on the consultation.

If possible could we receive any comments by COB tomorrow ?

A 'no comment' response will also suffice our consultation needs.

Appreciate your help with this, and any issues please let me know.

Cheers,
Lachie

From: Lachlan O'Reilly
Sent: Friday, 20 October 2023 9:37 AM
To: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>
Cc: Luke Ridley <Luke.Ridley@goodman.com>; Stephanie Partridge <Stephanie.Partridge@goodman.com>
Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

Hi Heather,

That timing below sounds good and is greatly appreciated.

Appreciate your assistance and any issues let me know.

Regards,
Lachie

From: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>
Sent: Friday, 20 October 2023 9:17 AM
To: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>; Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>
Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

Hi Lachlan,

The SME's working on reviewing the CTMP have been inundated with requests over the last two weeks. They are still working through the CTMP's and hope to have comments to me by mid next week.

Kind Regards,

Heather Trengove
Principal Transport Planner
Customer Journey Planning
Greater Sydney
Transport for NSW

T: 0481 482 667
231 Elizabeth Street, Sydney 2000
Note: I work Mon, Tue, Wed

OFFICIAL

From: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>
Sent: Thursday, 19 October 2023 7:11 PM
To: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>
Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

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Hi Heather,

I hope you are well.

I just wanted to see if you had any updates on the CTMP review ?

Really appreciate your assistance with this, and any questions please reach out.

Regards,

OFFICIAL

From: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>

Sent: Monday, 9 October 2023 9:52 AM

To: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>; Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>

Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

Hi Lachlan,

As some of our SME's work in our operations space and have multiple transport based projects they manage along with reviewing CTMP's we usually have a 2-3 week turnaround on comments.

Unfortunately, COB 13th October will be unachievable.

As soon as I have comments for you I will share them with you.

In the meantime if you have any other questions please don't hesitate to contact me.

Kind Regards,

Heather Trengove
Principal Transport Planner
Customer Journey Planning
Greater Sydney
Transport for NSW

T: 0481 482 667
231 Elizabeth Street, Sydney 2000

Note: I work Mon, Tue, Wed

OFFICIAL

From: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>

Sent: Monday, 9 October 2023 9:29 AM

To: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>

Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

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Thankyou Heather,

Any issues throughout the review process please let me know.

Just so I can communicate internally, do you have a rough timeline how long this review takes ? Is the below timeline of COB 13 Oct 23 achievable ?

Thanks in advance and have a great day.

Regards,

OFFICIAL

From: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>

Sent: Monday, 9 October 2023 9:23 AM

To: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>; Brett Morrison (TAR TECHN) <Brett.Morrison4@transport.nsw.gov.au>; Simon Turner <Simon.Turner2@transport.nsw.gov.au>; Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>

Cc: Stephanie Partridge <Stephanie.Partridge@goodman.com>; Luke Ridley <Luke.Ridley@goodman.com>; Guy Smith <Guy.Smith@goodman.com>; Ali Rasouli <ali.rasouli@asongroup.com.au>; James Laidler <james.laidler@asongroup.com.au>; Jayden Lam <Jayden.Lam@asongroup.com.au>; Pahee Rathan <Pahee.RATHAN@transport.nsw.gov.au>

Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

Hi Lachlan,

I have your CTMP for circulation to SME's and review now.

Kind Regards,

Heather Trengove
Principal Transport Planner
Customer Journey Planning
Greater Sydney
Transport for NSW

T: 0481 482 667
231 Elizabeth Street, Sydney 2000

Note: I work Mon, Tue, Wed

OFFICIAL

From: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>

Sent: Monday, 9 October 2023 8:54 AM

To: Brett Morrison (TAR TECHN) <Brett.Morrison4@transport.nsw.gov.au>; Simon Turner <Simon.Turner2@transport.nsw.gov.au>; Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>

Cc: Stephanie Partridge <Stephanie.Partridge@goodman.com>; Luke Ridley <Luke.Ridley@goodman.com>; Guy Smith <Guy.Smith@goodman.com>; Ali Rasouli <ali.rasouli@asongroup.com.au>; James Laidler <james.laidler@asongroup.com.au>; Jayden Lam <Jayden.Lam@asongroup.com.au>; Pahee Rathan <Pahee.RATHAN@transport.nsw.gov.au>

Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

You don't often get email from lachlan.oreilly@goodman.com. [Learn why this is important](#)

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Thanks Brett,

Do I need to send the CTMP to this email separately, or has this been done by yourself ?

Appreciate your help with this.

Regards,

OFFICIAL

From: Brett Morrison (TAR TECHN) <Brett.Morrison4@transport.nsw.gov.au>

Sent: Monday, 9 October 2023 8:20 AM

To: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>; Simon Turner <Simon.Turner2@transport.nsw.gov.au>; Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>

Cc: Stephanie Partridge <Stephanie.Partridge@goodman.com>; Luke Ridley <Luke.Ridley@goodman.com>; Guy Smith <Guy.Smith@goodman.com>; Ali Rasouli <ali.rasouli@asongroup.com.au>; James Laidler <james.laidler@asongroup.com.au>; Jayden Lam <Jayden.Lam@asongroup.com.au>; Pahee Rathan <Pahee.RATHAN@transport.nsw.gov.au>

Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

Thank you for your email. Any further submissions regarding CTMP please send to Development CTMP CJP development.CTMP.CJP@transport.nsw.gov.au for registration and allocation.

Brett Morrison

Senior Land Use Planner
Land Use Assessment Western
Planning and Programs
Greater Sydney

Transport for NSW

E Brett.Morrison4@transport.nsw.gov.au

27-31 Argyle Street
Parramatta NSW 2150



**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.

OFFICIAL: **Sensitive – NSW Government**

OFFICIAL

From: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>
Sent: Saturday, 7 October 2023 11:10 AM
To: Simon Turner <Simon.Turner2@transport.nsw.gov.au>; Brett Morrison (TAR TECHN) <Brett.Morrison4@transport.nsw.gov.au>
Cc: Stephanie Partridge <Stephanie.Partridge@goodman.com>; Luke Ridley <Luke.Ridley@goodman.com>; Guy Smith <Guy.Smith@goodman.com>; Ali Rasouli <ali.rasouli@asongroup.com.au>; James Laidler <james.laidler@asongroup.com.au>; Jayden Lam <Jayden.Lam@asongroup.com.au>; Pahee Rathan <Pahee.RATHAN@transport.nsw.gov.au>
Subject: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW
Importance: High

CAUTION: This email is sent from an external source. Do not click any links or open attachments unless you recognise the sender and know the content is safe.

Hi Simon & Brett,

I trust you have both been well.

Hoping I have come to the right people and/or you could point me in the right direction.

As you are aware, we are shortly about to commence construction of the scope associated with SSD 37486043, which is for the Infrastructure and Stage 2 Development associated with Oakdale East Industrial Estate.

As part of the SSD 37486043 Consent, we are required to consult with yourself in respect of the Construction Traffic Management Plan ('CTMP'):

The below extract from SSD 37486043 outlines the requirement for consultation to occur with TfNSW

- D27. Prior to the commencement of construction of the development, the Applicant must prepare a Construction Traffic Management Plan for the development to the satisfaction of the Planning Secretary. The plan must form part of the CEMP required by condition E2 and must:
- (a) be prepared by a suitably qualified and experienced person(s);
 - (b) be prepared in consultation with Council, TfNSW and Water NSW;
 - (c) detail the measures to be implemented to ensure safe and efficient access to the site during construction both on-site and for the external road upgrades;
 - (d) detail truck numbers, hours of operation, heavy vehicle routes, access arrangements, traffic controls and parking;
 - (e) 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;
 - (iii) minimise road traffic noise; and
 - (iv) ensure truck drivers use specified routes;
 - (f) include a program to monitor the effectiveness of these measures; and
 - (g) if necessary, detail procedures for notifying residents and the community, of any potential disruptions to routes.

Please note, this plan has been prepared by Ason Group and follows the same principles as per the Oakdale East Rehabilitation Approval CTMP and the previous endorsed Oakdale West CTMP's by TfNSW.

Based on the above, can you please review the plan and confirm if you have any changes or comments ? A 'no comment' response is also satisfactory to close out our consultation requirement.

As we are seeking to commence works as soon as possible, would it be possible to receive your comments back by **COB 13 October 23** ?

I really do appreciate your help with this, and any issues please give me a call.

Regards,
Lachie



Lachlan O'Reilly
Project Manager
Lachlan.OReilly@goodman.com

T. +61 2 9230 7284
M. +61 481 254 556

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Rosebery NSW 2018
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Lachlan O'Reilly

From: Nhung Bugaev <NBugaev@fairfieldcity.nsw.gov.au>
Sent: Wednesday, 18 October 2023 2:47 PM
To: Lachlan O'Reilly
Cc: Patrick Warren; Glenn Meehan
Subject: FW: Oakdale East Industrial Estate | SSD 37486043 CEMP Consultation - Fairfield City Council
Attachments: Waste Management Plan - 18.10.2023.obr; Development Consent - 18.10.2023.obr
Importance: High

Dear Lachlan,

Reference is made to the Waste Management Plan (WMP) dated September 2023 prepared by SLR Consulting for Stage 2 of the Oakdale East Estate development.

The WMP has provided detailed information on:

- ✓ Waste management practices during construction
- ✓ Waste management practices for on-going operations
- ✓ Provision of ongoing waste storage areas for each warehouse
- ✓ Detailed estimates of waste generated per warehouse

Therefore, the information supplied in this WMP is sufficient and meets Council's requirements.

Kind regards,

Nhung Bugaev

Waste and Sustainability Projects Officer | Waste and Cleansing Operations |
Directorate City Delivery
I currently work on Mondays and Wednesdays.

02 9725 0209 | 0417 908 499 | nbugaev@fairfieldcity.nsw.gov.au

Customer Service: 02 9725 0222 | PO Box 21 Fairfield NSW 1860

www.fairfieldcity.nsw.gov.au
mail@fairfieldcity.nsw.gov.au



*We acknowledge the Cabrogal of the Darug nation who are the Traditional Custodians of this Land.
We also pay our respect to the Elders both past, present and emerging of the Darug Nation.*

From: Patrick Warren <PWarren@fairfieldcity.nsw.gov.au>
Sent: Wednesday, 18 October 2023 9:57 AM

To: Nhung Bugaev <NBugaev@fairfieldcity.nsw.gov.au>
Cc: Glenn Meehan <GMeehan@fairfieldcity.nsw.gov.au>
Subject: FW: Oakdale East Industrial Estate | SSD 37486043 CEMP Consultation - Fairfield City Council
Importance: High

Hi Nhung,

The state significant development application for redevelopment of the brick pit at the Oakdale industrial estate has been approved by the Department of Planning and Environment.

The approval will facilitate the redevelopment of the site from an open mine to industrial warehousing and estate roads.

As part of the conditions of consent of the approval (attached above) the applicant Goodman is required to consult with Council on the waste management plan for the site.

Can you please review the waste management plan and provide any comments you have to Lachlan O'reilly of Goodman's, his details are in the email below.

If you could provide him a response by 01 November 2023 it would be appreciated.

If you have any questions let me know.

Also feel free to circulate this email to anyone else in the organisation who may have relevant input.

Kind Regards

Patrick Warren

Senior Strategic Land Use Planner | Strategic Land Use Planning

02 9725 0215 | pwarren@fairfieldcity.nsw.gov.au

Customer Service: 9725 0222 | PO Box 21 Fairfield NSW 1860

www.fairfieldcity.nsw.gov.au
mail@fairfieldcity.nsw.gov.au



*We acknowledge the Cabrogal of the Darug Nation who are the Traditional Custodians of this Land.
We also pay our respect to the Elders both past, present and emerging of the Darug Nation.*



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FAIRFIELD CITY COUNCIL | EXCELLENCE IN COMMUNICATIONS

From: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>
Sent: Tuesday, 17 October 2023 6:27 PM
To: Patrick Warren <PWarren@fairfieldcity.nsw.gov.au>
Cc: Stephanie Partridge <Stephanie.Partridge@goodman.com>; Luke Ridley <Luke.Ridley@goodman.com>
Subject: Oakdale East Industrial Estate | SSD 37486043 CEMP Consultation - Fairfield City Council
Importance: High

Hi Patrick,

Thanks for your time on the phone this afternoon.

As discussed, SSD 37486043 was approved by DPE on 11 October 2023.

As part of the SSD 37486043 Consent, we are required to consult with yourself in respect of the following plans prior to the commencement of Construction.

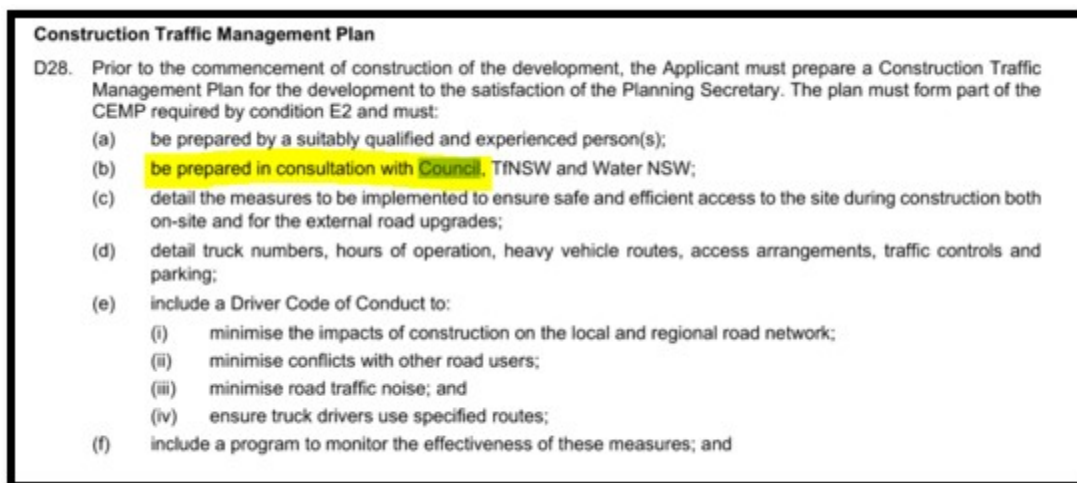
- Staging Plan (Condition A11 (a));
- Construction Traffic Management Plan (Condition D28 (b));
- Road Safety Audit (Internal Estate Roads) (Condition D40 (b));
- Stormwater Management System Design (Condition D58 (b));
- Waste Management Plan (Condition D77)

A summary of the relevant consent conditions in respect of each plan is as follows:

Construction Traffic Management Plan

Please see attached Construction Traffic Management Plan ('CTMP') in respect of the SSDA works.

The below extract from SSD 37486043 outlines the requirement for consultation to occur with Council



Please note, this plan has been prepared by Ason Group and follows the same principles as per the endorsed Rehabilitation CTMP

Based on the above, can you please review the plan and confirm if you have any changes or comments ? A 'no comment' response is also satisfactory to close out our consultation requirement.

Waste Management Plan

Please see attached Waste Management Plan ('WMP').

The below extract from SSD 37486043 outlines that we are required to obtain agreement with Council on the Waste Storage Area design.

Waste Management Plan

D75. Prior to the commencement of construction of the Stage 2 development, the Applicant must update the Waste Management Plan included in the EIS for the development. The Plan must:

- (a) detail the type and quantity of waste to be generated during construction and operation of the Stage 2 development;
- (b) describe the handling, storage and disposal of all waste streams generated on site, consistent with the *Protection of the Environment Operations Act 1997*, *Protection of the Environment Operations (Waste) Regulation 2014* and the *Waste Classification Guideline* (Environment Protection Authority, 2014); and
- (c) detail the materials to be reused or recycled, either on or off site.

D76. The Applicant must implement the Waste Management Plan for the duration of construction and operation.

Waste Storage and Processing

D77. Prior to the commencement of construction of the Stage 2 development, the Applicant must obtain agreement from Council for the design of the waste storage area for the Stage 2 development.

Please note, this plan is the same plan that Council have seen as part of the SSDA referral process, however it has been updated to now include the specific conditions within the SSD.

Furthermore, Condition D77 is responded to via Section 5.6.2, 6.4 and Figure 6 of the attached, where the FCC requirements are outlined and will be adhered to.

Based on the above, can you please review the plan and confirm if you have any changes or comments? A 'no comment' response is also satisfactory to close out our consultation requirement.

In respect of the following plans, these will be shared once we finalise them imminently:

- Staging Plan (Condition A11 (a));
- Road Safety Audit (Internal Estate Roads) (Condition D40 (b));
- Stormwater Management System Design (Condition D58 (b));

As per our conversation, could you please forward this thread and/or point me in the right direction to the correct individuals in FCC?

We are seeking to commence works as soon as possible, thus would it be possible at all to receive your comments back by **COB 27 October 23**?

Really do appreciate your help with this, and any issues please give me a call.

Regards,
Lachie



Lachlan O'Reilly
Project Manager
Lachlan.OReilly@goodman.com

T. +61 2 9230 7284
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Date/Time	Contact Person/s	Address	SR #	Name	Method of Communication	Outcome of Engagement	Consultation Status
20/10/2023 10:20 and 12:15 pm	Jessica Keegan (SLR) Alexis Parmenter (SLR)	321-325 Burley Road Horsley Park	R01	-	House visit	Locked gate. Pressed Intercom. No Answer. Left brochure in letter box on second visit.	Follow up letter posted 30/10/2023. See Appendix C . No further comments received as at COB 3/11/2023 in respect of the CNVMP and Staging Plan under SSD 37486043. As no comment received on these plans on 20/10/2023, consultation closed.
20/10/2023 10:25am	Jessica Keegan (SLR) Alexis Parmenter (SLR)	315-319 Burley Road Horsley Park	R02	Nicole and Anthony Gemayel	House visit - spoke with Nicole	Nicole said that her husband has been involved and ask him to respond to noise and scoping report consultation. Nicole expressed distress with regards to dust. She described that on windy days the air is filled with dirt creating poor viability. Dust impacts include: <ul style="list-style-type: none"> Covers house and eroding materials. Covers driveway- paint peeling with constant high pressure hosing. Outdoor equipment and infrastructure deterioration including barbeques. Daily cleaning of house. Thick layer of dirt on floors, window sills, in sliding door tracks. Fly screens all deteriorating. Have to keep windows shut. Nil comments in relation to the Staging Plan and CNVMP.	GMG (SLR) provided a response to Nicole and Anthony via return email dated 23/10/2023, 24/10/2023 and 1/11/2023. Comments on the Rehab Consent addressed separately. SSD 37486043 consultation closed on CNVMP and Staging Plan.
20/10/2023 10:40am	Jessica Keegan (SLR)	275-285 Burley Road	R03	Emanuel and Doris Vella	House visit - spoke with Doris.	Doris expressed frustration with constant dust levels and was very upset. Doris very	GMG (SLR) provided response to Emanuel and Doris via return email dated 1/11/2023.

Date/Time	Contact Person/s	Address	SR #	Name	Method of Communication	Outcome of Engagement	Consultation Status
	Alexis Parmenter (SLR)	Horsley Park				<p>appreciative of opportunity to be listened to and that concerns will be followed up.</p> <p>The concerns she raised included:</p> <ul style="list-style-type: none"> • Constant cleaning • Daily cleaning of cars • Everything in the house covered in dirt • Crack from vibration (she noted from brick works). • Poor viability due to dust when windy <p>Doris was interested in a clear timeframe of construction period and said she'd really like ongoing updates. Doris expressed she feels they haven't had enough information and do not knowing where the estate is up to. Appreciated the opportunity to have SLR as a contact.</p> <p>Doris mentioned ongoing noise from site vehicles- and if she knows this has a time limit and likely period of time then this would really help.</p> <p>Doris said her and her husband aren't good with computers and would prefer to be contacted via mail or the phone. Prefer for consultation to occur with her husband.</p> <p>Nil comments in relation to the Staging Plan and CNVMP.</p>	<p>Comments on the Rehab Consent addressed separately.</p> <p>SSD 37486043 consultation closed on CNVMP and Staging Plan.</p>
20/10/2023 11:00am	Jessica Keegan (SLR) Alexis Parmenter (SLR)	263-273 Burley Road Horsley Park	R04	Charlie Camela	House visit - spoke with Charlie.	Charlie said he will review the plans and respond.	GMG (SLR) provided response to Charlie letter via return email dated 01/11/2023. See Appendix C .

Date/Time	Contact Person/s	Address	SR #	Name	Method of Communication	Outcome of Engagement	Consultation Status
28/10/2023 10.37am (Email)	Jessica Keegan (SLR)			Charlie Camela	Email	Further to the above, letter was received from Charlie outlining concerns with the following: <ul style="list-style-type: none"> - Dust. - Noise occurrence at 4am. - Burley Road future works. Based on the above, nil comments were received in relation to the Staging Plan and CNVMP.	As none of the comments related to SSD 37486043, consultation is closed on CNVMP and Staging Plan.
20/10/2023 11:20 am	Jessica Keegan (SLR) Alexis Parmenter (SLR)	257-261 Burley Road Horsley Park	R05	Mrs Sultana (not comfortable to give contact details). Said daughters will follow up.	House visit - spoke with Mrs Sultana.	Mrs Sultana said she will ask her daughters to look at the brochure. Nil comments in relation to the Staging Plan and CNVMP.	Follow up letter posted 30/10/2023. See Appendix C . No further comments received as at COB 3 November 2023 in respect of the CNVMP and Staging Plan under SSD 37486043. As no comment received on these plans on 20 October 2023, consultation closed.
20/10/2023 11:30 and 12:20pm	Jessica Keegan (SLR) Alexis Parmenter (SLR)	251-255 Burley Road Horsley Park	RO6	-	House visit	Called intercom- no one home. 2nd visit- left message on intercom and brochure in letter box.	Follow up letter posted 30/10/2023. See Appendix C . No comments received as at COB 3 November 2023 in respect of the CNVMP and Staging Plan under SSD 37486043. As no comment received on these plans on 20 October 2023, consultation closed.
20/10/2023 11:40 and 12:25	Jessica Keegan (SLR) Alexis Parmenter (SLR)	253-255 Delaware Road Horsley Park	R07	-	House visit	Gate was open. Rang the doorbell. No answer on both occasions Left brochure in letter box.	Follow up letter posted 30/10/2023. See Appendix C . No comments received as at COB 3/11/2023 in respect of the CNVMP and Staging Plan under SSD 37486043. As no comment received on these plans on 20/10/2023, consultation closed.

Date/Time	Contact Person/s	Address	SR #	Name	Method of Communication	Outcome of Engagement	Consultation Status
20/10/2023 11:45 and 2:30	Jessica Keegan (SLR) Alexis Parmenter (SLR)	192-210 Delaware Road Horsley Park	R08		House visit	Knocked on door- no answer. 2nd visit- answered door. Quickly explained purpose, the details and cut off date but heavily pregnant and said she was not feeling well. Did not have capacity to talk. Informed SLR that she will look at brochure and respond if required.	Follow up letter posted 30/10/2023. See Appendix C. No comments received as at COB 3/11/2023 in respect of the CNVMP and Staging Plan under SSD 37486043. As no comment received on these plans on 20/10/2023, consultation closed.
20/10/2023 11:50 and 12:45	Jessica Keegan (SLR) Alexis Parmenter (SLR)	198-222 Burley Road Horsley Park	R09	L K Fencing	Attempted property visit.	Called mobile on fence with no answer. No where to leave brochure. Express posted brochure.	Follow up letter posted 30/10/2023. See Appendix C. No comments received as at COB 3/11/2023 in respect of the CNVMP and Staging Plan under SSD 37486043. As no comment received on these plans on 20/10/2023, consultation closed.
20/10/2023 11:55 1pm	Jessica Keegan (SLR) Alexis Parmenter (SLR)	146 Burley Road Horsley Park	R10	-	Attempted house visit.	Gate locked. Waited and didn't see anyone. Left brochure in letter box on second visit.	Follow up letter posted 30/10/2023. See Appendix C. No comments received as at COB 3/11/2023 in respect of the CNVMP and Staging Plan under SSD 37486043. As no comment received on these plans on 20/10/2023, consultation closed.
20/10/2023 12:00 1pm and	Jessica Keegan (SLR) Alexis Parmenter (SLR)	142 Burley Road Horsley Park	R11	Carmelina Salman	Attempted house visit.	Gate locked. Waited and didn't see anyone. Left brochure in letter box on second visit.	Follow up letter posted 30/10/2023. See Appendix C. No comments received as at COB 3/11/2023 in respect of the CNVMP and Staging Plan under SSD 37486043. As no comment received on these plans on 20/10/2023, consultation closed.

Date/Time	Contact Person/s	Address	SR #	Name	Method of Communication	Outcome of Engagement	Consultation Status
3/11/23 5.05pm					Phone Call	Further to the above, phone call was received from Carmelina on the 3/11/2023 outlining concerns with the following: <ul style="list-style-type: none"> - Dust. - Compensation. Based on the above, Nil comments were received in relation to the Staging Plan and CNVMP.	
20/10/2023 12:05 and 12:50	Jessica Keegan (SLR) Alexis Parmenter (SLR)	1 Barwar Close Horsley Park	R12	-	Attempted house visit.	Gate locked. Waited and didn't see anyone. Left brochure in letter box on second visit.	Follow up letter posted 30/10/2023. See Appendix C . No comments received as at COB 3/11/2023 in respect of the CNVMP and Staging Plan under SSD 37486043. As no comment received on these plans on 20/10/2023, consultation closed.
30/10/2023	Jessica Keegan (SLR)	No one home and emails not available	R01, R05, R06, R07, R08, R09, R10, R11, R12	-	Letter Mailed	Follow up letter sent with a reminder that Goodman would appreciate feedback on the Scoping Report and CNVMP by Friday the 3/11/2023.	Complete. Letters issues to remind people to respond.
01/11/2023	Jessica Keegan (SLR)	Where emails available	RO2, R03, R04	-	Letter sent as an email attachment	Follow up letter sent with a reminder that Goodman would appreciate feedback on the Scoping Report and CNVMP by Friday the 3/11/2023.	Complete. Letters issues to remind people to respond. Response provided to comments raised under DA 347.1/2021 (not related to Scoping Report and CNVMP).

Appendix C Event Notification Report

Construction Environmental Management Plan

SSD-37486043: Oakdale East Industrial Estate
2-10 Old Wallgrove Road, Horsley Park

Goodman Property Services (Aust) Pty Ltd

SLR Project No.: 630.V10611.00001

13 November 2023

EVENT NOTIFICATION REPORT

Plant Vehicle Property	Non work Related Motor Vehicle Accidents	Service Strike	Environmental	Injury	Break-in Theft	Conduct
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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 Title	Capacity of involvement (Direct / in-direct witness)	Contact No.	Statement Taken
					Y <input type="checkbox"/>
					Y <input type="checkbox"/>
					Y <input type="checkbox"/>
					Y <input type="checkbox"/>

3. IMMEDIATE ACTION TAKEN Tick items to signify the action taken immediately following the event occurring						
<input type="checkbox"/>	Secure area / isolate	<input type="checkbox"/>	Subcontractor Workers retained on site	<input type="checkbox"/>	Medical Centre Ambulance	Other:
<input type="checkbox"/>	Contacted Emergency services	<input type="checkbox"/>	Photos of scene / area	<input type="checkbox"/>	Spill control	
<input type="checkbox"/>	Notified asset owner	<input type="checkbox"/>	D & A testing	<input type="checkbox"/>	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)	<input type="checkbox"/>		Subcontractor PM responsible	<input type="checkbox"/>	
EPA / DPIE (ER responsible)	<input type="checkbox"/>		Police / Fire / Amb	<input type="checkbox"/>	
Asset Owner PM responsible	<input type="checkbox"/>		Police Event No. (if applicable)	<input type="checkbox"/>	
Client (Org) PM responsible	<input type="checkbox"/>		Other (Name)	<input type="checkbox"/>	

7. FACTORS CONTRIBUTING TO THE INCIDENT							
Environment			Equipment / materials				
<input type="checkbox"/>	Noise	<input type="checkbox"/>	Surface gradient / conditions	<input type="checkbox"/>	Tampering of plant / equipment	<input type="checkbox"/>	Plant or equipment failure
<input type="checkbox"/>	Lighting	<input type="checkbox"/>	Dust / fume	<input type="checkbox"/>	Inadequate maintenance	<input type="checkbox"/>	Material / equipment too heavy / awkward
<input type="checkbox"/>	Vibration	<input type="checkbox"/>	Slip / trip hazard	<input type="checkbox"/>	Inadequate guarding	<input type="checkbox"/>	Plant or equipment unsuitable
<input type="checkbox"/>	Weather	<input type="checkbox"/>	Time production pressures	<input type="checkbox"/>	Other:		
Work systems			People				
<input type="checkbox"/>	Hazard no identified	<input type="checkbox"/>	No / inadequate risk assessment conducted	<input type="checkbox"/>	No / Not followed Procedure	<input type="checkbox"/>	Drugs / alcohol
<input type="checkbox"/>	Hazard not reported	<input type="checkbox"/>	No / inadequate controls implemented	<input type="checkbox"/>	Fatigue	<input type="checkbox"/>	Stress/ Pressures
<input type="checkbox"/>	No/inadequate safe work procedure	<input type="checkbox"/>	Inadequate training / supervision	<input type="checkbox"/>	Change of routine	<input type="checkbox"/>	Distraction / personal issues / stress
<input type="checkbox"/>	Inadequate planning	<input type="checkbox"/>	Other:	<input type="checkbox"/>	Lack of communication	<input type="checkbox"/>	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 <input type="checkbox"/>	No <input type="checkbox"/>
PM Signature:		ER Signature:		
Date:		Date:		



Appendix D Community Consultation and Complaints Handling Strategy

Construction Environmental Management Plan

**SSD-37486043: Oakdale East Industrial Estate
2-10 Old Wallgrove Road, Horsley Park**

Goodman Property Services (Aust) Pty Ltd

SLR Project No.: 630.V10611.00001

13 November 2023



Community Consultation and Complaints Handling Strategy

Oakdale East Industrial Estate

Goodman Property Services (Australia) Pty Ltd

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

Prepared by:

SLR Consulting Australia

10 Kings Road, New Lambton NSW 2305,
Australia

SLR Project No.: 630.10611.00001

Client Reference No.: R01

3 November 2023

Revision: -v2.0

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
-v 2.0	3 November	Jessica Keegan	Alanna Ryan	Alanna Ryan
-v 1.1	6 October 2023	Jessica Keegan	Alanna Ryan	Alanna Ryan
-v 1.0	5 October 2023	Jessica Keegan	Alanna Ryan	Alanna Ryan

Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Goodman (the Client). Information reported here in 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.



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Appendix A Complaints Register



1.0 Introduction

1.1 Background

This Community Consultation and Complaints Handling Strategy (CCCHS) has been prepared on behalf of Goodman Property Services (Australia) Pty Ltd (Goodman) for the Oakdale East Industrial Estate (OEIE). The OEIE is a warehouse and distribution centre, which forms the eastern extent of the 421 hectare (ha) and is located within the Western Sydney Employment Area (WSEA). The site is located within the Fairfield Local Government Area (LGA) and is legally described as Lot 102 and Lot 103 in DP1268366.

Goodman lodged State Significant Development (SSD) application, SSD-374860043 to the Department of Planning and Environment (DPE) for the OEIE Concept and Stage 2 lead-in works, estate-wide infrastructure works, the development of a warehouse and distribution facility in Precinct 3 and extension of the existing approved development in Precinct 1 to create a new warehouse tenancy (see **Figure 1**). Development Consent for SSD-374860043 was granted in October 2023.

1.2 Purpose

The following key aspects are included in the CCCHS:

- Identification of stakeholders to be consulted with during the CCCHS 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.

This CCCHS will be updated as the project progresses to account for variations in the construction program and methodology to SSD-374860043, along with changes in stakeholder situation that impacts on stakeholder interests, with these articulated through the feedback mechanisms.

1.3 SSD Conditions

The details of these conditions are identified within **Table 1** below, along with a cross reference to the relevant section of this CCCHS.

Table 1: Relevant Conditions of Consent

Condition Number	Condition Detail	Report Reference
E3	As part of the CEMP required under condition E2 of this consent, the Applicant must include the following: (f) Community Consultation and Complaints Handling.	This Report
E17	At least 48 hours before the commencement of construction of the Stage 2 development and for the life of the development, the Applicant must:	Section 4.3.1



Condition Number	Condition Detail	Report Reference
	(a) make the following information and documents (as they are obtained or approved) publicly available on its website: <ul style="list-style-type: none"> (i) the documents referred to in condition A1 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.	

1.4 Community Communication Strategy Scope

This CCCHS applies to works and operations undertaken by Goodman and their engaged contractors. The method, triggers and timing of consultation, notification and complaints and queries handling required during the development and arising from the requirements of the relevant SSD-37486043 consent conditions outlined in **Table 1**.

1.5 Project Description

Goodman is developing the OEIE located at 2-10 Wallgrove Road, Horsley Park within the Fairfield LGA. A Concept Plan and Stage 2 Development Application (SSD-37486043) was approved for the estate in October 2023 by Department of Planning & Environment (see **Figure 1**). This report covers the approval associated with Stage 2 Development is as follows:

- Completion of lead-in infrastructure works including intersection upgrades at Millner Ave / Old Wallgrove Road and Lenore Drive / Old Wallgrove Road.
- Clearing of 2.28 ha of vegetation.
- Completion of the internal road network (excl. the proposed private driveway providing access to Precinct 5 but including all other roads shown on the proposed Masterplan).
- Reticulation of services infrastructure to provide serviced development pads to all precincts.
- Completion of retaining walls across OEIE.



- Completion of Building works to Precinct 1 expansion and Precinct 3 including any ancillary on lot infrastructure and detailed civil works required.

The development, as approved under SSD-37486043 is outlined in **Table 2** below.

Table 2: Approved Development

Application Number	Development Description
SSD-37486043	The OEIE Concept Plan includes a Concept Proposal for an industrial estate to be built over five stages; and a Stage 2 development for earthworks, intersection upgrades, construction of estate roads and services, expansion of an existing warehouse in Precinct 1 and construction and operation of three new warehouses in Precinct 3.

This CCCHS has been prepared to address all works approved under SSD-37486043 including earthworks, infrastructure and built form. All contractors and sub-contractors involved in delivering the project will be required to comply with the approved CCCHS.

Figure 1 below identifies the site Masterplan.



Figure 1: Oakdale East Industrial Estate Masterplan

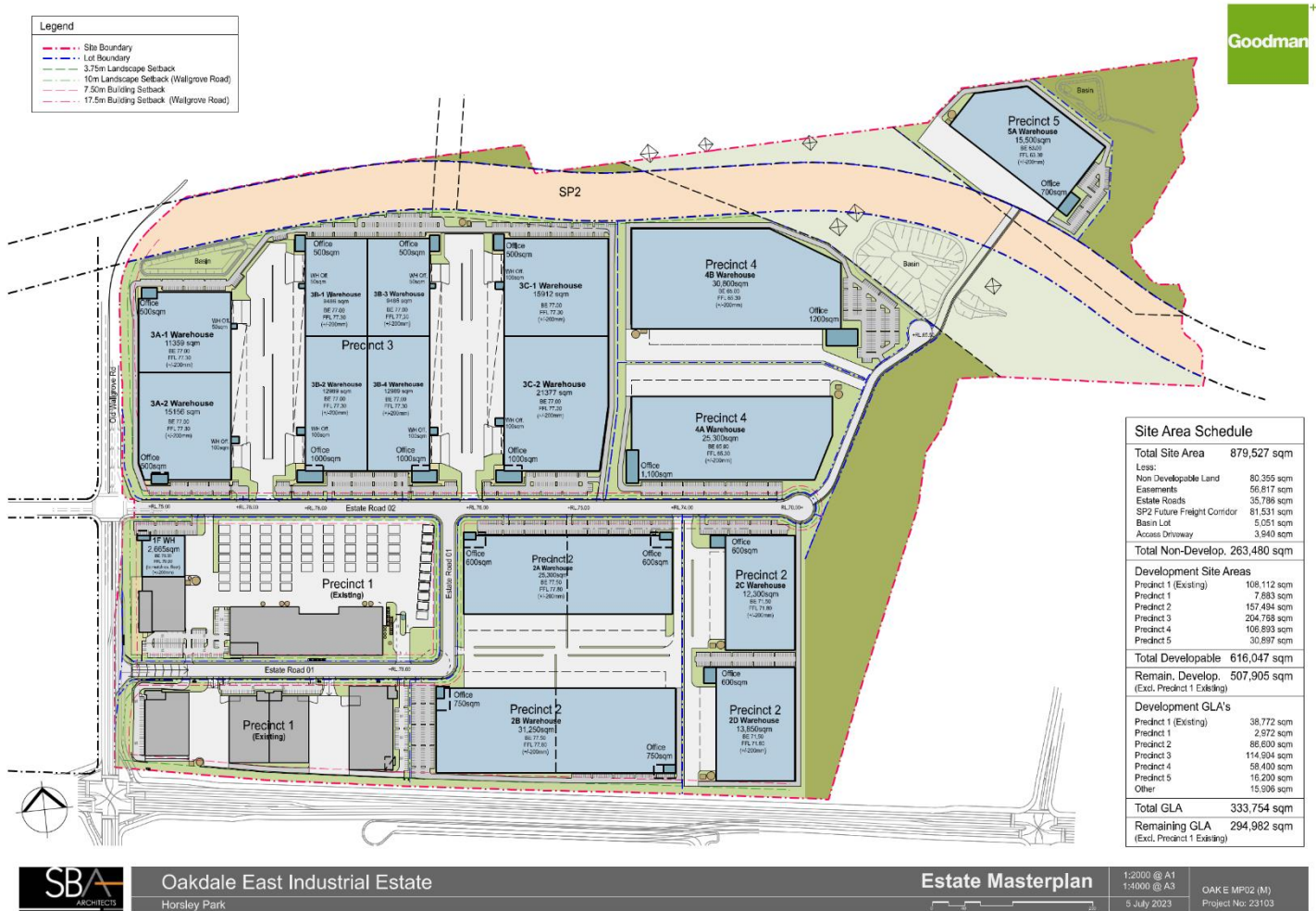
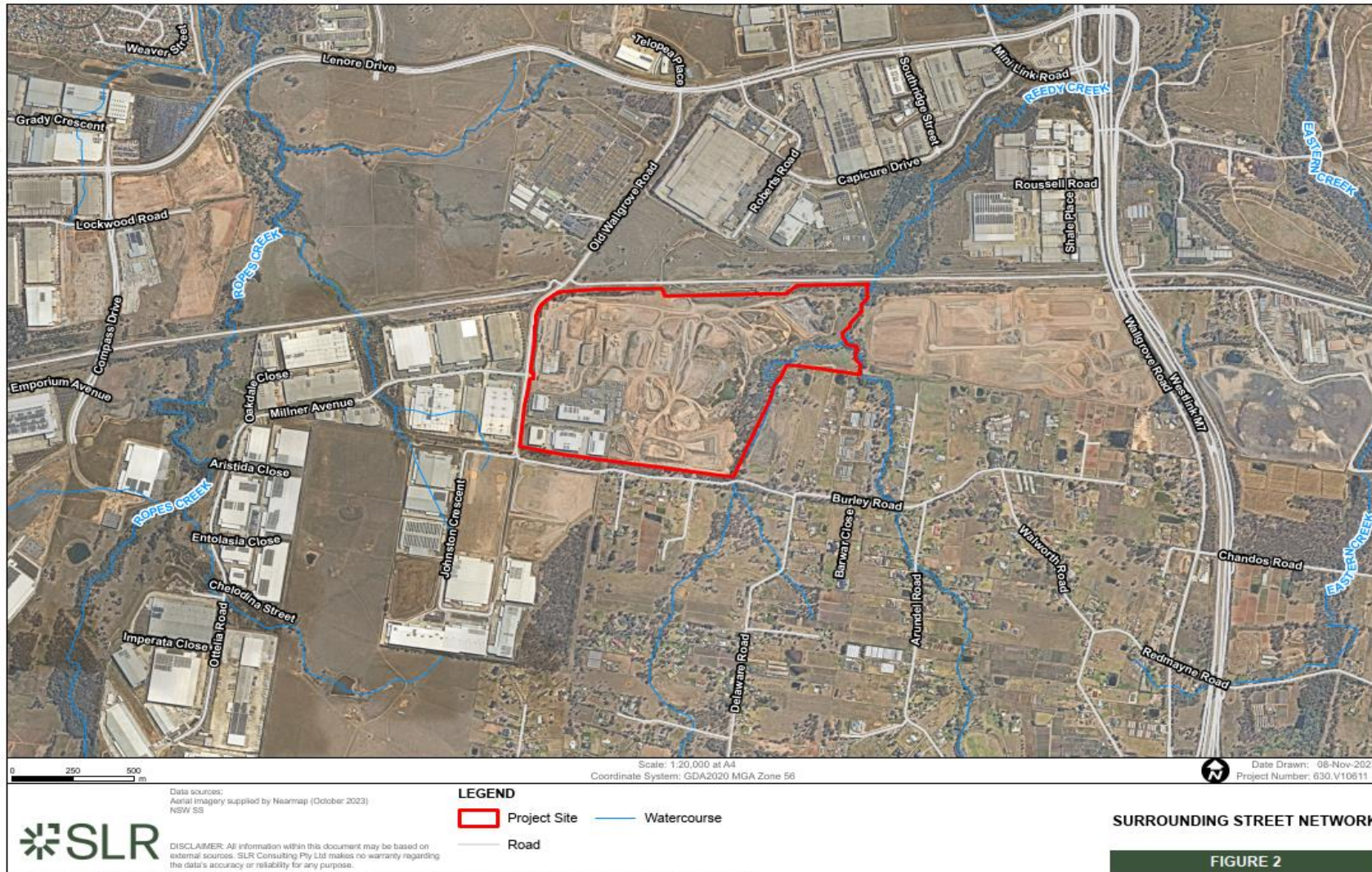


Figure 2: Street Locations of Surrounding Residents and Stakeholders



2.0 Stakeholder Identification

2.1 Community Overview

Goodman has established an extensive and ongoing relationship with key relevant State and Local agencies and authorities with regard to the development of its lands in the Western Sydney Employment Area (WSEA). This program of consultation, consistent with the community participation objectives in the Undertaking Engagement Guidelines for State Significant Projects, has provided a comprehensive understanding of the key issues and requirements each stakeholder might have with regard to the broader Oakdale Estate

Figure 2 above shows the surrounding residents and stakeholder locations including the street and road names, in reference to the site.

2.1.1 Horsley Park

The site is located across one Australian Bureau of Statistics (ABS) geographical boundary, Horsley Park, 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.

- Horsley Park has a population of 1790 accommodated in 598 dwellings. The median age is 45 compared to a state median of 39. The top ancestry response is Italian, followed by Maltese, Australian, English then Assyrian, with languages other than English spoken at home comprising Italian (10.4%), Maltese (6.9%), Arabic (4.4%), Assyrian Neo- Aramaic (4.3%) and Serbian (1.5%).
- 15.8% of the Horsley Park population completed Year 12 compared to 14.5% for the State, with 46.8% of the population employed full time compared to a state average of 55.2%. Clerical and Administrative comprised the highest percentage of employment, equating to 21%, with a median weekly income of \$764, compared to \$813 for the State.

2.2 Key Stakeholders

The key stakeholders likely to require consultation, notification and or likely to raise comment or complaint in the course of the construction of the project include (but are not limited to):

- NSW Department of Planning and Environment (DPE).
- Transport for NSW and Roads (TfNSW) and Maritime Services (RMS).
- NSW Office of Water.
- Water NSW.
- NSW Environment and Heritage Group.
- Endeavour Energy.
- NSW Rural Fire Service.
- Fairfield, Blacktown and Penrith City Council.
- DPI Industries – Land.
- Department of Primary Industry- Agricultural.



- Environmental Protection Authority (EPA).
- Sydney Water.
- TransGrid.
- Deerubbin Local Aboriginal Land Council.
- Surrounding local residential and stakeholders.
- Other Interested Parties.

2.3 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 (Keylan, 2022).

A total of 15 submissions were made on the proposed development, including 10 submissions from public authorities including Fairfield City Council and Blacktown City Council, two submissions were received from the public and three submissions from special interest groups. None of the submissions objected. Endeavour Energy made a submission, raising no concerns with the proposed development and reiterated the need for ongoing consultation during the construction of the development. TransGrid was contacted seeking further input into the proposal.

During the doorknock campaign on 23 March 2022, Goodman and SLR spoke with residents of two properties. In response to concerns raised by community members, a Noise Impact Assessment and Air Quality Assessment were prepared and included within appendices of the EIS (Keylan, 2022).

For more information, refer to the DPE Major Project Assessments webpage for SSD-37486043.

2.4 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 and operational related impacts. **Table 3** 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.

Where an incident or non-compliance arises relating to environmental management and beyond the scope of matters relating to consultation, the OEIE Construction Environmental Management Plan (CEMP) provides the management and mitigation measures to address those matters. **Section 3.5** of the OEIE CEMP outlines the Incident and Non-Compliance Response and Handling Procedure.

Table 3: Issue Identification and Mitigation

Potential Issue	Potential Key Impacts	Mitigation Strategy
Noise, Vibration, and Air Quality	Truck, machinery, and light vehicle movements within, to and from the site, along with civil works have potential to result in negative impacts	Sensitive receivers and affected stakeholders will be consulted prior to actions likely to generate high levels of noise or vibration in accordance with Section 4 of this CCCHS.



Potential Issue	Potential Key Impacts	Mitigation Strategy
	associated with noise, vibration, and dust.	<p>Up to date information on current works will be accessible to stakeholders and the wider public on the project web page.</p> <p>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.</p> <p>The CEMP, along with the supporting Construction Noise and Vibration Management Plan and Construction Air Quality Management Plan 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.</p>
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.	The CEMP and supporting Construction Traffic Management Plan identify specific mechanisms to manage and mitigate these impacts including the development and implementation of a Driver Code of Conduct to be adhered to by all vehicle operators undertaking works in relation to the Site.
Stormwater, Sediment Control, Erosion, Water Quality	<p>High rainfall events could result in localised flooding.</p> <p>Construction could result in impacts to local water quality, associated with sediment laden runoff.</p>	<p>Surrounding sensitive receivers will be consulted with in relation to adjacent works regarding erosion and water quality issues, with these items discussed as they arise via the construction phonenumber, in accordance with Section 4 of this Strategy.</p> <p>The CEMP, along with the supporting Erosion and Sediment Control Plan identify specific mechanisms to manage and mitigate these impacts in accordance with the relevant Fairfield City Council standards and commitments within the SSD approvals package.</p>
Waste Management	Earthworks, demolition, and construction waste present at the site during works.	The CEMP and supporting Waste Management Plan identify 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.	<p>Potentially affected receivers would be advised of works with the potential for impact via letter box drop and phone contact.</p> <p>(If appropriate) and with these items discussed as they arise via the construction phonenumber, in accordance with Section 4 of this Strategy.</p> <p>The CEMP, along with the supporting Flora and Fauna Management Plan identify specific mechanisms to manage and mitigate these impacts.</p>
Visual Amenity and Privacy	Visual impacts of earthwork and construction activities, along with potential impacts on the privacy of adjacent sensitive receivers.	<p>Potentially affected receivers would be advised of works with the potential for impact via letter box drop and phone contact.</p> <p>(If appropriate) and with these items discussed as they arise via the construction phonenumber, in accordance with Section 4 of this Strategy.</p> <p>The CEMP and supporting Vegetation Management Plan identifies specific</p>



Potential Issue	Potential Key Impacts	Mitigation Strategy
		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.	Works outside of hours identified in Condition D1 to only be undertaken in accordance with Condition D2, where necessary and subject to endorsement from the applicable managing agency (where relevant). Should out of hours work with the potential for impact be proposed the potentially affected receivers would be advised via letter box drop in accordance with Section 4.4 of this Strategy.
Hazardous Goods and Contamination	There is the potential for environmental incidents relating to the hazardous goods and contamination on site during construction.	The CEMP and supporting Unexpected Contamination Procedure identify specific mechanisms to manage and mitigate these impacts.
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 CCCHS includes measures at Section 4.3 to provide regular updates in plain language, supported by imagery to stakeholders and the wider community through public and private media. Contact details will be provided on site, the project web page and in all information issued. Information on project works, reporting and compliance is to be maintained and updated on the project website
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 CCCHS includes measures at Section 4.4 to provide updates in emergency events, with the CEMP identifying specific mechanisms to manage and mitigate these impacts from an environmental management perspective.



3.0 Communications and Community Liaison Representative

The Communications and Community Liaison Representative (CCLR) will act as a first point of contact for the community and stakeholders should they have an enquiry or complaint regarding the project. A phone number and project reference number will be provided for publication, display, or distribution to act as the point of contact should the community have an enquiry or complaint related to the development. Calls during working hours will be received by the CCLR, calls outside of working hours (6pm – 7am) and on weekends will be recorded via voicemail for action the next business day. The CCLR will record, follow up and respond to enquiries and complaints in accordance with the CCCHS.

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 responsible for recording, actioning and provided response to comments, queries or complaints received with relation to the construction of the project and will maintain the Complaints Register in accordance with **Section 5.2** of this strategy.

At the time of writing, the contact details for the CCLR are as follows:

- Name: Jessica Keegan – Project Consultant – SLR
- Email: community.oakdaleeast@slrconsulting.com
- Phone: 02 4037 3262.



4.0 Community and Stakeholder Engagement

4.1 Objectives

The key objectives of the CCCHS include the requirements of condition E17 of SSD-37486043 and to:

- Keep the local community and key stakeholders informed of the commencement and progress of works relating to the OEIE project.
- Ensure that enquires and complaints received from the community or key stakeholders for the duration of the project 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.

4.2 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)*.

4.3 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 4** 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 4: Communication Management and Mitigation Tools

Tool/ Technique	Description	Person Responsible	Audience	Frequency/timing	Specifications
Consultation Meetings	Meetings held to notify, discuss or consult on matters arising of relevance to community and or key stakeholders. Meetings to be held either face to face or on virtual platform(s)	CCLR	The wider community and key stakeholders.	Meetings to be held on an as needs basis dependant on matters to be discussed and appropriate timing of discussions	Details and matters to be discussed to be tailored to the purpose and aims of the meeting. Record of conversation (informal) or minutes of meeting (formal) to be recorded, retained by the CCLR and provided to all attendees following the meetings. A record of the discussion shall be included in the Complaints Register and actioned as required.
Complaints Register	Recording community and stakeholder interactions (including notification, consultation, queries, comments and complaints), along with associated remedial actions as required.	CCLR	The wider community and key stakeholders.	Project duration	The maintenance of the Complaints Register is required to satisfy the requirements of (viii) of SSD-37486043. The register will be continually updated to record community engagement, including information provided by Goodman, feedback received, and remedial action undertaken where required.
Agency Meetings	Meetings with agencies to discuss matters relevant to their agency	CCLR and/or Goodman Project Manager	Relevant Agency	As required.	Meetings will be held as required to address matters relevant to specific agencies including the satisfaction of conditions of consent. These shall be undertaken either directly by Goodman or facilitated by the CCLR at Goodman's discretion.
Notification Letterbox Drop	Letters would be provided to specific receivers identified as being potentially	CCLR	Landowners and occupiers of the immediate area.	As required for the project duration.	Letter box drop details to be recorded in the Complaints Register. Timing of construction activity to be identified



Tool/ Technique	Description	Person Responsible	Audience	Frequency/timing	Specifications
	affected by construction. This may be undertaken in tandem with door knocking.				along with relevant contact details.
Email and phone	Where agreed to by the stakeholder and contact details provided, contact is made via email, phone and/or text message to notify or respond to query or complaint	CCLR	The wider community and key stakeholders.	As required for the project duration.	With the stakeholder's consent, contact details shall be utilised to provide notification or further contact to respond to query or complaint. Recorded contact details are to kept private and used exclusively for the purpose of consultation on the project.
On Site Signage	Project information details.	CCLR	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.
Project Information and Complaints Number	Phone number to be contacted should information on the project be required or complaint lodged.	CCLR	The wider community and key stakeholders.	Project duration.	Phone number to be included on site signage, the web page and all project information material. Feedback provided to be incorporated into the Complaints Register and actioned as required.
Staff and Visitor Induction and Training	Project information details.	Contractor's Project Manager	Staff and visitors to the site.	Project duration.	Key project safety information, contact details, emergency procedures and site information.
Toolbox and Prestart Meetings	Project information details.	Site Manager and Contractor's Project Manager	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
Website	A web page shall be	Site Manager and Goodman	The wider community	Project duration.	Website address and phone number located on site signage and all



Tool/ Technique	Description	Person Responsible	Audience	Frequency/timing	Specifications
	established for the project	Project Manager	and key stakeholders.		project information material. Web page to provide all details outlined in Section 4.3.1 below.

4.3.1 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-37486043, Condition E17:

- A copy of the documents listed in Condition C2 of SSD-37486043.
- All current statutory approvals for the Development.
- All approved strategies, plans and programs required under conditions of SSD-37486043.
- 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 SSD-37486043, 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.

4.4 Notification Procedure

Where notification is required pursuant to Condition(s) of SSD-37486043, notification shall be undertaken within the timeframes outlined within the Consent. Where notification is required due to a potential impact or issue, notification shall be undertaken in accordance with **Table 5** and **Table 6** below.

Table 5: 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



Activity	Notification Required
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 6: Notification Requirements for Construction Works

Notification Type	Submission to Goodman	Distribution Community and Stakeholder
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

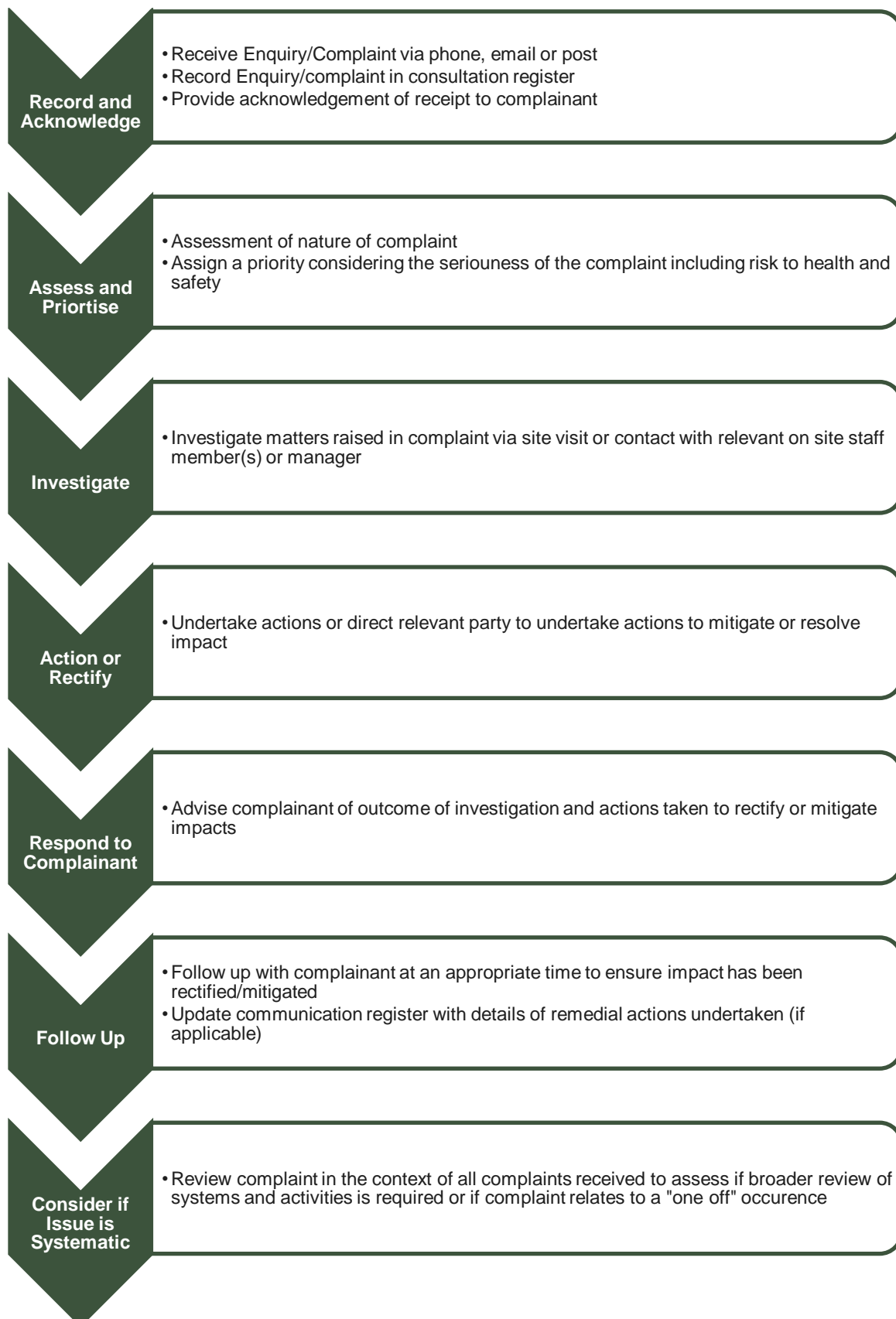
4.5 Complaints Procedure

Goodman are committed to the timely and effective management of enquiries and complaints relating to construction and operational activities for the OEIE. To this end, the following complaints procedure shown in SSD-37486043 will be adhered to, enabling the receipt, and recording of enquiries and complaints, along with the methods of response and resolution of issues raised.

The complaints handling procedure outlined below and illustrated in **Figure 2**.



Figure 3: Complaints Handling Procedure



4.5.1 Protocol for Receiving and Recording Enquires 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 (**1300 004 917**) has been established. The facilities established for receiving enquiries and complaints about the project during construction are shown in **Table 7**.

Table 7: Enquiries and Complaints Facilities

Facility	Purpose	Detail
Community Information Line (Construction phase)	A contact phone number and associated contact name for questions/enquiries and the lodgement of complaints relating to the construction of the development.	1300 004 917
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.oakdaleeast@slrconsulting.com
Postal Address	A postal address for the receipt of questions/enquiries and the lodgement of complaints relating to the development.	1-11 Hayes Road, Rosebery, NSW 2018
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 Complaints Register is included at **Appendix A**.

4.5.2 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 responsible party 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 responsible party 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 or tenant’s representative. The responsible party 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 responsible party 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 responsible party will liaise with the project manager or relevant project engineer/tenant’s representative 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.

4.5.3 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”*.

4.5.4 Contingency Management Plan

In accordance with Condition E1(e) of the SSD-37486043 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 8** below.

Table 8: 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.



Key Element	Trigger/Response	Condition Green	Condition Amber	Condition Red
	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.
	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	Goodman Project Team to prepare and provide response or assign response task to	Goodman Project Team to prepare and provide response within 48 hours.	Goodman Project Team to prepare and provide response within 24 hours.



Key Element	Trigger/Response	Condition Green	Condition Amber	Condition Red
		relevant staff member for comment. Record in consultation register.	Record in consultation register.	Record in consultation register.



5.0 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 CCCHS undertaken to formalise these incremental improvements.

5.1 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 9** below.

Table 9: 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 of 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
Response timeframes	Response to enquiries and complaints should be timely to ensure effective responsiveness and rectification of issues and to	Enquiries and complaints acknowledged within 48 hours. Urgent enquiries and complaints responded to within 48 hours of receipt, non-	Monthly



Monitoring Parameter	Rationale	Performance Criteria	Monitoring Frequency
	encourage trust within the community.	urgent enquiries and complaints responded to within 5 days.	

5.2 Reporting

A monthly summary of results is to be updated in accordance with Condition E17 of SSD-37486043 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 all enquiries and complaints received within the preceding month, including details of response and/or remediation activities.

5.3 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.



6.0 References

NSW Ombudsman (2012) *Managing Unreasonable Complainant Conduct Practice Manual 2nd Edition*.

SLR (2023) *Community and Stakeholder Participation Strategy: SSD-37486043*

SLR (2023) *Construction Environmental Management Plan*

Keylan (2022) *Environmental Impact Statement – Oakdale East Estate (State Significant Development Application Ref 3)*

Keylan (2022) *Response to Submissions – Oakdale East Estate*





Appendix A Complaints Register

Community Consultation and Complaints Handling Strategy

Goodman Property Services (Australia) Pty Ltd

SLR Project No.: 630.10611.00001

3 November 2023

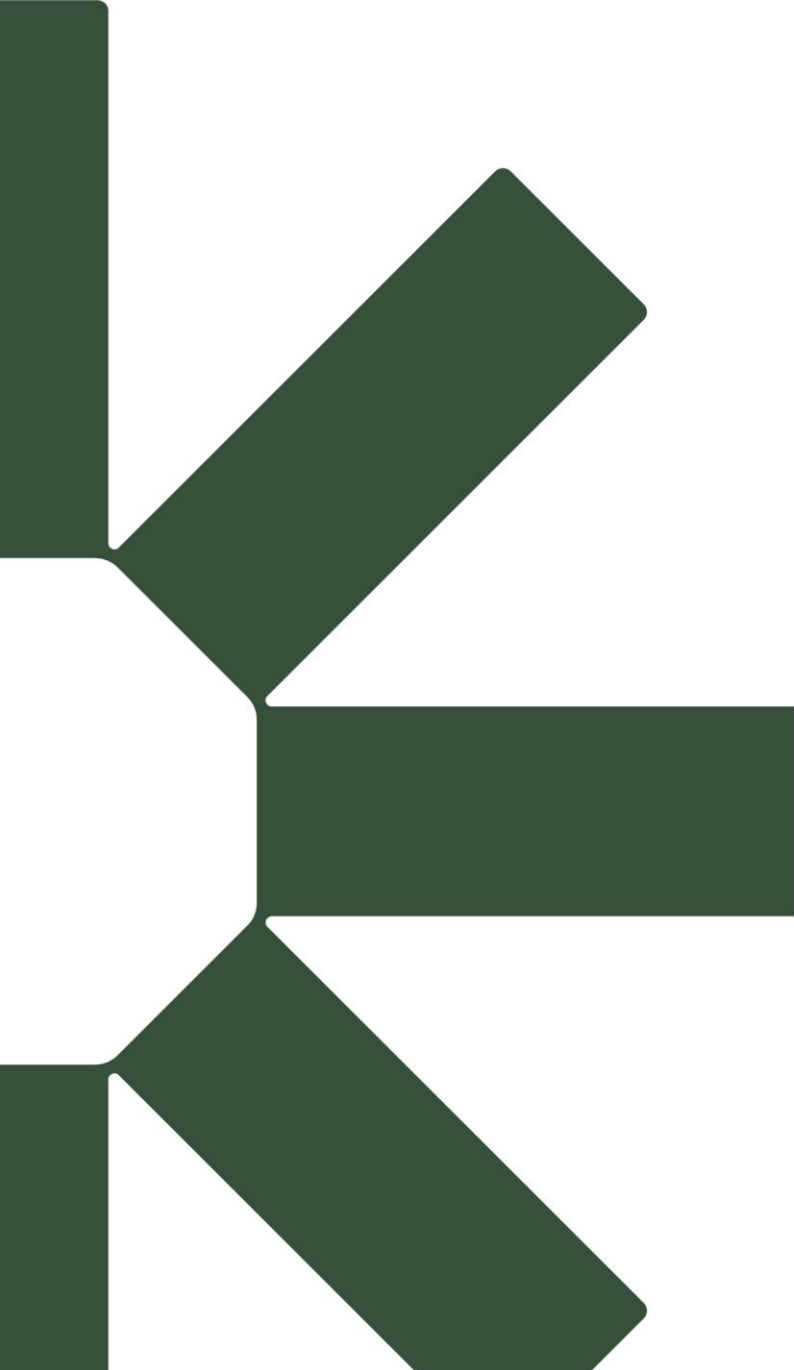
3 November 2023

SLR Project No.: 630.10611.00001
SLR Ref No.: Community Consultation and
Complaints Handling Strategy v 2.0
20231113.docx

Goodman Property Services (Australia) Pty Ltd
Community Consultation and Complaints Handling Strategy

Date	Time	Responsible Party	In/Out	Initial Communication	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







Appendix E Construction Noise and Vibration Management Plan

Construction Environmental Management Plan

**SSD-37486043: Oakdale East Industrial Estate
2-10 Old Wallgrove Road, Horsley Park**

Goodman Property Services (Aust) Pty Ltd

SLR Project No.: 630.V10611.00001

13 November 2023



Construction Noise and Vibration Management Plan

SSD-37486043 Oakdale East Industrial Estate

Goodman Property Services (Aust) Pty Ltd

The Hayesbery
1-11 Hayes Road
Rosebery NSW 2018

Prepared by:

SLR Consulting Australia

Tenancy 202 Submarine School, Sub Base
Platypus, 120 High Street, North Sydney NSW
2060, Australia

SLR Project No.: 630.V10611.00003-CNVMP-R01

13 November 2023

Revision: v2.1

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
V2.1	13 November 2023	Joshua Ridgway	Mark Irish	Mark Irish
V2.0	9 November 2023	Joshua Ridgway	Mark Irish	Mark Irish
v1.1	13 October 2023	Joshua Ridgway	Mark Irish	Mark Irish
v1.0	9 October 2023	Joshua Ridgway	Mark Irish	Mark Irish

Basis of Report

This report has been prepared by SLR Consulting Australia (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.



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Appendices

Appendix A Acoustic Terminology

Appendix B Consultation



1.0 Introduction

SLR Consulting Australia Pty Ltd (SLR) has been engaged by Goodman Property Services (Aust) Pty Ltd (Goodman) to prepare a Construction Noise and Vibration Management Plan (CNVMP) for construction works associated with the development of Stage 2 of the Oakdale East Industrial Estate (OEIE), located at 2-10 Old Wallgrove Road, Horsley Park, NSW.

This CNVMP addresses the potential noise and vibration impacts associated with the construction works and details the mitigation and management procedures for dealing with potential impacts. Construction noise and vibration impacts were previously assessed for Stage 2 of the OEIE as part of *Oakdale East Estate Horsley Park, NSW Stage 2 Concept Plan Assessment - Noise Ref 2201866 Version H* prepared by RWDI in July 2023 (Stage 2 NIA).

SLR is suitably qualified to produce this CNVMP and is a member of the Australian Acoustical Society (AAS) and the Association of Australasian Acoustical Consultants (AAAC). In accordance with Condition D4(a), Goodman is seeking endorsement from the Planning Secretary for the appointment of SLR to prepare this CNVMP.

Specific acoustic terminology is used in this report. An explanation of common acoustic terms is provided in **Appendix A**.



2.0 Development Overview

Goodman Property Services (Aust) Pty Ltd is developing the Oakdale East Industrial Estate located at 2-10 Wallgrove Road, Horsley Park within the Fairfield Local Government Area (LGA). The land is legally described as Lot 102 and Lot 103 in DP 1268366. A Concept Plan and Stage 2 Development Application (SSD-37486043) was approved for the estate in October 2023 by Department of Planning and Environment (DPE).

This report covers the approval associated with the Stage 2 Development as follows:

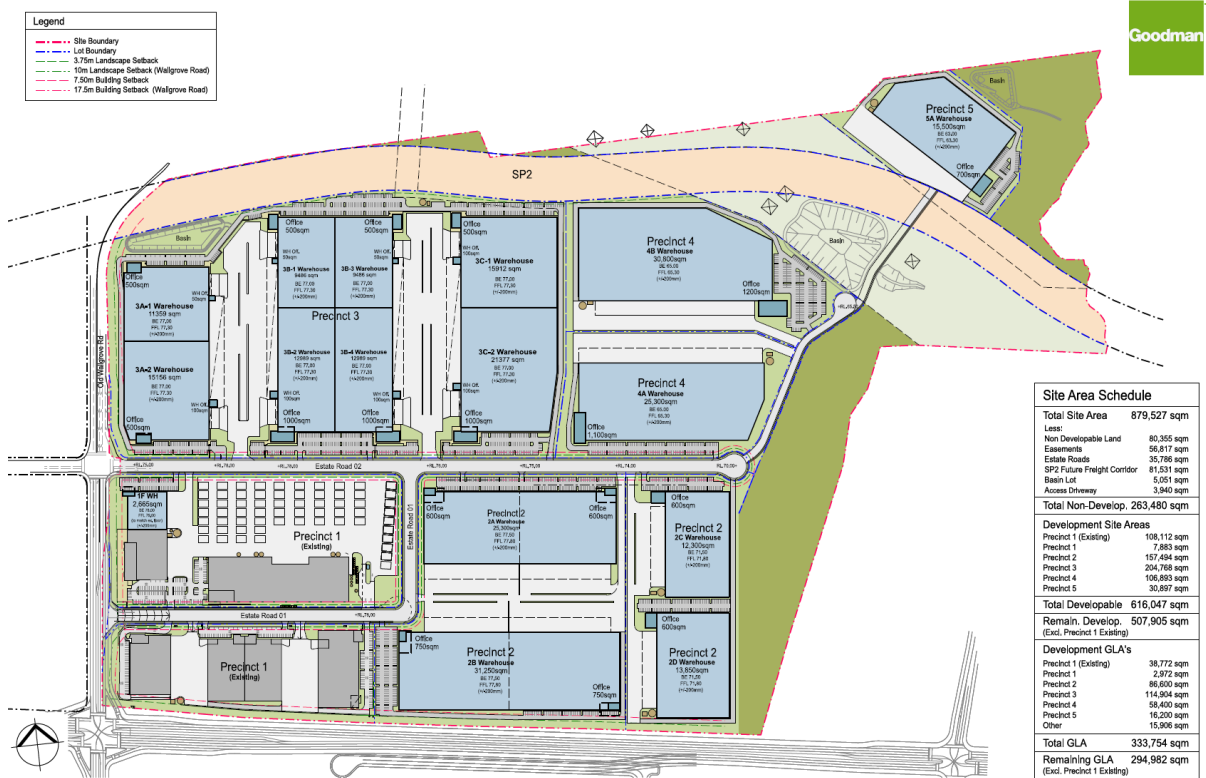
- Completion of lead-in infrastructure works including intersection upgrades at Millner Avenue / Old Wallgrove Road and Lenore Drive / Old Wallgrove Road;
- Clearing of 2.28 ha of vegetation;
- Completion of the internal road network (excl. the proposed private driveway providing access to Precinct 5 but including all other roads shown on the proposed masterplan);
- Reticulation of services infrastructure to provide serviced development pads to all precincts;
- Completion of retaining walls across the entire Estate; and
- Completion of Building works to Precinct 1 expansion and Precinct 3 including any ancillary on lot infrastructure and detailed civil works required.

A site overview of the Stage 2 development is shown in **Figure 1** and the OEIE Concept Masterplan is shown in **Figure 2**.

Figure 1: Stage 2 Site Overview



Figure 2: Oakdale East Industrial Estate Concept Masterplan



2.1 Nearest Sensitive Receivers

The nearest sensitive receivers to the site are located around 100 m to the south and around 150 m to the east along Burley Road, Horsley Park. Existing industrial estates are located to the southwest, west and north of the site. Precinct 1 of the OEIE has been developed and consists of several warehouse buildings.

The sensitive receivers in the area around the site are shown in **Figure 3**.



Figure 3: Nearest Sensitive Receivers



Note 1: Receiver plan sourced from Appendix 4 of the Development Consent.



3.0 Development Consent

This CNVMP has been prepared to accompany the Construction Environmental Management Plan (CEMP) for the development.

Development Consent for the project was approved in SSD-37486043. The conditions relevant to this CNVMP are reproduced in **Table 1**.

Table 1: Development Consent Conditions

Development Consent	Where Addressed									
<p>Hours of Works</p> <p>D1. The Applicant must comply with the hours detailed in Table 5, unless otherwise agreed in writing by the Planning Secretary.</p> <p>Table 5 Hours of Work</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="background-color: #d3d3d3;">Activity</th> <th style="background-color: #d3d3d3;">Day</th> <th style="background-color: #d3d3d3;">Time</th> </tr> </thead> <tbody> <tr> <td style="background-color: #d3d3d3;">Earthworks and Construction</td> <td style="background-color: #d3d3d3;">Monday – Friday Saturday</td> <td style="background-color: #d3d3d3;">7 am to 6 pm 8 am to 1 pm</td> </tr> <tr> <td style="background-color: #d3d3d3;">Operation</td> <td style="background-color: #d3d3d3;">Monday – Sunday</td> <td style="background-color: #d3d3d3;">24 hours</td> </tr> </tbody> </table>	Activity	Day	Time	Earthworks and Construction	Monday – Friday Saturday	7 am to 6 pm 8 am to 1 pm	Operation	Monday – Sunday	24 hours	<p>Section 6.2</p>
Activity	Day	Time								
Earthworks and Construction	Monday – Friday Saturday	7 am to 6 pm 8 am to 1 pm								
Operation	Monday – Sunday	24 hours								
<p>D2. Works outside of the hours identified in Condition D1 may be undertaken in the following circumstances:</p> <ul style="list-style-type: none"> (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. 	<p>Section 6.2</p>									
<p>Construction Noise Limits</p> <p>D3. The Stage 2 development must be constructed to achieve the construction noise management levels detailed in the <i>Interim Construction Noise Guideline</i> (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 CNVMP required by Condition D4.</p>	<p>Sections 5.0, 6.0, 7.0</p>									
<p>Construction Noise and Vibration Management Plan</p> <p>D4. The Applicant must prepare a Construction Noise and Vibration Management Plan (CNVMP) for the Stage 2 development to the satisfaction of the Planning Secretary. The CNVMP must form part of a CEMP in accordance with Condition E2 and must:</p> <ul style="list-style-type: none"> (a) be prepared by a suitably qualified and experienced noise expert whose appointment has been endorsed by the Planning Secretary; (b) describe procedures for achieving the noise management levels in EPA's <i>Interim Construction Noise Guideline</i> (DECC, 2009) (as may be updated or replaced from time to time); 	<p>This CNVMP</p> <p>Section 1.0</p> <p>Sections 5.0, 6.0, 7.0</p>									



Development Consent	Where Addressed
<p>(c) describe the measures to be implemented to manage high noise generating works such as piling and rock breaking, in close proximity to the sensitive receivers on Burley Road, shown on Figure 7 in Appendix 4;</p> <p>(d) include strategies that have been developed with the community for managing high noise generating works;</p> <p>(e) describe the community consultation undertaken to develop the strategies in Condition D4(d); and</p> <p>(f) include a complaints management system that would be implemented for the duration of the development.</p>	<p>Section 7.0</p> <p>There are no works predicted to result in high impacts.</p> <p>Goodman has undertaken consultation advising of impacts and management measures. A report summarising the consultation was provided to DPE separately.</p> <p>Section 7.3</p>
<p>D5. The Applicant must:</p> <p>(a) not commence construction of the Stage 2 development until the CNVMP required by Condition D4 is approved by the Planning Secretary; and</p> <p>(b) implement the most recent version of the CNVMP approved by the Planning Secretary for the duration of construction.</p>	<p>Section 6.2</p>
<p>Vibration Criteria</p> <p>D15. Vibration caused by construction of the development, at any residence or structure outside the site, must be limited to:</p> <p>(a) for structural damage, the latest version of <i>DIN 4150-3 (1992-02) Structural vibration - Effects of vibration on structures</i> (German Institute for Standardisation, 1999); and</p> <p>(b) for human exposure, the acceptable vibration values set out in the <i>Environmental Noise Management Assessing Vibration: a technical guideline</i> (DEC, 2006) (as may be updated or replaced from time to time).</p>	<p>Section 5.4</p>
<p>D16. 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 D15.</p>	<p>Section 7.1</p>
<p>D17. The limits in Conditions D15 and D16 apply unless otherwise outlined in a Construction Noise and Vibration Management Plan, approved as part of the CEMP required by condition E2 of this consent.</p>	<p>Conditions D15 and D16 are applicable</p>
<p>Vibration Monitoring Plan</p> <p>D18. The Applicant must prepare a Vibration Monitoring Plan (VMP) for the Stage 2 development to the satisfaction of the Planning Secretary. The VMP must form part of the CEMP in accordance with Condition E2 and must:</p> <p>(a) be prepared by a suitably qualified and experienced expert;</p> <p>(b) be prepared in consultation with WaterNSW;</p>	<p>Sections 7.0, 7.2.2, 7.2.3</p> <p>Section 1.0</p> <p>Section 5.4.2, Appendix B</p>



Development Consent	Where Addressed
<p>(c) describe procedures to ensure the development complies with the <i>German Standard DIN 4150-3:2016 Structural Vibration Part 3: Effects of vibration on structures</i>;</p> <p>(d) describe the measures to be implemented to manage vibration intensive works, in close proximity to the water pipelines corridor.</p>	<p>Sections 5.4, 7.1, 7.2</p> <p>Sections 7.1, 7.2</p>
<p>D19. The Applicant must:</p> <p>(a) not commence construction until the VMP required by Condition D18 is approved by the Planning Secretary; and</p> <p>(b) implement the most recent version of the VMP approved by the Planning Secretary for the duration of construction.</p>	<p>Sections 7.0, 7.2.2, 7.2.3</p>
<p>Management Plan Requirements</p> <p>E1. Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:</p> <p>(a) detailed baseline data;</p> <p>(b) details of:</p> <p style="padding-left: 20px;">(i) the relevant statutory requirements (including any relevant approval, licence or lease conditions);</p> <p style="padding-left: 20px;">(ii) any relevant limits or performance measures and criteria; and</p> <p style="padding-left: 20px;">(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;</p> <p>(c) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;</p> <p>(d) a program to monitor and report on the:</p> <p style="padding-left: 20px;">(i) impacts and environmental performance of the Stage 2 development; and</p> <p style="padding-left: 20px;">(ii) effectiveness of the management measures set out pursuant to paragraph (c) above;</p> <p>(e) 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;</p> <p>(f) a program to investigate and implement ways to improve the environmental performance of the Stage 2 development over time;</p> <p>(g) a protocol for managing and reporting any:</p> <p style="padding-left: 20px;">(i) incident and any non-compliance (specifically including any exceedance of the impact assessment criteria and performance criteria);</p> <p style="padding-left: 20px;">(ii) complaint;</p> <p style="padding-left: 20px;">(iii) failure to comply with statutory requirements; and</p> <p>(h) a protocol for periodic review of the plan.</p> <p>Note: <i>The Planning Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans</i></p>	<p>Section 4.0</p> <p>Section 3.0</p> <p>Section 5.0</p> <p>Section 6.0</p> <p>Section 7.0</p> <p>Section 7.2</p> <p>Section 7.4</p> <p>Section 7.5</p> <p>Section 7.4</p> <p>Section 7.3</p> <p>Section 7.5</p> <p>Section 8.0</p>



Development Consent	Where Addressed
<p>Appendix 3 Applicant’s Management and Mitigation Measures</p> <p>Construction noise mitigation:</p> <ul style="list-style-type: none"> • Minimising the coinciding use of multiple noisy plant items. • Equipment which is used intermittently is to be shut down when not in use. • Equipment with directional noise emissions would be oriented away from sensitive receivers as much as practicable. • Regular compliance checks on the noise emissions of all plant and machinery used for the proposal would indicate whether noise emissions from plant items were higher than predicted. This also identifies defective silencing equipment on the items of plant. • Non-tonal reversing alarms should be used on all items of plant and heavy vehicles used for construction. • Pre-construction consultation with receivers R01, R03, R04, R05, R06 and R09 to clearly and transparently explain the proposed works and the potential for construction noise impacts. • Provision of regular on-going updates to these receivers throughout the works in order to understand and address as far as practicable any noise related concerns of the receivers. • Develop a Construction Noise and Vibration Management Plan (CNVMP) by the construction contractor prior to commencement of site works. The CNVMP will form part of the CEMP for the development and includes: <ul style="list-style-type: none"> • confirm that the results presented in the NVIA are representative of the final construction methodology • identify the most sensitive receivers potentially impacted by construction noise • provide details of all reasonable and feasible noise mitigation measures required • inform site staff of this sensitivity and methods to reduce construction noise. 	<p>Section 7.0</p> <p>This CNVMP</p>



4.0 Existing Environment

4.1 Unattended Ambient Noise Monitoring

The Stage 2 NIA did not undertake noise monitoring in the vicinity of the OEIE, instead using noise monitoring data from Oakdale West Estate around 3 km to the west. Unattended noise monitoring was completed in October 2018 at 263-273 Burley Road, Horsley Park, as part of *Noise Impact Assessment 224-398 Burley Road, Horsley Park Ref 181156_NIA_Rev4* prepared by Benbow Environmental in March 2019 (Stage 1 NIA). This residence is located to the south of OEIE (shown as R04 in **Figure 3**), and is representative of ambient noise levels at the nearby residential receivers. While the monitoring data from the Stage 2 NIA is more recent, the data from the Stage 1 NIA is considered to be more representative of the nearest receivers as it was undertaken in this area. As such, the noise monitoring from the Stage 1 NIA has been used for this CNVMP.

A summary of the noise monitoring results is presented in **Table 2**. Further information regarding the monitoring, including methodology and detailed data, is provided in the Stage 1 NIA.

Table 2: Summary of Ambient Noise Levels

ID	Address	Measured Noise Levels (dBA)					
		Background Noise (RBL)			Average Noise (LAeq)		
		Day	Evening	Night	Day	Evening	Night
NML1	263-273 Burley Road, Horsley Park	36	38	35	53	48	45

Note 1: The assessment periods are the daytime which is 7 am to 6 pm Monday to Saturday and 8 am to 6 pm on Sundays and public holidays, the evening which is 6 pm to 10 pm, and the night-time which is 10 pm to 7 am on Monday to Saturday and 10 pm to 8 am on Sunday and public holidays. See the NSW EPA *Noise Policy for Industry*.



5.0 Assessment Criteria

5.1 Construction Noise and Vibration Guidelines

The standards and guidelines relevant to the development are listed in **Table 3**. These guidelines aim to protect the community and environment from excessive noise and vibration impacts during construction of projects.

Table 3: Construction Noise and Vibration Standards and Guidelines

Guideline/Policy Name	Where Guideline is Used
<i>Interim Construction Noise Guideline (ICNG)</i> (DECC, 2009)	Assessment of airborne noise impacts on sensitive receivers
<i>Construction Noise and Vibration Guideline (CNVG)</i> (Roads and Maritime Services, 2016)	Assessment and management protocols for noise and vibration impacts
<i>Road Noise Policy (RNP)</i> (DECCW, 2011)	Assessment of construction traffic impacts
<i>BS 7385 Part 2-1993 Evaluation and measurement for vibration in buildings Part 2</i> , BSI, 1993	Assessment of vibration impacts (structural damage) to non-heritage sensitive structures
<i>DIN 4150: Part 3-2016 Structural vibration – Effects of vibration on structures</i> , Deutsches Institute fur Normung, 1999	Screening assessment of vibration impacts (structural damage) to heritage sensitive structures, where the structure is found to be unsound
<i>Assessing Vibration: a technical guideline</i> (DEC, 2006)	Assessment of vibration impacts on sensitive receivers

5.2 Interim Construction Noise Guideline

The NSW *Interim Construction Noise Guideline (ICNG)* is used to assess and manage impacts from construction noise on residences and other sensitive land uses in NSW.

The ICNG contains procedures for determining project specific Noise Management Levels (NMLs) for sensitive receivers based on the existing background noise in the area. The 'worst-case' noise levels from construction of a project are predicted and then compared to the NMLs in a 15-minute assessment period to determine the likely impact of the project.

The NMLs are not mandatory limits, however, where construction noise levels are predicted or measured to be above the NMLs, feasible and reasonable work practices to minimise noise emissions are to be investigated.

Residential Receivers

The ICNG approach for determining NMLs at residential receivers is shown in **Table 4**.



Table 4: ICNG NMLs for Residential Receivers

Time of Day	NML LAeq(15minute)	How to Apply
Standard Construction Hours Monday to Friday 7:00 am to 6:00 pm Saturday 8:00 am to 1:00 pm No work on Sundays or public holidays	Noise affected RBL ¹ + 10 dB	<ul style="list-style-type: none"> The noise affected level represents the point above which there may be some community reaction to noise Where the predicted or measured LAeq(15minute) is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.
	Highly Noise Affected 75 dBA	<ul style="list-style-type: none"> The Highly Noise Affected (HNA) level represents the point above which there may be strong community reaction to noise Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restructuring the hours that the very noisy activities can occur, taking into account: <ul style="list-style-type: none"> Times identified by the community when they are less sensitive to noise (such as before and after school for works near schools or mid-morning or mid-afternoon for works near residences If the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.
Outside Standard Construction Hours	Noise affected RBL + 5 dB	<ul style="list-style-type: none"> A strong justification would typically be required for works outside the recommended standard hours The proponent should apply all feasible and reasonable work practices to meet the noise affected level Where all feasible and reasonable practises have been applied and noise is more than 5 dB above the noise affected level, the proponent should negotiate with the community.

Note 1: The RBL is the Rating Background Level and the ICNG refers to the calculation procedures in the NSW *Industrial Noise Policy* (INP). The INP has been superseded by the NSW EPA *Noise Policy for Industry* (NPfI).

‘Other Sensitive’ Land Use and Commercial Receivers

The ICNG provides NMLs for ‘other sensitive’ non-residential land uses. The ICNG NML for commercial receivers is 70 dBA LAeq(15minute) and is applicable when the premises are in use.

Sleep Disturbance

A method for assessing sleep disturbance is contained in the NPfI. Although the NPfI sleep disturbance criteria relates to industrial noise, it is also considered relevant for reviewing potential impacts from construction noise as a screening criteria to identify the need for further



assessment. The NPfI notes that a detailed maximum noise level assessment should be undertaken where a project results in night-time noise levels which exceed 52 dBA L_{AFmax} or the prevailing background level plus 15 dB, whichever is the greater.

Works will be undertaken during standard daytime construction hours. For works required during out of hours periods the sleep disturbance screening level of night-time RBL plus 15 dB will be applied.

5.2.1 NML Summary

The NMLs for the project have been determined in accordance with the requirements of the ICNG and are shown in **Table 5**. Further information regarding the NMLs is provided in the Stage 1 NIA.

Table 5: Project Specific Noise Management Levels (dBA)

Receiver Type	NML – $L_{Aeq}(15\text{minute})$ dBA					Sleep Disturbance Screening Level – L_{Amax} dBA
	Standard Construction Hours (RBL+10 dB)	Highly Noise Affected	Out of Hours ¹ (RBL+5 dB)			
	Daytime	All	Daytime ²	Evening	Night-time	Night-time
Residential	46	75	41	41 ³	40	52
Commercial	70 (when in use)	n/a	70 (when in use)			-

Note 1: Works will be undertaken during standard daytime construction hours. Where out of hours works are required the out of hours NMLs apply.

Note 2: Daytime out of hours is 7 am to 8 am and 1 pm to 6 pm on Saturday, and 8 am to 6 pm on Sunday and public holidays.

Note 3: Where the evening RBL is higher than the daytime RBL, the daytime RBL has been used.

5.3 Construction Road Traffic Noise Guidelines

The potential impacts from construction traffic on public roads are assessed under the NSW EPA *Road Noise Policy* (RNP) and Roads and Maritime (now Transport for NSW) *Construction Noise and Vibration Guideline* (CNVG).

An initial screening test is first applied to evaluate if existing road traffic noise levels are expected to increase by more than 2.0 dB as a result of construction traffic. Where this is considered likely, further assessment is required using the RNP base criteria shown in **Table 6**.

Table 6: ICNG NMLs for Residential Receivers

Road Category	Type of Project/Land Use	Assessment Criteria (dBA)	
		Daytime (7 am-10 pm)	Night-time (10 pm-7 am)
Freeway/ arterial/ sub-arterial roads	Existing residences affected by additional traffic on existing freeways/arterial/sub-arterial roads generated by land use developments	$L_{Aeq}(15\text{hour})$ 60 (external)	$L_{Aeq}(9\text{hour})$ 55 (external)
Local roads	Existing residences affected by additional traffic on existing local roads generated by land use developments	$L_{Aeq}(1\text{hour})$ 55 (external)	$L_{Aeq}(1\text{hour})$ 50 (external)



5.4 Vibration Guidelines

The effects of vibration from construction work can be divided into three categories:

- Those in which the occupants of buildings are disturbed (**human comfort**). People can sometimes perceive vibration impacts when vibration generating construction work is located close to occupied buildings. Vibration from construction work tends to be intermittent in nature and the EPA's *Assessing Vibration: a technical guideline* (2006) provides criteria for intermittent vibration based on the Vibration Dose Value (VDV), as shown in **Table 7**.
- Those where building contents may be affected (**building contents**). People perceive vibration at levels well below those likely to cause damage to building contents. For most receivers, the human comfort vibration criteria are the most stringent and it is generally not necessary to set separate criteria for vibration effects on typical building contents. Exceptions to this can occur when vibration sensitive equipment, such as electron microscopes or medical imaging equipment, are in buildings near to construction work. No such equipment has been identified in the study area.
- Those where the integrity of the building may be compromised (**structural/cosmetic damage**). If vibration from construction work is sufficiently high, it can cause cosmetic damage to elements of affected buildings. Industry standard cosmetic damage vibration limits are specified in British Standard BS 7385 and German Standard DIN 4150. The limits are shown in **Table 8** and **Table 9**.

Table 7: Human Comfort Vibration – Vibration Dose Values for Intermittent Vibration

Building Type	Assessment Period	Vibration Dose Value ¹ (m/s ^{1.75})	
		Preferred	Maximum
Critical Working Areas (eg operating theatres or laboratories)	Day or night-time	0.10	0.20
Residential	Daytime	0.20	0.40
	Night-time	0.13	0.26
Offices, schools, educational institutions and places of worship	Day or night-time	0.40	0.80
Workshops	Day or night-time	0.80	1.60

Note 1: The VDV accumulates vibration energy over the daytime and night-time assessment periods, and is dependent on the level of vibration as well as the duration.



Table 8: Cosmetic Damage – BS 7385 Transient Vibration Values for Minimal Risk of Damage

Group	Type of Building	Peak Component Particle Velocity in Frequency Range of Predominant Pulse	
		4 Hz to 15 Hz	15 Hz and Above
1	Reinforced or framed structures. Industrial and heavy commercial buildings	50 mm/s at 4 Hz and above	
2	Unreinforced or light framed structures. Residential or light commercial type buildings	15 mm/s at 4 Hz increasing to 20 mm/s at 15 Hz	20 mm/s at 15 Hz increasing to 50 mm/s at 40 Hz and above

Note 1: Where the dynamic loading caused by continuous vibration may give rise to dynamic magnification due to resonance, especially at the lower frequencies where lower guide values apply, then the guide values may need to be reduced by up to 50%.

Table 9: Cosmetic Damage – DIN 4150 Guideline Values for Short-term Vibration on Structures

Group	Type of Structure	Guideline Values Vibration Velocity (mm/s)				
		Foundation, All Direction at a Frequency of			Topmost Floor, Horizontal	Floor Slab, Vertical
		1 to 10 Hz	10 to 50 Hz	50 to 100 Hz	All Frequencies	All Frequencies
1	Buildings used for commercial purposes, industrial buildings and buildings of similar design	20	20 to 40	40 to 50	40	20
2	Residential buildings and buildings of similar design and/or occupancy	5	5 to 15	15 to 20	15	20
3	Structures that, because of their particular sensitivity to vibration, cannot be classified as Group 1 or 2 and are of great intrinsic value (eg heritage listed buildings)	3	3 to 8	8 to 10	8	20 ¹

Note 1: It may be necessary to lower the relevant guideline value markedly to prevent minor damage.

5.4.1 Heritage Buildings or Structures

Heritage listed buildings and structures should be considered on a case-by-case basis but as noted in BS 7385 should not be assumed to be more sensitive to vibration, unless structurally unsound. Where a heritage building is deemed to be sensitive, the more stringent DIN 4150 Group 3 guideline values in **Table 9** can be applied.

No heritage buildings have been identified in the vicinity of the development.

5.4.2 WaterNSW Pipelines

WaterNSW pipelines are located adjacent to the northern boundary of the OEIE site, around 40 to 50 m from the closest point of the OEIE works.

In accordance with Condition D18(b), consultation with WaterNSW was undertaken by Goodman. The consultation is detailed in **Appendix B**.



At the request of WaterNSW, vibration values in Group 3 of Table 1 of DIN 4150 (refer to **Table 9**) will be adopted for the WaterNSW pipelines. This is consistent with the *Guideline for Development Adjacent to the Upper Canal and Warragamba Pipelines* (WaterNSW, 2021). This is applicable to both above ground and buried sections of the pipelines.

5.4.3 Minimum Working Distances for Vibration Intensive Works

Minimum working distances for typical vibration intensive construction equipment are provided in the CNVG and are shown in **Table 10**. The minimum working distances are for both cosmetic damage (from BS 7385 and DIN 4150) and human comfort (from the NSW EPA *Assessing Vibration: a technical guideline*). They are calculated from empirical data which suggests that where work is further from receivers than the quoted minimum distances then impacts are not considered likely.

Table 10: Recommended Minimum Working Distances from Vibration Intensive Equipment

Plant Item	Rating/Description	Minimum Distance		
		Cosmetic Damage		Human Response (NSW EPA Guideline)
		Residential and Light Commercial (BS 7385)	Heritage Items (DIN 4150, Group 3)	
Vibratory Roller	<50 kN (1–2 tonne)	5 m	11 m	15 m to 20 m
	<100 kN (2–4 tonne)	6 m	13 m	20 m
	<200 kN (4–6 tonne)	12 m	25 m	40 m
	<300 kN (7–13 tonne)	15 m	31 m	100 m
	>300 kN (13–18 tonne)	20 m	40 m	100 m
	>300 kN (>18 tonne)	25 m	50 m	100 m
Small Hydraulic Hammer	300 kg (5 to 12 t excavator)	2 m	5 m	7 m
Medium Hydraulic Hammer	900 kg (12 to 18 t excavator)	7 m	15 m	23 m
Large Hydraulic Hammer	1,600 kg (18 to 34 t excavator)	22 m	44 m	73 m
Vibratory Pile Driver	Sheet piles	2 m to 20 m	5 m to 40 m	20 m
Piling Rig – Bored	≤ 800 mm	2 m (nominal)	5 m	4 m
Jackhammer	Hand held	1 m (nominal)	3 m	2 m

The minimum working distances are indicative and will vary depending on the particular item of equipment and local geotechnical conditions. The distances apply to cosmetic damage of typical buildings under typical geotechnical conditions.



6.0 Construction Noise and Vibration Assessment

6.1 Construction Activities

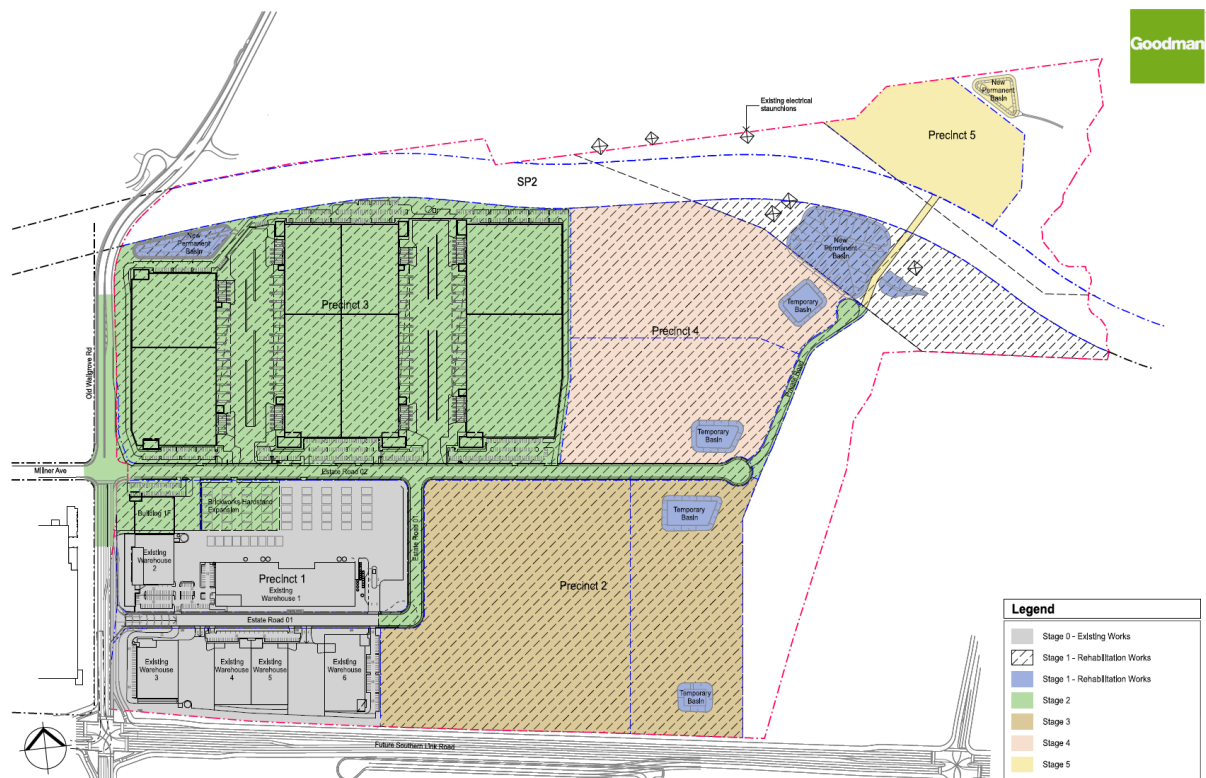
The construction activities proposed for the Stage 2 development of OEIE are detailed in the Stage 2 NIA. The construction activities include:

- Site clearing, earthworks, road construction and retaining walls
- Pad and hardstand works
- Construction of warehouse and office structures

The construction staging plan is shown in **Figure 4**.

Stage 2 infrastructure works are forecast to commence in November 2023 and last around 22 months. Stage 2 building works (Precincts 1 and 3) are forecast to commence in May 2024 and last around 21 months.

Figure 4: Construction Staging



6.2 Hours of Construction

In accordance with Condition D1, construction activities will be undertaken during the following standard daytime construction hours:

- 7:00 am to 6:00 pm, Mondays to Fridays
- 8:00 am to 1:00 pm on Saturdays
- At no time on Sundays or Public Holidays.

In accordance with Condition D2, out of hours work may be undertaken in the following circumstances:

- Works that are inaudible at the nearest sensitive receivers
- Works agreed to in writing by the Planning Secretary
- For the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons
- Where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm.

In accordance with Condition D5, construction must not be commenced until this CNVMP is approved by the Planning Secretary, and the most recent version of this CNVMP must be implemented for the duration of construction.

6.3 Construction Noise Predictions

Construction noise levels were modelled in the Stage 2 NIA. A summary of the predicted noise levels (without additional mitigation) at the nearest receivers for the various work activities is presented in **Table 11**. Construction noise impacts have been assessed only for standard daytime construction hours. Note that the table uses the NMLs detailed in **Table 5** as detailed in **Sections 4.1** and **5.2**.

For most construction activities, it is expected that the construction noise levels would frequently be lower than predicted at the most-exposed receiver, as the noise levels presented in this report are based on each scenario occurring at the nearest point of the works to each receiver.



Table 11: Predicted Construction Noise Levels

Receiver	Period (Weather)	LAeq(15minute) Noise Level (dBA)				
		NML	Highly Affected NML	Predicted		
				Earthworks	Hardstand	Warehouse
R01	Day (standard)	46	75	54	51	47
R02	Day (standard)	46	75	52	49	44
R03	Day (standard)	46	75	55	50	46
R04	Day (standard)	46	75	56	53	47
R05	Day (standard)	46	75	56	52	48
R06	Day (standard)	46	75	58	52	49
R07	Day (standard)	46	75	46	42	37
R08	Day (standard)	46	75	48	43	38
R09	Day (standard)	46	75	56	52	47
R10	Day (standard)	46	75	47	45	39
R11	Day (standard)	46	75	47	45	38
R12	Day (standard)	46	75	48	45	39
I01	Day (standard)	70	n/a	52	51	46
I02	Day (standard)	70	n/a	40	39	38
I03	Day (standard)	70	n/a	48	47	42
I04	Day (standard)	70	n/a	47	45	40

Note 1: **Bold** cells indicate an exceedance of the NML.

Residential Receivers

Construction noise levels up to 56 dBA are predicted at the nearest residential receivers.

Low impacts (1-10 dB above NML) are predicted at most receivers during 'site clearing, earthworks, road construction and retaining walls', with low impacts at fewer receivers during 'pad and hardstand works' and 'construction of warehouse and office structures'.

No residential receivers are predicted to be Highly Noise Affected (>75 dBA).

Commercial Receivers

Construction noise levels up to 52 dBA are predicted at the nearest commercial receivers.

Noise levels at commercial receivers are not predicted to exceed the NMLs for the proposed works.

It is expected that the construction noise levels would frequently be lower than predicted at the most-affected receivers when equipment is operated further from the receivers than the closest point of works, and when less noisy equipment is used.

All feasible and reasonable noise mitigation measures will be applied to the construction work. Construction noise and vibration mitigation measures are discussed in **Section 7.0**.



6.4 Construction Road Traffic Noise

The route to the site uses Old Wallgrove Road, which feeds onto the arterial roads Wallgrove Road and the M7 Motorway. The site access arrangements are shown in **Figure 5**, and alternative access arrangements during the Stage 4 – Milner Ave/Old Wallgrove Rd Intersection works are shown in **Figure 6**.

Figure 5: Access Arrangements (Internal Works Only)

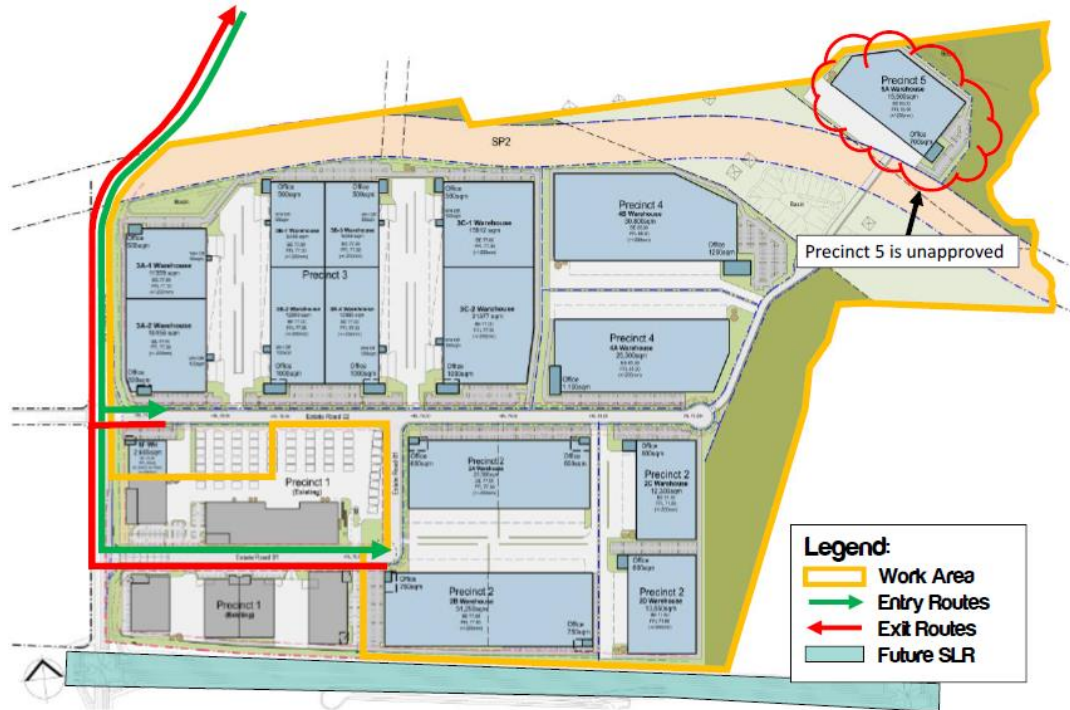
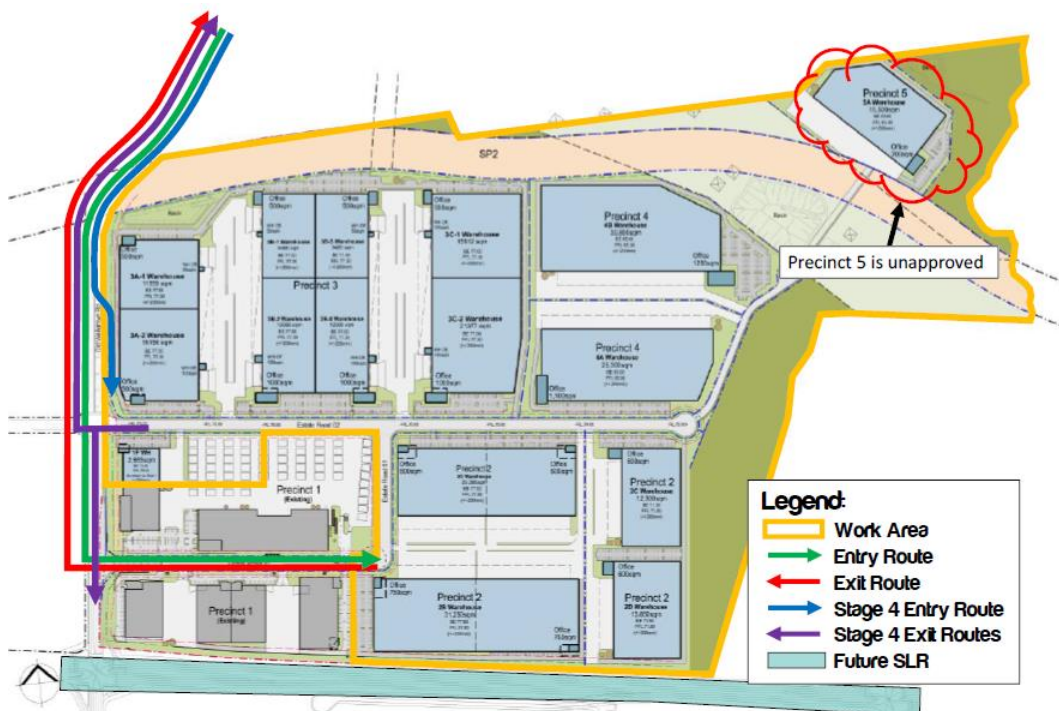
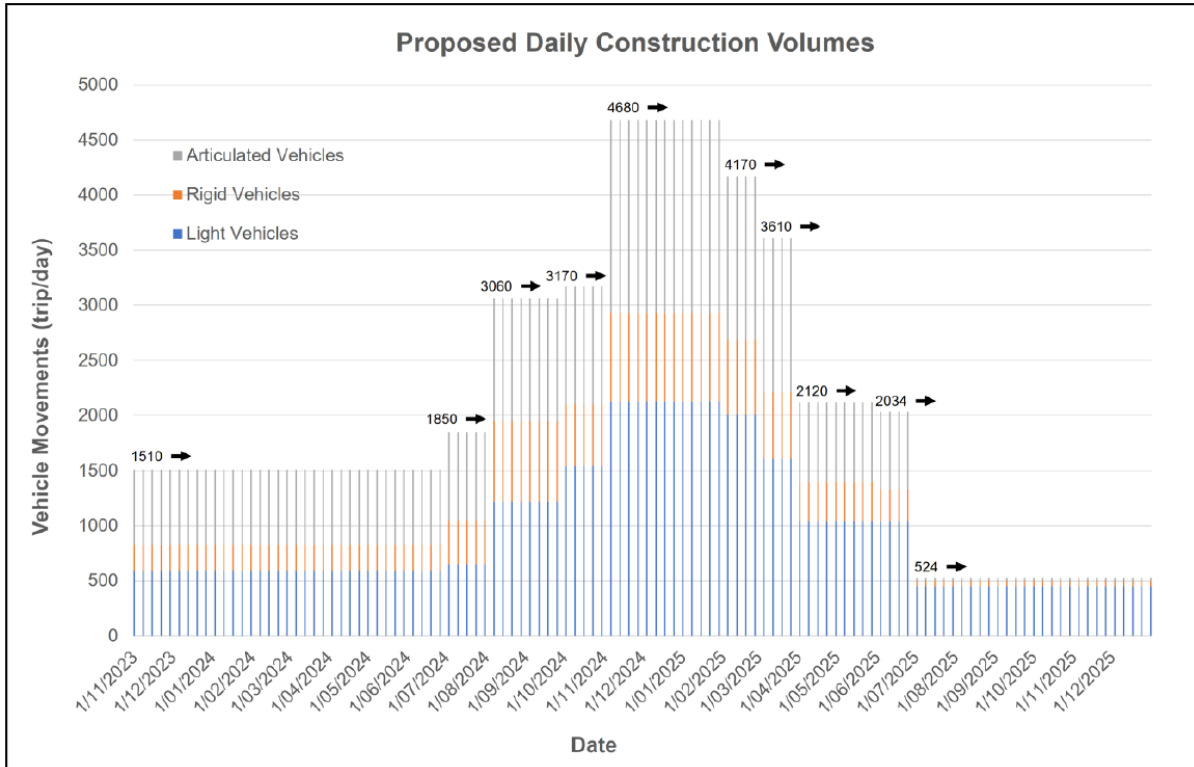


Figure 6 Access Arrangements (During Stage 4 Intersection Works)



Proposed daily construction vehicle volumes are estimated to reach a cumulative peak of around 4,680 vehicle movements per day during the peak construction period. An indicative display of the proposed daily construction vehicle volumes is shown in **Figure 7**.

Figure 7 Proposed Daily Construction Vehicle Volumes



Note 1: Figure sourced from Construction Traffic Management Plan (CTMP).

Old Wallgrove Road is not adjacent to any receivers sensitive to road traffic noise. The proposed daily construction traffic volumes would not result in an increase of greater than 2 dB on Wallgrove Road or the M7 Motorway, which are both busy arterial roads. As such, road traffic noise impacts from construction related traffic are expected to be negligible.



6.5 Construction Vibration

Vibration intensive items of plant proposed for use during the construction of the site may include rockbreakers and vibratory rollers. These items of equipment are proposed to be used primarily 'site clearing, earthworks, road construction and retaining walls' and 'pad and hardstand works'.

During these works, vibratory rollers and rockbreakers have the potential to be operated within the recommended minimum working distances of the nearest residential receivers on the southern side of Burley Road, and commercial receivers in OEIE Precinct 1 and Oakdale Central Estate.

The separation distance from these buildings will be maximised and all feasible and reasonable mitigation and management measures undertaken. Mitigation and management measures are outlined in **Section 7.0**.

Vibration at the nearest receivers is likely to be perceptible at times during the works when vibration intensive activities are being carried out nearby.

WaterNSW pipelines are located adjacent to the northern boundary of the OEIE site, around 40 to 50 m from the closest point of the works. Corresponding to the largest minimum working distance for DIN 4150 (detailed in **Table 10**), mitigation and management measures will be undertaken when vibration intensive works are required within 50 m of the pipelines, including the buried section of the pipelines. These measures are outlined in **Section 7.0**.



7.0 Mitigation and Management Measures

The ICNG acknowledges that due to the nature of construction works it is inevitable that there will be impacts where construction is near to sensitive receivers. The worst-case noise impacts during construction of the project are predicted to be 'low' to 'moderate', however, this would likely only occur on an infrequent basis when noise intensive works are being completed near to receivers. Works are also generally limited to daytime hours only.

All appropriate feasible and reasonable mitigation measures will be applied to the work to minimise the potential impacts, as far as practicable.

7.1 Standard Mitigation and Management Measures

The mitigation and management measures that would be applied to the project are detailed in **Table 12**.

Table 12: Construction Noise and Vibration Standards and Guidelines

Measure	Person Responsible	Timing / Frequency	Reference / Notes
Project Planning			
Use quieter and less vibration emitting construction methods where feasible and reasonable.	Contractor Project Manager	Ongoing	Best practice
Works will be completed during standard daytime construction hours outlined in Section 6.2 .			
Truck routes to site will be limited to major roads.			
Scheduling			
Respite offers will be considered where high-noise works are predicted to exceed 75 dBA for residential receivers. Respite offers will be considered for high-vibration works where the works are undertaken within the human comfort minimum working distances for all receiver types. It is noted that no works are predicted to result in highly noise affected levels at receivers. Where high noise impacts are identified, further consultation with these receivers will be undertaken to determine appropriate respite periods.	Contractor Project Manager / Communications and Community Liaison Rep	Ongoing	Best practice
High-noise or vibration generating works will be carried out in continuous blocks no longer than three hours in length, with a minimum respite period of one hour between each block. 'Continuous' includes any period during which there is less than a one hour respite between ceasing and recommencing these works.			



Measure	Person Responsible	Timing / Frequency	Reference / Notes
Duration Respite will be considered where it may be beneficial to sensitive receivers to increase the duration of blocks of work or number of consecutive periods in order to complete the works more quickly. The project team will engage with the community where Duration Respite is considered in accordance with the Community Consultation & Complaints Handling Strategy (CCCHS).			
Notification detailing work activities, dates and hours, impacts and mitigation measures, indication of work schedule over the night-time period, any operational noise benefits from the works (where applicable) and contact telephone numbers will be undertaken in accordance with the CCCHS.			
Site Layout			
Compounds and worksites will be designed to promote one-way traffic and minimise the need for vehicle reversing.	Contractor Project Manager	Ongoing	Best practice
Where practicable, work compounds, parking areas, and equipment and material stockpiles will be positioned away from noise-sensitive locations and take advantage of existing screening from local topography.			
Equipment that is noisy will be started away from sensitive receivers			
Training			
Training will be provided to all personnel on noise and vibration requirements for the project. Inductions and toolbox talks to be used to inform personnel of the location and sensitivity of surrounding receivers.	Contractor Project Manager	Ongoing	Best practice
Plant and Equipment Source Mitigation			
Minimise the coinciding use of multiple noisy plant items.	Contractor Project Manager	Ongoing	Development Consent Applicant's Management and Mitigation Measures
Equipment which is used intermittently is to be shut down when not in use.			
Equipment with directional noise emissions would be oriented away from sensitive receivers as much as practicable.			



Measure	Person Responsible	Timing / Frequency	Reference / Notes
Regular compliance checks on the noise emissions of all plant and machinery used for the proposal would indicate whether noise emissions from plant items were higher than predicted. This also identifies defective silencing equipment on the items of plant.			
Where practicable, tonal reversing alarms (beepers) will be replaced with non-tonal alarms (squawkers) on all equipment in use (subject to occupational health and safety requirements).			
Noisy equipment will be sited behind structures that act as barriers, or at the greatest distance from the noise-sensitive area. Equipment will be oriented so that noise emissions are directed away from any sensitive areas, where possible.			Best practice
Noise generating equipment will be regularly checked and effectively maintained, including checking of hatches/enclosures regularly to ensure that seals are in good condition and doors close properly against seals.			
Noise monitoring spot checks of equipment will be completed to ensure individual items are operating as expected			
Dropping materials from a height will be avoided.			
Loading and unloading will be carried out away from noise sensitive areas, where practicable.			
Trucks will not queue outside residential properties. Truck drivers will avoid compression braking as far as practicable.			
Truck movements will be kept to a minimum, ie trucks are fully loaded on each trip.			
Screening			
Where possible, install purpose-built screening or enclosures will be used around long-term fixed plant that has the potential to impact nearby receivers	Contractor Project Manager	Ongoing	Best practice
The layout of the site will take advantage of existing screening from local topography, where possible. Site huts, maintenance sheds and/or containers will be positioned between noisy equipment and the affected receivers.			



Measure	Person Responsible	Timing / Frequency	Reference / Notes
Community Consultation			
Pre-construction consultation with receivers R01, R03, R04, R05, R06 and R09 to clearly and transparently explain the proposed works and the potential for construction noise impacts have been undertaken (refer to CEMP).	Communications and Community Liaison Rep	Prior to commencement of construction	Development Consent Applicant's Management and Mitigation Measures
Provide of regular on-going updates to these receivers throughout the works in order to understand and address as far as practicable any noise related concerns of the receivers.		Ongoing	
Notifications will be provided to the affected community where high impacts are anticipated or where out of hours works are required. Notification will be a minimum of 24 hours.		Best practice	
Where complaints are received, work practices will be reviewed and feasible and reasonable practices implemented to minimise any further impacts. Refer to Section 7.3 .			
Monitoring			
Noise and/or vibration monitoring will be conducted (as appropriate) when noise/vibration intensive works are being undertaken in close proximity to sensitive receivers.	Contractor Project Manager	Ongoing	Best practice
Noise and/or vibration monitoring will be conducted (as appropriate) in response to any complaints received to verify that levels are not substantially above the predicted levels.			
Refer to Section 7.2 for full details of monitoring requirements.			



Measure	Person Responsible	Timing / Frequency	Reference / Notes
Vibration			
<p>If vibration generating works are required within the minimum cosmetic damage working distances and considered likely to exceed the criteria:</p> <ul style="list-style-type: none"> Different construction methods with lower source vibration levels will be investigated and implemented, where feasible Attended vibration measurements will be undertaken at the start of the works to determine actual vibration levels at the item. Works will cease if the monitoring indicates vibration levels are likely to, or do, exceed the relevant criteria. 	Contractor Project Manager	Ongoing	Best practice
Where works are required within the cosmetic damage minimum working distances, building condition surveys will be completed before and after the works to ensure no cosmetic damage has occurred.			
Vibratory compactors must not be used closer than 30 metres from residential buildings unless vibration monitoring confirms compliance with the vibration criteria detailed in Section 5.4 .			Condition D16
The vibration limits detailed for Group 3 of Table 1 of DIN 4150 will be applied for the WaterNSW pipelines located adjacent to the northern site boundary (refer to Table 9).			Required by WaterNSW
During vibration intensive construction works within 50 m of the WaterNSW pipelines, vibration will be monitored in accordance with the procedures outlined in Section 7.2.2.1 .			
WaterNSW will be immediately notified in the event of any impact to the pipeline so that they can inspect the pipes prior to confirming whether any remedial work is required.			



7.2 Monitoring

While not required by the Development Consent, Goodman proposes to install SiteHive real-time monitoring units at locations representative of the nearest receivers. The indicative monitoring locations are shown in **Figure 8**. Final monitoring locations will be confirmed based on environmental conditions and consultation with the relevant stakeholders. Vibration monitoring units are proposed to be installed near the northern site boundary adjacent to the WaterNSW pipelines, and south of the site adjacent to the nearest residence. Noise monitoring units will be installed at these locations along with two additional locations adjacent to residences to the south and southeast of the site.

From time to time, and without notice to DPE, Goodman may amend or replace the real-time monitoring equipment with alternative solutions to similar effect should the SiteHive units not be available or are required to be replaced.

Figure 8 Indicative SiteHive Real-Time Monitoring Locations



Note 1: Indicative SiteHive monitoring unit locations shown in blue.



7.2.1 Construction Noise Monitoring

The real-time noise monitoring units will record the rolling $L_{Aeq(15\text{minute})}$ noise levels and will send notifications (SMS and/or email) to nominated site personnel such as the contractors project manager when the following trigger levels are exceeded:

- 46 dBA – exceedance of the daytime standard hours NMLs at residences.
- 65 dBA – approaching the Highly Noise Affected level.
- 75 dBA – exceedance of the Highly Noise Affected level.

To supplement the real-time noise monitoring, attended noise measurements will be undertaken at the start of noise intensive works that are near to sensitive receivers to verify the levels are as predicted and/or don't exceed the NMLS, and to check the effectiveness of mitigation and management measures.

Attended noise monitoring will also be undertaken in response to any formal complaints. All monitoring will be completed by suitably qualified acoustic specialists. The location and extent of attended monitoring will be determined in consultation with project staff and would be dependent on the activities taking place.

The monitoring will take place during the expected noisiest construction periods and be representative / indicative of the impacts at the potentially affected sensitive receivers.

A noise monitoring report will be prepared after each attended monitoring survey. Monthly monitoring reports will be prepared for the real-time monitoring.

All items of acoustic instrumentation utilised will be designed to comply with *AS/NZS IEC 61672.1-2019 Electroacoustics – Sound level meters* (AS IEC 61672) and carry current calibration certificates.

7.2.2 Construction Vibration Monitoring

This section details the Vibration Monitoring Plan (VMP) in accordance with Condition D18. In accordance with Condition D19, construction must not be commenced until this VMP is approved by the Planning Secretary, and the most recent version of this VMP must be implemented for the duration of construction.

Where vibration intensive works (such as rockbreaking or vibratory rolling) are required within the minimum working distances of sensitive receivers or structures (refer to **Section 5.4.3**), vibration will be monitored continuously for the duration of works within the minimum working distances.

SiteHive vibration monitoring units (or similar) will be installed at the nearest point of vibration sensitive structures to any vibration intensive works required within the minimum working distances (indicative locations shown in **Figure 8**) to continuously monitor vibration for the duration of the works. Should the works location change, the monitoring units will be relocated to remain at the closest point of the structure to the works.

Attended vibration measurements will be undertaken at the start of vibration intensive works within the minimum working distances to confirm the levels of vibration are below the applicable vibration limits (refer to **Section 5.4**).



The vibration monitoring units will send notifications (SMS and/or email) to nominated site personnel such as the contractors project manager when the following trigger levels are exceeded:

- A warning vibration level of 2/3 of the applicable vibration limit will trigger a 'warning' alarm if exceeded.
- A 'halt work' alarm will trigger if vibration is measured equal to the applicable vibration limit.
- Actions to be carried out at each alarm level are detailed in **Section 7.4**.

Vibration monitoring data will be downloaded and reported at the following timeframes:

- Monthly during works (at a minimum)
- Within 24 hours of an exceedance of the vibration limit alarm level
- Upon completion of vibration monitoring.

All items of vibration instrumentation will be designed to comply with applicable guidelines and carry current calibration certificates.

7.2.2.1 WaterNSW Pipelines

At the request of WaterNSW (refer to the consultation detailed in **Appendix B**), vibration monitoring will be undertaken at the site boundaries rather than on the pipelines themselves (indicative locations shown in **Figure 8**) to continuously monitor vibration for the duration of the works. . Should the works location change, the monitoring units will be relocated to remain at the closest point of the structure to the works.

Vibrations impacts on the WaterNSW pipelines due to construction activities will be monitored continuously for the duration of vibration intensive works within 50 m of the WaterNSW pipelines (corresponding to the largest minimum working distance for DIN 4150 detailed in **Table 10**) to ensure vibration levels do not exceed the applicable limits (refer to **Section 5.4.2**). At the request of WaterNSW, the monitoring equipment will be located within the OEIE site boundary (as detailed above), and the vibration limits applicable to the pipelines will be applied at the monitoring locations.

The vibration monitoring units will send notifications (SMS and/or email) to nominated site personnel such as the contractors project manager when the following trigger levels are exceeded:

- A warning vibration level of 2/3 of the applicable vibration limit will trigger a 'warning' alarm if exceeded.
- A 'halt work' alarm will trigger if vibration is measured equal to the applicable vibration limit.
- Actions to be carried out at each alarm level are detailed in **Section 7.4**.

Monitoring data will be downloaded and reported monthly, at a minimum. Vibration monitoring reports will be prepared and provided to Goodman to review at the following stages:

- Monthly during works (at a minimum)
- Within 24 hours of an exceedance of the vibration limit alarm level
- Upon completion of works.

All items of vibration instrumentation utilised will be designed to comply with applicable guidelines and carry current calibration certificates.



7.2.3 Monitoring Reports

Noise and/or vibration monitoring reports will be provided to the relevant regulatory authorities after review, unless otherwise agreed by the relevant regulatory authorities. Monitoring reports would include the following details, at a minimum:

- Noise/vibration monitoring/measurement locations
- Date, time and length of noise monitoring/measurements
- Weather conditions during the measurements
- Name and position of personnel undertaking measurements
- Construction activities being undertaken during measurements
- Locations of construction equipment and distance from monitoring location
- Measured L_{Aeq} and L_{Amax} noise levels during construction works (for each activity) along with a comparison to the predicted noise levels (noise monitoring only)
- Measured L_{A90} background noise level in absence of the construction works (noise monitoring only)
- Measured vibration levels during construction works (for each activity) along with a comparison to the relevant vibration criteria (vibration monitoring only)
- Measured vibration levels and relevant details of any of exceedance of the warning vibration level or vibration limits (vibration monitoring only)
- Measured background vibration level in absence of the construction works (vibration monitoring only)
- Operator observations noting any extraneous noise/vibration sources or other points of relevance.

7.3 Complaints Management

The complaints handling process is detailed in the CEMP. Complaints are able to be made via phone and email. Contact details will be included on site signage and on the project website.

Information recorded in the complaints register with respect to each complaint will include:

- Date and time of complaint
- Name, address and telephone number of complainant
- Nature of complaint
- Response actions taken to date.

A report of complaints will be provided to the relevant regulatory authorities every three months throughout the construction of the project, or as otherwise agreed by the relevant regulatory authorities.

Preliminary investigations into the complaint will commence within 48 hours of the complaint receipt and adequate measures to identify and manage will be considered and implemented. Where required, noise monitoring will be undertaken as per **Section 7.2**.



7.4 Contingency Plan

The following contingency management plan, shown in **Table 13**, would be used to manage noise and vibration impacts that are higher than expected.

In the event of an incident, response will be carried out in accordance with the procedures detailed in the CEMP. As detailed in the CEMP, all Condition Red occurrences will be recorded in the Construction Contractor incident register and discussed during the toolbox talks.

The following events constitute an incident in terms of noise and vibration:

- Trigger of Condition Red for noise impacts during the standard construction hours detailed in **Section 6.2**.
- Any works occurring outside the standard construction hours detailed in **Section 6.2**, where those works do not meet the allowable circumstances defined in **Section 6.2**, including being agreed in writing by the relevant authority.
- Trigger of Condition Red for vibration impacts at sensitive receivers or on WaterNSW pipelines.

Table 13: Contingency Management Plan

Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
Noise impacts at sensitive receiver locations	Trigger	Noise levels do not exceed applicable NMLs	Noise levels exceed applicable NMLs	Noise levels exceed Highly Noise Affected criteria (75 dBA)
	Response	On-going best practice management measures to minimise noise emissions	Undertake all feasible and reasonable mitigation and management measures to minimise noise impacts (aiming to achieve NMLs)	Works exceeding the Highly Noise Affected criteria will be managed in accordance with the strategies for high-noise generating works detailed in Section 7.1 , such as scheduling respite periods. (It is noted that no works are predicted to result in highly noise affected levels).
Vibration impacts at sensitive receiver locations	Trigger	Vibration intensive works undertaken outside minimum working distance for the specific equipment in use	Vibration intensive works undertaken within minimum working distance for the specific equipment in use	Vibration levels exceed applicable vibration limits
	Response	On-going best practice management measures to minimise vibration emissions	Undertake vibration monitoring for the duration of the works to confirm vibration levels.	Stop work. Undertake all feasible and reasonable mitigation and management measures to ensure vibration levels are below applicable limits. If vibration levels cannot be kept below applicable limits then a different construction method or equipment must be utilised.



Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
Vibration impacts on WaterNSW pipelines	Trigger	Vibration intensive works undertaken more than 50 m from the closest point of the pipeline	Vibration intensive works undertaken within 50 m of the closest point of the pipeline	Vibration levels exceed applicable vibration limits
	Response	On-going best practice management measures to minimise vibration emissions	Undertake vibration monitoring for the duration of the works to confirm vibration levels.	Stop work. Undertake all feasible and reasonable mitigation and management measures to ensure vibration levels are below applicable limits. If vibration levels cannot be kept below applicable limits then a different construction method or equipment must be utilised.

7.5 Internal Audits

Periodic internal audits will be conducted to ensure that the development consent conditions and commitments and environmental management controls outlined in this CNVMP are being properly implemented. Audit reports will be used to inform of any corrective actions.

7.6 Roles and Responsibilities

Overall roles and responsibilities relating to the project are outlined in the CEMP. The key responsibilities specifically for noise and vibration management are as follows:

7.6.1 Contractors Project Manager

- Ensuring appropriate resources are available for the implementation of this CNVMP
- 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 noise and vibration management
- Reviewing and update of this CNVMP, where necessary
- Commissioning suitably qualified consultants to complete noise and vibration monitoring. Ensuring environmental coordinators appropriately undertake attended noise and vibration measurements required by this CNVMP
- Assessing and (as required) mitigating risks of high noise and vibration levels before commencing works and ensuring that the appropriate controls are implemented
- Ceasing works in the event of excessive noise and vibration generation
- In the event that a noise or vibration complaint is received, implementing the procedure outlined in **Section 7.3**.
- Coordinating noise and/or vibration monitoring program, where required



- Review control measures in accordance with the CNVMP
- Identifying and reporting any high or non-compliant noise and vibration emissions.

7.6.2 All Workers on Site

- Observing any noise and vibration emission control instructions and procedures that apply to their work
- Taking action to prevent or minimise noise and vibration emission incidents
- Identifying and reporting noise and vibration emission incidents.



8.0 Review and Improvement of Noise Management Plan

This CNVMP will be reviewed, and if necessary, updated in the following circumstances:

- Significant changes to the equipment, machinery and plant operated within the site
- Where it is identified via monitoring that the performance of the project is not meeting the objectives of the CNVMP
- At the request of the relevant regulatory authority or other relevant government agency.

All employees and contractors will be informed of any revisions to the CNVMP by Site Management during toolbox talks. The most recent version of the CNVMP as approved by the Planning Secretary, will be implemented for the duration of construction works.





Appendix A Acoustic Terminology

Construction Noise and Vibration Management Plan

SSD-37486043 Oakdale East Industrial Estate

Goodman Property Services (Aust) Pty Ltd

SLR Project No.: 630.V10611.00003-CNVMP-R01

13 November 2023

1. Sound Level or Noise Level

The terms ‘sound’ and ‘noise’ are almost interchangeable, except that ‘noise’ often refers to unwanted sound.

Sound (or noise) consists of minute fluctuations in atmospheric pressure. The human ear responds to changes in sound pressure over a very wide range with the loudest sound pressure to which the human ear can respond being ten million times greater than the softest. The decibel (abbreviated as dB) scale reduces this ratio to a more manageable size by the use of logarithms.

The symbols SPL, L or LP are commonly used to represent Sound Pressure Level. The symbol LA represents A-weighted Sound Pressure Level. The standard reference unit for Sound Pressure Levels expressed in decibels is 2×10^{-5} Pa.

2. ‘A’ Weighted Sound Pressure Level

The overall level of a sound is usually expressed in terms of dBA, which is measured using a sound level meter with an ‘A-weighting’ filter. This is an electronic filter having a frequency response corresponding approximately to that of human hearing.

People’s hearing is most sensitive to sounds at mid frequencies (500 Hz to 4,000 Hz), and less sensitive at lower and higher frequencies. Different sources having the same dBA level generally sound about equally loud.

A change of 1 dB or 2 dB in the level of a sound is difficult for most people to detect, whilst a 3 dB to 5 dB change corresponds to a small but noticeable change in loudness. A 10 dB change corresponds to an approximate doubling or halving in loudness. The table below lists examples of typical noise levels.

Sound Pressure Level (dBA)	Typical Source	Subjective Evaluation
130	Threshold of pain	Intolerable
120	Heavy rock concert	Extremely noisy
110	Grinding on steel	
100	Loud car horn at 3 m	Very noisy
90	Construction site with pneumatic hammering	
80	Kerbside of busy street	Loud
70	Loud radio or television	
60	Department store	Moderate to quiet
50	General Office	
40	Inside private office	Quiet to very quiet
30	Inside bedroom	
20	Recording studio	Almost silent

Other weightings (eg B, C and D) are less commonly used than A-weighting. Sound Levels measured without any weighting are referred to as ‘linear’, and the units are expressed as dB(lin) or dB.

3. Sound Power Level

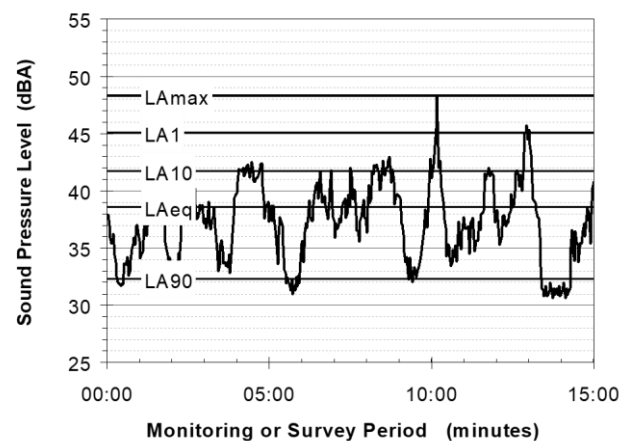
The Sound Power of a source is the rate at which it emits acoustic energy. As with Sound Pressure Levels, Sound Power Levels are expressed in decibel units (dB or dBA), but may be identified by the symbols SWL or LW, or by the reference unit 10^{-12} W.

The relationship between Sound Power and Sound Pressure is similar to the effect of an electric radiator, which is characterised by a power rating but has an effect on the surrounding environment that can be measured in terms of a different parameter, temperature.

4. Statistical Noise Levels

Sounds that vary in level over time, such as road traffic noise and most community noise, are commonly described in terms of the statistical exceedance levels LAN, where LAN is the A-weighted sound pressure level exceeded for N% of a given measurement period. For example, the LA1 is the noise level exceeded for 1% of the time, LA10 the noise exceeded for 10% of the time, and so on.

The following figure presents a hypothetical 15 minute noise survey, illustrating various common statistical indices of interest.



Of particular relevance, are:

- LA1 The noise level exceeded for 1% of the 15 minute interval.
- LA10 The noise level exceeded for 10% of the 15 minute interval. This is commonly referred to as the average maximum noise level.
- LA90 The noise level exceeded for 90% of the sample period. This noise level is described as the average minimum background sound level (in the absence of the source under consideration), or simply the background level.
- LAeq The A-weighted equivalent noise level (basically, the average noise level). It is defined as the steady sound level that contains the same amount of acoustical energy as the corresponding time-varying sound.

5. Frequency Analysis

Frequency analysis is the process used to examine the tones (or frequency components) which make up the overall noise or vibration signal.

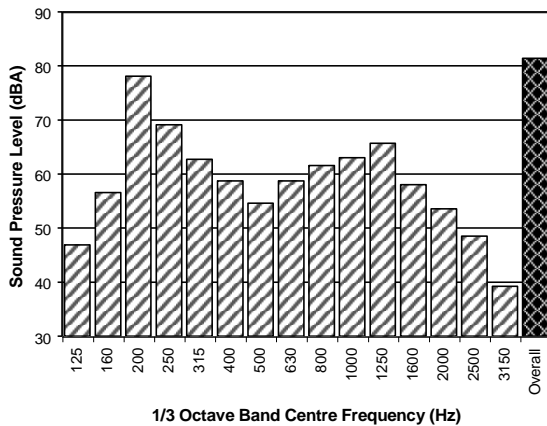
The units for frequency are Hertz (Hz), which represent the number of cycles per second.

Frequency analysis can be in:

- Octave bands (where the centre frequency and width of each band is double the previous band)
- 1/3 octave bands (three bands in each octave band)
- Narrow band (where the spectrum is divided into 400 or more bands of equal width)



The following figure shows a 1/3 octave band frequency analysis where the noise is dominated by the 200 Hz band. Note that the indicated level of each individual band is less than the overall level, which is the logarithmic sum of the bands.



6. Annoying Noise (Special Audible Characteristics)

A louder noise will generally be more annoying to nearby receivers than a quieter one. However, noise is often also found to be more annoying and result in larger impacts where the following characteristics are apparent:

- **Tonality** - tonal noise contains one or more prominent tones (ie differences in distinct frequency components between adjoining octave or 1/3 octave bands), and is normally regarded as more annoying than 'broad band' noise.
- **Impulsiveness** - an impulsive noise is characterised by one or more short sharp peaks in the time domain, such as occurs during hammering.
- **Intermittency** - intermittent noise varies in level with the change in level being clearly audible. An example would include mechanical plant cycling on and off.
- **Low Frequency Noise** - low frequency noise contains significant energy in the lower frequency bands, which are typically taken to be in the 10 to 160 Hz region.

7. Vibration

Vibration may be defined as cyclic or transient motion. This motion can be measured in terms of its displacement, velocity or acceleration. Most assessments of human response to vibration or the risk of damage to buildings use measurements of vibration velocity. These may be expressed in terms of 'peak' velocity or 'rms' velocity.

The former is the maximum instantaneous velocity, without any averaging, and is sometimes referred to as 'peak particle velocity', or PPV. The latter incorporates 'root mean squared' averaging over some defined time period.

Vibration measurements may be carried out in a single axis or alternatively as triaxial measurements (ie vertical, longitudinal and transverse).

The common units for velocity are millimetres per second (mm/s). As with noise, decibel units can also be used, in which case the reference level should always be stated. A vibration level V , expressed in mm/s can be converted to decibels by the formula $20 \log (V/V_0)$, where V_0 is the reference level (10^{-9} m/s). Care is required in this regard, as other reference levels may be used.

8. Human Perception of Vibration

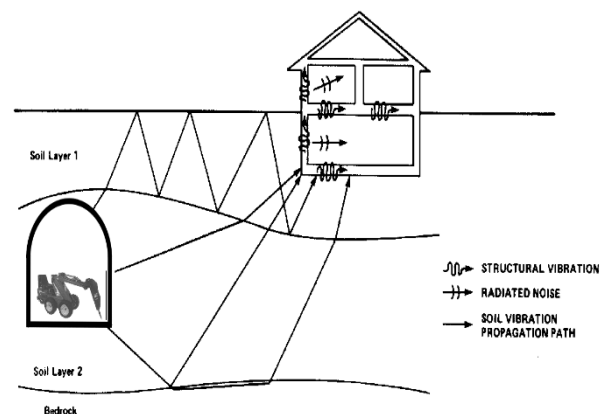
People are able to 'feel' vibration at levels lower than those required to cause even superficial damage to the most susceptible classes of building (even though they may not be disturbed by the motion). An individual's perception of motion or response to vibration depends very strongly on previous experience and expectations, and on other connotations associated with the perceived source of the vibration. For example, the vibration that a person responds to as 'normal' in a car, bus or train is considerably higher than what is perceived as 'normal' in a shop, office or dwelling.

9. Ground-borne Noise, Structure-borne Noise and Regenerated Noise

Noise that propagates through a structure as vibration and is radiated by vibrating wall and floor surfaces is termed 'structure-borne noise', 'ground-borne noise' or 'regenerated noise'. This noise originates as vibration and propagates between the source and receiver through the ground and/or building structural elements, rather than through the air.

Typical sources of ground-borne or structure-borne noise include tunnelling works, underground railways, excavation plant (eg rockbreakers), and building services plant (eg fans, compressors and generators).

The following figure presents an example of the various paths by which vibration and ground-borne noise may be transmitted between a source and a receiver for construction activities occurring within a tunnel.



The term 'regenerated noise' is also used in other instances where energy is converted to noise away from the primary source. One example would be a fan blowing air through a discharge grill. The fan is the energy source and primary noise source. Additional noise may be created by the aerodynamic effect of the discharge grill in the airstream. This secondary noise is referred to as regenerated noise.





Appendix B Consultation

Construction Noise and Vibration Management Plan

SSD-37486043 Oakdale East Industrial Estate

Goodman Property Services (Aust) Pty Ltd

SLR Project No.: 630.V10611.00003-CNVMP-R01

13 November 2023

Lachlan O'Reilly

From: Justine Clarke <Justine.Clarke@waternsw.com.au>
Sent: Thursday, 26 October 2023 3:11 PM
To: Lachlan O'Reilly
Cc: Stephanie Partridge; Luke Ridley; Alanna Ryan; Jessica Keegan
Subject: RE: Oakdale East Estate | SSD 37486043 CTMP/ CNVMP and Staging Plan Consultation - WaterNSW

Hi Lachlan

Thank you for reviewing our comments and responding. We are supportive of your proposed changes and they satisfy our requirements.

Agree that this is sufficient and closes your consultation requirement with WaterNSW.

Can we please request final copies of the revised documents when approved by the department (for our records).

Regards

Justine Clarke
Catchment and Asset Protection Adviser



Level 14, 169 Macquarie Street

PO Box 398

Parramatta NSW 2150

M: 0457 535 955

justine.clarke@waternsw.com.au

www.waternsw.com.au

From: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>
Sent: Thursday, October 26, 2023 11:28 AM
To: Justine Clarke <Justine.Clarke@waternsw.com.au>
Cc: Stephanie Partridge <Stephanie.Partridge@goodman.com>; Luke Ridley <Luke.Ridley@goodman.com>; Alanna Ryan <aryan@slrconsulting.com>; Jessica Keegan <jkeegan@slrconsulting.com>
Subject: [EXTERNAL] RE: Oakdale East Estate | SSD 37486043 CTMP/ CNVMP and Staging Plan Consultation - WaterNSW

This message is from an External Sender. Be careful opening emails, attachments and links from unknown senders.

Hi Justine,

Thanks for the below and your time on the phone yesterday.

Further to the below, and our discussion, please see comments in Red.

Please let me know if you have any queries, otherwise we will make the amended changes and deem this will suffice WaterNSW to confirm consultation can be closed.

Any issues with this approach please let me know.

Regards,
Lachie



Lachlan O'Reilly
Project Manager
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From: Justine Clarke <Justine.Clarke@waterNSW.com.au>

Sent: Wednesday, 25 October 2023 1:46 PM

To: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>

Subject: Oakdale East Estate | SSD 37486043 CTMP/ CNVMP and Staging Plan Consultation - WaterNSW

Dear Lachlan

Thank you for your consultation request with WaterNSW related to the Oakdale East Industrial Estate (OEIE) approval conditions and Stage 2 development under SSD 37486043. WaterNSW appreciates being involved early in this project and the continued consultation.

WaterNSW acknowledges receipt of the following documents, related to Condition A11 (a), Condition D27 (b), and Condition D21 (b) respectively.

- Staging Plan
- Construction Traffic Management Plan (CTMP)
- Vibration Monitoring Plan (VMP)

Construction Traffic Management Plan

It is noted that **no** access to the site is proposed via the WaterNSW pipeline corridor. All access is via Old Wallgrove Road as identified in Section 3.1 of the CTMP report (Ason, 6/10/2023).

WaterNSW has reviewed the CTMP and advise the following:

- WaterNSW affirm that no access to the WaterNSW pipelines corridor is allowed without written approval of WaterNSW **GMG confirm no access will be provided to the WaterNSW Corridor without prior approval. Furthermore Figure 4 of the CTMP confirms the access to site which is via Latitude Drive and/or Milner Ave. As such, GMG consider this closed.**
- It is acknowledged that the CTMP does not allow queuing to occur on the public road network (section 4.1.3). This is essential, as it will ensure that access the WaterNSW pipelines corridor from Old Wallgrove Road will not be impeded. **GMG are aligned with this, and as such GMG consider this closed.**

Vibration Management Plan (VMP)

WaterNSW has reviewed the VMP (SLR, 9/10/2023) and provides the following comments:

- Vibration mitigation measures are to be implemented as per the approved VMP (including any prescribed changes post consultation), especially the proposed mitigation and management measures listed in section 7 (table 12). **Confirmed and GMG will implement measures as per the VMP, once approved by DPE.**

- WaterNSW accepts the current German Standard DIN 4150-3:2016 when addressing vibration. Specifically Part 3 - “Structural Vibration Part 3: Effects of vibration in structures”. **Noted and will be implemented. GMG consider closed**
- It is understood that to ensure consistency with the Oakdale West Industrial Estate vibration requirements, SLR have proposed to use the same vibration acceptance criteria, being 15 mm/s PPC (peak particle velocity), for all vibration intensive works within 50m of the Warragamba to Prospect Pipelines (including the buried section). And while these levels were no where near reached for Oakdale West and specifically the construction of the North South Link Road over the pipelines, WaterNSW requests that the vibration values prescribes in line 3 of Table 1 within the German Standard DIN 4150-3:2016 be adopted instead. We are confident that these levels will not be reached (from past adjacent vibration intensive development). This change to the VMP will then ensures consistency with our own Guideline (*Guideline for Development Adjacent to the Upper Canal and Warragamba Pipelines*) (WaterNSW, September 2021). **Noted and GMG will ammend the plan accordingly. GMG consider this closed on the basis we ammend the plan accordingly.**
- It is preferred that all vibration monitoring equipment required to measure vibration levels from construction be placed within the OEIE, that being at the property boundary. However, WaterNSW will accept the vibration monitoring methodology set out in the VMP (section [7.2.2.1](#)). Access to set-up the monitoring equipment will require written access approval from WaterNSW. It is recommended that this application is submitted as early as possible (greater than 28 business days) to ensure its approval inline with the construction schedule. Applications can be made via the WaterNSW website at [Special Areas and Controlled Areas Consent Application form - WaterNSW](#) **Since the issue of the CNVMP, GMG have identified some proprietary systems that do not require monitoring on top of the WaterNSW pipeline, and can be installed on the perimeter of the GMG site, within our boundary. Please refer to Figure 1 for details of this system and confirmation it monitors in accordance with DIN 4150-3 Standard. As such, to meet WaterNSW preferred method of vibration by containing within the site, GMG propose to ammend the plan to reflect this system. Criteria thresholds will be as per the comment above and will be measured closer than the pipeline itself, thus a better outcome GMG deem. GMG consider this closed on the basis we ammend the plan accordingly.**
- WaterNSW requests that Goodman (or its consultants) consult with WaterNSW on the vibration monitoring locations prior to their installation. **Please refer to the below. On the basis these are within our site, GMG deem this closed.**
- WaterNSW requests to receive the monthly vibration monitoring reports for any vibration monitoring set up to monitor the WaterNSW pipelines. **Noted. We will work with the team to have these issued once works commence.**

Staging Plan

- WaterNSW acknowledge receipt of this document and has no specific comment to make. **Noted. Thankyou and GMG consider this closed**

Erosion and sediment control

- In addition, WaterNSW would like to see (for our records) the project construction erosion and control plan (ESCP), to ensure no predicted impacts to our adjacent land. **Please see attached ESCP for your records as relevant under the SSDA. As such GMG consider this closed.**

I trust this information enables you to meet your consultation requirements. WaterNSW requests that our consultation comments be considered and the plans updated as required.

If you have any questions regarding this response, please reach out.


Regards

Justine Clarke

Catchment and Asset Protection Adviser


Figure 1

Choose from the SiteHive Hexanode family




SiteHive Hexanode Multi
 Innovative noise and dust monitoring in a single, compact device.

- NATA-certified sound level meter (IEC 61672)
- Sound and dust direction of arrival
- Images and audio capture
- Optical particle counter (PM2.5 & PM10)
- See pricing



SiteHive Hexanode Noise
 A noise monitoring device that's small and lightweight, with very low power requirements.

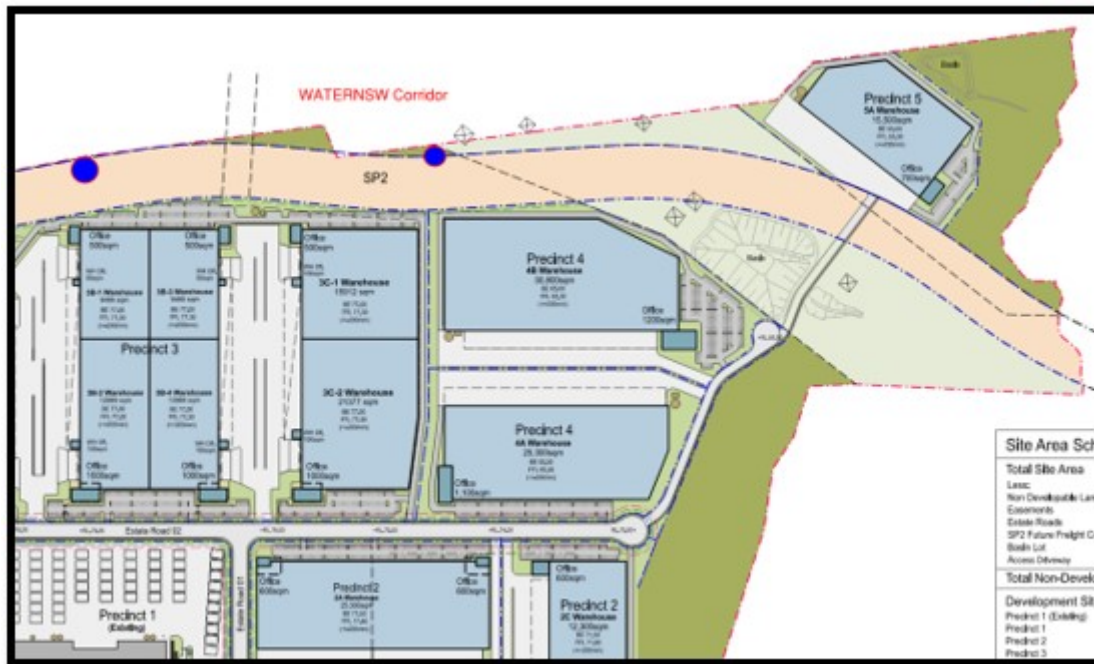
- NATA-certified sound level meter (IEC 61672)
- Sound direction of arrival
- Images and audio capture
- See pricing

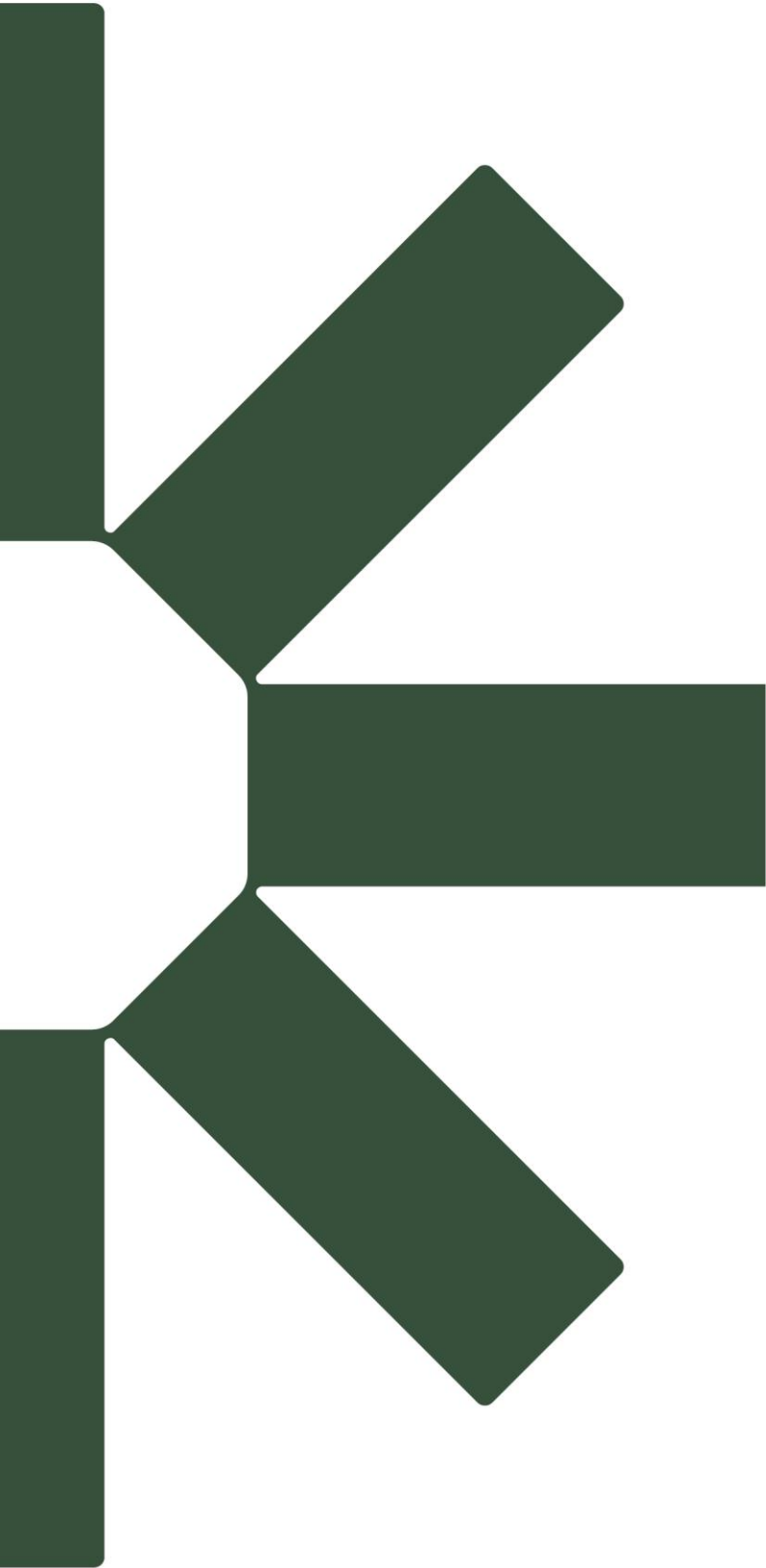


SiteHive Hexanode Vibration
 Small, compact and automated vibration monitor, lasting months on a single battery.

- Structural damage PPV (DIN 4150-3, BS 7385-2)
- Human comfort VDV (DIN 4150-2, BS 6472)
- Ground-borne noise (Leq)
- See pricing

Figure 2





Making Sustainability Happen



Appendix F Construction Air Quality Management Plan

Construction Environmental Management Plan

SSD-37486043: Oakdale East Industrial Estate
2-10 Old Wallgrove Road, Horsley Park

Goodman Property Services (Aust) Pty Ltd

SLR Project No.: 630.V10611.00001

13 November 2023



Construction Air Quality Management Plan

**SSD-37486043: Oakdale East Industrial Estate 2-10 Old
Wallgrove Road, Horsley Park**

Goodman Property Services (Aust) Pty Ltd

The Hayesbery
1 11 Hayes Road
Rosebery NSW 2018

Prepared by:

SLR Consulting Australia Pty Ltd

Tenancy 202 Submarine School, Sub Base
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2060, Australia

SLR Project No.: 630.10611

13 November 2023

Revision: V1.2

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
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V1.1	07 November 2023	S Bagheri/ R Abrantes	V Marwaha / J Shepherd	
V1.0	10 October 2023	S Bagheri/ R Abrantes	V Marwaha / J Shepherd	
V0.2	5 October 2023	S Bagheri/ R Abrantes	V Marwaha / J Shepherd	DRAFT
V0.1	23 June 2023	S Bagheri	V Marwaha	DRAFT

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 and shall not be reproduced except in full. 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.



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Appendix B	Construction Risk Assessment Methodology
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1.0 Introduction

SLR Consulting Australia Pty Ltd (SLR) was commissioned by Goodman Property Services (Aust) Pty Ltd (Goodman) to prepare a Construction Air Quality Management Plan (CAQMP) for construction works associated with the development of Stage 2 of the Oakdale East Industrial Estate (OEIE), located at 2-10 Old Wallgrove Road, Horsley Park, NSW (the Development Site) within the Fairfield Local Government Area (LGA). The land is legally described as Lot 102 and Lot 103 in DP 1268366.

The aim of this CAQMP is to address potential air quality impacts on nearby sensitive receivers during the construction works. A Concept Plan and Stage 2 Development Application (SSD-37486043) was approved for the estate in October 2023 by the Department of Planning and Environment (DPE). This report covers the approval associated with the Stage 2 Development as follows:

- Completion of lead-in infrastructure works including intersection upgrades at Millner Avenue/ Old Wallgrove Road and Lenore Drive/ Old Wallgrove Road;
- Clearing of 2.28 ha of vegetation;
- Completion of the internal road network (excl. the proposed private driveway providing access to Precinct 5 but including all other roads shown on the proposed masterplan);
- Reticulation of services infrastructure to provide serviced development pads to all precincts;
- Completion of retaining walls across the entire Estate; and
- Completion of Building works to Precinct 1 expansion and Precinct 3 including any ancillary on lot infrastructure and detailed civil works required.

1.1 Objectives of the CAQMP

The objectives of this CAQMP are as follows:

- Maintain acceptable levels of amenity for surrounding receptors.
- Ensure compliance with relevant ambient air quality criteria for particulate matter and deposited dust at surrounding receptors.
- Maintain an effective response mechanism to deal with issues and complaints relating to dust emissions from the construction works.
- Outline air quality management commitments and responsibilities, including air quality compliance monitoring and reporting requirements.
- Promote environmental awareness among employees and subcontractors.

1.2 Statutory Requirements

The Development Consent (SSD-37486043) requirements stipulated for the construction of the Development Site and where they have been addressed in this CAQMP are shown in **Table 1**.



Table 1 Assessment against SSD-37486043 Conditions

Conditions	Response / Section Reference
Dust Minimisation	
Condition D63	
The Applicant must take all reasonable steps to minimise dust generated during all works authorised by this consent.	Section 7.0
Condition D64	
During construction, the applicant must ensure that: <ul style="list-style-type: none"> (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 the Development do not track dirt onto the public road network (d) public roads used by these trucks are kept clean (e) land stabilisation works are carried out progressively on site to minimise exposed surfaces. 	Section 7.0
Odour Management	
Condition D65	
The Applicant must ensure the development does not cause or permit the emission of any offensive odour (as defined in the POEO Act).	Section 7.0
Air Quality	
Condition B13	
Future DAs must be accompanied by an Air Quality and Odour Impact Assessment. The assessment must: <ul style="list-style-type: none"> (a) be prepared in accordance with the <i>Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales</i> (EPA 2016) and <i>Assessment and Management of Odour from Stationary Sources in NSW</i> (DEC 2006) 	Section 4.0
(b) identify the air quality and odour impacts during construction and operation, including potential impacts on sensitive receivers	Section 6.2
(c) assess any potential cumulative impacts from concurrent construction and operational activities on the site	Section 6.2
(d) recommend mitigation, management and monitoring measures to be implemented to minimise air quality and odour impacts during construction and operation.	Section 7.0



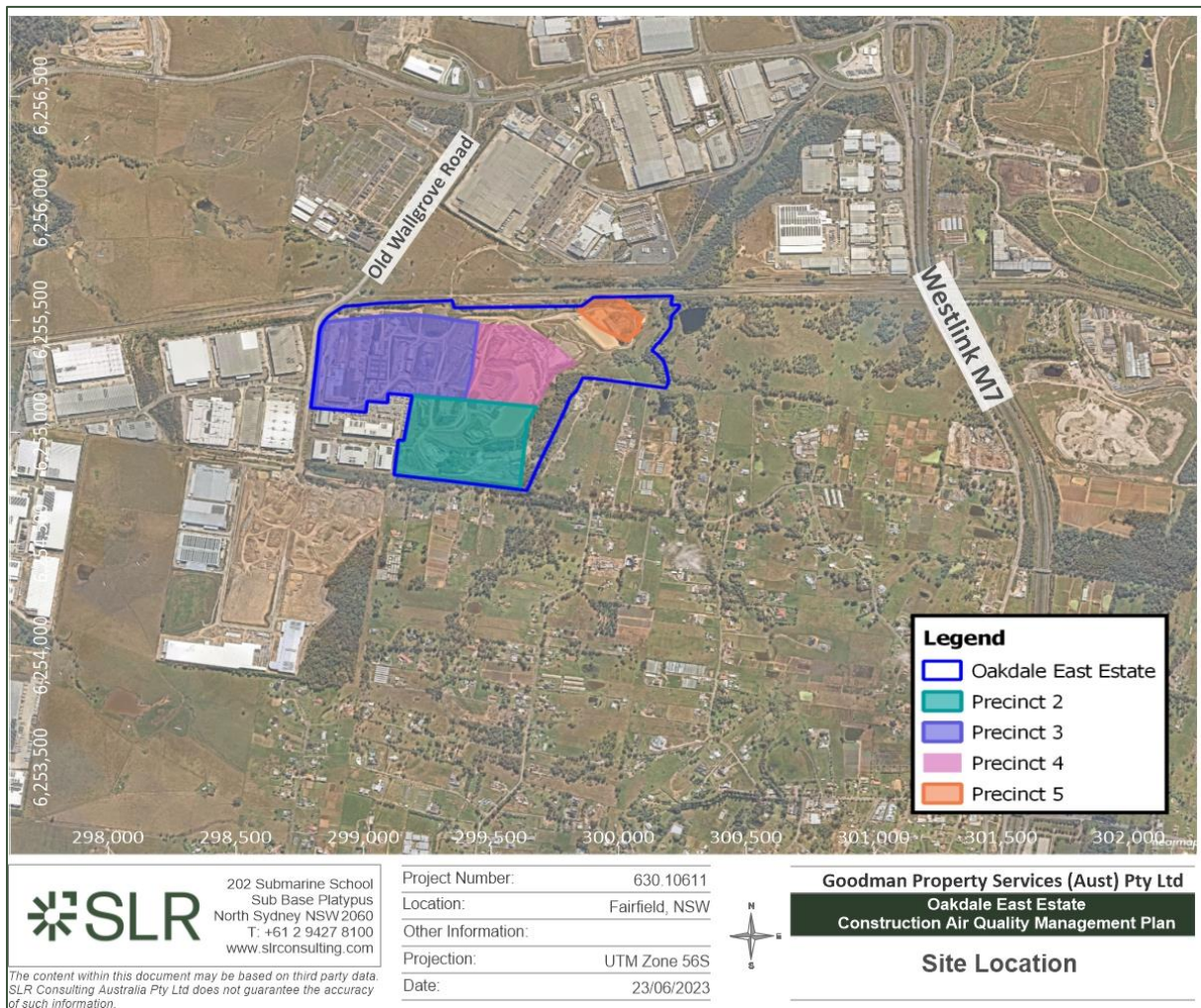
2.0 Project Overview

2.1 Site Location

The Development Site is located on 2-10 Wallgrove Road, Horsley Park, within the Fairfield Local Government Area (LGA). The site occupies a single land allotment and is legally described as Lot 102 and Lot 103 in DP1268366.

The Development Site forms the eastern extent of the 421-hectare (ha) Oakdale Industrial Estate and is located within the Western Sydney Employment Area (WSEA). The net developable area of the OEIE site is approximately 52.5 ha with approximately 24.6 ha associated with non-developable areas including easements, estate roads, infrastructure, vegetation management and the SP2 infrastructure corridor. The regional location of the Development Site is shown in **Figure 1**.

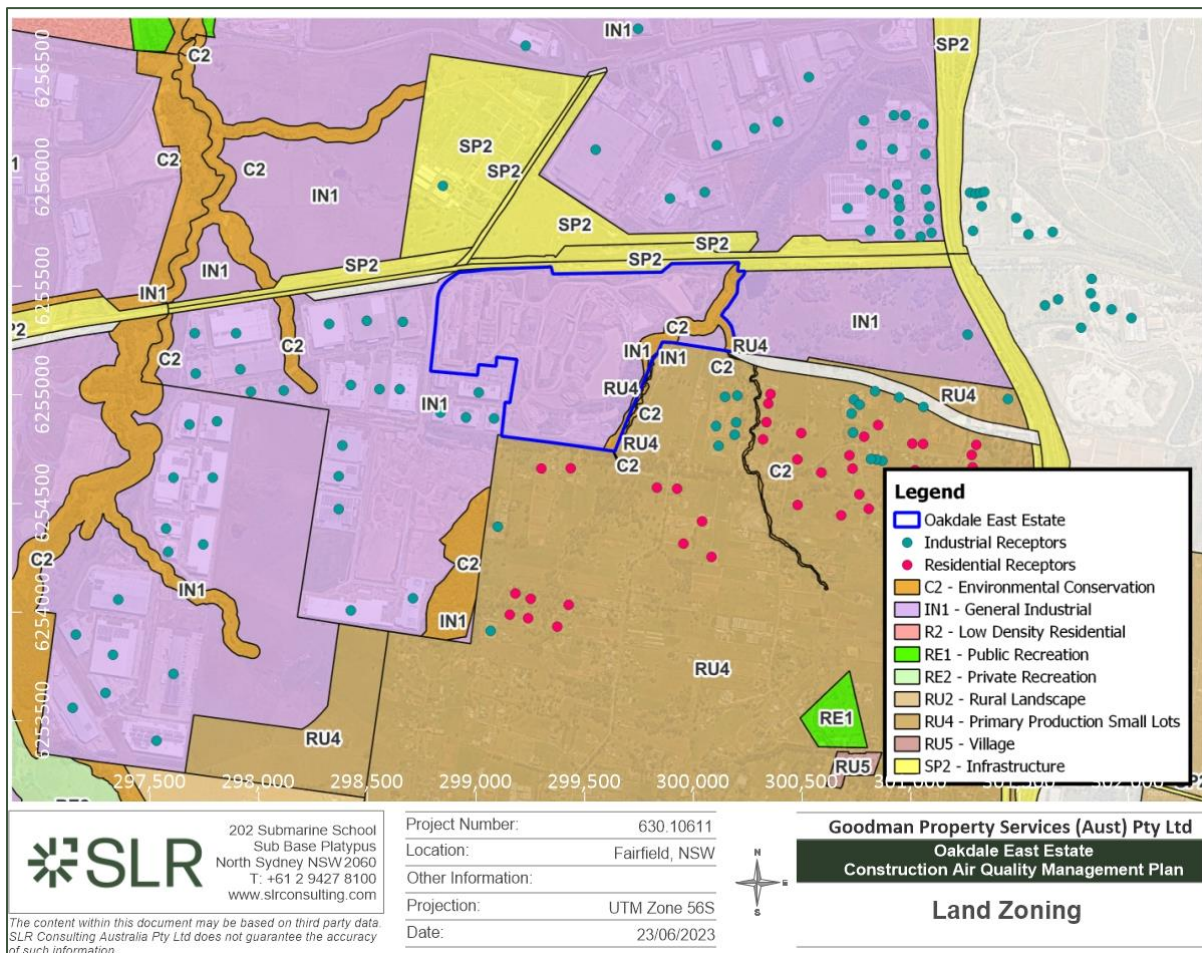
Figure 1 Regional Location of the Site



2.2 Surrounding Land Uses and Sensitive Receptors

As shown in **Figure 2**, adjacent areas to the east and west of the Development Site are zoned as general industrial (IN1) the lands to its north are zoned Infrastructure (SP2), and the lands to its south are zoned Primary Production Small Lots (RU4). The closest residential receptors to the Development Site are located approximately 100 metres (m) to the south and 300 m to the southeast. The nearest industrial/commercial receptors are located adjacent to the western boundary of the Development Site including amenities (such as office buildings or workshops). Individuals in these areas could potentially experience air quality impacts due to the construction works at the Development Site.

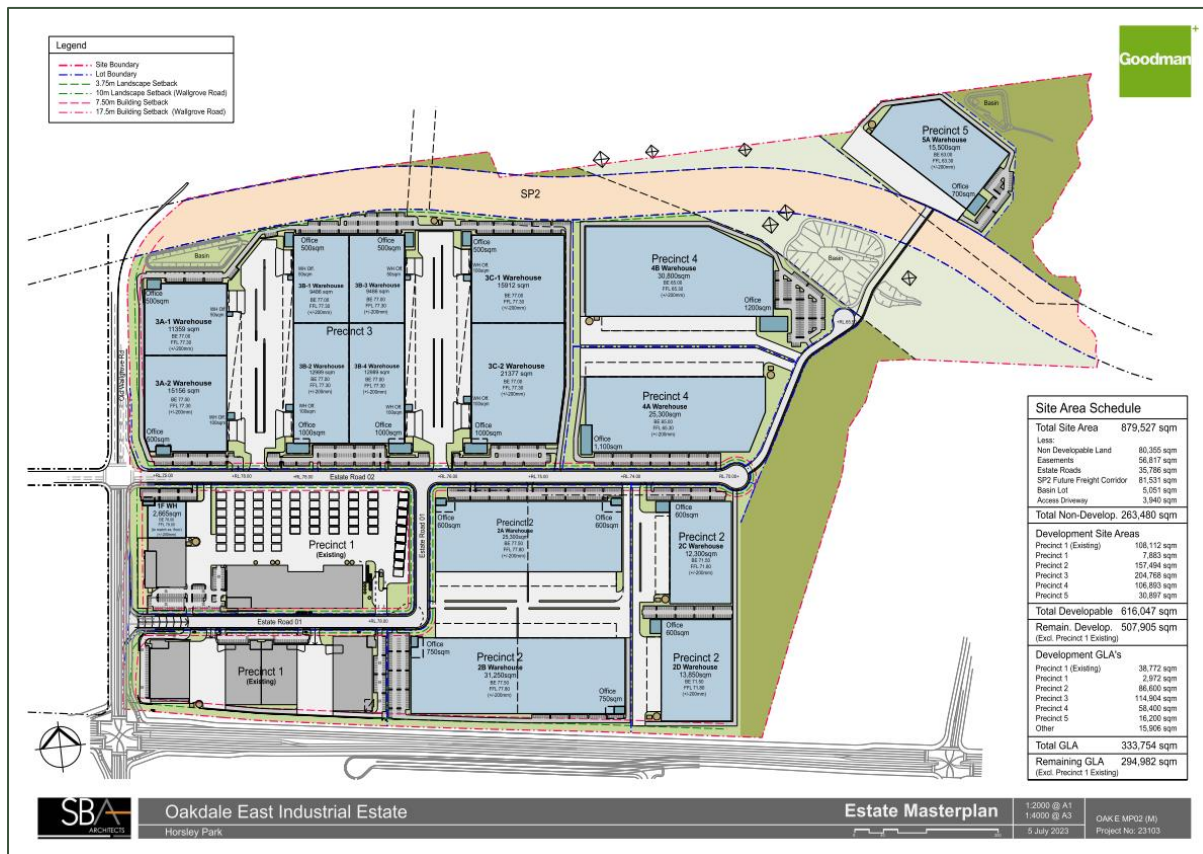
Figure 2 Surrounding Land Zoning



2.3 Site Layout

The Concept Masterplan of the Development Site is shown in **Figure 3**.

Figure 3 Proposed Development Site Layout



2.4 Construction Staging

This CAQMP relates to Stage 2. The project phases are shown in **Table 2** below. Stage 2 is forecast to commence in November 2023 and forecast to conclude in December 2025.

The description of works under Stage 2 are as following:

- Infrastructure Works, Intersection Works, vegetation clearing and biodiversity offsets, vegetation management and landscaping, Precinct 1 hardstand expansion works.
- Precinct 1 and 3 building works.



Table 2 Construction Staging

Project Phase	Proposed Construction Activities	Forecast Commencement	Forecast Duration	Forecast Completion
Infrastructure Works	Internal Estate Roads, Services, Retaining Walls, Lenore Dr/Old Wallgrove Road & Milner Avenue / Old Wall Grove Road intersection upgrades	Nov 23	22 Months	April 25
Building Works	Precinct 1 Expansion and Precinct 3 Buildings	May 24	21 Months	Dec 25

2.5 Construction Hours

Construction hours will be in accordance with Conditions D1 and D2 of Development Consent SSD 37486043, which are reproduced below:

D1. The Applicant must comply with the hours detailed in Table 5 (of the Development Consent SSD 37486043), unless otherwise agreed in writing by the Planning Secretary.

Activity	Day	Time
Earthworks and Construction	Monday – Friday	7:00 am to 6:00 pm
	Saturday	8:00 am to 1:00 pm
Operation	Monday – Sunday	24 hours

D2. Works outside of the hours identified in condition D1 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 loss of lives, property or to prevent environmental harm.

The approved construction hours will be provided to all staff and contractors in their inductions. The movements of staff and contractors will be recorded for this project.

2.6 Construction Site Access

Access to the Development Site shall be available on Old Wallgrove Road in a left-in/ right-out arrangement, as shown in **Figure 4**. An alternative access arrangement will be in place during the SP03 stage works, as shown in **Figure 5**. Access to each precinct shall be provided via future Estate Road 1 and Estate Road 2.



Figure 4 Construction Site Access

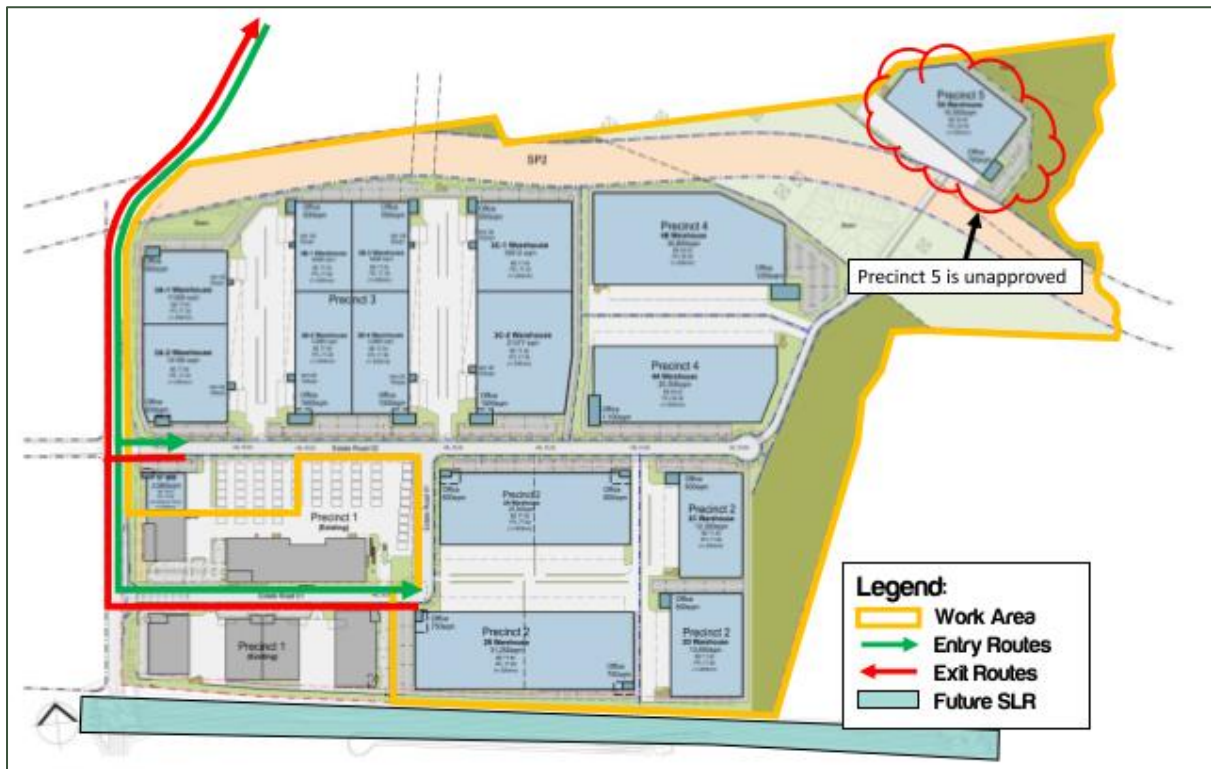
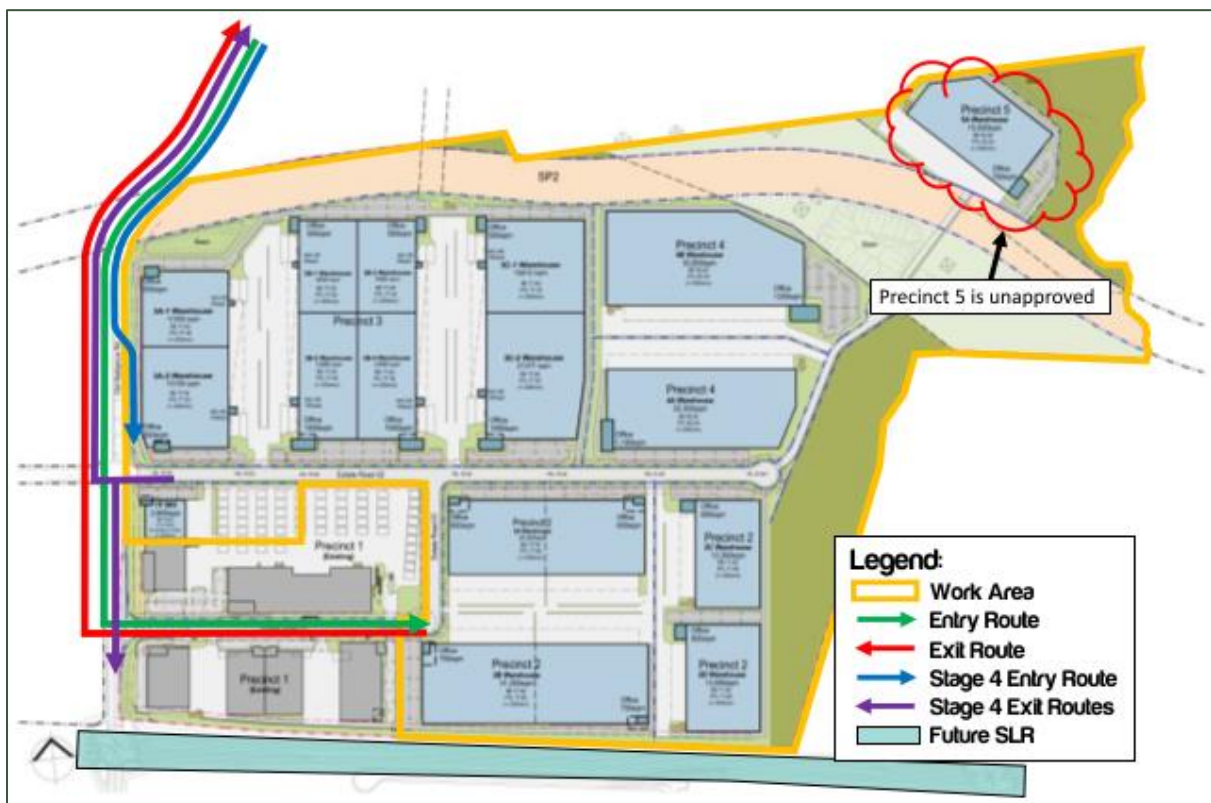


Figure 5 Access Arrangements During SP03 Intersection Upgrades



2.7 Construction Contact Details

Table 3 lists the key contacts during the Development.

Table 3 Construction Contact List

Role	Name	Company
Goodman Project Manager	Lachlan O'Reilly	Goodman Property Services (Aust) Pty Ltd
Superintendent	Edmund Tsang	Orion Consulting Engineers Pty Ltd
Site Manager	Bassel Assaf	Mulgoa Quarries Burtons Contractors JV
Contractor's Project manager	David Claxton	Mulgoa Quarries Burtons Contractors JV
Contractor's WHS&E Advisor	Faten Samaan	Mulgoa Quarries Burtons Contractors JV
Environmental Consultant	Carl Vincent	ErSed Environmental Pty Ltd
Communications and community Liaison Representative	Jessica Keegan	SLR Consulting Australia Pty Ltd



3.0 Potential Sources of Air Emissions

The main emissions to air during the construction phase will be emissions of particulate matter (as TSP, PM₁₀ and PM_{2.5}) and nuisance dust from the movement of vehicles and construction equipment, excavation, clearing and grading, truck loading and unloading and wind erosion.

During the construction works, the key potential sources of dust 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
- particulate matter associated with exhaust emissions from increased/congested traffic emissions due to road closures or diversions.

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.

Potential air quality impacts associated with the proposed construction works, and the relative risk ratings, are addressed in **Section 6.0**.



4.0 Relevant Pollutants and Air Quality Criteria

4.1 Pollutants of Concern

As identified in **Section 0**, potential air pollutants of interest for the construction activities are considered to be both:

- suspended particulate matter
- deposited dust.

The following sections outline the potential health and amenity issues associated with the above pollutants, while **Section 4.2** outlines relevant air quality assessment criteria.

4.1.1 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 $\text{PM}_{2.5}$ (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 $\text{PM}_{2.5}$ 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 $\text{PM}_{2.5}$ is primarily associated with vehicles exhausts resulting from the incomplete combustion of diesel.

4.1.2 Deposited Dust

Section 4.1.1 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.

4.1.3 Products of Combustion

Emissions associated with road traffic and the combustion of fossil fuels (diesel, petrol, AVGAS etc.) will include carbon monoxide (CO), oxides of nitrogen (NOx), particulate matter, sulphur dioxide (SO_2) and volatile organic compounds (VOC).



CO is an odourless, colourless gas formed from the incomplete burning of fuels in motor vehicles. 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. The incomplete combustion of fuel in diesel powered vehicles can generate particulate in the form of black soot.

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 (NO₂). 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 NO₂ which can have significant health effects including damage to the respiratory tract and increased susceptibility to respiratory infections and asthma. NO will be converted to NO₂ after being emitted from engine exhausts.

Engine exhausts can contain emissions of SO₂ due to impurities in the fuel. The sulfur content of diesel fuel in Australia has been significantly reduced over the years and ambient SO₂ concentrations in Australian cities are typically well below regulatory criteria.

Volatile organic compounds (VOCs) may be emitted as a result of the incomplete combustion of fuel. VOC emissions are reducing significantly due to the improved combustion processes offered by modern engines.

4.2 Ambient Air Quality Criteria

State air quality guidelines specified by the NSW Environmental Protection Agency (EPA) for the pollutants identified in **Section 4.1** are published in the “*Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales*” (NSW EPA 2022) [hereafter ‘Approved Methods’]. The ground level air quality impact assessment criteria listed in Section 7 of the Approved Methods have been established by NSW EPA to achieve appropriate environmental outcomes and to minimise risks to human health. They have been derived from a range of sources and are the defining ambient air quality criteria for NSW and are considered to be appropriate for use in this assessment.

The impact assessment criteria listed in the Approved Methods for particulate matter and nuisance dust are shown in **Table 4**. A summary of the relevant impact assessment criteria for products of combustion is provided in **Table 5**.



Table 4 NSW EPA Impact Assessment Criteria for Particulate Matter and Nuisance Dust

Pollutant	Averaging Period	Assessment Criteria ($\mu\text{g}/\text{m}^3$)
TSP	Annual	90
PM ₁₀	Annual	50
	24-hour	25
PM _{2.5}	Annual	25
	24-hour	8
Deposited Dust	Annual	2 (maximum increase in deposited dust level)
		4 (maximum total deposited dust level)
Source: (DEC 2022)		

Table 5 NSW EPA Impact Assessment Criteria for Combustion Gases

Pollutant	Averaging Period	Assessment Criteria ($\mu\text{g}/\text{m}^3$)
CO	15 minutes	100,000
	1 hour	30,000
	8 hours	10,000
NO ₂	1 hour	164
	Annual	31
SO ₂	1 hour	286
	24 hours	57
Source: (DEC 2022)		
a For assessments performed prior to January 2025		

4.3 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, which 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 CAQMP.



5.0 Existing Environment

5.1 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 4 kilometres (km) southeast of the Development Site. The annual and seasonal wind roses and long-term rainfall patterns observed at the Horsley Park AWS indicate that:

- Winds that would blow fugitive dust emissions from the construction works towards the nearest receptors located to the north and east of the proposed construction activities occur rarely during (less than 8%) of the time.
- The long-term wind and rainfall patterns suggest that construction activities at the Development 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 can be found in **Appendix A**.

5.2 Background Air Quality

Air quality monitoring is performed by the NSW Department of Planning and Environment (DPE) at a number of monitoring stations across NSW. The nearest such station is located at Prospect, approximately 7.0 km northeast of the Site. The Prospect AQMS was commissioned in 2007 and is located in William Lawson Park at an elevation of 64 m. The Prospect AQMS monitors the concentration levels of following air pollutants:

- NO, NO₂ and NO
- CO
- SO₂
- PM_{2.5} and PM₁₀.

A summary of the monitored pollutant concentrations for the last five years (2018-2022) is presented in **Table 6** and the data are presented graphically in **Figure 6** to **Figure 11**.

Table 6 Summary of Air Quality Monitoring Data at Prospect AQMS (2018-2022)

Pollutant	PM ₁₀		PM _{2.5}		NO ₂		CO	SO ₂	
	Maximum 24-hour	Annual	Maximum 24-hour	Annual	Maximum 1-hour	Annual	Maximum 1-hour	Maximum 1-hour	Annual
Units	µg/m ³	µg/m ³	µg/m ³	µg/m ³	pphm	pphm	ppm	pphm	pphm
2018	113.3	21.9	47.5	8.5	5.1	0.9	1.3	0.9	0.08
2019	182.8	26.0	134.1	11.9	4.9	0.9	5.5	1.1	0.07
2020	245.8	20.2	70.8	8.6	4.3	0.7	2.1	2.8	0.05
2021	44.6	17.2	37.3	6.9	4.3	0.7	1.3	2.2	0.05
2022	29.2	13.4	18.2	5.3	4.2	0.6	1.3	0.9	0.04
Criterion	50	25	25	8	8	1.5	25	10	2



The monitoring data for CO, NO₂ and SO₂ indicate that the respective air quality criteria (short term and long term) for these pollutants are achieved at the Prospect AQMS. Other points to note are:

- Exceedances of the 24-hour average PM₁₀ criterion were recorded by the Prospect AQMS in all years except 2021 and 2022,
- Exceedances of the 24-hour average PM_{2.5} criterion were recorded in all years except 2022,
- Exceedances of the annual average PM₁₀ and PM_{2.5} criteria were recorded in 2019, and 2018 to 2020 respectively.

A review of these recorded exceedances indicate that they were associated with natural events such as bushfires or dust storms, or hazard reduction burns.

In summary, the Prospect AQMS data show that background particulate levels in Sydney can be elevated at times. Effective mitigation measures therefore need to be implemented during the construction and operation so that the activities do not contribute to any additional exceedances of air quality criteria in the surrounding area.

Figure 6 Measured 24-Hour Average PM₁₀ Concentrations at Prospect AQMS (2018-2022)

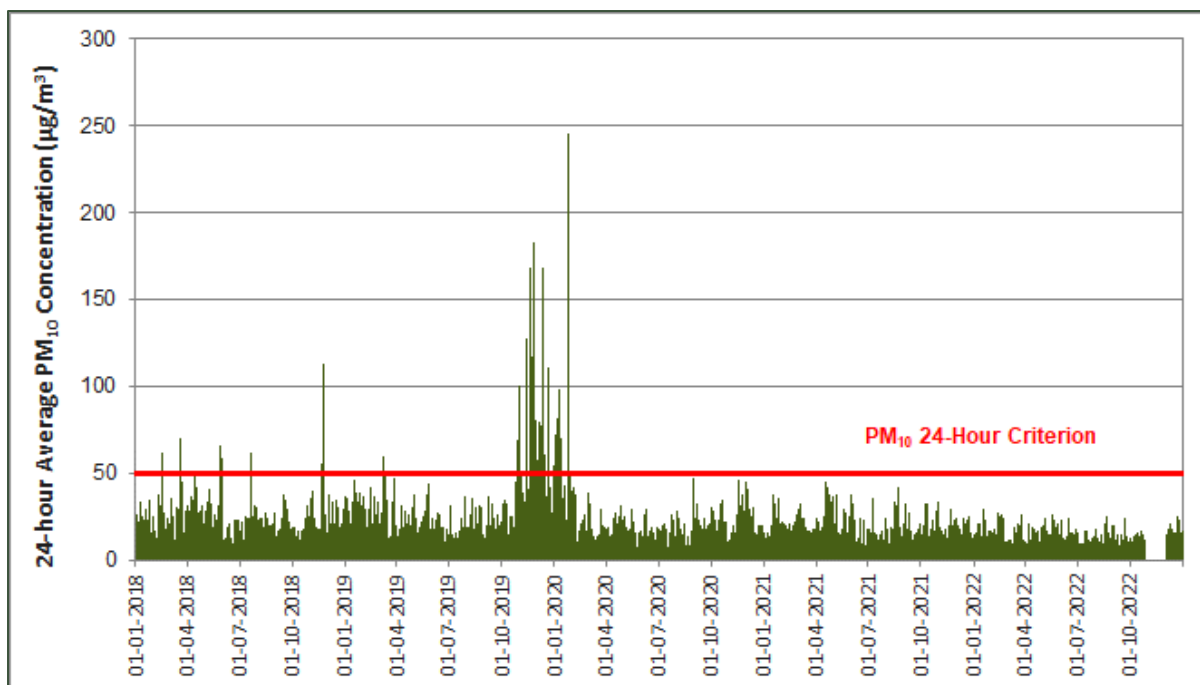


Figure 7 Measured 24-Hour Average PM_{2.5} Concentrations at Prospect AQMS (2018-2022)

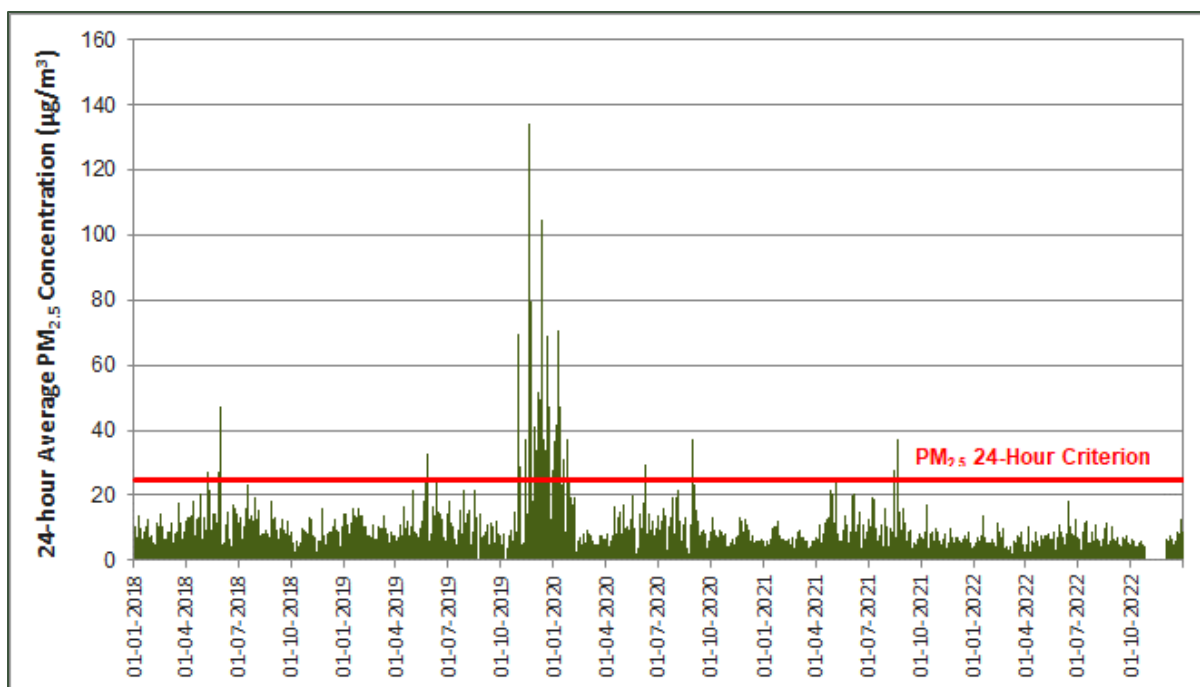


Figure 8 Measured 1-Hour Average NO₂ Concentrations at Prospect AQMS (2018-2022)

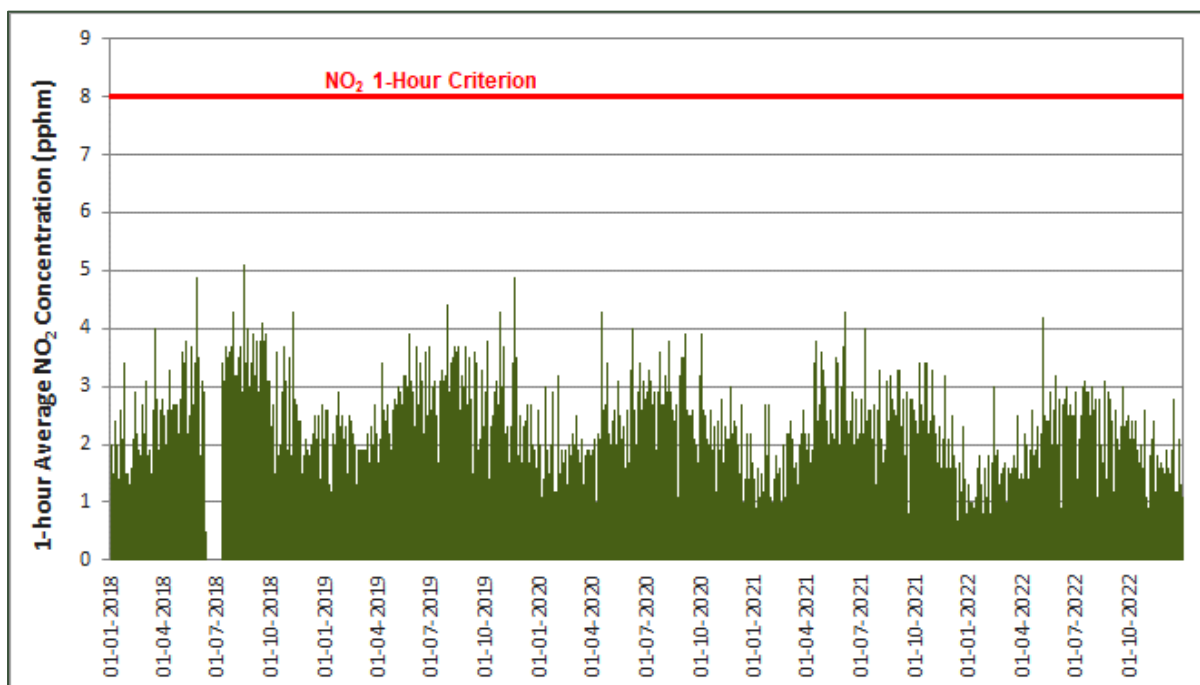


Figure 9 Measured 1-Hour Average CO Concentrations at Prospect AQMS (2018-2022)

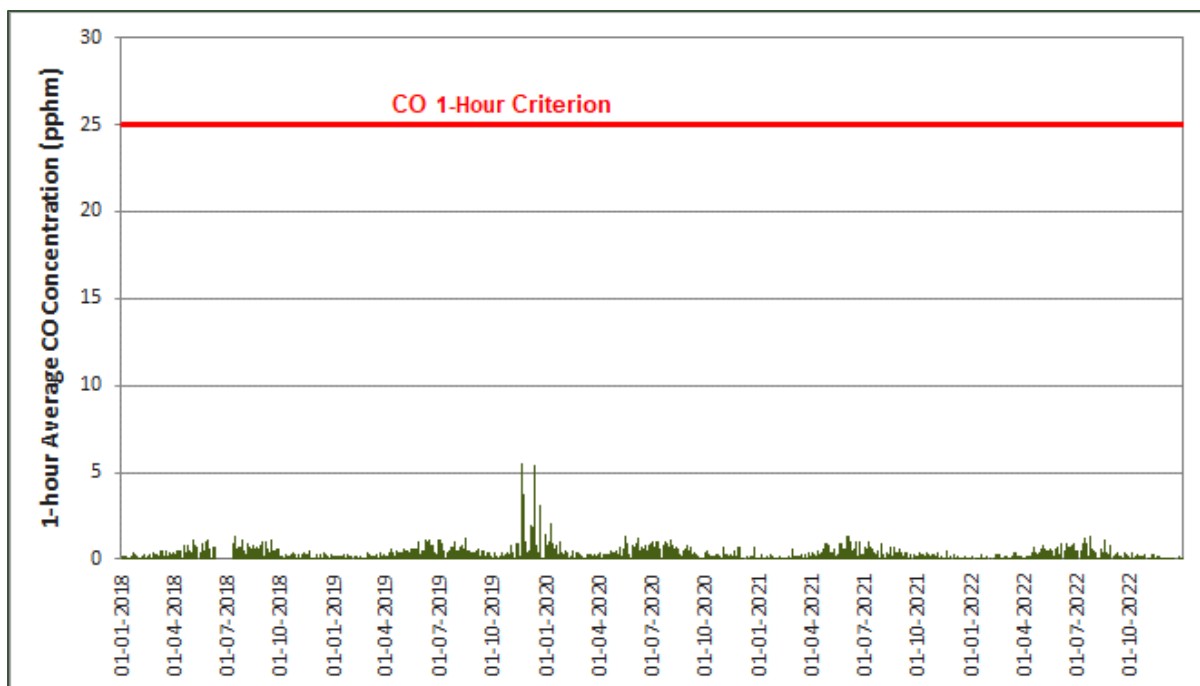


Figure 10 Measured 1-Hour Average SO₂ Concentrations at Prospect AQMS (2018-2022)

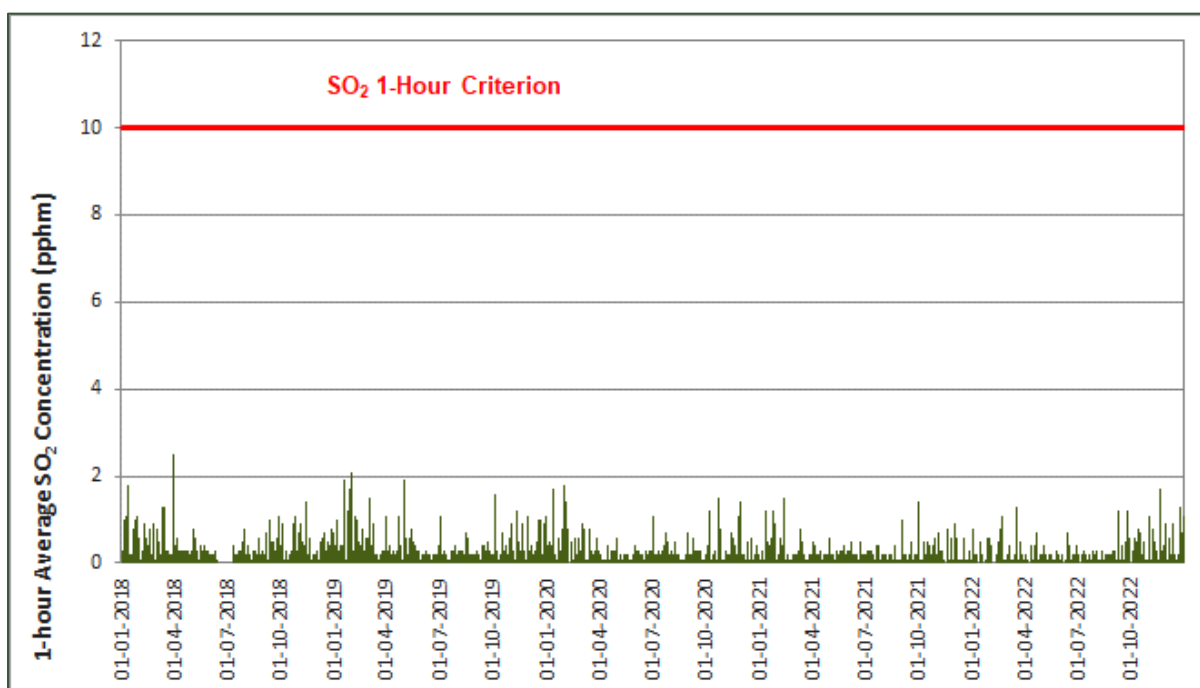
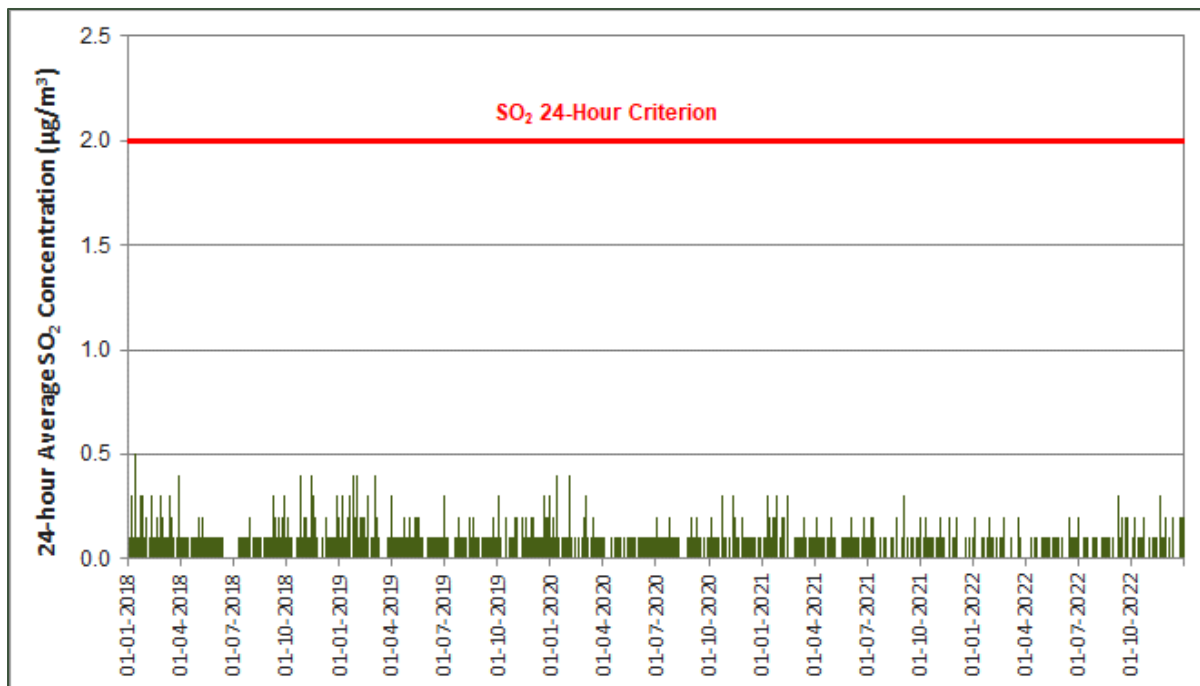


Figure 11 Measured 24-Hour Average SO₂ Concentrations at Prospect AQMS (2018-2022)



6.0 Assessment of Dust Emissions During Construction

While not required by the Development Consent, Goodman proposes to install two Site-hive real-time dust monitors at locations representative of the nearest receivers. The indicative monitor locations are shown in **Figure 12**. Final monitor locations will be confirmed based on Environmental conditions and consultation with the relevant stakeholders.

Figure 12 Indicative Site-hive Real-time Monitor Locations



Note: Indicative Site-hive locations shown in yellow.

The key potential health and amenity issues associated with the construction works are:

- elevated suspended particulate concentrations (PM_{10})
- nuisance due to dust deposition (soiling of surfaces) and visible dust plumes that may potentially be observed to be leaving the site.



6.1 Construction Dust Impact Assessment 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 earthworks and construction activities at the 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*” (Holmen 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 B** 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.

6.2 Risk Assessment

6.2.1 Step 1 – Screening Based on Separation Distance

As noted in **Section 2.2**, a number of sensitive receptors are located adjacent to the Site boundary.

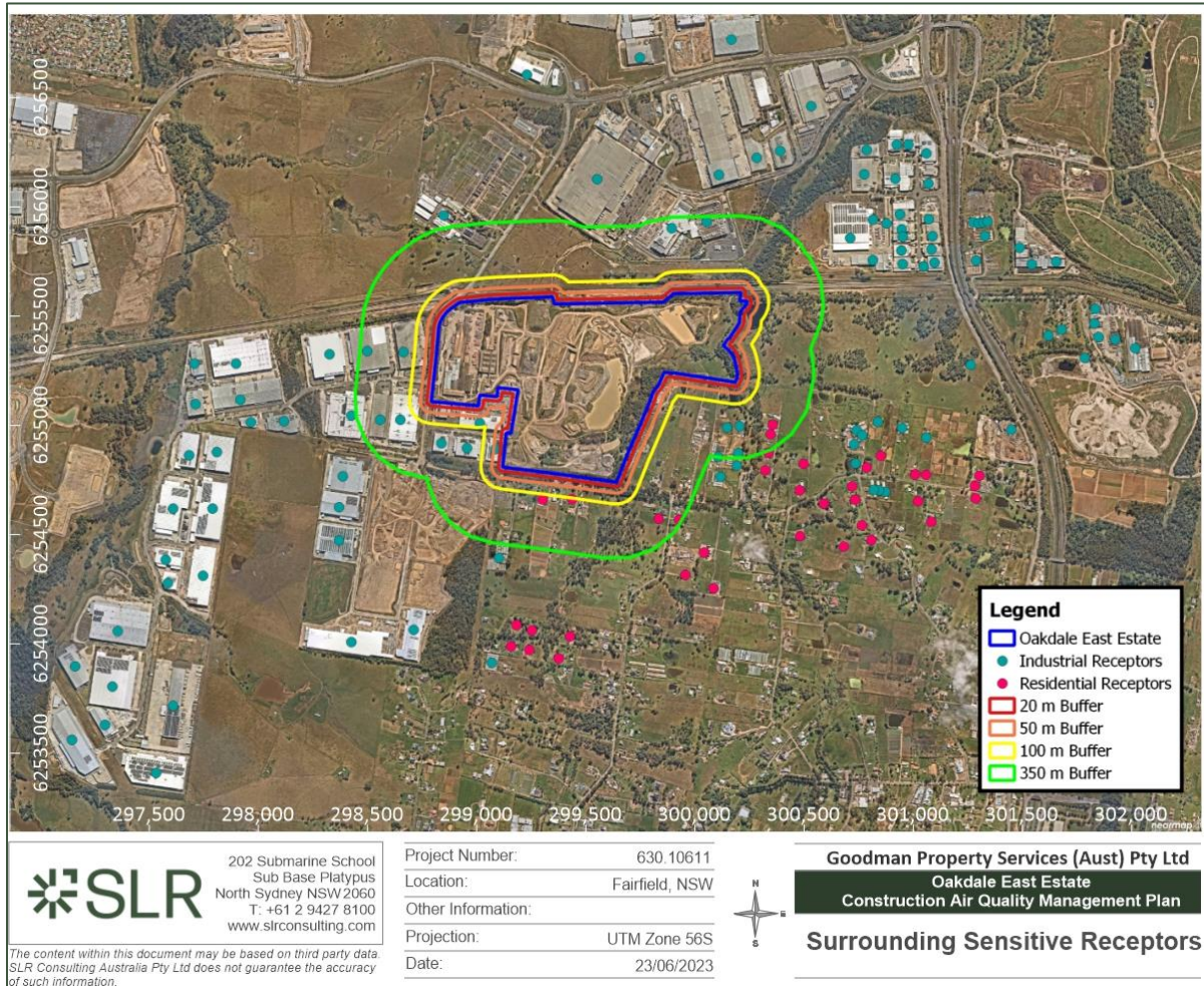
The IAQM screening criteria for further assessment is the presence of a ‘human receptor’ within:

- 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).



As a 'human receptor' is located within 350 m of the boundary of the site, further assessment is required. For the purpose of this assessment, the number of sensitive receptors is estimated to be between 1 to 10 within 20 m of the Site boundary (see **Figure 13**).

Figure 13 Density of Sensitive Receptors in the Vicinity of the Site



6.2.2 Step 2a – Assessment of Scale and Nature of the Works

Based upon the proposed works and the IAQM definitions presented in **Appendix B**, the dust emission magnitudes for each phase of the construction works have been categorised as presented in **Table 7**. No significant demolition activities are proposed as part of the works, hence the risk of dust impacts from demolition activities have not been assessed.



Table 7 Categorisation of Dust Emission Magnitude

Activity	Dust Emission Magnitude	Basis
Earthworks	Large	<p>IAQM Definition: Total site area greater than 10,000 m², potentially dusty soil type (eg 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.</p> <p>Relevance to this Project: <i>Total area of the Site is estimated to be approximately 783,000 m².</i></p>
Construction	Large	<p>IAQM Definition: Total building volume greater than 100,000 m³, piling, on site concrete batching; sandblasting.</p> <p>Relevance to this Project: <i>The total warehouse area is 19,715 m² and the elevation of the warehouses is 13.7 m. Therefore, the total building volume will be 270,100 m³.</i></p>
Trackout	Large	<p>IAQM Definition: 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.</p> <p>Relevance to this Project: <i>It is estimated that more than 50 heavy vehicles movements per day will occur during the peak construction period.</i></p>

6.2.3 Step 2b – Risk Assessment

Receptor Sensitivity

Based on the criteria listed in **Table B1** in **Appendix B**, the sensitivity of the identified receptors in this study is concluded to be high for both health impacts and dust soiling.

Sensitivity of an Area

Based on the classifications shown in **Table A2** and **Table A3** in **Appendix A**, the sensitivity of the area is medium to both dust soiling and health effects. This categorisation has been made taking into account the individual receptor sensitivities derived above, the 5-year mean background PM₁₀ concentration of 19.7 µg/m³ recorded at Prospect AQMS (see **Section 5.2**) and the existing number of sensitive receptors present in the vicinity of the Site (i.e. between 1-10 receptors within 20 m of the Site boundary).

Risk Assessment

Given the sensitivity of the general area is classified as medium to dust soiling and health effects, and the dust emission magnitudes for the various construction phase activities as shown in **Table 7**, the resulting risk of air quality impacts is as presented in **Table 8**.



Table 8 Preliminary Risk of Air Quality Impacts from Construction Activities (Uncontrolled)

Impact	Sensitivity of Area	Dust Emission Magnitude			Preliminary Risk		
		Earthworks	Construction	Trackout	Earthworks	Construction	Trackout
Dust Soiling	Medium	Large	Large	Large	Medium	Medium	Medium
Human Health	Medium				Medium	Medium	Medium

The results indicate that the adverse risk of dust soiling and human health effects for the surrounding receptors is medium during earthworks, construction, and trackout phases.

6.2.4 Step 3 - Mitigation Measures

A reappraisal of the predicted unmitigated air quality impacts on sensitive receptors has been performed to demonstrate the opportunity for minimising risks associated with the use of mitigation strategies. These are termed 'residual impacts'.

According to the IAQM method, no mitigation measures are required for a development with low risk of adverse dust soiling and human health effects during earthworks.

Table 9 provides the mitigation measures targeting the potential impacts from earthworks. Implementing these measures may reduce the risk of adverse dust soiling impacts from medium to low for the surrounding receptors.

Table 9 Mitigation Measures Specific to Earthworks

Activity	Highly recommended or Desirable
Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.	D
Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.	D
Only remove the cover in small areas during work and not all at once.	D

H = Highly recommended; D = Desirable

Table 10 and **Table 11** provide the mitigation measures targeting the potential impacts from construction and trackout. Implementing these measures may reduce the risk of these impacts from *medium* to *low* for the surrounding receptors.

Table 10 Mitigation Measures Specific to Construction

Activity	Highly recommended or Desirable
Avoid scabbling (roughening of concrete surfaces) if possible.	D



Activity	Highly recommended or Desirable
Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.	H
Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.	D
For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.	D

H = Highly recommended; D = Desirable; N = Not required

Table 11 Mitigation Measures Specific to Trackout

Activity	Highly recommended or Desirable
Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.	H
Avoid dry sweeping of large areas.	H
Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.	H
Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.	H
Record all inspections of haul routes and any subsequent action in a site log book.	H
Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.	H
Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).	H
Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.	H
Access gates to be located at least 10 m from receptors where possible.	H

H = Highly recommended; D = Desirable; N = Not required

A range of mitigation measures relating to site preparations, truck movements and mobile machinery etc are also recommended by the IAQM for low-risk sites, which have been considered in developing the list of project-specific mitigation measures in **Section 7.0**.



6.2.5 Step 4 - Residual Impacts

A reappraisal of the predicted unmitigated air quality impacts on sensitive receptors has been performed to demonstrate the opportunity for minimising risks associated with the use of mitigation strategies. These are termed 'residual impacts'. The results of the reappraisal are presented below in **Table 12**.

Table 12 Residual Risk of Air Quality Impacts from Construction

Impact	Sensitivity of Area	Preliminary Risk		
		Earthworks	Construction	Trackout
Dust Soiling	Medium	Low	Low	Low
Human Health	Medium	Low	Low	Low

The mitigated dust deposition and human health impacts for earthworks, construction and trackout phases are anticipated to be **low**.



7.0 Mitigation Measures

As per **Section 6.2**, construction works at the Development Site pose a *low risk* to neighbouring sensitive receptors during earthworks, construction, and trackout phases. Nonetheless, in accordance with best practice construction methodology, and minimise potential for cumulative impacts on local air quality during periods of high background concentrations, a range of dust mitigation measures will be implemented during the construction works to minimise dust emissions.

Table 13 lists the mitigation measures to be adopted during the construction works.

Table 13 Site-Specific Management Measures Recommended by the IAQM

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		
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 8.0 of this CAQMP.	Construction Contractor	Ongoing	Section 8.0 of this document
All dust and air quality complaints will be undertaken as per Section 8.0 of this CAQMP.			
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	Ongoing	Best practice
Exposed surfaces and stockpile will be suppressed by regular watering or use of approved dust suppressants.			



Environmental Management Control	Person Responsible	Timing / Frequency	Reference / Notes
Land stabilisation works will be carried out in such a way on site to minimise exposed surfaces.			
Dust generating activities in areas close to receptors will be closely monitored and additional mitigation applied as required to best manage potential dust emissions			
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 construction works will not track dirt off site and onto the public road network.	Construction Contractor	Ongoing	Best practice
Project access roads used by delivery trucks will be kept clean.			
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.			
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.			
Operations			
Only cutting, grinding or sawing equipment fitted with suitable dust suppression systems, such as water sprays will be used.	Construction Contractor	Ongoing	Best practice



Environmental Management Control	Person Responsible	Timing / Frequency	Reference / Notes
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	Ongoing	
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	Ongoing	Best practice
No waste materials, timbers or any other combustible materials will be burnt on site.			
Earthworks			
Scopes of work will be planned in such a way to assist in minimising the duration that surfaces are left denuded	Construction Contractor	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	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	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.			



8.0 Complaints Handling and Response Procedure

All complaints will be handled in accordance with the sections below.

8.1 Performance Objective

To ensure that all environmental complaints in relation to the air emissions from the construction activities are promptly and effectively received, handled and addressed.

8.2 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. It should be ensured that 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.

8.3 Complaints Handling Procedure

Upon becoming aware of a complaint, the protocol outlined below will be followed.

1. Record and Acknowledge

Any employee who takes 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.

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.

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 10.0**, 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 7.0** and/or the air quality monitoring programme outlined in **Section 9.0** is to be reviewed and, the CAQMP 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.

8.4 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
- copies of all completed Complaint Enquiry Forms, which are to be maintained for at least five years after the event to which they relate.



9.0 Proposed Air Quality Monitoring Program

As discussed in **Section 6.2**, 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 7.0**).

Air quality monitoring program is recommended to start 3 months prior to the start of constructions to get a baseline regarding air quality in the vicinity of the Development Site. The dust gauges should be installed in compliance with the AS/NZS 3580.1.1:2016 and changed every 30 days. The results will be compared against NSW EPA criterion stated in **Section 4.2**. Furthermore, 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 is recommended.

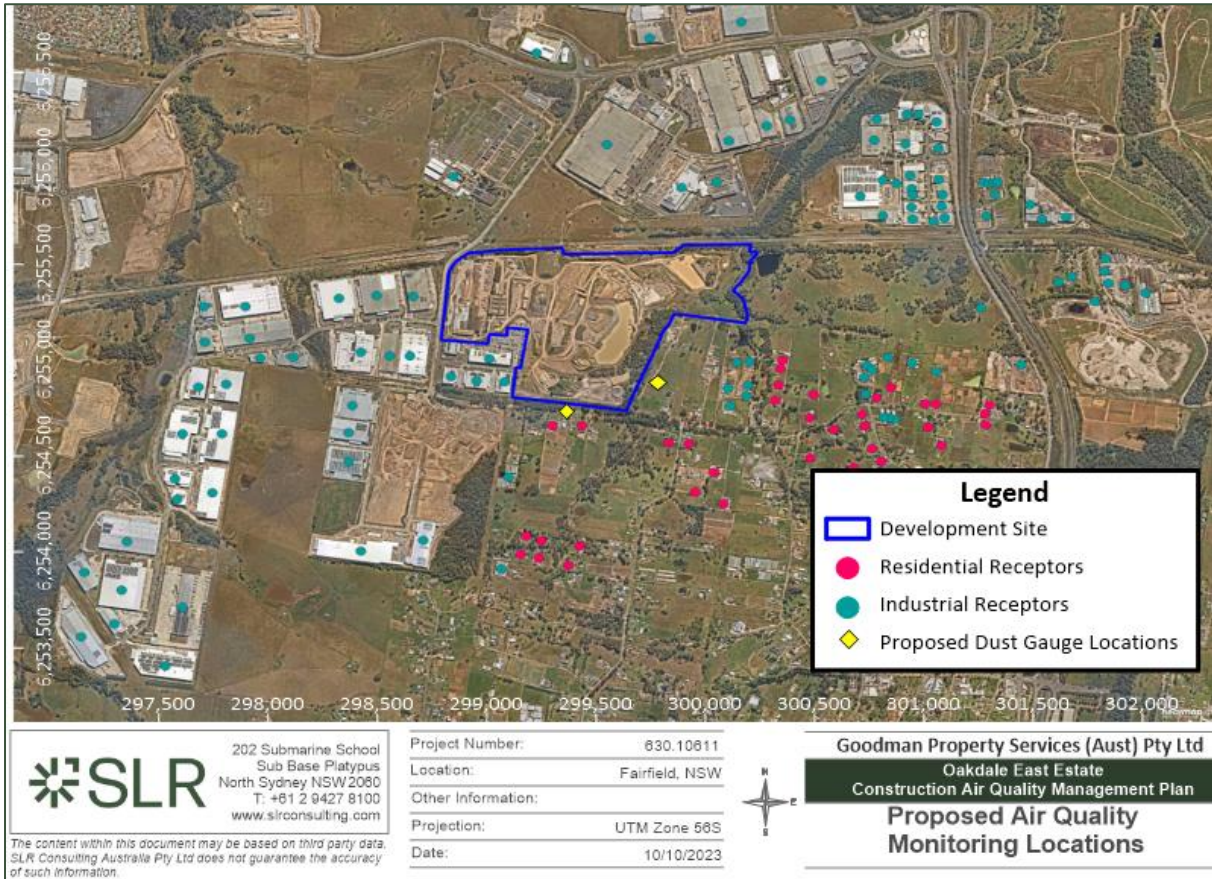
A summary of the proposed on-site air quality monitoring programme at the Development Site is shown in **Table 14**. The locations of these monitors are shown in **Figure 14**. The proposed dust deposition gauge (DDG) locations (shown in **Figure 14**) are indicative locations and are subject to change based on further information.

Table 14 Summary of On-Site Monitoring Programme

Pollutant	Equipment Used	Number of Monitoring Sites	Criterion
Deposited dust	DDG	2	4 g/m ² /month (annual average)



Figure 14 Air Quality Monitoring Locations for the Development Site



10.0 Contingency Management Plan

The air quality contingency management plan for the construction activities is shown in **Table 15**. As noted in **Section 9.0**, data from the ongoing monitoring program will be utilised to inform the appropriate contingency response for the development.

Table 15 Air Quality Contingency Management Plan for the Construction in the Development Site

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. Review weather conditions including wind speed. Where appropriate, implement additional remedial measures, such as: <i>Deployment of additional water sprays, water trucks etc</i>	In addition to condition amber, halt the dust generating activities and stop work during high wind speeds.



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.	Goodman Project Managers 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.	Goodman Project Managers to review and investigate construction activities and respective control measures for the monitoring period. If it is concluded that construction activities 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 and stop dust generating works.
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



Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
	Response	Continue monitoring program as normal.	<p>Report the complaint to the regulator, in line with complaints handling procedure (See Section 8.0).</p> <p>Review and investigate construction activities and increase dust suppression measures (additional watering, covering stockpiles etc), where appropriate.</p>	<p>Including real time monitors to measure PM₁₀ and PM_{2.5}.</p> <p>Review real-time monitoring data at the existing continuous monitors to investigate the likelihood of onsite activities contributing (see Appendix C).</p>



11.0 Roles and Responsibilities

The key responsibilities specifically for dust management are as follows:

11.1 Contractor's Project Manager

- ensuring appropriate resources/plant/personnel are available for the implementation of this CAQMP
- 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 CAQMP
- 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)
- ceasing particular scopes of works as required in the event of excessive dust generation due to extreme weather conditions or inadequately controlled construction activities (e.g. high winds, surface dirt accumulation, etc.).

In the event that an air quality complaint is received, the procedure in **Section 8.0** of this CAQMP will be implemented.

11.2 Environmental Coordinator

- undertaking dust monitoring program
- reviewing efficacy of CAQMP control measures.

11.3 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
- identifying and reporting dust emission incidents.



12.0 Review and Improvement of the CAQMP

The review of the CAQMP 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
- highlighting any changes in procedures resulting from process improvement.

This CAQMP 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 CAQMP
- in the event of a substantiated complaint being received regarding air quality impacts
- at the request of a relevant regulatory authority.



13.0 References

- DEC. 2022. *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*. Department of Environment and Conservation NSW.
- EPA. 2022. *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales*. Environment Protection Authority NSW.
- EPA. 2018. "Local Government Air Quality Toolkit, Module 3 – Guidelines for Managing Air Pollution, Part 3 – Guidance Notes for Construction Sites, available online at <https://www.epa.nsw.gov.au/your-environment/air/air-nsw-overview/local-government-air-quality-tool>."
- EPA NSW. 2021. "Local government air quality toolkit - Module 3: Guidelines for managing air pollution."
- Holmen. 2014. "IAQM Guidance on the assessment of dust from demolition and construction, <http://www.iaqm.co.uk/text/guidance/construction-dust-2014.pdf>." *Institute of Air Quality Management, London* (Institute of Air Quality Management).
- NSW EPA. 2022. *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales*. New South Wales Environment Protection Authority.
- SLR. 2023. "M7 Business Park 9 Roussell Road, Eastern Creek." *SSDA Air Quality Impact Assessment*.





Appendix A Wind Roses and Rainfall Data Analysis

Construction Air Quality Management Plan

**SSD-37486043: Oakdale East Industrial Estate 2-10 Old Wallgrove Road,
Horsley Park**

Goodman Property Services (Aust) Pty Ltd

SLR Project No.: 630.10611

13 November 2023

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 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.

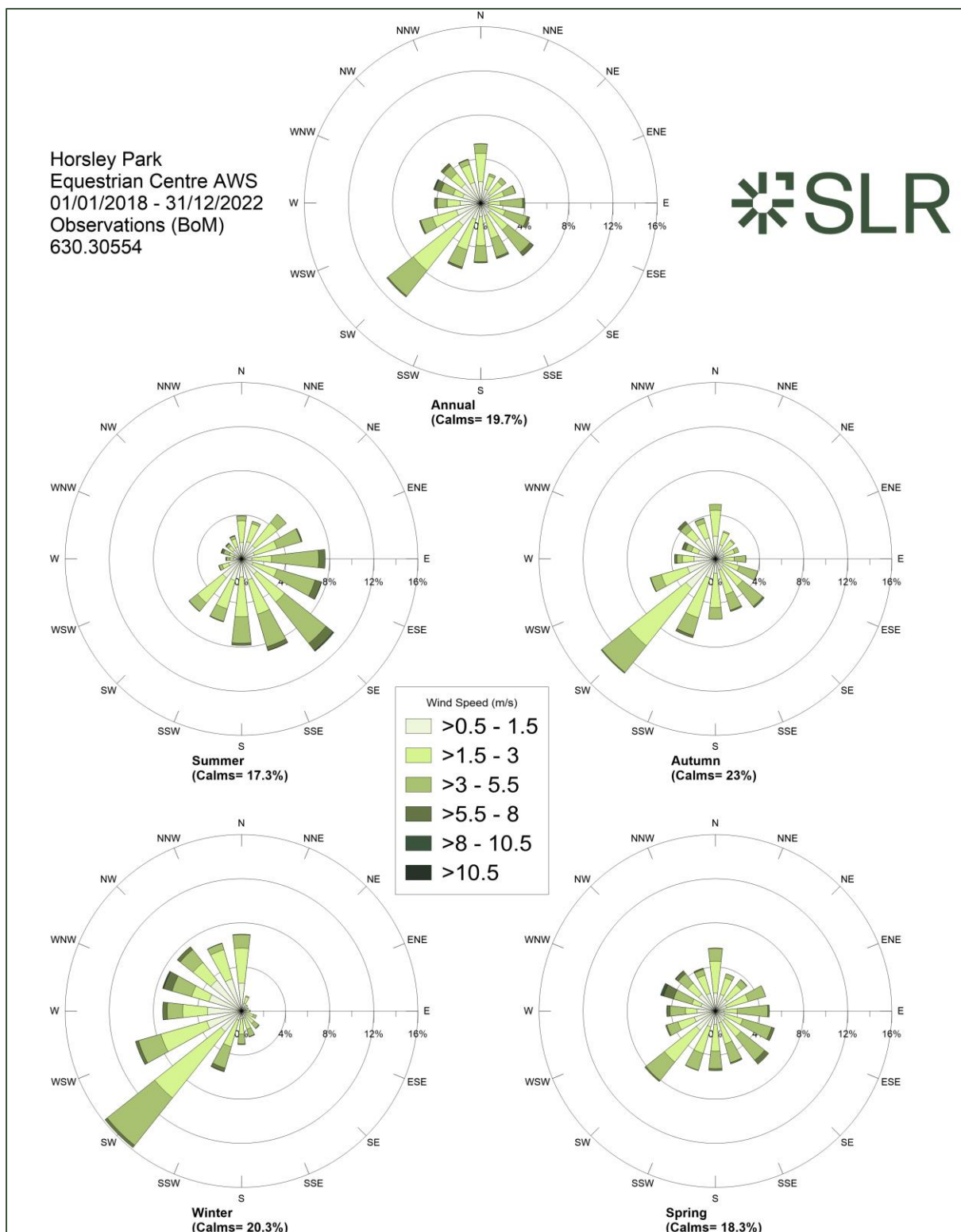
Annual and seasonal wind roses for the years 2018 to 2022 compiled from data recorded by the Horsley Park AWS are presented in **Figure A1**. Wind roses show the frequency of occurrence of winds by direction and strength. The bars correspond to the 16 compass points (degrees from North). The bar at the 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 annual wind rose (**Figure A1**) indicates that the predominant wind directions in the area are from the southwest direction. Calm wind conditions (wind speed less than 0.5 m/s) were recorded approximately 19.7% of the time throughout the five year period reviewed. The average seasonal wind roses for the years 2018-2022 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 southern quadrants, with very few winds from westerly directions. Calm wind conditions were recorded approximately 17.3% 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 23% of the time during autumn.
- In winter, wind speeds ranged from calm to fresh winds (between 0.5 m/s and 10.0 m/s). The majority of winds originated from the north and west quadrants, with very few winds from the east. Calm wind conditions were observed to occur approximately 20.3% of the time during winter.
- In spring, wind speeds ranged from calm to fresh winds (between 0.5 m/s and 10.0 m/s). The frequencies of winds were generally even from all directions. Calm wind conditions were observed to occur approximately 18.3% of the time during spring.



Figure A1 Annual and Seasonal Wind Roses for Horsley Park (2018 to 2022)

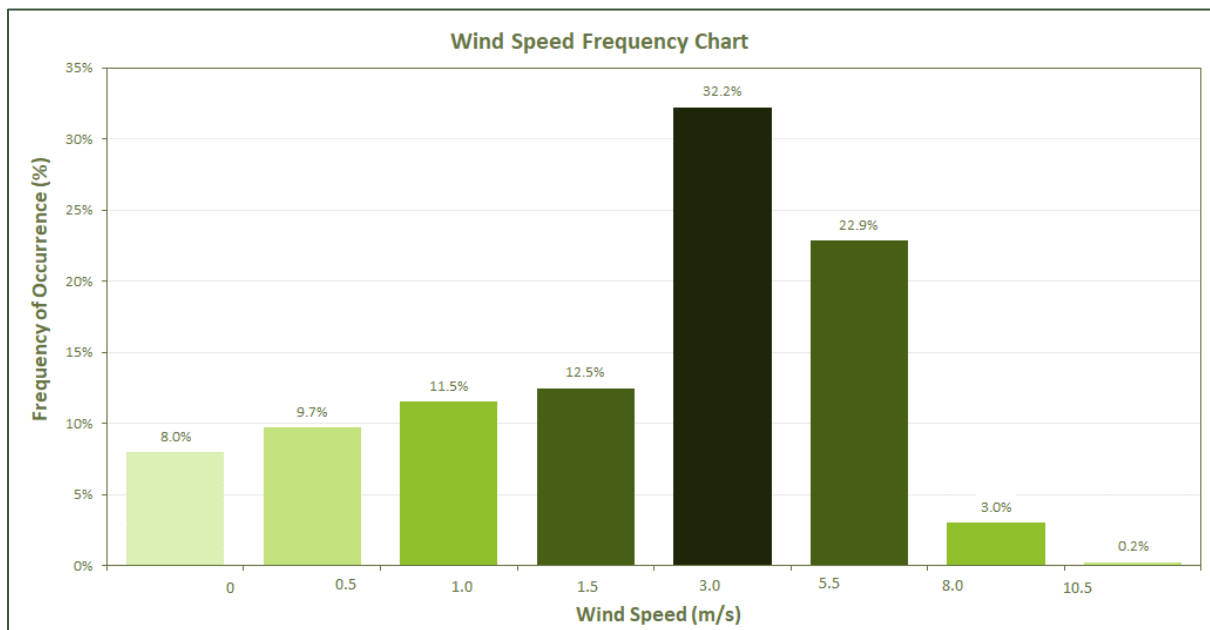


Wind erosion of dust from exposed surfaces (ie, during the construction phase of the development) is usually initiated when wind speeds exceed the threshold friction velocity for a given surface or material, however a general rule of thumb is that wind erosion can be expected to occur above 5 m/s (USEPA 2006). The frequency of wind speeds for the period



of 2018-2022 is presented in **Figure A2**. The plot showed that the frequency of wind speeds exceeding 5 m/s for the period 2018-2022 at Horsley Park AWS was approximately 4.9%.

Figure A2 Wind Speed Frequency Chart for Horsley Park AWS – 2018-2022

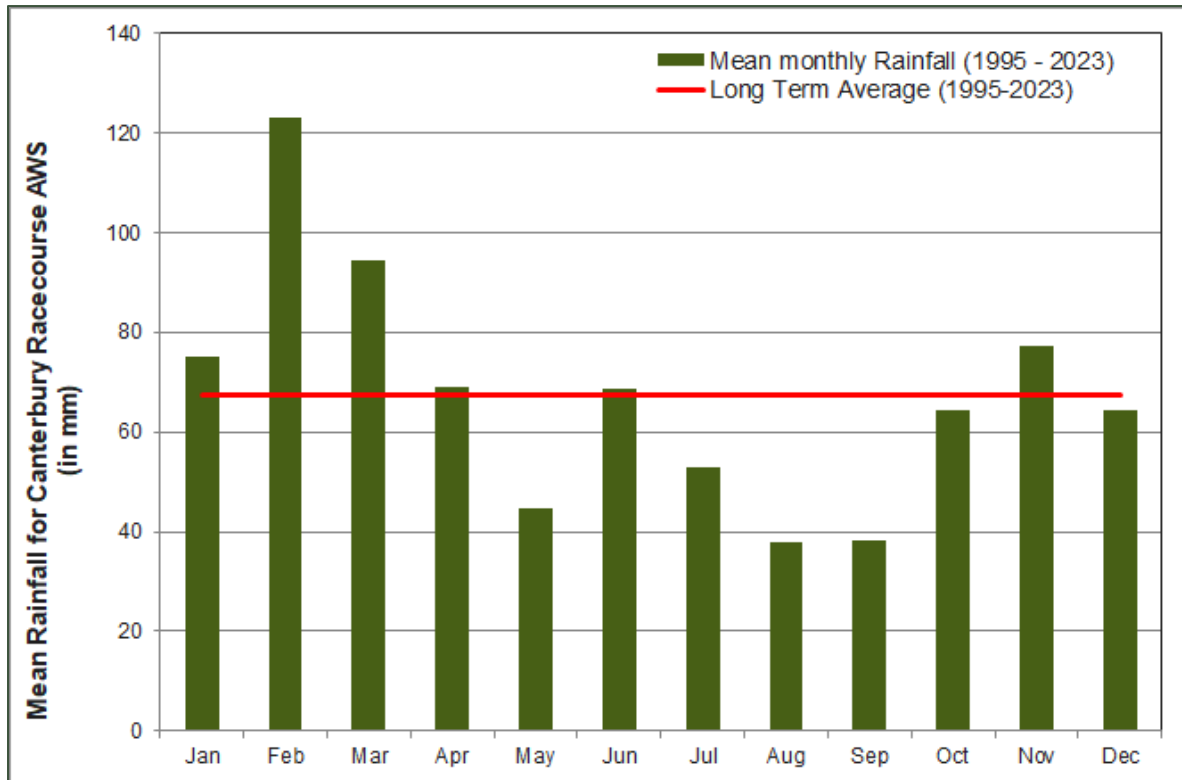


Rainfall

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 A3**. 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 A3 Long term Mean Rainfall for Horsley Park AWS – 1995 to 2023





Appendix B Construction Risk Assessment Methodology

Construction Air Quality Management Plan

**SSD-37486043: Oakdale East Industrial Estate 2-10 Old Wallgrove Road,
Horsley Park**

Goodman Property Services (Aust) Pty Ltd

SLR Project No.: 630.10611

13 November 2023

Step 1 – Screening Based on Separation Distance

As noted in **Section 2.2**, the nearest human receptors are located adjacent to the west and 100 m to the south of the Development Site boundary.

The IAQM screening criteria for further assessment is the presence of a sensitive 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).

As human receptors are located adjacent to the boundary of the site 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 $>50,000 \text{ m}^3$, potentially dusty construction material (e.g. concrete), on-site crushing and screening, demolition activities $>20 \text{ m}$ above ground level;
- **Medium:** Total building volume $20,000 \text{ m}^3 - 50,000 \text{ m}^3$, potentially dusty construction material, demolition activities $10\text{-}20 \text{ m}$ above ground level; and
- **Small:** Total building volume $<20,000 \text{ m}^3$, construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities $<10\text{m}$ above ground, demolition during wetter months.

Earthworks (Covers the processes of soil-stripping, ground-levelling, excavation and landscaping):

- **Large:** Total site area greater than $10,000 \text{ m}^2$, 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 $100,000 \text{ t}$.
- **Medium:** Total site area $2,500 \text{ m}^2$ to $10,000 \text{ m}^2$, 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 $20,000 \text{ t}$ to $100,000 \text{ t}$.
- **Small:** Total site area less than $2,500 \text{ m}^2$, 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 $20,000 \text{ t}$, 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 $100,000 \text{ m}^3$, piling, on site concrete batching; sandblasting.



- **Medium:** Total building volume 25,000 m³ to 100,000 m³, potentially dusty construction material (e.g. concrete), piling, on site concrete batching.
- **Small:** Total building volume less than 25,000 m³, 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.

Note: No significant demolition activities are proposed as part of the works.

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.

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 PM₁₀, 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 B2**. It is noted that user expectations of amenity levels (dust soiling) are dependent on existing deposition levels.



Table B2 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.
	<i>Examples: Dwellings, museums, medium and long term car parks and car showrooms.</i>	<i>Examples: Parks and places of work.</i>	<i>Examples: Playing fields, farmland (unless commercially-sensitive horticultural), footpaths, short term car parks and roads.</i>
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.
	<i>Examples: Residential properties, hospitals, schools and residential care homes.</i>	<i>Examples: Office and shop workers, but will generally not include workers occupationally exposed to PM₁₀.</i>	<i>Examples: Public footpaths, playing fields, parks and shopping street.</i>



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 PM₁₀ 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 B2**, the sensitivity of the identified receptors in this study is concluded to be *medium* for both health impacts and dust soiling, as they include offices and workshops 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 B3**. The sensitivity of the area should be derived for each of activity relevant to the project (i.e. construction and earthworks).

Table B3 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 B4**. For medium sensitivity receptors, the IAQM methods takes the existing background concentrations of PM₁₀ (as an annual average) experienced in the area of interest into account and is based on the air quality objectives for PM₁₀ 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 19.7 µg/m³ for PM₁₀) 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 B4 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/m ³	>100	High	High	High	Medium	Low
		10-100	High	High	Medium	Low	Low
		1-10	High	Medium	Low	Low	Low
	21-25 µg/m ³	>100	High	High	Medium	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	High	Medium	Low	Low	Low
	17-21 µg/m ³	>100	High	Medium	Low	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	Medium	Low	Low	Low	Low
	<17 µg/m ³	>100	Medium	Low	Low	Low	Low
		10-100	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
Medium	>25 µg/m ³	>10	High	Medium	Low	Low	Low
		1-10	Medium	Low	Low	Low	Low
	21-25 µg/m ³	>10	Medium	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
	17-21 µg/m ³	>10	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
	<17 µg/m ³	>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 human receptor is located within 60 m from the nearest Development Site. Based on the classifications shown in **Table B3** and **Table B4**, the sensitivity of the area to dust soiling and to health effects may both be classified as '*low*'. Additionally, these categorisations have been made taking into account the 5-year mean background PM₁₀ concentration of 19.7 µg/m³ recorded at Prospect AQMS (see **Section 5.2**).

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 B5** (earthworks and construction), **Table B6** (track-out) and **Table B7** (demolition) to determine the risk category with no mitigation applied.

Table B5 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 B6 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 B7 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 Air Quality Notification Form

Construction Air Quality Management Plan

**SSD-37486043: Oakdale East Industrial Estate 2-10 Old Wallgrove Road,
Horsley Park**

Goodman Property Services (Aust) Pty Ltd

SLR Project No.: 630.10611

13 November 2023

Construction of Oakdale East Industrial Estate	
Air Quality Notification Form	
This form to be completed by the Contractor PM, PE or Environmental Representative	
Please attach site observation photographs as required	
Contract	
Prepared by (Print Name)	
Position (Project PM, Engineer etc)	
Time/Day/Date of notification	
What were the PM ₁₀ levels recorded at the start of the shift?	
Was there scope of work specific dust generation observed during the reporting period? (If yes, please provide site specific area)	
Was the measured dust level influenced by dust from external sources? (yes/no/possible)	
Dust generating construction related activities at the time of the notification (1) Provide a brief description of works being undertaken at the time of the dust being observed	
Wind direction and speed relating to the reporting period (show variable wind directions and speed throughout the notification period. Attach wind charts if applicable) (3)	
Were additional dust mitigation resources implemented during the reporting period? (if yes, provide a brief description)	
Sign/Date	
Goodman Contract Superintendent to Complete	
Notified ER Time/Day/Date	
Follow up required (yes/no)	
Is this notification issued as a result of an external complaint?	
Sign/Date	





Appendix D Curriculum Vitae of the Author

Construction Air Quality Management Plan

**SSD-37486043: Oakdale East Industrial Estate 2-10 Old Wallgrove Road,
Horsley Park**

Goodman Property Services (Aust) Pty Ltd

SLR Project No.: 630.10611

13 November 2023

Sahar Bagheri, CAQP
Senior Project Consultant | Air Quality | Sydney



Sahar is a Senior Air Quality Consultant working within the Air Quality team. She has over 5 years of environmental engineering experience.

Sahar has acquired broad environmental experience including air quality and odour, impact assessments, emission inventories (including National Pollutant Inventory and National Greenhouse and Energy Reporting), air quality dispersion modelling (including GRAL, CALPUFF and AERMOD), air quality and odour monitoring, meteorological monitoring, meteorological modelling (TAPM & CALMET), greenhouse gas assessments, and greenhouse gas management plans.

Education

- Master's in Mechanical Engineering, Sharif University of Technology, Iran (2016)
- Bachelor of Science (Mechanical Engineering), Sharif University of Technology, Iran (2014)

Key Capabilities/Expertise

- Project Management
- Air Quality Impact Assessments (AQIA) and Air Quality Management Plans (AQMP)
- Meteorological Modelling (TAPM, CALMET, AERMET) and Dispersion Modelling (GRAL, CALPUFF, AERMOD)
- Emissions Inventory Development
- National Pollutant Inventory and National Greenhouse and Energy Reporting
- Field Odour Surveys and Dust, Ambient Air Quality, and Odour Monitoring
- Greenhouse Gas Assessments

Project Experience

Waratah Golf Club Residences Odour Impact Assessment (2023)

Project manager to assess potential odour impacts from the operations within the Argenton 1 Wastewater Pump Station on the proposed residential areas, consistent with the NSW Best Practice Odour Guideline to determine if odour impacts are within the acceptable limits for residential development.

Sydney Terminal Building Revitalisation (2022)

Air quality specialist engaged by Aurecon to undertake a qualitative, risk-based Air Quality Impact Assessment (AQIA) for assessing air quality impacts from the Central Precinct Renewal project.

Aspect Industrial Estate (2021 – 2022)

Air quality specialist engaged by Mirvac to prepare a Construction Air Quality Management Plan (CAQMP) for the Aspect Industrial Estate (AIE) to maintain acceptable levels of amenity for surrounding residents during construction activities and ensure compliance with relevant ambient air quality criteria for particulate matter at surrounding receptor locations.

South Creek West Rezoning (2022)

Project manager to provide a detailed quantitative assessment of the potential air quality impacts of the Bringelly Brickworks operations on the Northwest Precinct within the South



Sahar Bagheri, CAQP
Senior Project Consultant | Air Quality | Sydney



Creek West Land Release Area. The assessment has been modelled using a combination of the TAPM, CALMET and CALPUFF models.

Moss Vale Sewage Treatment Plant Upgrade (2022)

Lead air quality consultant to undertake a detailed odour impact assessment for the proposed upgrade of the Moss Vale STP using the CALMET/CALPUFF modelling software.

Anzac Parade Air Quality Assessment (2021)

Air quality specialist to model the emissions from the closest main road using the GRAMM/GRAL modelling system and predict the incremental impact of these emissions across the proposed development of a mixed-use building.

Bombo Quarry Dust Monitoring (Ongoing)

Project manager for the ongoing monitoring and reporting for dust deposition at 3 monitoring locations in accordance with legislative requirements to pro-actively manage on-site operations and stockpile dust impacts on sensitive receptors.

Aussie Skips Dust Monitoring (Ongoing)

Air quality specialist to conduct air quality monitoring of deposited dust and metals for the ongoing operations associated with waste management by Aussie Skips Recycling Pty Ltd.

Compliance Monitoring (Lead, PM10 and TSP), Sydney Harbour Bridge, NSW, Australia (Ongoing)

Air quality consultant for the project involving repainting the iconic Sydney Harbour Bridge. The process includes stripping the old paint (containing lead), preparation of the surface and repainting. Lead concentration in the air along with the concentration of particulate (PM10 and TSP) is monitored in the project.

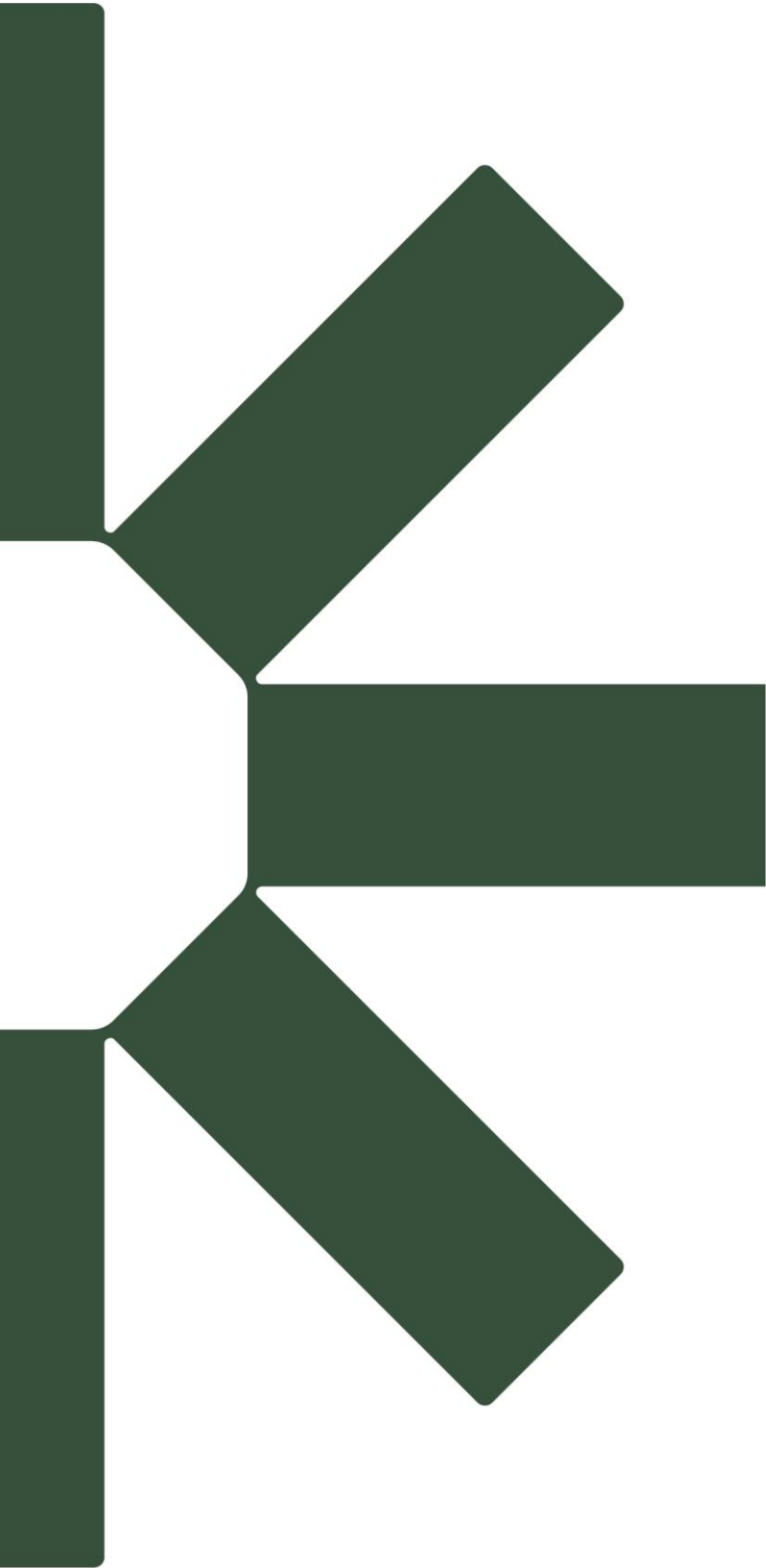
ACT No-Waste, Odour Monitoring (Ongoing)

Conduct a series of ambient odour field surveys to assess the intensity of odours in the area surrounding the Mugga Lane Resource Management Centre (MLRMC) Landfill. The project includes In-field measurements using photo-ionisation detector (PID) and/or gas detector measurements of surface gas and odour levels in the vicinity of the tarpaulin trials and collection of infield odour samples from the surface of landfill cells using a Flux Chamber technique and preparation of a report detailing the findings of the assessment as well as survey plots for each survey.

Memberships and Associations

- Clean Air Society of Australia and New Zealand (CASANZ) Memberships and Associations
- Emerging Air Quality Professionals (EAQP)





Making Sustainability Happen

Appendix G Construction Traffic Management Plan

Construction Environmental Management Plan

**SSD-37486043: Oakdale East Industrial Estate
2-10 Old Wallgrove Road, Horsley Park**

Goodman Property Services (Aust) Pty Ltd

SLR Project No.: 630.V10611.00001

13 November 2023

asongroup



Construction Traffic Management Plan

Oakdale East Industrial Estate

Oakdale East Industrial Estate, Kemps Creek

9/11/2023

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II	06/10/2023	Issue II	J. Lam	J. Laidler	J. Laidler
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IV	09/11/2023	Issue IV	J. Lam		

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Appendix G. Fairfield City Council Correspondence

Appendix H. WaterNSW Correspondence

Glossary

Acronym	Description
AGRД	Austrоads Guide to Road Design
AGTM	Austrоads Guide to Traffic Management
CC	Construction Certificate
Council	Fairfield City Council
DA	Development Application
DCP	Development Control Plan
DoS	Degree of Saturation
DPE	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)
TDT 2013/04a	TfNSW Technical Direction, Guide to Traffic Generating Developments – Updated traffic surveys, August 2013
TfNSW	Transport for New South Wales
TGS	Traffic Guidance Scheme
TIA	Transport Impact Assessment
TIS	Transport Impact Statement
veh/hr	Vehicle movements per hour (1 vehicle in & out = 2 movements)

1 Introduction

1.1 Overview

Ason Group has been engaged by Goodman Property Services (Aust) Pty. Limited (Goodman) to prepare a Construction Traffic Management Plan (CTMP) relating to the Stage 2 Development for Oakdale East Industrial Estate (OEE) at Kemps Creek (the Site). A site plan is provided in **Figure 1**. As of the writing of this CTMP, the Precinct 5 development is not yet approved.



Figure 1: Oakdale Industrial East Estate Masterplan

1.2 Report Purpose

The purpose of this report is to detail a traffic management plan for construction that seeks:

- To minimise traffic impacts on the surrounding road network and adjacent landowners / occupiers,
- Ensure safety of workers, pedestrians, road users and any site-specific considerations (including schools and neighbours to the west),
- Provide appropriate warnings of changes in road / traffic conditions, and of personnel / workers and plant engaged in the works on or adjacent to roads accessible to the general public.
- Provide information regarding the construction vehicle access routes and any changed road conditions (if applicable); and

- Communicate the arrangements for and impacts of any activities affecting traffic.

It is expected that this plan will be updated should any necessary changes to the currently proposed arrangements arise in the future. Any special events (if required) would be subject to a separate request for a specific permit not covered by this report. Ason Group is responsible for the preparation of this Plan only and not for its implementation, which is the responsibility of the Contractor.

This report has been prepared by consultants who hold the SafeWork NSW Prepare Work Zone (formally TfNSW Prepare a Work Zone Traffic Management Plan) certification. Details of the accredited personnel are provided below:

- James Laidler: Ticket No. TCT0031686
- Jasmine Wong Ticket No. SOC5116939

1.3 Site Context

Goodman Property Services (Aust) Pty Ltd is developing the OEE located at 2-10 Wallgrove Road, Horsley Park (the Site) within the Fairfield Local Government Area (LGA). The land is legally described as Lot 102 and Lot 103 in DP 1268366. A Concept Plan and Stage 2 Development Application (SSD-37486043¹) was approved for the estate in October 2023 by Department of Planning & Environment. This report covers the approval associated with Stage 2 Development following:

- Completion of lead-in infrastructure works including intersection upgrades at Millner Ave / Old Wallgrove Road and Lenore Drive / Old Wallgrove Road
- Clearing of 2.28 ha of vegetation
- Completion of the internal road network (excl. the proposed private driveway providing access to Precinct 5 but including all other roads shown on the proposed masterplan);
- Reticulation of services infrastructure to provide serviced development pads to all precincts;
- Completion of retaining walls across the entire Estate;
- Completion of Building works to Precinct 1 expansion and Precinct 3 including any ancillary on lot infrastructure and detailed civil works required;

It is expected that works associated with Precinct 2, Precinct 4 and Precinct 5 will be considered under a separate CTMP at a later stage.

The cumulative GLA was envisaged to be 303,330m² across 5 precincts. The proposal has since undergone several modifications with the most recent approval resulting in an increase in GLA to 333,754m² for which TfNSW have provided the following advice dated 17 May 2023.

TfNSW has reviewed the submitted information and notes that the proposed amendments to SSD-37486043 result in the GLA increasing from 303,330m² to 333,754m². It also noted that the increase in traffic generation due to the increase in GLA will result in 5 additional vehicular trips during the AM and PM peak hour compared to the previously modelled scenario.

In this regard TfNSW agrees that additional traffic modelling is not required to support the proposed amendments and therefore does not object to the proposed amendment on traffic grounds.

For context, the previously approved Oakdale East Industrial Estate will generate the following traffic volumes associated with the future operation of the Estate, as shown in **Table 1**.

¹ <https://www.planningportal.nsw.gov.au/major-projects/projects/oakdale-east-industrial-estate>

TABLE 1: OAKDALE EAST ESTATE TRAFFIC VOLUMES

	Original SSD (trips/hr)	Modelled Scenario (trips/hr)	Plan Swap (trips/ hr)
AM Peak	546	596	601
PM Peak	485	529	534
Daily	7,371	8,040	8,110

1.4 Statuary Requirements

The following conditions have been imposed with respect to construction traffic management.

TABLE 2: COMPLIANCE TABLE

Reference	SSD Condition Requirement	Response
D13	Prior to the commencement of construction of the Stage 2 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 Driver Code of Conduct has been included in Appendix E .
D28	Prior to the commencement of construction of the development, the Applicant must prepare a Construction Traffic Management Plan for the development to the satisfaction of the Planning Secretary. The plan must form part of the CEMP required by condition E2 and must:	-
	(a) be prepared by a suitably qualified and experienced person(s);	Refer to Section 1.2 .
	(b) be prepared in consultation with Council, TfNSW and Water NSW;	Noted, refer to Section 1.5 .
	(c) detail the measures to be implemented to ensure safe and efficient access to the site during construction both on-site and for the external road upgrades;	Refer to Section 2 which provides an overview of the relevant works. Details for the site access arrangements are shown in Section 3.1 . Refer to Appendix D which includes Traffic Guidance Schemes for the Site.
(d) detail truck numbers, hours of operation, heavy vehicle routes, access arrangements, traffic controls and parking;	Refer to Section 5.1 which details the construction traffic volumes. The hours of operation are outlined in Section 2.2 . Site access arrangements have been outlined in the Driver Code of Conduct in Appendix E . Traffic Guidance Schemes for the Site have been included in Appendix D . Contractor	

		parking arrangements for each stage have been outlined in Section 2.1 .
	(e) include a Driver Code of Conduct to: <ul style="list-style-type: none"> (i) minimise the impacts of construction on the local and regional road network; (ii) minimise conflicts with other road users; (iii) minimise road traffic noise; and (iv) ensure truck drivers use specified routes; 	A Driver Code of Conduct has been included in Appendix E .
	(f) include a program to monitor the effectiveness of these measures; and	Refer Section 6.1 of this Plan which outlines the requirement for this Plan to be updated regularly.
	(g) if necessary, detail procedures for notifying residents and the community, of any potential disruptions to routes.	A communications strategy has been outlined in Section 6.4 .
D29	The Applicant must: <ul style="list-style-type: none"> (a) not commence construction until the Construction Traffic Management Plan required by condition D28 is approved by the Planning Secretary; and (b) implement the most recent version of the Construction Traffic Management Plan approved by the Planning Secretary for the duration of construction. 	Noted.

1.5 Stakeholder Engagement

Goodman has consulted with the required stakeholders regarding construction schedules and trucks routes and will raise any further conflicts with stakeholders at the earliest time. Goodman is to consult with key stakeholders, and provides a platform to discuss programmes, impacts and any outcomes from previous engagements.

TABLE 3: STAKEHOLDER CONSULTATION ACTIONS

Stakeholder	Action
TfNSW	Goodman have liaised with stakeholder. TfNSW have endorsed the proposed temporary construction arrangements on 1/11/2023. Several conditions have also been provided which have been reproduced in Section 1.5.1 . Goodman's correspondence with WaterNSW has been reproduced and included in Appendix F .
Fairfield City Council	Goodman have liaised with stakeholder. Fairfield City Council provided comments on 7/11/2023 which have been reproduced in Section 1.5.2 . Goodman has also addressed each of these comments on 7/11/2023. A copy of Goodman's correspondence with Fairfield City Council has been reproduced and included in Appendix G .

WaterNSW	Goodman have liaised with stakeholder. WaterNSW provided comments on 25/10/2023 which have been reproduced in Section 1.5.3 . Goodman has addressed these comments on 26/10/2023. A copy of Goodman's correspondence with WaterNSW has been reproduced and included in Appendix H .
Transport Management Centre (TMC)	Tied to consultation with TfNSW. Any consultation will be undertaken in tandem with TfNSW.

1.5.1 Consultation with TfNSW

TABLE 4: TFNSW ENDORSEMENT CONDITIONS

Condition	Response
Any Traffic Guidance Schemes (TGS) prepared are to comply with AS1742.3 and Transport for NSW's "Traffic Control at Worksites" manual and be signed by a person with TfNSW certification to prepare a TGS.	TGS have been prepared to comply with AS1742.3 and Transport for NSW's "Traffic Control at Worksites" manual. Refer to Appendix D .
Traffic volumes utilising the westbound slip lane off Old Wallgrove Road will not support daytime occupancy during the week.	Occupancy and closure of the westbound slip lane off Old Wallgrove Road will be restricted to nightworks only and will therefore have no impact during the day. Refer to Appendix D .
Proponent must apply and obtain approval from the Transport Management Centre for a Road Occupancy Licence (ROL) for any required lane closures and/or Speed Zone Authorisations as part of the ROL that may impact the state road network or is within 100m of traffic signals.	Noted, refer to Section 3.2 .
Access to be maintained for residents, businesses and emergency vehicles at all times.	Noted, refer to Section 6.4 .
No marshalling or queuing of construction vehicles is to occur on public roads. Arriving vehicles that are not able to use parking bay/work zone must continue to a holding point until space becomes available.	Noted, refer to Section 4.1.3 .
When heavy vehicles are entering or leaving the site a traffic controller is to be provided to manage any conflicts between pedestrians and heavy vehicles.	A traffic controller can be provided during days with particularly high construction traffic volumes. It is noted that the northern site access is located at the Old Wallgrove Road / Millner Avenue signalised intersection and that there is currently no footpath on the eastern side of Old Wallgrove Road to the north of the intersection. This CTMP is a live document and will be updated as necessary. Refer to Appendix D .
Access to the site should be at the farthest point from the intersection as practicable to reduce additional conflicting vehicle manoeuvres.	The main existing site access is located at the Old Wallgrove Road / Millner Avenue signalised intersection. Notwithstanding, another site access has been provided via Estate Road 1 which is the farthest practical point of access from the intersection. Refer to Section 3.1 .

Transport for New South Wales reserve the right to alter the CTMP Conditions at any time to maintain safe and efficient traffic and pedestrian movements in this area.	Noted.
Any approved Works Zone should only be used for work activities. No infrastructure, including bins, tanks or traffic control equipment should be left on the road when the works zone is not in use by a vehicle. All non-vehicular items must be contained with the work area and not on the carriageway. When a work zone is not in use, the area/lane must be opened up to allow for normal trafficable conditions	No work zones are currently proposed during construction activities, however there will be no bins, tanks or traffic control equipment on the public roads.
Should TfNSW Network and Asset Management, Network Operations, CJP Operations, Network and Safety or other TfNSW business area determine that that more information is to be provided for review and acceptance, including other TCS locations, this information must be submitted prior to the CTMP being implemented, or otherwise agreed upon.	Noted.
Any traffic control devices, including signage and line marking, should be installed by the proponent and must conform with Australian Standards 1742	Noted, refer to Appendix D .

1.5.2 Consultation with Fairfield City Council

TABLE 5: FAIRFIELD CITY COUNCIL COMMENTS

Comments	Response
The estate roads are to be designed to accommodate the swept paths for 30m B Double vehicle in the operational stage of the development. Turnaround (cul-de-sac) must be sufficient for a for 30m B Double vehicle to turn around (precinct 4). This is to ensure road safety of motorists and avoiding three-point turn movements.	Noted, however this refers to Operational Traffic. 30m B-Doubles are not proposed during construction. Refer to Section 2.1 .
Regulatory signage including No Stopping and No parking must be implemented at no cost to Council. This includes costs of installation, consultation, referral to Traffic and/or Services Committees for the public road.	Noted, this item has also been addressed as part of the Conditions of Consent.
Temporary sealed turnaround area (adjacent to Precinct 1) must be provided within Estate Road 01 unless this road is already constructed. If turnaround is expected to last more than 5 days, the turnaround area must be constructed as a permanent infrastructure including preparing designs addressing pavement, seal and turn swept paths design for the design vehicle.	Noted, Goodman will consider whether this is required during construction works.
Construction traffic management plan referred to as Operational Traffic Management Plan must be submitted to Council. The plan must address,	Noted, this item has also been addressed as part of the Conditions of Consent.

parking, access and turnaround area. Work must not commence prior to the approval of this plan.	
The pavement must be suitable for Higher Mass Loading (HML) and road widths must be designed to meet the AusRoad Guidelines. Any departures from the guidelines must be noted and explanation provided before the issue of Construction Certificate.	Noted, it is expected that design of the roads will be subject to the detailed design of a qualified Civil Engineer.
Issues raised in Council's memorandum dated 11 August 2023 must be addressed to the satisfaction of Council. Unless otherwise agreed, all conditions raised in the memorandum shall be complied with.	Goodman have since provided a response via the Response to Submissions.
Based on the number of vehicles that will use the state road per day, this Construction Traffic Management Plan shall be referred to Transport for NSW for review and comments. Issues raised by TfNSW shall be satisfactorily addressed, if any. The applicant shall provide details of the contact person who has been contacted regarding this CTMP.	Goodman have liaised with TfNSW and TfNSW have endorsed the plan. Refer to Appendix F .
The applicant shall ensure that the largest vehicle (19m articulated vehicle and/or truck and dog trailer) to be used during construction can satisfactorily traverse the entire construction vehicle route and can satisfactorily turn into and out of the site.	Noted, contractor to ensure adequate access to the site and circulation through the site. Construction vehicle access routes are shown in Figure 4 and Figure 5 .
The applicant needs to apply for a Road Occupancy Permit from Council's Assets team branch when occupying any part of public roads owned by Council.	Noted, refer to Section 3.2 .
Restricted access vehicles must not travel on local roads unless the applicant has obtained permits from National Heavy Vehicle Regulator (NHVR). Requests to use these vehicles on public road(s) must be submitted to the NHVR at least 28 days prior to the vehicles' scheduled travel dates. Information on restricted access vehicles can be found on the website at www.nhvr.gov.au .	Noted, Goodman will apply for permits if required.
The relocation of the existing bus stop shall be consulted with the affected stakeholders. Any issues raised by the affected businesses, TfNSW and bus company need to be satisfactorily addressed. Any changes to the existing parking restrictions on a local road require the applicant to apply to the Fairfield Traffic Committee for approval.	Noted, however relocation of bus stops is not proposed.
The applicant needs to provide a staging plan to show what works associated with the development proposal would be required to be undertaken at various stages of the construction works. This would help Council to determine if any relevant approvals (Section 138 Approval of the Roads Act 1993 and Traffic Committee) are required to be obtained. Also, staging plan needs to consider the legibility of the road network and access/turning areas provided function properly and have the correct capacity and connections when each stage is completed.	Noted, Goodman have provided the staging plan which has been reviewed by Fairfield City Council. Additionally, refer to Section 2.1 .

1.5.3 Consultation with WaterNSW

TABLE 6: WATERNSW COMMENTS

Comments	Response
WaterNSW affirm that no access to the WaterNSW pipelines corridor is allowed without written approval of WaterNSW	No access is currently proposed to the WaterNSW pipeline. Proposed construction vehicle access routes are shown in Figure 4 and Figure 5 .
It is acknowledged that the CTMP does not allow queuing to occur on the public road network (section 4.1.3). This is essential, as it will ensure that access the WaterNSW pipelines corridor from Old Wallgrove Road will not be impeded.	Noted, refer to Section 4.1.3 .

1.5.4 Stakeholder Notification

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

- If any future disruptions to roadways / footpaths are required, Council / TfNSW is to be notified first and depending on the extent of the disruption the contractor is to notify affected property occupiers using letter drops and Variable Message Sign (VMS).
- If any unforeseen disruptions to roadways / footpaths occur, Council / TfNSW is to be notified first and depending on the extent of the disruption the contractor is to notify affected property occupiers via traffic controllers and VMS.
- In the event that heavy vehicle damage to Council / TfNSW assets / infrastructure, contractors will notify Fairfield City Council's Traffic & Transport team and / or Assets Branch.

1.6 Site Location

At a regional level, the Site is located approximately 3 kilometres south of the nearest suburban area, Erskine Park, 16 kilometres west of Parramatta, and 35 kilometres west of the Sydney CBD. It is within the Local Government Area (LGA) of Fairfield City Council. OEE is located directly to the northeast of the future Old Wallgrove Road / Southern Link Road intersection with a total site area of 879,527 m².

1.7 Site Related Data

1.7.1 Road Details

The road hierarchy in the locality is presented in **Figure 2** and summarised below for key roads.

Old Wallgrove Road / Lenore Drive

Lenore Drive is a recently upgraded sub-arterial route providing an east-west connection linking Old Wallgrove Road (OWR) to the east and Erskine Park Road to the west. It provides four lanes (two in each

direction) within a divided carriageway with a shared path along the northern side of the road. It is subject to an 80 km/h speed zoning.

Millner Avenue

Millner Avenue is a public road and provides access to other industrial areas to the west of the OEE. It currently provides a connection between Old Wallgrove Road, Ottelia Road and Oakdale Close as well as the Future Southern Link Road (SLR). It has a signalised intersection where it intersects with Old Wallgrove Road and a roundabout where it intersects with Ottelia Road and Oakdale Close. It provides a single lane in each direction and is subject to a 50 km/h speed zoning.

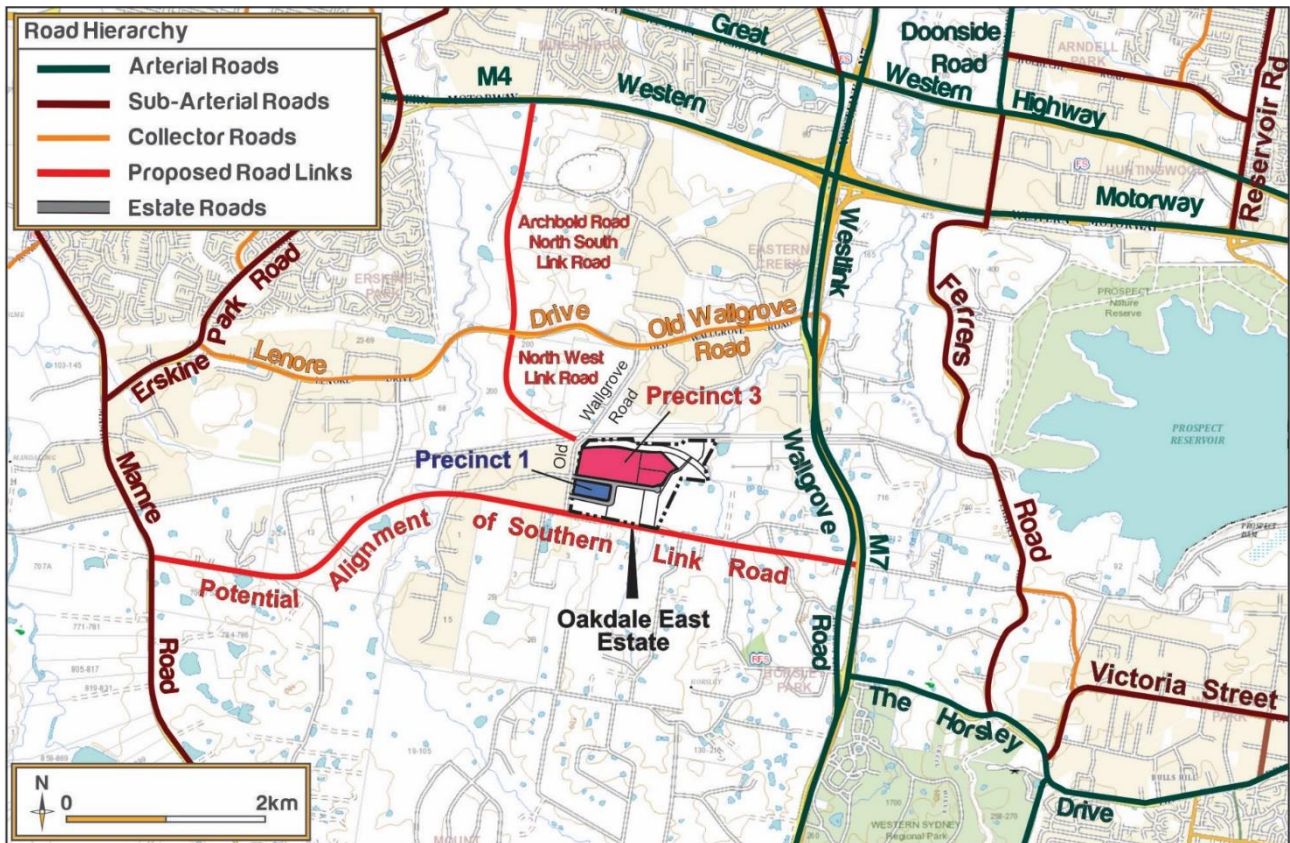


Figure 2: Road Hierarchy²

1.7.2 Crash History

A review of the TfNSW crash database has been undertaken to establish the crash history in the vicinity of the Site; the crash history for the 5-year period 2017 to 2021 (inclusive) is outlined below in **Table 7**. Of those crashes, the ones that occurred near the Site can be seen in **Figure 3**.

² <https://caportal.com.au/tfnsw/slr/>

TABLE 7: CRASH HISTORY

Year	Location	RUM Code	RUM Description	Injury/Death
2017	T-junction	21	Right through	Moderate Injury
2017	2-way undivided	45	Reversing	Non-casualty (towaway)
2019	Divided road	81	Off left / right turn bend => object	Fatal
2019	T-junction	21	Right through	Moderate Injury
2020	2-way undivided	88	Out of control on bend	Serious Injury

Source: TfNSW Crash Statistics Website

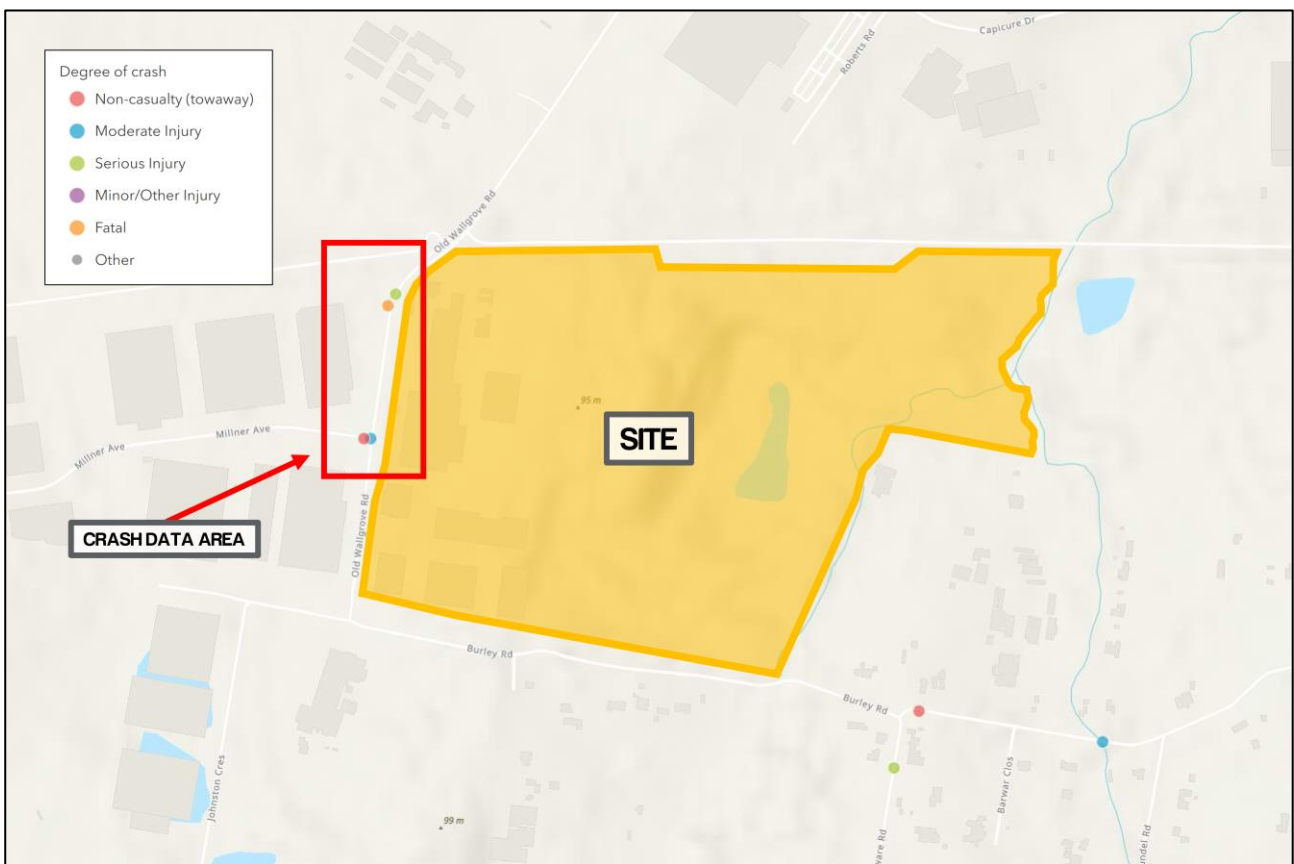


Figure 3: Crash Locations

The crash data shows that there were few incidents that occurred in the vicinity of the Site over a 5-year period, suggesting that there are no inherent safety issues at the Old Wallgrove Road / Millner Avenue intersection. Notwithstanding, a single fatal crash has previously occurred to the north of the Site, however it is suggested that this crash has no bearing on the Site access.

1.7.3 Vulnerable Road Users

Vulnerable road users (VRU) are road users not in a car, bus, or truck. In the event of a crash, VRUs have little to no protection from crash forces, therefore, need to be addressed within this CTMP. Provides context to VRUs surrounding the Site.

TABLE 8: PUBLIC AND ACTIVE TRANSPORT

Road Name	Pedestrian	Cycling	Public Transport
Old Wallgrove Road	Yes	Yes Shared pedestrian/bike path	No
Millner Avenue	Yes	No	No

1.8 Project Representatives and Stakeholders

Through the preparation of this CTMP, the project representatives and stakeholders for this project are as follows.

TABLE 9 PROJECT REPRESENTATIVES AND STAKEHOLDERS

Role	Name	Contact Details
Goodman Project Manager	Lachlan O'Reilly	Goodman Property Services (Aust) Pty Ltd
Superintendent	Edmund Tsang	Orion Consulting Engineers Pty Ltd
Site Manager	Bassel Assaf	Mulgoa Quarries Burtons Contractors JV
Contractor's Project Manager	David Claxton	Mulgoa Quarries Burtons Contractors JV
Contractor's WHS&E Advisor	Faten Samaan	Mulgoa Quarries Burtons Contractors JV
Environmental Consultant	Carl Vincent	ErSed Environmental Pty Ltd
Communications and Community Liaison Representative	Jessica Keegan	SLR Consulting Australia Pty Ltd
Principal Traffic Engineer	Ali Rasouli	Ason Group Pty Ltd
Senior Traffic Engineer	James Laidler	Ason Group Pty Ltd
Traffic Engineer	Jayden Lam	Ason Group Pty Ltd

2 Overview of Works

2.1 Works Stages

For the purposes of this CTMP, these works will utilise Lenore Drive and Old Wallgrove Road as well as the internal Estate Road 01 and Estate Road 02. The access and traffic management required is outlined later within this report. Recognising the purpose of this CTMP, it is estimated that the total duration of the construction works will be approximately 112 weeks from the commencement date. The following summarises key aspects of the construction stages:

An assessment of the traffic impacts has been provided within **Section 5** of this report, finding that the existing and proposed intersections will perform satisfactorily at all stages.

2.1.1 Infrastructure Works

TABLE 10: STAGE 1 – RETAINING WALL WORKS

Criteria	Response
Description of Key Activities	Construction of retaining walls across the entire estate
Stage Length	35 weeks (01/11/2024 – 01/07/2025)
Max. Vehicle Size	Truck and Dog Trailer (Special permits required for floating in oversize plant)
Vehicle Movement Frequency	Approximately 590 light vehicle movements / day + Approximately 920 heavy vehicle movements / day
Truck Access Requirements	Access shall be on Old Wallgrove Road
Vehicle access / egress in a forward direction (Y / N)	Y
Out of Hours Deliveries (Y/N)	N
Contractor Parking	Y A designated parking zone for site workers will be established on the site to limit on-street parking.
Pedestrian Control	Nil Required
Public Transport Services Affected	N
Road Occupancy Requirements (If yes, provide further details)	N
Lane or Footpath Closures (If yes, provide further details)	N
Traffic Guidance Scheme	Refer to Appendix D

TABLE 11: STAGE 2 – CONSTRUCTION OF INTERNAL ROAD 1 & 2 TO EDGE OF PRECINCT 3 & 4

Criteria	Response
Description of Key Activities	Construction of internal road 1, internal road 2, stormwater, pavement & utilities (up to Precinct 3).
Stage Length	35 weeks (01/11/2023 – 01/07/2024)
Max. Vehicle Size	Truck and Dog Trailer (Special permits required for floating in oversize plant)
Vehicle Movement Frequency	Approximately 590 light vehicle movements / day + Approximately 920 heavy vehicle movements / day
Truck Access Requirements	Access shall be on Old Wallgrove Road
Vehicle access / egress in a forward direction (Y / N)	Y
Out of Hours Deliveries (Y/N)	N
Contractor Parking	Y A designated parking zone for site workers will be established on the site to limit on-street parking.
Pedestrian Control	Nil Required
Public Transport Services Affected	N
Road Occupancy Requirements (If yes, provide further details)	N
Lane or Footpath Closures (If yes, provide further details)	N
Traffic Guidance Scheme	Refer to Appendix D

TABLE 12: STAGE 3 – CONSTRUCTION OF INTERNAL ROAD 2 FROM EDGE OF PRECINCT 3 & 4 TO PRIVATE ACCESS ROAD ADJACENT TO PRECINCT 4

Criteria	Response
Description of Key Activities	Construction of internal road 1, internal road 2, stormwater, pavement & utilities (from Precinct 3 to Precinct 5).
Stage Length	40 weeks (01/07/2024 – 01/04/2025)
Max. Vehicle Size	Truck and Dog Trailer (Special permits required for floating in oversize plant)
Vehicle Movement Frequency	Approximately 570 light vehicle movements / day + Approximately 920 heavy vehicle movements / day
Truck Access Requirements	Access shall be on Old Wallgrove Road
Vehicle access / egress in a forward direction (Y / N)	Y
Out of Hours Deliveries (Y/N)	N
Contractor Parking	Y A designated parking zone for site workers will be established on the site to limit on-street parking.
Pedestrian Control	Nil Required
Public Transport Services Affected	N
Road Occupancy Requirements (If yes, provide further details)	N
Lane or Footpath Closures (If yes, provide further details)	N
Traffic Guidance Scheme	Refer to Appendix D

TABLE 13: STAGE 4 – MILNER AVENUE/OLD WALLGROVE ROAD INTERSECTION

Criteria	Response
Description of Key Activities	Millner Ave/Old Wallgrove Rd intersection upgrades
Stage Length	9 weeks (01/08/2024 – 01/10/2024)
Max. Vehicle Size	Truck and Dog Trailer (Special permits required for floating in oversize plant)
Vehicle Movement Frequency	Approximately 570 light vehicle movements / day + Approximately 640 heavy vehicle movements / day
Truck Access Requirements	Access shall be on Old Wallgrove Road
Vehicle access / egress in a forward direction (Y / N)	Y
Out of Hours Deliveries (Y/N)	N
Contractor Parking	Y A designated parking zone for site workers will be established on the site to limit on-street parking.
Pedestrian Control	A combination of chain wire boundary fencing and type A hoarding will be used along the Old Wallgrove Rd (southbound) footpath.
Public Transport Services Affected	N
Road Occupancy Requirements (If yes, provide further details)	Y Details: Old Wallgrove Rd/Millner Ave Intersection Southbound Lane Closure (1-2 lanes), 150m length of Old Wallgrove Rd. Duration: 1-2 months. Time (typically): 9:30AM - 3PM or 8PM - 5AM
Lane or Footpath Closures (If yes, provide further details)	Y Details: Footpath works at intersection of Road 1 and Old Wallgrove Rd, 5-day duration.
Traffic Guidance Scheme	Refer to Appendix D

TABLE 14: STAGE 5 – LENORE DRIVE/OLD WALLGROVE ROAD INTERSECTION

Criteria	Response
Description of Key Activities	Lenore Drive/Old Wallgrove Rd intersection upgrades
Stage Length	18 weeks (01/10/2024 – 01/02/2025)
Max. Vehicle Size	Truck and Dog Trailer (Special permits required for floating in oversize plant)
Vehicle Movement Frequency	Approximately 570 light vehicle movements / day + Approximately 550 heavy vehicle movements / day
Truck Access Requirements	Access shall be on Old Wallgrove Road
Vehicle access / egress in a forward direction (Y / N)	Y
Out of Hours Deliveries (Y/N)	N
Contractor Parking	Y A designated parking zone for site workers will be established on the site to limit on-street parking.
Pedestrian Control	A combination of chain wire boundary fencing and type A hoarding will be used along the Old Wallgrove Rd (northbound) footpath.
Public Transport Services Affected	N
Road Occupancy Requirements (If yes, provide further details)	Y Details: 150m of Old Wallgrove Rd (North/South-bound). Time: (Typically) 9:30AM - 3:00PM or 8PM - 5AM.
Lane or Footpath Closures (If yes, provide further details)	Y Details: Footpath works at northbound lane of Old Wallgrove Rd, 5-day duration
Traffic Guidance Scheme	Refer to Appendix D

TABLE 15: STAGE 1 – PRECINCT 1 & 3 SITE ESTABLISHMENT AND DETAIL EARTHWORKS

Criteria	Response
Description of Key Activities	Site establishment, temporary driveways, sediment and erosion control and adjustments, bulk cut and fill, detail excavation.
Stage Length	13 weeks (01/07/2024 – 30/09/2024)
Max. Vehicle Size	Truck and Dogs (Special permits required for floating in oversize plant)
Vehicle Movement Frequency	Approximately 80 light vehicle movements / day + Approximately 280 heavy vehicle movements / day
Truck Access Requirements	Access shall be on Old Wallgrove Road
Vehicle access / egress in a forward direction (Y / N)	Y
Out of Hours Deliveries (Y/N)	N
Contractor Parking	Y A designated parking zone for site workers will be established on the site to limit on-street parking.
Pedestrian Control	Chain wire fencing at boundary.
Public Transport Services Affected	N
Road Occupancy Requirements (If yes, provide further details)	N
Lane or Footpath Closures (If yes, provide further details)	Y Details: Temporary crossover for the site entry and exit.
Traffic Guidance Scheme	Refer to Appendix D

TABLE 16: STAGE 2 – PRECINCT 1 & 3 STRUCTURAL STEEL, ROOFING & CLADDING

Criteria	Response
Description of Key Activities	Structural steel, precast erection, roofing, metal wall cladding.
Stage Length	22 weeks (30/09/2024 – 28/02/2025)
Max. Vehicle Size	Truck and Dogs (Special permits required for oversize roof sheets)
Vehicle Movement Frequency	Approximately 400 light vehicle movements / day + Approximately 160 heavy vehicle movements / day
Truck Access Requirements	Access shall be on Old Wallgrove Road
Vehicle access / egress in a forward direction (Y / N)	Y
Out of Hours Deliveries (Y/N)	N
Contractor Parking	Y A designated parking zone for site workers will be established on the site to limit on-street parking.
Pedestrian Control	Chain wire fencing at boundary.
Public Transport Services Affected	N
Road Occupancy Requirements (If yes, provide further details)	N
Lane or Footpath Closures (If yes, provide further details)	Y Details: Temporary crossover for the site entry and exit.
Traffic Guidance Scheme	Refer to Appendix D

TABLE 17: STAGE 3 – PRECINCT 1 & 3 INTERNAL & EXTERNAL SLABS

Criteria	Response
Description of Key Activities	Warehouse slabs FRP, External hardstand stand FRP.
Stage Length	18 weeks (31/01/2025 – 31/05/2025)
Max. Vehicle Size	Truck and Dogs (Special permits required for oversize roof sheets)
Vehicle Movement Frequency	Approximately 450 light vehicle movements / day + Approximately 160 heavy vehicle movements / day
Truck Access Requirements	Access shall be on Old Wallgrove Road
Vehicle access / egress in a forward direction (Y / N)	Y
Out of Hours Deliveries (Y/N)	N
Contractor Parking	Y A designated parking zone for site workers will be established on the site to limit on-street parking.
Pedestrian Control	Chain wire fencing at boundary.
Public Transport Services Affected	N
Road Occupancy Requirements (If yes, provide further details)	Y Details: Temporary road occupancy for sewer extension. Maximum duration 2 weeks on Roussell Rd.
Lane or Footpath Closures (If yes, provide further details)	Y Details: Temporary crossover for the site entry and exit.
Traffic Guidance Scheme	Refer to Appendix D

TABLE 18: STAGE 4 – PRECINCT 1 AND 3 FITOUT OF SERVICES, FICTURE, LANDSCAPING AND COMPLETION WORKS

Criteria	Response
Description of Key Activities	Warehouse and office service fit out, metal works, internal office fit out, fencing and landscaping.
Stage Length	31 weeks (31/05/2025 – 31/12/2025)
Max. Vehicle Size	Truck and Dogs
Vehicle Movement Frequency	Approximately 450 light vehicle movements / day + Approximately 74 heavy vehicle movements / day
Truck Access Requirements	Access shall be on Old Wallgrove Road
Vehicle access / egress in a forward direction (Y / N)	Y
Out of Hours Deliveries (Y/N)	N
Contractor Parking	Y A designated parking zone for site workers will be established on the site to limit on-street parking.
Pedestrian Control	Chain wire fencing at boundary.
Public Transport Services Affected	N
Road Occupancy Requirements (If yes, provide further details)	N
Lane or Footpath Closures (If yes, provide further details)	Y Details: Temporary crossover for the site entry and exit.
Traffic Guidance Scheme	Refer to Appendix D

2.2 Hours of Work

It is expected that the permitted hours of work would be as follows:

TABLE 19: HOURS OF WORK

Activity	Day	Time
Construction works	Monday – Friday	7 am to 6 pm
	Saturday	8 am to 1 pm

No work Sundays or Public Holidays.

It is anticipated that construction works will not be conducted outside of the hours outlined above. Should out of work hours be required, Goodman will lodge an application for an Out of Work Hours Permit with DPE to seek approval for these works. The type of works that might be undertaken outside the recommended standard hours are:

- The delivery of oversized plant or structures that police or other authorities determine require special arrangements to transport along public roads,
- Emergency work to avoid the loss of life or damage to property, or to prevent environmental harm,
- Maintenance and repair of public infrastructure where disruption to essential services and/or considerations of worker safety do not allow work within standard hours (community agreement with the affected receivers should be obtained),
- Public infrastructure works that shorten the length of the project and are supported by the affected community (community agreement with the affected receivers should be obtained),
- Works where a proponent demonstrates and justifies a need to operate outside the recommended standard hours.

2.3 Access Arrangements

Emergency vehicle access to and from the Site will be available at all times while the site is occupied by construction activities. This process would be implemented through emergency protocols on the site which will be developed by the Contractor and shall be documented within the Contractor's Construction Management Plan.

Further, it is noted that the delivery of any oversized plant or structure that require special arrangements to transport along public roads will require approval from the National Heavy Vehicle Regulator (NHVR) and Council.

This is discussed in further detail below. All heavy vehicles are to access the site from the North via Old Wallgrove Road.

2.4 Temporary Traffic Management Method

Traffic management shall be undertaken in accordance with the methodology outlined within the TGS, **Table 20** and attached within Appendix D. All road users are expected to be directed around the worksite in order to physically separate the road user from any hazards within the worksite.

TABLE 20: ACCESS PROTOCOLS & METHODOLOGY

Procedure	Responsibility	Notes
<pre> graph TD A[Access to the Site] --> B{Is the Vehicle Entering} B -- YES --> C[Discuss & Understand Call-up Protocol] B -- NO --> D{Is the Vehicle Exiting} D -- YES --> E[Discuss & Understand Call-up Protocol] D -- NO --> F[END] </pre>	<p>Site Manager / Foreman / Traffic Controller</p>	<p>ENTRY PROTOCOL: Via UHF radio, channel agreed at pre-start</p> <ol style="list-style-type: none"> 1. Vehicle to advise gate controller when 200m from gate via UHF — vehicle to ensure flashing lights are on 2. Vehicle advises of metres from gate in 50m lots (i.e., 1 50 m from gate 100m from gate). 3. Gate Controller advises safe to enter, vehicle enters site and decelerates behind barriers 4. If not safe to enter, vehicle is to continue driving and not stop / queue on the public roadway 5. Vehicle uses road network to return and make another attempt at entering site
	<p>Site Manager / Foreman / Traffic Controller</p>	<p>EXIT PROTOCOL: Via UHF radio, channel agreed at pre-start</p> <ol style="list-style-type: none"> 1. Vehicle driver to radio Gate Controller to ensure exit is possible – vehicle to ensure flashing lights are on 2. If no issues driver to accelerate to exit gate and merge with traffic. 3. If driver cannot exit, Gate Controller to order vehicle to hold until gate is clear. <p>Gate Controller is not to stop traffic on the public road network</p>

2.5 Risk Assessment

A risk assessment is aimed to identify the hazards and risks associated with the works. The purpose of this risk assessment is to determine the controls required for the protection of the road workers and road users. A risk assessment has been completed and is attached in **Appendix A**.

3 Existing Conditions

3.1 Site Access

Access to the site shall be available on Old Wallgrove Road in a left-in/right-out arrangement as shown in **Figure 4**. Additionally, an alternative access arrangement during the Stage 4 – Milner Ave/Old Wallgrove Road Intersection works outlined in **Section 2.1.1** is shown in **Figure 5**. Access to each precinct shall be provided via the future Estate Road 1 and Estate Road 2.

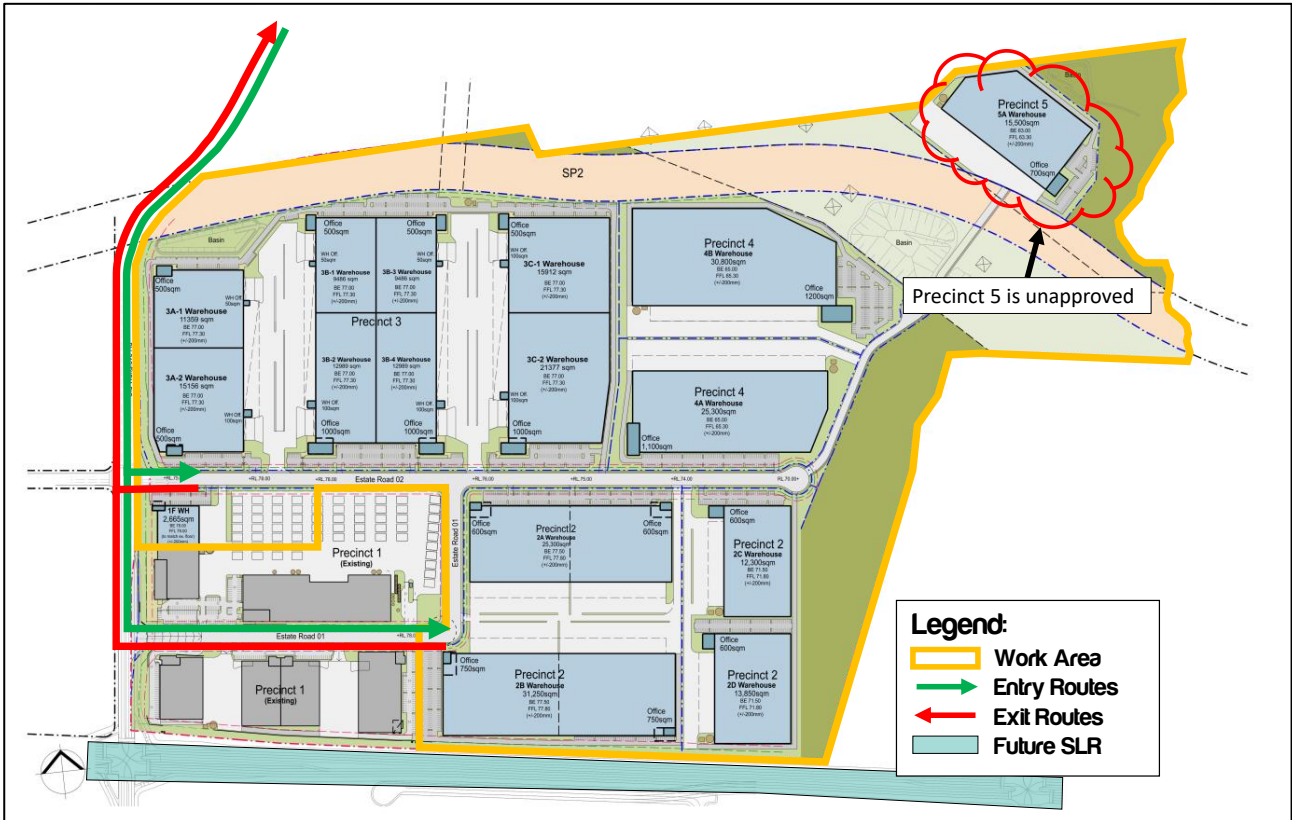


Figure 4: Access Arrangements (Internal Works Only)

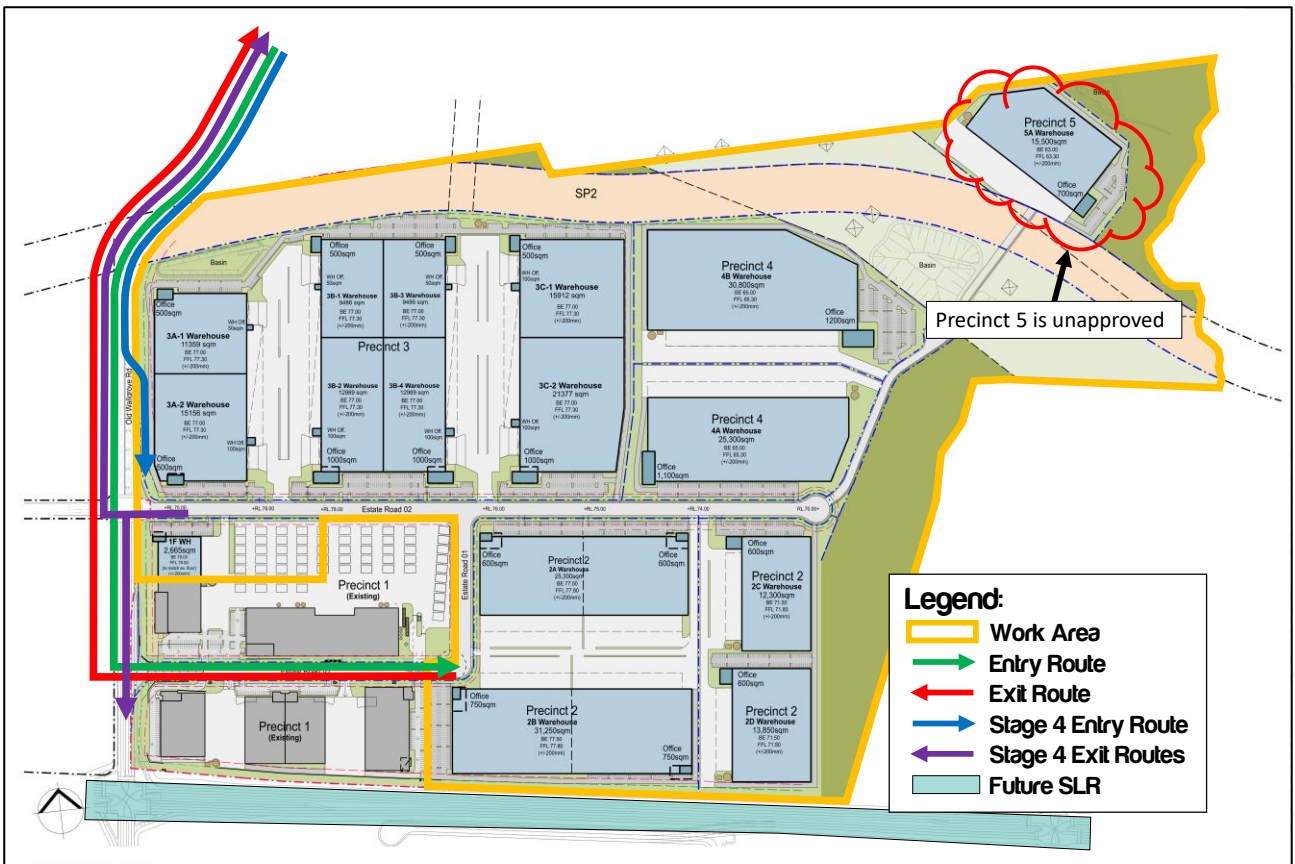


Figure 5: Access Arrangements (During Stage 4 – Milner Ave/Old Wallgrove Road Intersection)

3.2 Works Zone

A Road Occupancy Permit (ROP) from Fairfield City Council will be required during the works undertaken on Old Wallgrove Road. It is the responsibility of the contractor to obtain the ROP.

4 Management Plan

4.1 Traffic Movements

4.1.1 Background

The previously submitted technical note (Ason Group Ref: P1546tn01v04) in support of the development, outlined the following relevant figures with regards to future operational traffic volumes associated with the Site:

- AM Peak 601 movements per hour (movements, in & out combined)
- PM Peak 534 movements per hour (movements, in & out combined)
- Daily Total 8,110 daily movements (movements, in & out combined)

Note: 1 vehicle equals 1 inbound movement plus 1 outbound movement, equalling 2 movements.

4.1.2 Current Construction Traffic Estimates

It is noted that the proposed Old Wallgrove Road / Millner Avenue and Old Wallgrove Road / Lenore Drive intersection upgrades are expected to be completed partway through the Oakdale East Estate Construction works. As such, the construction traffic estimates are to be considered across 2 phases, before the intersection upgrades and after the intersection upgrades.

The anticipated vehicle movements generated by the construction of the Site have been estimated having consideration of the likely requirements for construction staff, plant, equipment, and haulage. The anticipated construction schedule has been provided by the contractor, with the estimated traffic volumes as follows:

- Phase 1: Oakdale East Estate Construction Works – Pre-intersection Upgrades.
 - Up to 545 movements in the AM Peak
 - Up to 330 movements in the PM Peak
 - Up to 4,680 movements per day
- Phase 2: Oakdale East Estate Construction Works – Post-intersection Upgrades.
 - Up to 490 movements in the AM Peak
 - Up to 330 movements in the PM Peak
 - Up to 4,170 movements per day

Note: AM peak time is between 7:30 AM – 8:30 AM and PM peak time is between 3:00 PM – 4:00 PM

For reference, a construction vehicle would relate to all contracted parties involved in day-to-day construction activities on site. This would include.

- All Vehicles making material deliveries to and from the Site.
- All Contractors and their sub-contractor's construction site vehicles
- All construction staff working on the projects arriving / departing the Site in private cars.

In turn, the following are exempt from the requirements of the CTMP (as they are not part of construction works within the Site).

- All Goodman staff and their design / management consultants
- Food vans / food deliveries by non-contracted parties
- Relevant Authorities / Agencies (including DPE or Fairfield City Council/, and other stakeholders including Endeavour Energy, TransGrid, Sydney Water, NBN or others who have assets on the site)
- Members of the public who may drive in ad hoc.

4.1.3 Truck Movements & Contractor Parking

The construction access is from Old Wallgrove Road. Relevant truck routes are outlined in **Figure 4**. The implementation of the access route shall be done so in accordance with any and all conditions of consent received from Council and/or TfNSW.

It is expected that a schedule for deliveries of materials and goods will be established prior to that day, with Traffic Controllers maintaining radio contact with construction vehicles at all times. Thus, at no stage shall queueing occur on the public road network. In the event that vehicles were required to use a layover prior to arrival to site, it is expected that the vehicles shall laydown within Millner Avenue before arriving to site in order to avoid any on-street queueing.

It is expected that future contractors shall prepare Vehicle Movement Plans (VMP) for on-site circulation for key stages generating more than 150 truck movements (75 in, 75 out) per day.

In preparing relevant VMPs, the contractor should:

- Minimise interaction with other work areas, as far as possible.
- Where possible, separate truck movements from contractor car parking areas
- Prepare Traffic Control Plans where necessary to provide additional management of on-site vehicle movements.

It should be noted that TfNSW is yet to complete detailed design of the SLR. As such, it is unlikely that SLR works will commence during the timeframes envisaged by this CTMP. Nevertheless, regular engagement with TfNSW should be undertaken to coordinate any final design and/or construction access requirements.

4.2 Other General Requirements

4.2.1 Driver Code of Conduct

All drivers shall adhere to the Driver Code of Conduct, outlined in **Appendix E**.

4.2.2 Worker Induction

All workers and subcontractors engaged on-site would be required to complete a site induction. The induction will include permitted access routes to and from the construction site for all vehicles, as well as standard environmental, work, health and safety (WHS), driver protocols and emergency procedures.

Any workers required to undertake works or traffic control within the public domain must be suitably trained and covered by adequate and appropriate insurances.

4.2.3 Contractor Parking

Contractors shall nominate the parking zones without obstructing any vehicle manoeuvre routes. The location of Contractor parking areas is expected to change as construction continues and encompasses various portions of the Site.

4.2.4 Access Road Management

Vehicles shall be tracked upon entry and exit of the Site's access to ensure that vehicles are abiding by both the timed restrictions and construction volume constraints.

4.2.5 Loading & Materials Handling

Handling of all materials throughout the construction shall adhere to the following.

- It is proposed that all material loading and unloading will occur within the construction site boundary.
- No loading is proposed to occur outside of the provisioned areas.
- Equipment, materials, and waste will be kept within the construction site boundary.

All materials handling shall be undertaken off the public roadway, however in the event materials handling are required from the roadway, then prior approval shall be sought and obtained from the relevant Authorities. Estate Roads that are in private ownership would require consent of the Estate Management and be subject to special management.

4.2.6 Work Zone Requirements

Any on-street works proposed by the Contractor such as hydrant fill points would be subject to approval by Council prior to any filling.

A separate application would therefore be submitted to Council in the event that any special or discreet work activities are undertaken that will require the use of kerbside parking for the purposes of a Works Zone.

4.2.7 Fencing Requirements

Temporary exclusion fencing will be erected along the entire boundary of the site and will be maintained for the duration of the construction program. The fencing is to ensure unauthorised persons are kept out of the Site. Site access gates would be provided within Old Wallgrove Road and Estate Road 01. They are to be closed at all times outside of the permitted construction hours.

Careful consideration for pedestrian protection shall be included within relevant TGS's, as outlined below.

4.2.8 Pedestrian and Cyclist Management

Chain mesh construction fencing shall be provided along all site frontages accessible by the public to prevent unwanted pedestrian and/or cyclist access.

Pedestrians and cyclists using the footpath fronting the Site will be halted by an accredited Traffic Controller while construction vehicles are entering or exiting the Site. An expandable barrier (pedestrian boom gate or equivalent) would be installed on both sides of the driveway, to be operated when construction vehicles are on approach / ready to depart from the Site. Once the construction vehicles are clear from the footpath, the Traffic Controller can allow the pedestrians and cyclists to continue along their journey. One traffic controller will be allocated to each pedestrian barrier, which will remain closed when not in use and shall only be opened when required.

The Contractor shall make clear to Traffic Controllers that pedestrians have right of way and, as far as reasonable (mostly associated with exit vehicle movements). During peak times, only one truck is to ingress/egress the Site per footpath closure (holding of pedestrians and/or cyclists), and all queued pedestrian and/or cyclists must be cleared before another vehicle may have access to/from the Site.

Traffic Controllers are required to maintain radio communication with construction vehicle drivers at all times.

4.2.9 Engineering Construction Specifications

Any Signage and/or line marking to be installed as a result of these construction works shall be installed as per Council's Engineering Construction Specification for Civil Works document (October 2017).

4.2.10 Traffic Guidance Scheme's

Any Traffic Guidance Schemes (TGSs) shall be prepared and updated by an accredited person who holds a "Prepare a Work Zone Traffic Management Plan" card, in accordance with the TfNSW Traffic Control at Worksites Manual (Issue 6.1) and AS1742.3:2019.

All TGSs involving signage or impacts to public roads shall be approved by the Traffic Management Centre (TMC), prior to the works for which they relate. These TGSs shall be updated to respond to any changes to prevailing traffic conditions throughout the life of the works.

Further, temporary traffic control measures on public road/road related area under the care and control of Fairfield City Council will require obtaining Road Occupancy Permit (ROP) from the Council. Any excavation and/or road opening works on public road/road related area will require obtaining a Road Opening Permit from Council.

5 Transport Impact Assessment

5.1 Construction Traffic Generation

As mentioned above, the construction works are expected to generate up to 4,680 vehicle movements per day, which is noted to be substantially less than the approved future operational traffic volumes outlined in **Section 1.3**. Vehicle movements will be spread generally throughout the day; however, the majority of works will typically generate peak hourly traffic before and after the 'network peak' periods (as outlined within **Section 4.1.1**).

Following the above, it is expected that stages are to overlap and will therefore increase the demand during each month. The below figure outlines the cumulative daily total for each month of the construction period.

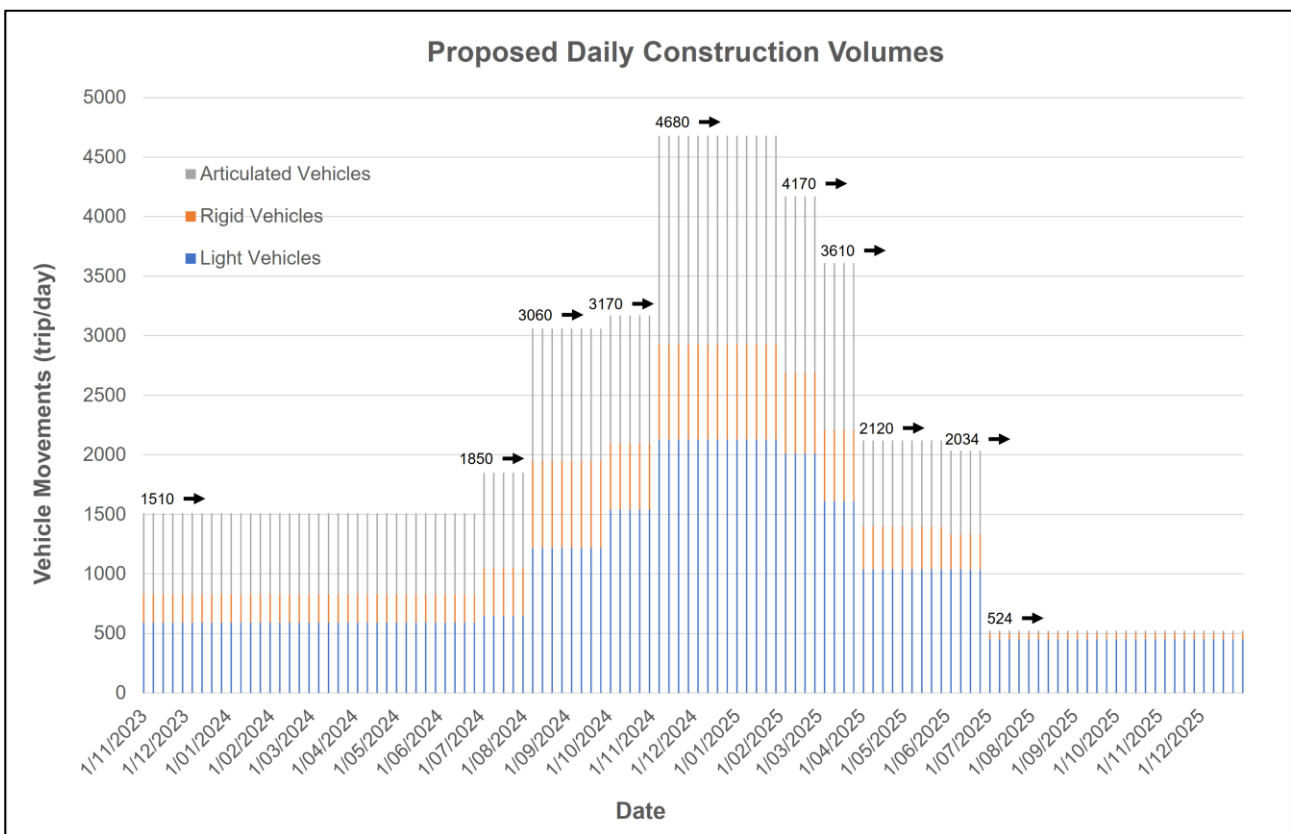


Figure 6: Construction Vehicle Volumes

5.2 Impacts on Surrounding Network

In general, the impacts of construction traffic and the mitigating measures to be implemented are outlined below.

- **Construction Traffic Along Old Wallgrove Road:** Construction traffic is substantially less than the approved future operational traffic volumes and will therefore not create any unacceptable impacts on the future road network.
- **Safety During Construction:** Safety to motorists and pedestrians throughout the area will be maintained during construction through the preparation and execution of Traffic Guidance Schemes

Plans (TGS's). A range of TGS's will be prepared for each access throughout construction, to identify all reasonably foreseeable hazards, assess the hazards, and manage the hazards as best as possible by either eliminating or minimising the risks. TGS's shall be monitored and updated accordingly throughout the project.

- **Reporting:** Reporting and monitoring of movements is to be undertaken to ensure that drivers are adhering to approved construction hours, and to ensure that the approved traffic generation, and subsequent impacts on the road network, are in line with those approved.

Notwithstanding, as previously mentioned the proposed intersection upgrades are to be completed partway through the Oakdale East Estate Construction works. The anticipated dates of completion are as follows:

- Old Wallgrove Road / Millner Avenue intersection: 1 December 2024
- Old Wallgrove Road / Lenore Drive intersection: 31 January 2025

As such, consideration should be made for the impacts of construction traffic on the existing road network, prior to the completion of all intersection upgrades on 31 January 2025. In this regard, SIDRA intersection modelling has been conducted under the existing network scenario.

For the purpose of this assessment, the representative SIDRA layouts of existing intersections are shown in **Figure 7** and **Figure 8**.

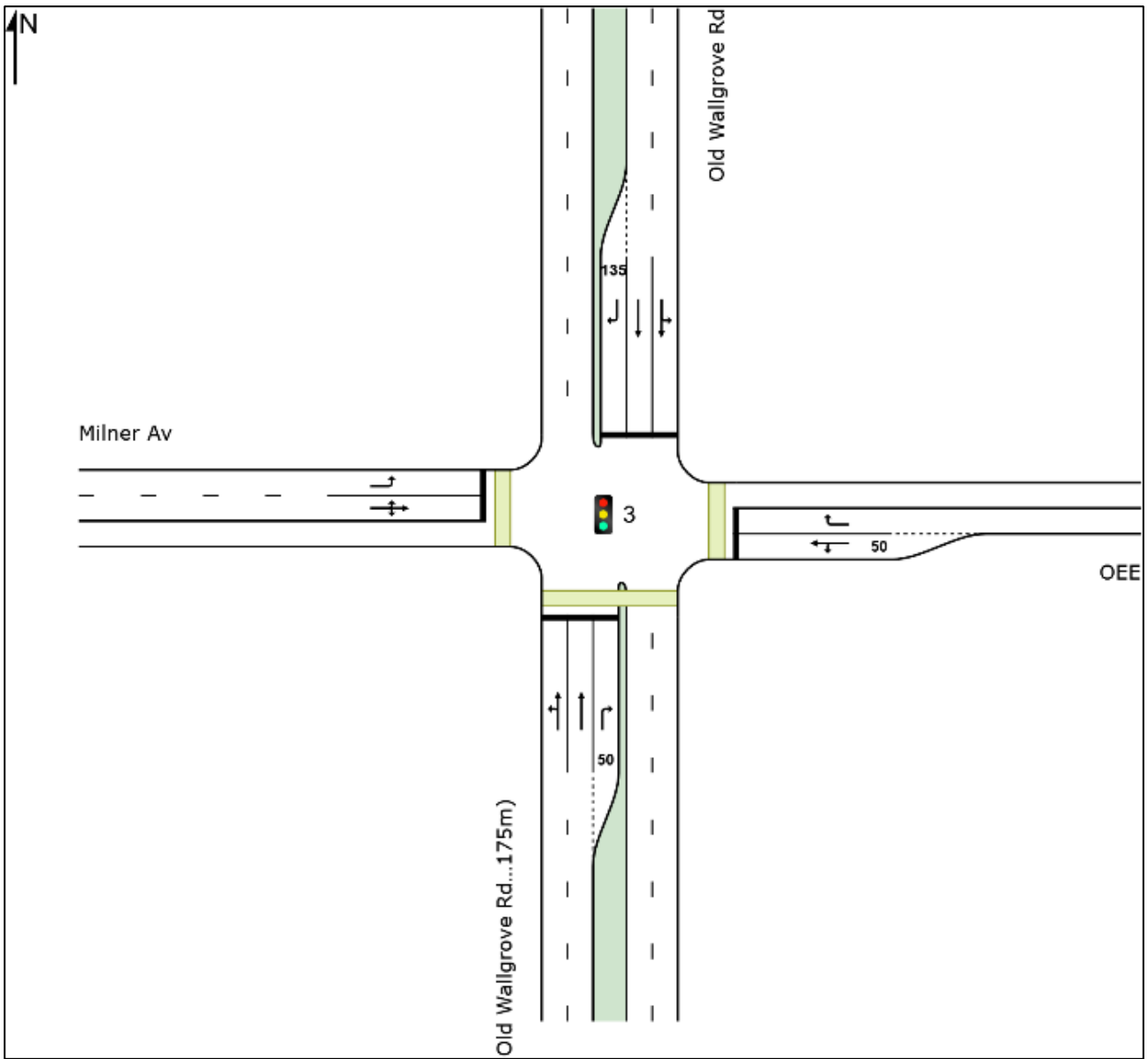


Figure 7: Old Wallgrove Road / Millner Avenue Intersection Layout

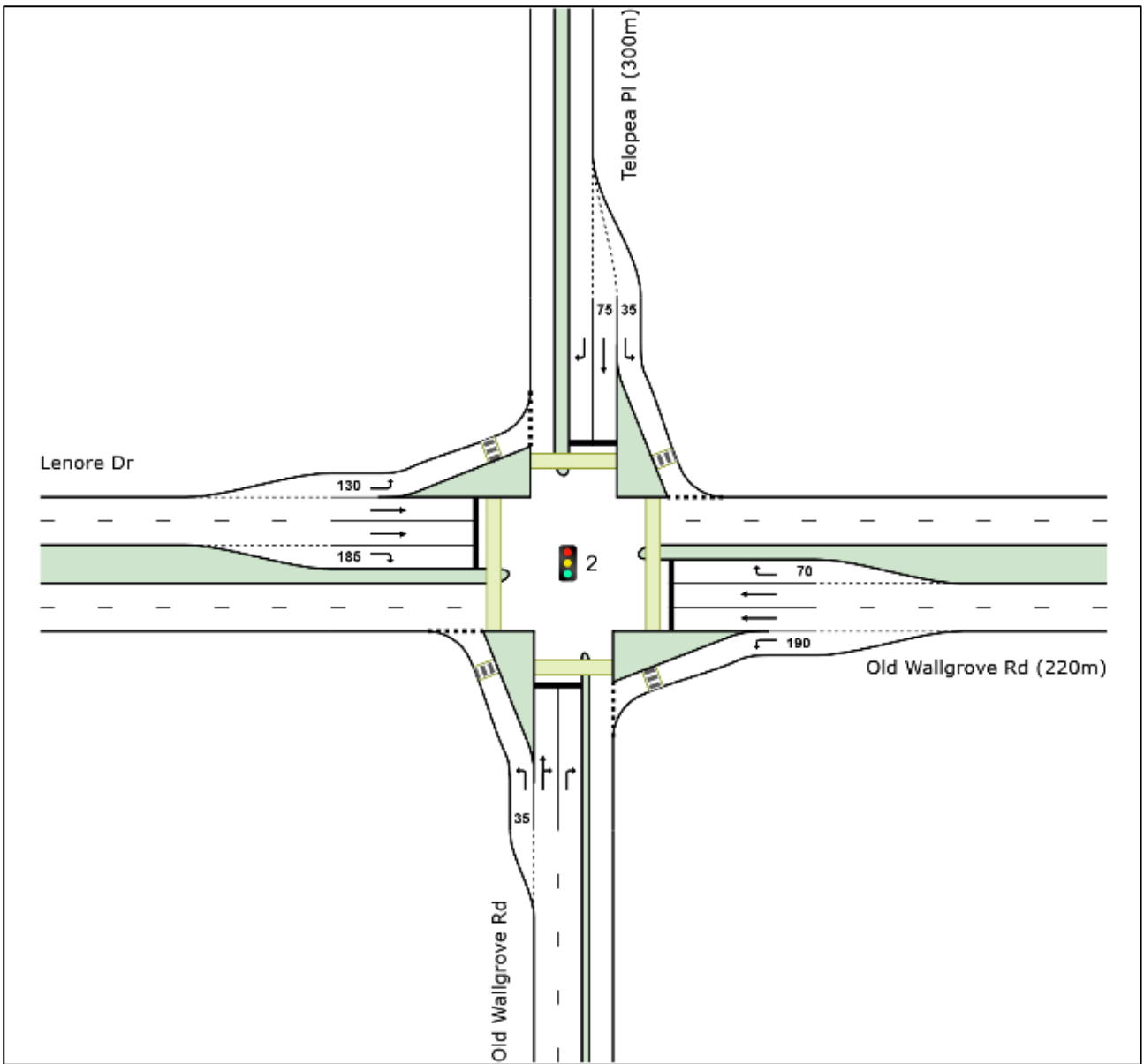


Figure 8: Old Wallgrove Road / Lenore Drive Intersection Layout

As previously mentioned, the maximum daily construction vehicle generation is up to 4,680 vehicle movements per day. As such, the trip generation for this stage of construction during the AM and PM network peak periods have been summarised in **Table 21**.

TABLE 21: CONSTRUCTION TRAFFIC GENERATION

Vehicle Type	AM Network Peak		PM Network Peak	
	In	Out	In	Out
LV	275	30	30	80
HV	120	120	110	110
Total	395	150	140	190

In summary, based on the traffic numbers currently envisaged, the traffic impacts are considered acceptable.

Additionally, it is noted that the existing Precinct 1 is currently operational and was proposed with the following trip generation during the AM and PM network peak periods:

- AM Network Peak:
 - LV: 58 vehicles per hour
 - HV: 12 vehicles per hour
 - Assumed 80% inbound / 20% outbound
- PM Network Peak:
 - LV: 52 vehicles per hour
 - HV: 10 vehicles per hour
 - Assumed 20% inbound / 80% outbound

The performance of the key intersections for the peak scenario, prior to the intersection upgrades is presented in **Table 22**. For more information on the intersection performance, the SIDRA movement summaries can be found in **Appendix C**.

TABLE 22: PRE-UPGRADE INTERSECTION PERFORMANCE				
Intersection	Peak Period	AVD (s)	LOS	DOS
Old Wallgrove Road / Millner Avenue	AM	35.6	LOS C	0.699
	PM	40.8	LOS C	0.753
Old Wallgrove Road / Lenore Drive	AM	30.2	LOS C	0.807
	PM	35.4	LOS C	0.781

Based on the above, all intersections fulfill the Level of Service and Degree of Saturation performance criteria., which suggests that the cumulative construction shall not create any unacceptable traffic impacts to the road network. As such, the existing infrastructure designed and constructed is sufficient to cater for the proposed traffic volumes.

6 Monitoring and Review

6.1 Monitoring Program

This CTMP shall be subject to ongoing review and will be updated accordingly. Regular reviews will be undertaken by the contractor. As a minimum, review of the CTMP shall occur monthly. All and any reviews undertaken should be documented, however key considerations regarding the review of the CTMP shall be:

- Tracking deliveries against the volumes outlined within report. Deliveries will be tracked against approved volumes and will keep a vehicle log - including rego & time of entry - for the purpose of assessing the effectiveness of these monitoring programs.
- Reporting and monitoring of movements to ensure drivers are adhering to the approved construction hours, and to ensure that the approved traffic generation, and subsequent impacts on the road network, are in line with those approved. This should be undertaken fortnightly during construction.
- To identify any shortfalls and develop an updated action plan to address issues that may arise during construction (Parking and access issues)
- To ensure TGSs are updated (if necessary) by “Prepare a Work Zone Traffic Management Plan” card holders to ensure they remain consistent with the set-up on-site.
- Regular checks undertaken to ensure all loads are entering and leaving site covered as outlined within this CTMP.
- A Dilapidation report shall be undertaken every periodically (once a month) to assess the condition of the road and note whether there has been any reduction in quality of the road as result of construction vehicles.

As such the table below provides triggers to monitor and review this CTMP.

TABLE 23: MONITORING & REVIEWS OF CTMP

Type of Review	Frequency	Considerations
Scheduled	The scheduled CTMP review must be undertaken monthly or as per Condition C8 / as specified otherwise	<p>The scheduled CTMP review must consider the following:</p> <ul style="list-style-type: none"> • CTMP and TGS are approved; • Identify required variations to the TGS, and ensure that they are updated, recorded, and approved; • Review any departures or variations of the CTMP and/or TGS to ensure they have been documented and approved; • Speed control effectiveness; and • Construction vehicle entry/egress suitability, with no queuing on the public road network at any time. • Construction vehicle daily / peak hour movements are compliant with approved volumes, with monthly reviews of the contractor’s daily logbook of vehicles required. • Periodic checks to ensure that heavy vehicles are using the correct access route. • Periodic checks of noise generating items to ensure they are less than the prescribed 45 dBA.
Change Generated Review	The change generated review must be undertaken when implementing new traffic stages, switches, or other construction-based activities.	<p>The change generated CTMP review must consider the following:</p> <ul style="list-style-type: none"> • The work site is operating safely; • Delineation is effective with appropriate signage installed for changed conditions; • Safe passage is provided for all road users; • Road Safety Audits are arranged or confirmed as required • Accountability for approval and inspection is well understood and documented
Non-Compliance, Post Incident or Near Miss Review	The Non-Compliance, post-incident or near miss review must be undertaken following an incident or near miss.	<p>Any non-compliance must be reported to immediately to the supervisor. A non-compliance is anything other than ‘Condition Green’ as outlined within Table 25.</p> <p>All workplace incidents must be reported immediately to the supervisor, who is to determine responsibility for investigating the incident. The incident and investigation must also be recorded in the incident reporting system of Transport</p> <p>The post incident or near miss CTMP review must consider:</p> <ul style="list-style-type: none"> • Causal factors; • Contributory factors or changes required; and • Identified changes to TGS are completed, approved, recorded, and communicated. For any incidents or near miss (where required) a safety alert must also be prepared and distributed by the Transport project manager to share learnings with other work sites.

This monitoring process is expected to form part of the monitoring plan required to be included as part of the overarching CEMP of which this CTMP forms a part. The roadway (including footpath) must be kept in a serviceable condition for the duration of construction. At the direction of Council, undertake remedial treatments such as patching at no cost to Council.

6.2 Work Site Inspections, Recording and Reporting

Recording and reporting of the monitoring programs shall be done in accordance with Section E.3, E.4 and E.5 of the TCAWs Manual. As such, the structure, schedule, and frequency of these activities have been considered and identified.

To inspect, review and audit the temporary traffic management (TTM) arrangements implemented on site, the following actions are to be undertaken by suitably qualified personnel in accordance with TCAWS 6.1 requirement during all phases of construction, being:

TABLE 24: EXAMPLE REVIEW OF ACTIVITIES

Activity			Frequency or Details
Shift Inspections	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Regular Inspections	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
TMP Review	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Road Safety Audit	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Other	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments			

Given that the length of construction and that no regular works have been proposed outside of the site, monthly TTM inspections is considered to be sufficient.

6.2.1 Incident Management

For the purposes of this CTMP, an 'incident' is 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. Furthermore, a 'non-compliance' is an occurrence, set of circumstances or development that is a breach of the consent.

All incidents related to traffic, including those of the Principal Contractor, subcontractors, and/or visitors that occur during construction works will be managed in conjunction with the requirements outlined in Goodman Incident and Non-compliance Response and Handling Procedure.

Goodman will be responsible for ensuring that systems and processes satisfy the requirements of the CEMP and relevant sub-plans, including the incident management components. The Contractor will be responsible for providing all necessary documentation with regards to the incident investigation and close-out actions where required. The timing of the provision of this documentation is to align with Goodman requirements.

Goodman Project Manager must be notified immediately of any environmental incident or near miss related to traffic. Such incidents may include, but not limited to:

- Vehicle crash or injury resulting from construction traffic related to the project.
- Failure to correctly implement required traffic controls for planned activities.
- Queuing onto Old Wallgrove Road, in breach of the requirements set out under this CTMP.
- Spill of any dangerous goods or hazardous substance to ground or water.
- Substantiated complaints received from members of the community or regulatory authorities relating to traffic management.
- Land-based off-site sediment loss to the environment, including sediment tracking onto the roadway.

Goodman's Project Principal will be responsible for all notifiable environmental incidents in line with the regulatory notification requirements as per Table 3-1 of CEMP.

All environmental incidents will be reported immediately to DPE in writing via the Major Projects website after Goodman becomes aware of the incident. Any notification to DPE must identify the development, including the application number, and set out the location and nature of the incident.

In the event of a notifiable non-compliance incident arising, the Principal Contractor will notify Goodman's Project Manager immediately, who is then required to notify DPE in writing (via the Planning Portal) within 7 days. Any notification to DPE must

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

6.3 Contingency Plan

A contingency plan shall be established by the Contractor and is to be included in the overarching CEMP. Notwithstanding, **Table 25** outlines an indicative plan to be undertaken by the builder in the event that the monitoring program identifies the management plan is not effective in managing the construction impacts.

TABLE 25: CONTINGENCY PLAN

Risk		Condition Green	Condition Amber	Condition Red
Construction Movements	Trigger	Construction traffic volume is in accordance with permissible and programmed volume and time constraints	Construction traffic volumes exceeds programmed volume but is within permissible volume constraints	Construction traffic volumes exceeds permissible volume and time constraints
	Response	No response required	Review and investigate construction activities, and where appropriate, implement additional remediation measures such as: <ul style="list-style-type: none"> Review CTMP and update where necessary Provide additional training. 	As with Condition Amber, plus; <ul style="list-style-type: none"> If it is concluded that construction activities were directly responsible for the exceedance, submit an incident report to government agencies.
Queuing	Trigger	No queuing identified	Queuing identified within site	Queuing identified on the public road
	Response	No response required Continue monitoring program	Review the delivery schedule prepared by the builder. If drivers are not following the correct schedule, then they should be provided with additional training and an extra copy of the Driver Code of Conduct	As with Condition Amber, plus <ul style="list-style-type: none"> Review and investigate construction activities. If it is concluded that construction activities were directly responsible for the exceedance, submit an incident report to government agencies. Temporary halting of activities and resuming when conditions have improved. Review CTMP and update where necessary, provide additional training.
Noise	Trigger	Noise levels do not exceed imposed noise constraints	Noise levels in minor excess of imposed noise constraints	Noise levels greatly more than imposed noise constraints

	Response	No response required	Undertake all feasible and reasonable mitigation and management measures to minimise noise impacts.	As with Condition Amber If noise levels cannot be kept below applicable limits, then a different construction method or equipment must be utilised.
Traffic Guidance Scheme	Trigger	No observable issues	Minor inconsistencies with TGS to onsite operations	Near miss or incident occurring regardless of / as a result of the TGS being implemented
	Response	No response required	Traffic Controller to amend TGS on site and to keep a log of all changes	Stop work until an investigation has been undertaken into the incident. There are to be changes made to the TGS to ensure that the safety of all workers, students and civilians are catered for.
Dust	Trigger	No observable dust	Minor quantities of dust in the air and tracking on to the road	Large quantities of dust in the air and tracking on to the road
	Response	No response required	Review and investigate construction activities and respective control measures, where appropriate. Implement additional remedial measures, such as: <ul style="list-style-type: none"> • Deployment of additional water sprays • Relocation or modification of dust-generating sources • Check condition of vibrating grids to ensure they are functioning correctly. • Temporary halting of activities and resuming when conditions have improved 	As with Condition Amber. <ul style="list-style-type: none"> • If it is concluded that construction activities were directly responsible for the exceedance, submit an incident report to government agencies. • Implement relevant responses and undertake immediate review to avoid such occurrence in future.

It is therefore proposed to incorporate the above items within the communications strategy. The contingency plan outlines the most effective methods to ensure that each item identified within the Monitoring Program is adhered to, resulting in the impacts to the wider community being minimised. It also represents the efforts undertaken to continually improve CTMP and ensure that the process being utilised are indeed best practice.

6.4 Communications Strategy

A communications strategy shall be established by the Contractor and is included in the overarching CEMP (refer to the community consultation strategy prepared separately).

A Communications and Community Liaison Representative (CCLR) shall be elected and shall be responsible for ensuring that the appropriate management response and handling procedures are instigated and carried through in the event of an environmental complaint.

All employees who are made aware of a complaint, either verbal or written, are to immediately notify the Contractor's Project Manager, who will then contact the CCLR. Upon becoming aware of a complaint, the protocol outlined below will be followed.

TABLE 26: RESPONSE STRATEGY

Ref	Protocol	Action
1	Record and acknowledge	<p>Any employee who takes 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.</p> <p>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.</p> <p>The complainant's name, address, and contact details, along with the nature of the complaint, will be requested. If the complainant refuses to supply the requested information, a note will be made on the form and complainant advised of this.</p>
2	Assess and prioritise	The CCLR will prioritise all complaints by severity for the risk to health and safety and will attempt to provide an immediate response via phone or email.
3	Investigate	An on-site investigation will be initiated in an attempt to confirm details relevant to the complaint and the cause of the problem. Any monitoring information and/or records at and around the time of the complaint will be reviewed for any abnormality or incident that may have resulted in the complaint.
4	Action or rectify	<p>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.</p> <p>The CCLR 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.</p>
5	Respond to Complainant	<p>The CCLR will oversee the rectification of the issue and respond to the complainant once the issue has been resolved.</p> <p>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.</p> <p>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.</p>
6	Record	<p>It is imperative that an assessment of the situation is carried out and documented to minimise the potential for similar complaints in the future. On this basis, every complaint received is to be recorded in the Community Correspondence Register.</p> <p>A copy of the completed form will be maintained for at least five years</p>

7	Preventative Action	Once the complaint has been suitably handled, appropriate measures will be identified and implemented to negate the possibility of re-occurrence. The Community Correspondence Register is not finalised until the preventative actions are completed and recorded on the form.
----------	---------------------	--

In addition to the above, the CCLR is to notify the community liaison representative when traffic is expected to exceed the parameters set within “Condition Green” of **Table 25**. Notwithstanding, **Table 27** outlines an indicative communication strategy to ensure that adequate communication with key stakeholders have been met.

TABLE 27: COMMUNICATIONS STRATEGY		
Risk	Impact	Comms Channel
Wider Traffic Disruption	Wider community and stakeholders informed through local and wider advertising and notification	Stakeholder Meetings Stakeholder email blast
Construction related traffic	Ensure construction crews use traffic routes identified in the Traffic Management Plan, and Ensure residents in area are notified in advance to any traffic changes that may affect them	

Furthermore, ongoing communication will be undertaken so that all stakeholders are kept up to date of works and potential impacts.

TABLE 28: COMMUNICATION STRATEGY		
Risk	Stakeholder	Action
Warehouse Specific Disruption	<ul style="list-style-type: none"> • TfNSW • Fairfield Council • Transport Management Centre (TMC) • NSW Police • Emergency Services • Goodman • Construction Crews 	Stakeholder meetings Stakeholder emails
Wider Traffic Specific Disruption	<ul style="list-style-type: none"> • TfNSW • Fairfield Council • Transport Management Centre (TMC) • NSW Police • Emergency Services • Goodman • Construction Crews • Surrounding Residents / Tenants 	

Appendix A. Risk Assessment

Oakdale East, Horsley Park

Risk Assessment and Communication Tool

Project Number	1546		
Project Name	P1546r03v04_CC CTMP_Oakdale East Industrial Estate, Issue IV		
Site Location	2 Old Wallgrove Road, Oakdale East Estate, Horsley Park		
Date of Assessment	30 June 2023		
Revision	Issue A		
Personnel			
Name	Company	Title	
Stephanie Partridge	Goodman	General Manager – Western Sydney Developments	
Luke Ridley	Goodman	Development Manager	
Lachlan O'Reilly	Goodman	Project Manager	
Ali Rasouli	Ason Group	Principal Traffic Engineer	
James Laidler	Ason Group	Senior Traffic Engineer	
Jayden Lam	Ason Group	Traffic Engineer	
Document Control			
Date Issued	Revision	Issued By	Checked By
30.06.2023	Issue A	J. Laidler	

Risk Matrix		Consequence				
		Minor A	Major B	Severe C	Critical D	Catastrophic E
Very Unlikely	1	Low	Low	Medium	Medium	Medium
Unlikely	2	Low	Low	Medium	Medium	High
Possible	3	Low	Medium	High	High	High
Likely	4	Medium	Medium	High	High	Extreme
Almost Certain	5	Medium	High	High	Extreme	Extreme

Consequence Description	
A - Minor	Could result in injury or illness not resulting in a lost workday or minimal environmental damage not required to be notified under jurisdiction requirements.
B - Major	Could result in injury or illness resulting in one or more lost workday(s) or environmental damage can be mitigated and is not required to be notified under jurisdiction requirements where restoration activities can be accomplished.
C - Severe	Could result in permanent partial disability, injuries or illness that may result in hospitalisation of persons or environmental damage can be mitigated and is required to be notified under jurisdiction requirements.
D - Critical	Could result in permanent total disability or reversible environmental damage required to be notified under jurisdiction requirements.
E - Catastrophic	Could result in fatality or irreversible severe environmental damage required to be notified under jurisdiction requirements.

Likelihood Description	Design Likelihood
1 - Very unlikely	Industry experience suggests design failure is very unlikely. It can be assumed failure occurrence may not be experienced.
2 - Unlikely	Industry experience suggests design failure is unlikely to occur in the life of design.
3 - Possible	Industry experience suggests design failure is possible sometime during the life of the design.
4 - Likely	Industry experience suggests design failure is likely to occur during the life of the design.
5 - Almost certain	Industry experience suggests design failure is almost certain to occur during the life of the design.

Risk Assessment and Communication Tool

Example


ID. Ref	Risk and/ or Hazard	Risk Description	Location	Existing Control	Initial Risk Rating			Design Response to risk and /or hazard	Status of Risk	Assignment of risk or hazard	Residual risk rating		
					C	L	RR				C	L	RR
1	Unauthorized Access to the Site	Site prevents unauthorised access	Entire Site	Nil	C	3	High	Boundary fence will be provided as part of the main works. The design provides a defined separation between public areas and work area. Admin area is to be located in front of the site to minimise unauthorised visitor access.	Design Solution	Main Contractor	B	2	Low
2	Interaction between pedestrians and vehicles	Vehicles and pedestrians to be separates as best possible	Entire Site & Access Roads	Nil	D	3	High	Additional signage and implementation of Traffic Controllers shall be provided to separate vehicles and pedestrians as best possible.	Design Solution	Main Contractor	B	2	Low
3	Potential vehicle conflict points	Vehicles can crash with each other while manoeuvring through the site	Entire Site & Access Roads	Nil	B	3	Medium	Additional signage and implementation of Traffic Controllers shall be provided to limit any interaction for oncoming vehicles as best as possible, coupled with low speeds throughout the site.	Design Solution	Main Contractor	B	1	Low

4	Fatigue	Injury caused by fatigue	Entire Site	Nil	C	3	High	Toolbox meetings and regular breaks (in line with WHS practices) to minimise fatigue	Design Solution	Main Contractor	B	1	Low
5	Fall risks	Injury due to falls (in general)	Entire Site	Nil	E	3	High	Ensuring level changes across the site to be minimised as best possible, with additional black & yellow hazard tape/markings being installed where appropriate. Installation of handrails where level changes / ramps grades are significant.	Design Solution	Main Contractor	C	2	Medium
6	Misdirected access into wrong site	Vehicle in unsafe locations	Entire Site	Nil	C	3	High	Ensuring appropriate directional signage has been provided to ensure vehicles do not access the wrong construction site, which could create potential safety breaches and hazards for all parties	Design Solution	Main Contractor	B	2	Low
7	Conflicting Traffic Management	Coordinating Traffic Controllers could create misleading and wrong advice	Entire Site	Nil	C	3	High	Toolbox meetings, regular liaison with all construction teams and review of signage plans on site in order to minimise contradicting signage.	Design Solution	Main Contractor	C	2	Medium

Appendix B. TGS Verification Checklist

E.2 TGS verification checklist

TGS Verification must be undertaken after selecting or designing a TGS as a confirmation of appropriateness prior to approval for use. A PWZTMP or TGS qualified person must undertake this verification.

Completed by:			
Name:	James Laidler	Signature:	
Qualification	Senior Traffic Engineer TCT0031686		
TGS details:			
TMP Reference:	P1546r03v04_CC CTMP_Oakdale East Industrial Estate, Issue IV	TGS Reference:	
Date:	30/06/2023	Review type	<input type="checkbox"/> Site Inspection <input checked="" type="checkbox"/> Desktop Review
Sources used for desktop review	Near Map, Dated 30 Mar 2023		
Site details			
Street name:	Old Wallgrove Road	Confirmed posted speed limits:	80km/h, 60km/h
Street name:	Millner Avenue	Confirmed posted speed limits:	50km/h
Street name:		Confirmed posted speed limits:	
Street name:		Confirmed posted speed limits:	
List unique site-specific Hazards / Risks identified on site			
E.g., utilities, infrastructure, vegetation, schools,			
n/a - site access is located at the signalised intersection of Old Wallgrove Road / Millner Avenue - no trees within the area - low speeds			

TGS details

Have the below been addressed on the TGS for this location?

Traffic volumes	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	Details	Volumes have been considered and will not cause an adverse impact.
Predicted queue length	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	Details	Noting the low traffic volumes, the predicted queue length within the site will not impact the road network. There is to be no queuing on public roads by construction vehicles.
Shoulder widths	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	Details	Roads Designed for B-doubles, therefore sufficient shoulder widths.
Sight distances	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	Details	Straight road with no obstructions and good sight distance. Notwithstanding the signalised intersection ensure sight distance is not necessary.
Existing infrastructure	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	Details	Small trees and light poles along the nature strip and sidewalk
Transport services	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	Details	The bus route will not be affected by the works.
Pedestrian generators	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	Details	Pedestrians are given right of way as far as possible. Pedestrians will be diverted where necessary.
Appropriate site access	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	Details	Roads Designed for B-doubles, therefore appropriate site access.
Appropriate escape route for traffic controllers	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	Details	An escape route will be provided for traffic controllers.

Confirmation	
<p>Does TGS require adjustments within tolerances?</p> <p>If yes provide details TGS must include these adjustments with justification.</p>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p>Comments or details of action taken:</p>	
<p>Does TGS require any additional changes or modifications?</p> <p>If yes provide details and return TGS to designer for additional changes or modifications</p>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p>Comments or details of action taken:</p>	
<p>Is TGS appropriate for use for works required at this location?</p> <p>If no provide details and, return TGS into file and select alternative, if design returned to designer for correction</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<p>Comments or details of action taken:</p>	
<p>Have key TTM risks been addressed on site?</p> <p>If no, provide details and return TGS to designer for correction, review, and approval</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<p>Comments or details of action taken:</p>	

Additional comments:

Reset forms - pages 269 to 272

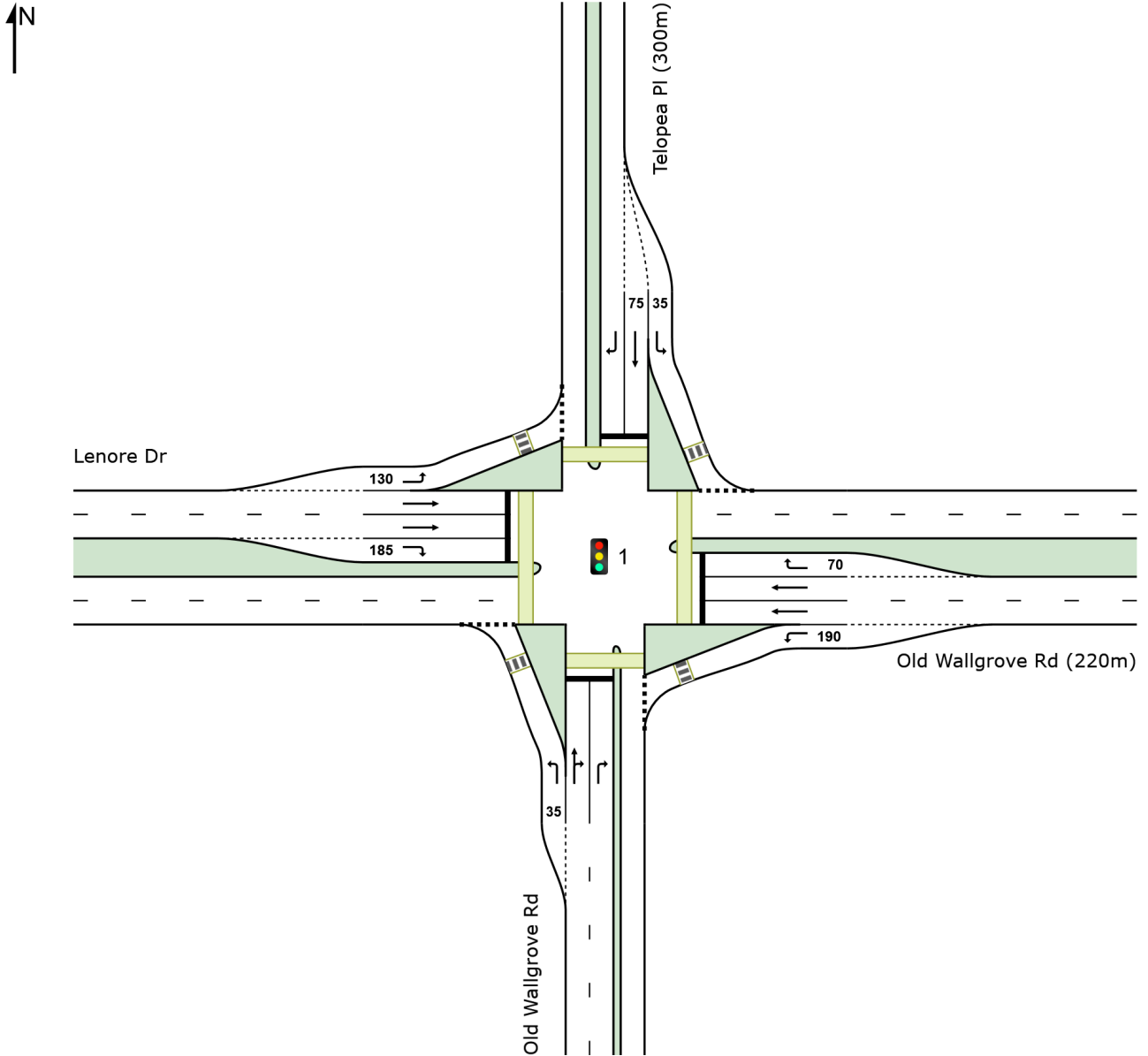
Appendix C. SIDRA Movement Summaries

SITE LAYOUT

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - AM (Site Folder: 2024 CTMP Model)]

Old Wallgrove Road x Lenore Drive
Site Category: Existing
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.

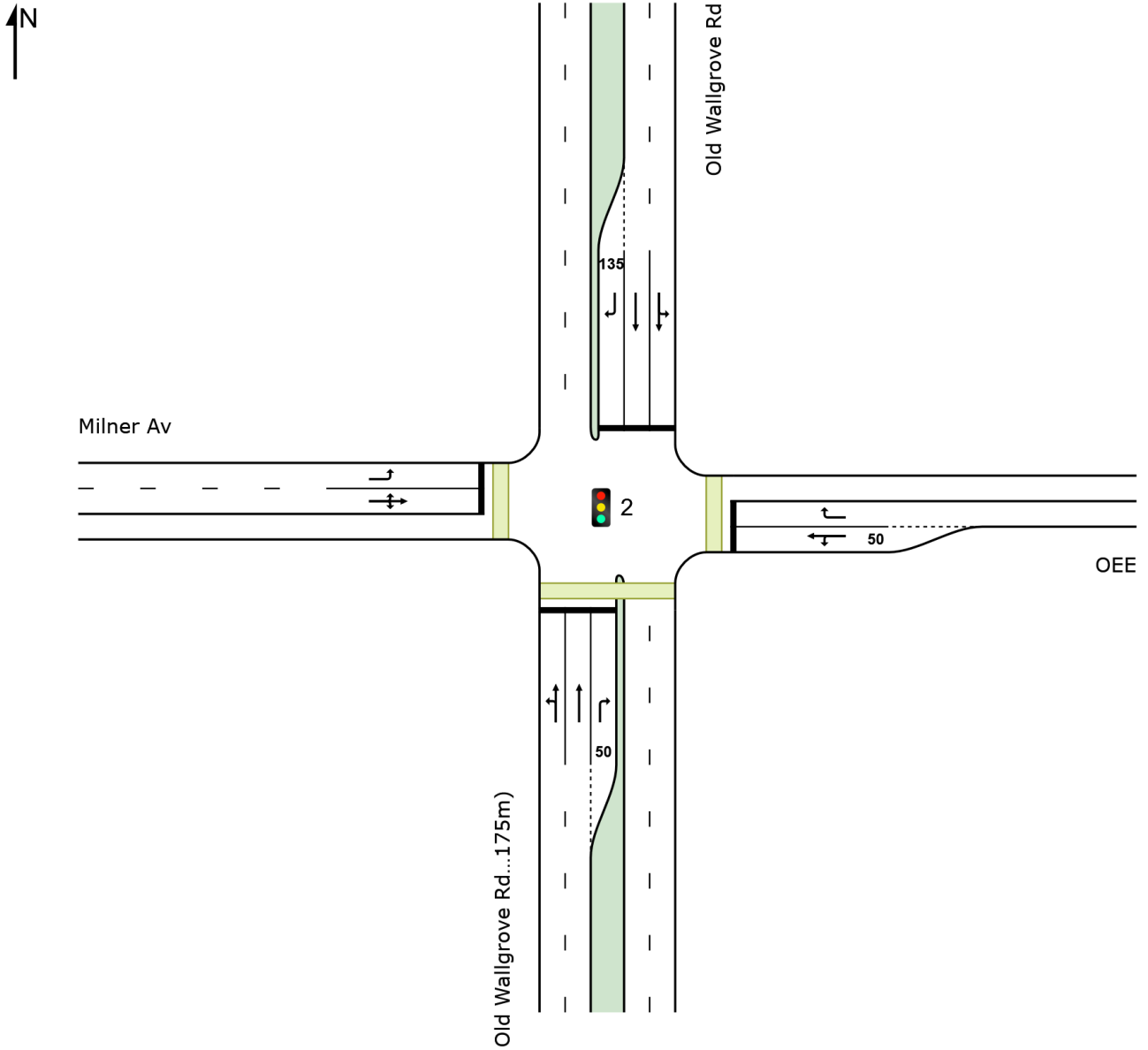


SITE LAYOUT

Site: 2 [2. Old Wallgrove Rd x Milner Av - AM (Site Folder: 2024 CTMP Model)]

Old Wallgrove Road x Milner Avenue
Site Category: Existing
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - AM (Site Folder: 2024 CTMP Model)]

Old Wallgrove Road x Lenore Drive

Site Category: Existing

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Old Wallgrove Rd														
1	L2	160	74	168	46.3	0.186	9.7	LOS A	1.7	16.2	0.21	0.65	0.21	52.1
2	T1	1	0	1	0.0	* 0.690	62.5	LOS E	8.0	74.2	0.98	0.83	1.06	27.7
3	R2	248	95	261	38.3	0.690	70.8	LOS F	9.7	90.0	0.99	0.84	1.06	24.0
Approach		409	169	431	41.3	0.690	46.9	LOS D	9.7	90.0	0.68	0.77	0.73	32.2
East: Old Wallgrove Rd (220m)														
4	L2	908	252	956	27.8	0.807	15.1	LOS B	21.2	184.1	0.61	0.83	0.61	45.9
5	T1	393	106	414	27.0	0.299	26.0	LOS B	8.9	76.4	0.68	0.58	0.68	44.8
6	R2	6	2	6	33.3	0.026	58.7	LOS E	0.4	3.2	0.85	0.67	0.85	21.3
Approach		1307	360	1376	27.5	0.807	18.6	LOS B	21.2	184.1	0.63	0.76	0.63	45.4
North: Telopea Pl (300m)														
7	L2	7	2	7	28.6	0.013	19.5	LOS B	0.2	1.7	0.45	0.65	0.45	39.7
8	T1	1	0	1	0.0	0.013	70.9	LOS F	0.1	0.5	0.97	0.57	0.97	27.5
9	R2	2	1	2	50.0	0.041	81.8	LOS F	0.1	1.5	0.98	0.62	0.98	21.8
Approach		10	3	11	30.0	0.041	37.1	LOS C	0.2	1.7	0.61	0.64	0.61	31.2
West: Lenore Dr														
10	L2	5	1	5	20.0	0.004	8.0	LOS A	0.0	0.1	0.09	0.61	0.09	58.4
11	T1	900	244	947	27.1	* 0.686	32.7	LOS C	25.6	220.5	0.86	0.77	0.86	40.2
12	R2	164	45	173	27.4	* 0.674	67.4	LOS E	11.4	98.5	0.99	0.84	1.02	29.6
Approach		1069	290	1125	27.1	0.686	37.9	LOS C	25.6	220.5	0.87	0.78	0.88	37.6
All Vehicles		2795	822	2942	29.4	0.807	30.2	LOS C	25.6	220.5	0.73	0.76	0.74	39.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
						[Ped ped	Dist] m					
South: Old Wallgrove Rd												
P1	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	228.0	212.9	0.93
East: Old Wallgrove Rd (220m)												
P2	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	233.9	220.5	0.94

North: Teloepa PI (300m)												
P3 Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	228.8	213.9	0.93	
West: Lenore Dr												
P4 Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	233.9	220.5	0.94	
All Pedestrians	200	211	64.3	LOS F	0.2	0.2	0.96	0.96	231.2	217.0	0.94	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 2 [2. Old Wallgrove Rd x Milner Av - AM (Site Folder: 2024 CTMP Model)]

Old Wallgrove Road x Milner Avenue

Site Category: Existing

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Site User-Given Phase Times)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Old Wallgrove Rd (175m)														
1	L2	1	0	1	0.0	0.138	60.0	LOS E	1.9	16.4	0.90	0.67	0.90	23.4
2	T1	60	16	63	26.7	*0.138	55.9	LOS D	1.9	16.4	0.90	0.67	0.90	25.2
3	R2	1	0	1	0.0	0.005	31.9	LOS C	0.0	0.3	0.82	0.59	0.82	19.5
Approach		62	16	65	25.8	0.138	55.6	LOS D	1.9	16.5	0.90	0.67	0.90	25.1
East: OEE														
4	L2	1	0	1	0.0	0.003	37.5	LOS C	0.1	0.7	0.69	0.52	0.69	18.5
5	T1	1	0	1	0.0	0.003	32.9	LOS C	0.1	0.7	0.69	0.52	0.69	27.9
6	R2	164	122	173	74.4	0.533	48.5	LOS D	9.9	113.2	0.88	0.81	0.88	21.4
Approach		166	122	175	73.5	0.533	48.3	LOS D	9.9	113.2	0.87	0.80	0.87	21.4
North: Old Wallgrove Rd														
7	L2	451	130	475	28.8	*0.573	16.4	LOS B	11.5	100.7	0.64	0.80	0.64	45.9
8	T1	349	94	367	26.9	0.573	37.5	LOS C	18.4	158.6	0.83	0.80	0.83	33.9
9	R2	382	113	402	29.6	*0.699	53.2	LOS D	23.9	209.9	1.00	0.88	1.00	32.3
Approach		1182	337	1244	28.5	0.699	34.5	LOS C	23.9	209.9	0.81	0.82	0.81	36.0
West: Milner Av														
10	L2	185	135	195	73.0	0.271	24.4	LOS B	3.2	36.1	0.76	0.74	0.76	33.8
11	T1	1	0	1	0.0	*0.271	19.9	LOS B	2.9	32.7	0.77	0.74	0.77	32.3
12	R2	1	1	1	100.0	0.271	25.3	LOS B	2.9	32.7	0.77	0.74	0.77	32.3
Approach		187	136	197	72.7	0.271	24.4	LOS B	3.2	36.1	0.76	0.74	0.76	33.8
All Vehicles		1597	611	1681	38.3	0.699	35.6	LOS C	23.9	209.9	0.82	0.81	0.82	33.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
						[Ped ped	Dist] m					
South: Old Wallgrove Rd (175m)												
P1	Full	5	5	64.1	LOS F	0.0	0.0	0.96	0.96	233.0	219.5	0.94
East: OEE												
P2	Full	5	5	64.1	LOS F	0.0	0.0	0.96	0.96	227.1	211.9	0.93
West: Milner Av												

P4 Full	5	5	64.1	LOS F	0.0	0.0	0.96	0.96	227.1	211.9	0.93
All Pedestrians	15	16	64.1	LOS F	0.0	0.0	0.96	0.96	229.1	214.4	0.94

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - PM (Site Folder: 2024 CTMP Model)]

Old Wallgrove Road x Lenore Drive

Site Category: Existing

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Old Wallgrove Rd														
1	L2	244	87	257	35.7	0.369	16.7	LOS B	6.9	63.5	0.47	0.73	0.47	49.2
2	T1	1	0	1	0.0	* 0.742	42.6	LOS D	13.3	111.2	0.84	0.83	0.91	34.1
3	R2	574	132	604	23.0	0.742	51.6	LOS D	22.7	189.9	0.91	0.86	0.94	29.6
Approach		819	219	862	26.7	0.742	41.2	LOS C	22.7	189.9	0.78	0.82	0.80	34.7
East: Old Wallgrove Rd (220m)														
4	L2	385	164	405	42.6	0.347	9.2	LOS A	3.4	32.8	0.19	0.65	0.19	47.3
5	T1	824	222	867	26.9	* 0.729	38.6	LOS C	25.5	219.6	0.91	0.81	0.91	37.0
6	R2	17	5	18	29.4	0.296	83.5	LOS F	1.3	11.3	1.00	0.70	1.00	16.8
Approach		1226	391	1291	31.9	0.729	30.0	LOS C	25.5	219.6	0.68	0.76	0.68	39.2
North: Telopea Pl (300m)														
7	L2	7	2	7	28.6	0.018	22.7	LOS B	0.2	2.0	0.50	0.66	0.50	37.3
8	T1	1	0	1	0.0	0.013	70.9	LOS F	0.1	0.5	0.97	0.57	0.97	27.5
9	R2	2	1	2	50.0	0.041	81.8	LOS F	0.1	1.5	0.98	0.62	0.98	21.8
Approach		10	3	11	30.0	0.041	39.3	LOS C	0.2	2.0	0.64	0.65	0.64	30.3
West: Lenore Dr														
10	L2	4	1	4	25.0	0.003	8.1	LOS A	0.0	0.1	0.10	0.61	0.10	57.4
11	T1	679	183	715	27.0	0.571	34.3	LOS C	18.8	161.6	0.83	0.73	0.83	39.3
12	R2	54	23	57	42.6	* 0.781	87.7	LOS F	4.3	41.2	1.00	0.86	1.31	24.7
Approach		737	207	776	28.1	0.781	38.1	LOS C	18.8	161.6	0.84	0.74	0.86	37.2
All Vehicles		2792	820	2939	29.4	0.781	35.4	LOS C	25.5	219.6	0.75	0.77	0.76	37.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
						[Ped ped	Dist] m					
South: Old Wallgrove Rd												
P1	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	228.0	212.9	0.93
East: Old Wallgrove Rd (220m)												
P2	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	233.9	220.5	0.94

North: Teloepa PI (300m)												
P3 Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	228.8	213.9	0.93	
West: Lenore Dr												
P4 Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	233.9	220.5	0.94	
All Pedestrians	200	211	64.3	LOS F	0.2	0.2	0.96	0.96	231.2	217.0	0.94	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 2 [2. Old Wallgrove Rd x Milner Av - PM (Site Folder: 2024 CTMP Model)]

Old Wallgrove Road x Milner Avenue

Site Category: Existing

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Phase Times)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Old Wallgrove Rd (175m)														
1	L2	1	0	1	0.0	0.479	61.4	LOS E	8.2	70.4	0.94	0.77	0.94	23.8
2	T1	249	67	262	26.9	*0.479	56.2	LOS D	8.2	70.7	0.94	0.77	0.94	27.4
3	R2	1	0	1	0.0	0.002	33.3	LOS C	0.0	0.3	0.71	0.60	0.71	19.9
Approach		251	67	264	26.7	0.479	56.1	LOS D	8.2	70.7	0.94	0.77	0.94	27.3
East: OEE														
4	L2	1	0	1	0.0	0.002	25.4	LOS B	0.1	0.5	0.55	0.47	0.55	23.5
5	T1	1	0	1	0.0	0.002	20.8	LOS B	0.1	0.5	0.55	0.47	0.55	32.9
6	R2	240	118	253	49.2	*0.463	33.7	LOS C	12.0	119.0	0.74	0.78	0.74	27.1
Approach		242	118	255	48.8	0.463	33.6	LOS C	12.0	119.0	0.74	0.78	0.74	27.1
North: Old Wallgrove Rd														
7	L2	152	112	160	73.7	0.246	15.6	LOS B	3.5	39.6	0.47	0.73	0.47	45.1
8	T1	62	17	65	27.4	0.239	57.1	LOS E	3.9	33.5	0.90	0.74	0.90	26.8
9	R2	224	112	236	50.0	*0.753	48.4	LOS D	13.3	132.9	0.97	0.87	1.04	33.6
Approach		438	241	461	55.0	0.753	38.3	LOS C	13.3	132.9	0.78	0.80	0.82	34.9
West: Milner Av														
10	L2	330	101	347	30.6	0.610	37.8	LOS C	7.7	68.4	0.96	0.82	0.96	33.4
11	T1	1	0	1	0.0	*0.610	32.7	LOS C	7.5	66.2	0.96	0.81	0.96	27.2
12	R2	1	0	1	0.0	0.610	37.3	LOS C	7.5	66.2	0.96	0.81	0.96	28.4
Approach		332	101	349	30.4	0.610	37.8	LOS C	7.7	68.4	0.96	0.82	0.96	33.4
All Vehicles		1263	527	1329	41.7	0.753	40.8	LOS C	13.3	132.9	0.85	0.79	0.87	31.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
						[Ped ped	Dist] m					
South: Old Wallgrove Rd (175m)												
P1	Full	5	5	64.1	LOS F	0.0	0.0	0.96	0.96	233.0	219.5	0.94
East: OEE												
P2	Full	5	5	64.1	LOS F	0.0	0.0	0.96	0.96	227.1	211.9	0.93
West: Milner Av												

P4 Full	5	5	64.1	LOS F	0.0	0.0	0.96	0.96	227.1	211.9	0.93
All Pedestrians	15	16	64.1	LOS F	0.0	0.0	0.96	0.96	229.1	214.4	0.94

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

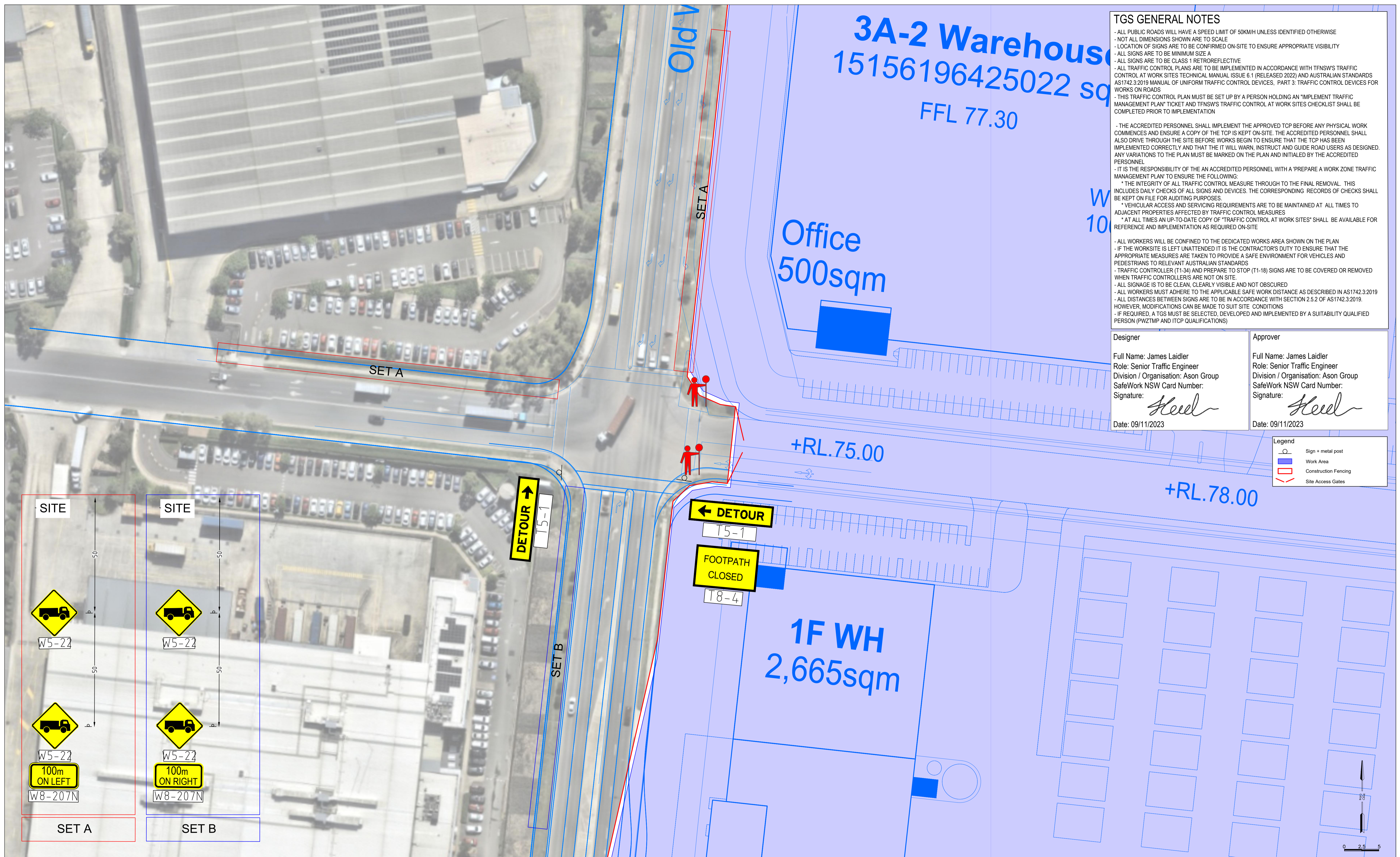
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Appendix D. Traffic Guidance Scheme

ASION ACCEPTS NO RESPONSIBILITY WHATSOEVER FOR THE USE OF UNAPPROVED PLANS IN ANY CONSTRUCTION OR FOR ANY COMMERCIAL PURPOSES. SET OUT DIMENSIONS OF ALL DESIGN LINES, GRID LINES, CONTROL LINES, RECOVERY MARKS AND BENCH MARKS SHOULD BE VERIFIED AND CONFIRMED AGAINST THE LATEST INFORMATION AT CONSTRUCTION. ASIONS TO BE NOTIFIED IMMEDIATELY OF ANY ERROR OR DISCREPANCY AND THE MATTER RESOLVED PRIOR TO THE COMMENCEMENT OF CONTINUATION OF ANY WORK. THIS NOTE IS AN INTEGRAL PART OF THIS PLAN/DATA. REPRODUCTION OF THIS PLAN OR ANY PART OF IT WITHOUT THE INFORMATION SHOWN ON SUCH REPRODUCTION IS INVALID AND NOT SUITABLE FOR USE. DISCLAIMER: ASION, THEREFORE, DISCLAIMS LIABILITY FOR ANY DAMAGE, ARISING FROM, OR CAUSED BY, THE FAILURE TO INFORM ANY SUCH THIRD PARTY OF THE LIMITATIONS WHICH APPLY TO THE INFORMATION CONTAINED IN THIS PLAN/DATA. THE INFORMATION WHICH APPLIES TO THE LIMITATIONS WHICH APPLY TO THE INFORMATION CONTAINED IN THIS PLAN/DATA.



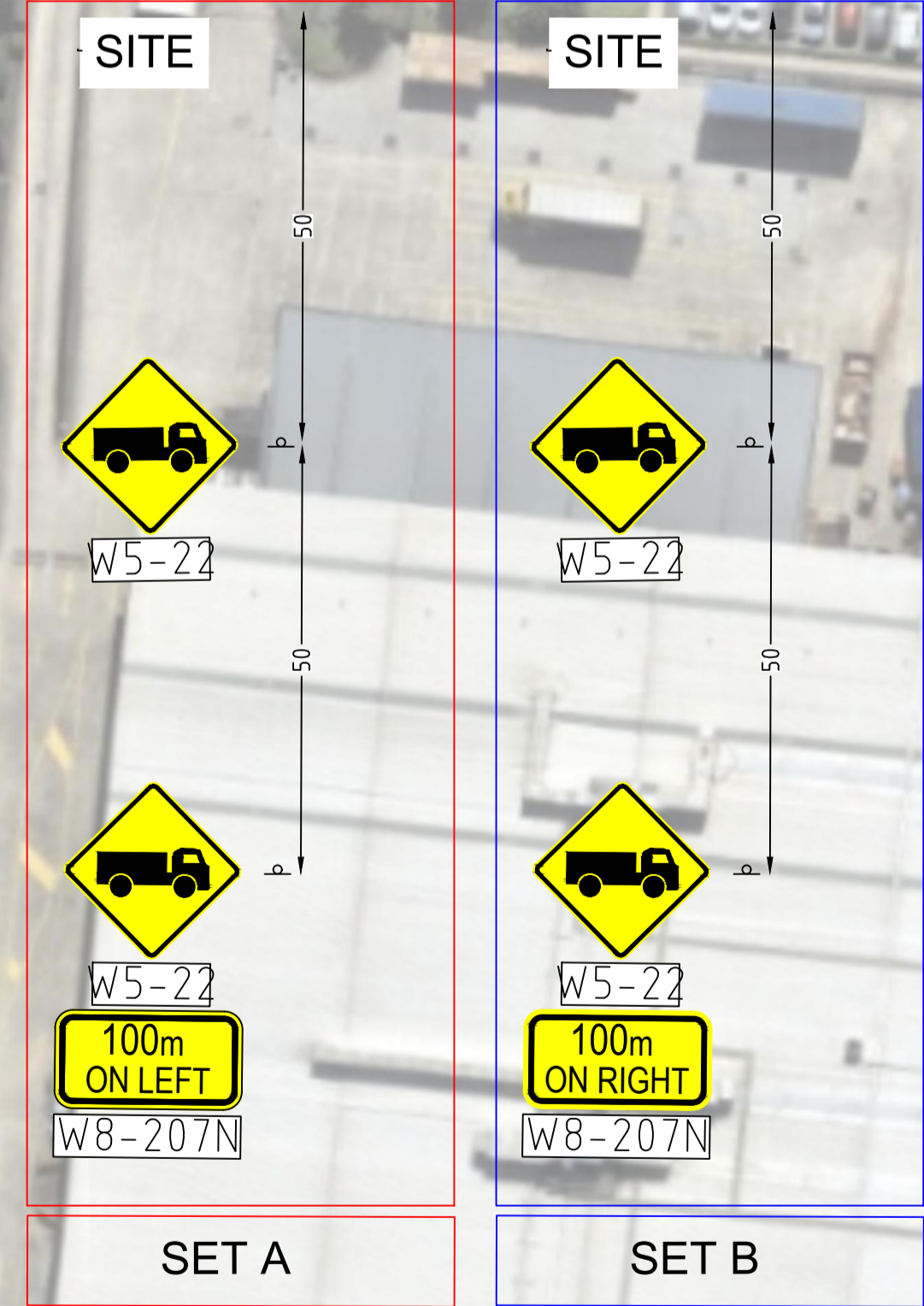
TGS GENERAL NOTES

- ALL PUBLIC ROADS WILL HAVE A SPEED LIMIT OF 50KM/H UNLESS IDENTIFIED OTHERWISE
- NOT ALL DIMENSIONS SHOWN ARE TO SCALE
- LOCATION OF SIGNS ARE TO BE CONFIRMED ON-SITE TO ENSURE APPROPRIATE VISIBILITY
- ALL SIGNS ARE TO BE MINIMUM SIZE A
- ALL SIGNS ARE TO BE CLASS 1 RETROREFLECTIVE
- ALL TRAFFIC CONTROL PLANS ARE TO BE IMPLEMENTED IN ACCORDANCE WITH TfNSW'S TRAFFIC CONTROL AT WORK SITES TECHNICAL MANUAL ISSUE 6.1 (RELEASED 2022) AND AUSTRALIAN STANDARDS AS1742.3:2019 MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, PART 3: TRAFFIC CONTROL DEVICES FOR WORKS ON ROADS
- THIS TRAFFIC CONTROL PLAN MUST BE SET UP BY A PERSON HOLDING AN 'IMPLEMENT TRAFFIC MANAGEMENT PLAN' TICKET AND TfNSW'S TRAFFIC CONTROL AT WORK SITES CHECKLIST SHALL BE COMPLETED PRIOR TO IMPLEMENTATION
- THE ACCREDITED PERSONNEL SHALL IMPLEMENT THE APPROVED TOP BEFORE ANY PHYSICAL WORK COMMENCES AND ENSURE A COPY OF THE TOP IS KEPT ON-SITE. THE ACCREDITED PERSONNEL SHALL ALSO DRIVE THROUGH THE SITE BEFORE WORKS BEGIN TO ENSURE THAT THE TOP HAS BEEN IMPLEMENTED CORRECTLY AND THAT THE IT WILL WARN, INSTRUCT AND GUIDE ROAD USERS AS DESIGNED. ANY VARIATIONS TO THE PLAN MUST BE MARKED ON THE PLAN AND INITIALED BY THE ACCREDITED PERSONNEL
- IT IS THE RESPONSIBILITY OF THE AN ACCREDITED PERSONNEL WITH A 'PREPARE A WORK ZONE TRAFFIC MANAGEMENT PLAN' TO ENSURE THE FOLLOWING:
 - * THE INTEGRITY OF ALL TRAFFIC CONTROL MEASURE THROUGH TO THE FINAL REMOVAL. THIS INCLUDES DAILY CHECKS OF ALL SIGNS AND DEVICES. THE CORRESPONDING RECORDS OF CHECKS SHALL BE KEPT ON FILE FOR AUDITING PURPOSES.
 - * VEHICULAR ACCESS AND SERVICING REQUIREMENTS ARE TO BE MAINTAINED AT ALL TIMES TO ADJACENT PROPERTIES AFFECTED BY TRAFFIC CONTROL MEASURES
 - * AT ALL TIMES AN UP-TO-DATE COPY OF 'TRAFFIC CONTROL AT WORK SITES' SHALL BE AVAILABLE FOR REFERENCE AND IMPLEMENTATION AS REQUIRED ON-SITE
- ALL WORKERS WILL BE CONFINED TO THE DEDICATED WORKS AREA SHOWN ON THE PLAN
- IF THE WORKSITE IS LEFT UNATTENDED IT IS THE CONTRACTOR'S DUTY TO ENSURE THAT THE APPROPRIATE MEASURES ARE TAKEN TO PROVIDE A SAFE ENVIRONMENT FOR VEHICLES AND PEDESTRIANS TO RELEVANT AUSTRALIAN STANDARDS
- TRAFFIC CONTROLLER (T1-34) AND PREPARE TO STOP (T1-18) SIGNS ARE TO BE COVERED OR REMOVED WHEN TRAFFIC CONTROLLER'S ARE NOT ON SITE.
- ALL SIGNAGE IS TO BE CLEAN, CLEARLY VISIBLE AND NOT OBSCURED
- ALL WORKERS MUST ADHERE TO THE APPLICABLE SAFE WORK DISTANCE AS DESCRIBED IN AS1742.3:2019
- ALL DISTANCES BETWEEN SIGNS ARE TO BE IN ACCORDANCE WITH SECTION 2.5.2 OF AS1742.3:2019. HOWEVER, MODIFICATIONS CAN BE MADE TO SUIT SITE CONDITIONS
- IF REQUIRED, A TGS MUST BE SELECTED, DEVELOPED AND IMPLEMENTED BY A SUITABILITY QUALIFIED PERSON (PWZTMP AND ITCP QUALIFICATIONS)

Designer	Approver
Full Name: James Laidler Role: Senior Traffic Engineer Division / Organisation: Ason Group SafeWork NSW Card Number: Signature: <i>Heed</i>	Full Name: James Laidler Role: Senior Traffic Engineer Division / Organisation: Ason Group SafeWork NSW Card Number: Signature: <i>Heed</i>
Date: 09/11/2023	Date: 09/11/2023

Legend

- Sign + metal post
- Work Area
- ▭ Construction Fencing
- ↔ Site Access Gates



AMENDMENTS			
REV	DATE	TGS DESCRIPTION	DRW CHK APP
1	09/11/23	TGS	JL JL JL
			DRW CHK APP

GENERAL NOTES

This drawing is provided for information purposes only and should not be used for construction.

Base Plan prepared by SBA Architects, received 13.03.2023.

Old Wallgrove Road has a posted speed limit of 80 km/h.

Millner Avenue has a posted speed limit of 50 km/h.

DRAFTER	Jayden Lam
DESIGNED BY	James Laidler
APPROVED BY	James Laidler

PAPER SIZE	A1
DATE	09.11.2023
SCALE	1:500

CLIENT	Goodman
PROJECT	P1546
	2 Old Wallgrove Road, Horsley Park

DOCUMENT INFORMATION	
Traffic Guidance Scheme	
DRAWING STATUS	Issue 1
FILE NAME	AG1546-08-v02.dwg
SHEET	AG01



AS/NZS 3000:2018 ELECTRICAL SAFETY WORK PRACTICES - PART 1: GENERAL REQUIREMENTS
 AS/NZS 3000:2018 ELECTRICAL SAFETY WORK PRACTICES - PART 2: SPECIAL REQUIREMENTS
 AS/NZS 3000:2018 ELECTRICAL SAFETY WORK PRACTICES - PART 3: TESTING
 AS/NZS 3000:2018 ELECTRICAL SAFETY WORK PRACTICES - PART 4: TESTING EQUIPMENT
 AS/NZS 3000:2018 ELECTRICAL SAFETY WORK PRACTICES - PART 5: TESTING PROCEDURES
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TGS GENERAL NOTES

- ALL PUBLIC ROADS WILL HAVE A SPEED LIMIT OF 50KM/H UNLESS IDENTIFIED OTHERWISE
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 - * AT ALL TIMES AN UP-TO-DATE COPY OF 'TRAFFIC CONTROL AT WORK SITES' SHALL BE AVAILABLE FOR REFERENCE AND IMPLEMENTATION AS REQUIRED ON-SITE
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- IF THE WORKSITE IS LEFT UNATTENDED IT IS THE CONTRACTOR'S DUTY TO ENSURE THAT THE APPROPRIATE MEASURES ARE TAKEN TO PROVIDE A SAFE ENVIRONMENT FOR VEHICLES AND PEDESTRIANS TO RELEVANT AUSTRALIAN STANDARDS
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Designer	Approver
Full Name: James Laidler Role: Senior Traffic Engineer Division / Organisation: Ason Group SafeWork NSW Card Number: Signature: <i>Heed</i>	Full Name: James Laidler Role: Senior Traffic Engineer Division / Organisation: Ason Group SafeWork NSW Card Number: Signature: <i>Heed</i>
Date: 09/11/2023	Date: 09/11/2023

Legend

	Sign + metal post
	Work Area
	Construction Fencing
	Site Access Gates



AMENDMENTS				
REV	DATE	TGS DESCRIPTION	JL	JL
1	09/11/23	TGS	JL	JL

GENERAL NOTES

This drawing is provided for information purposes only and should not be used for construction.
 Base Plan prepared by SBA Architects, received 13.03.2023.
 Old Wallgrove Road has a posted speed limit of 80 km/h.
 Millner Avenue has a posted speed limit of 50 km/h.

DRAFTER	Jayden Lam
DESIGNED BY	James Laidler
APPROVED BY	James Laidler

PAPER SIZE	A1
DATE	09.11.2023
SCALE	1:500

CLIENT	Goodman
PROJECT	P1546
	2 Old Wallgrove Road, Horsley Park

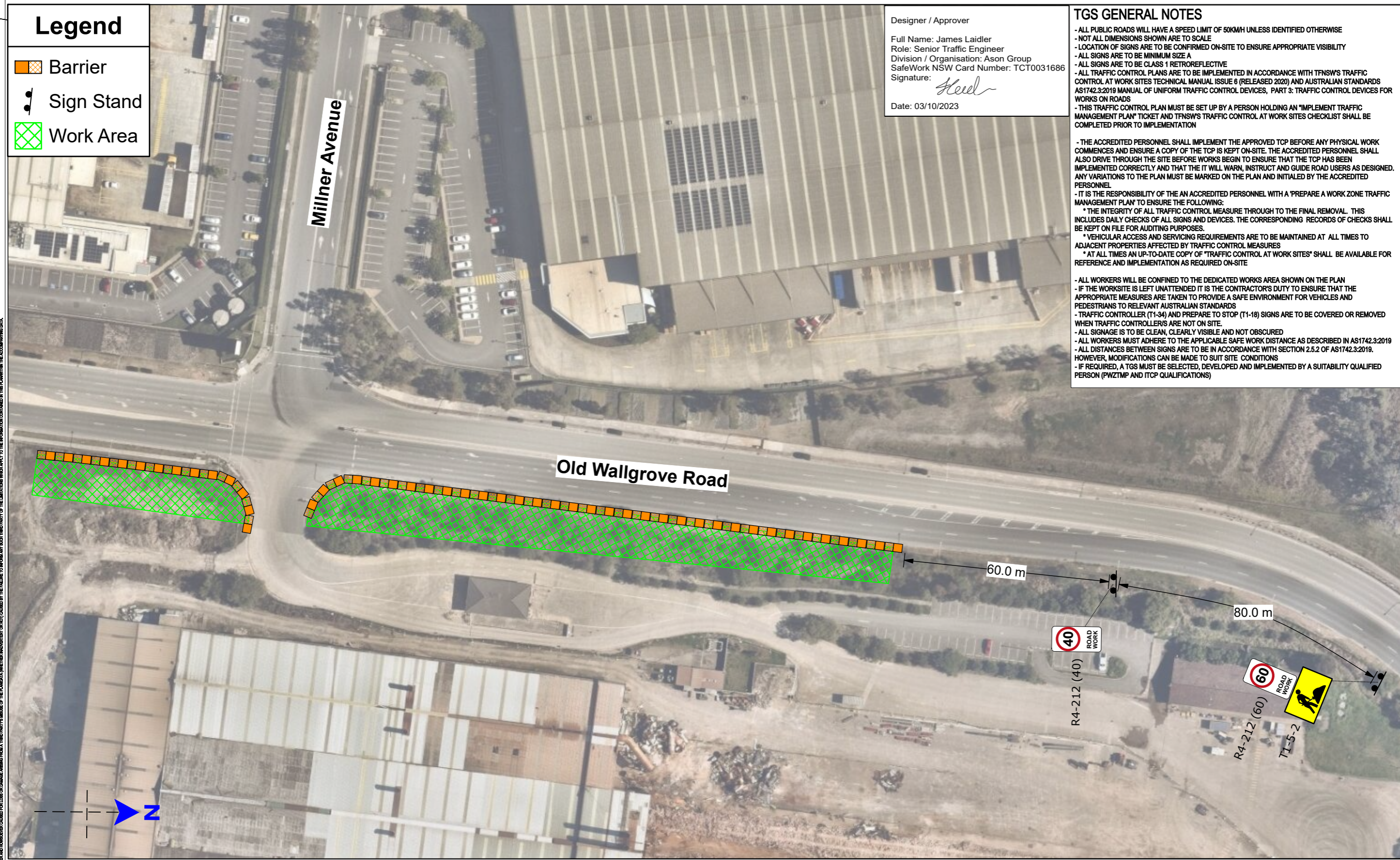
DOCUMENT INFORMATION		
Traffic Guidance Scheme		
DRAWING STATUS	Issue 1	
FILE NAME	AG1546-08-v02.dwg	SHEET
		AG02

Legend

-  Barrier
-  Sign Stand
-  Work Area

Designer / Approver
 Full Name: James Laidler
 Role: Senior Traffic Engineer
 Division / Organisation: Ason Group
 SafeWork NSW Card Number: TCT0031686
 Signature: *Heel*
 Date: 03/10/2023

- #### TGS GENERAL NOTES
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AMENDMENTS

REV	DATE	DESCRIPTION	JL	JL	JL
			DRW	CHK	APP
1	03/10/23	TGS			

GENERAL NOTES

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Old Wallgrove Road has a posted speed limit of 80km/h.
 Millner Avenue has a posted speed limit of 50 km/h.

DESIGNED
Jayden Lam

CHECKED BY
James Laidler

APPROVED BY
James Laidler

PAPER SIZE
A3

DATE
03/10/2023

SCALE
1:1000

CLIENT
Goodman

PROJECT
P1546

2 Old Wallgrove Road, Horsley Park

DOCUMENT INFORMATION
Traffic Guidance Scheme

SP03 Intersection Upgrade Works (North)

DRAWING STATUS
Issue 1



Suite 17.02, Level 17, 1 Castlereagh St
 Sydney NSW 2000
 info@asongroup.com.au




FILE NAME
AG1546-12-v01

SHEET
AG03

I warrant that the information contained in this drawing is true and correct to the best of my knowledge and belief and that I am not aware of any circumstances which might render the information misleading or deceptive. I warrant that the information contained in this drawing is true and correct to the best of my knowledge and belief and that I am not aware of any circumstances which might render the information misleading or deceptive.

I AM A DESIGNER OR ENGINEER REGISTERED WITH THE PROFESSIONAL ENGINEERS BOARD OF NEW SOUTH WALES. I HAVE PREPARED THIS DRAWING IN ACCORDANCE WITH THE REQUIREMENTS OF THE PROFESSIONAL ENGINEERS BOARD OF NEW SOUTH WALES. I HAVE TAKEN ALL REASONABLE STEPS TO ENSURE THE ACCURACY OF THE INFORMATION CONTAINED HEREIN. I ACCEPT RESPONSIBILITY FOR THE USE OF THIS DRAWING FOR THE PURPOSES INTENDED. I HAVE NOT CONDUCTED A VISUAL CHECK OF THE SITE TO VERIFY THE INFORMATION CONTAINED HEREIN. I HAVE NOT CONDUCTED A VISUAL CHECK OF THE SITE TO VERIFY THE INFORMATION CONTAINED HEREIN. I HAVE NOT CONDUCTED A VISUAL CHECK OF THE SITE TO VERIFY THE INFORMATION CONTAINED HEREIN.

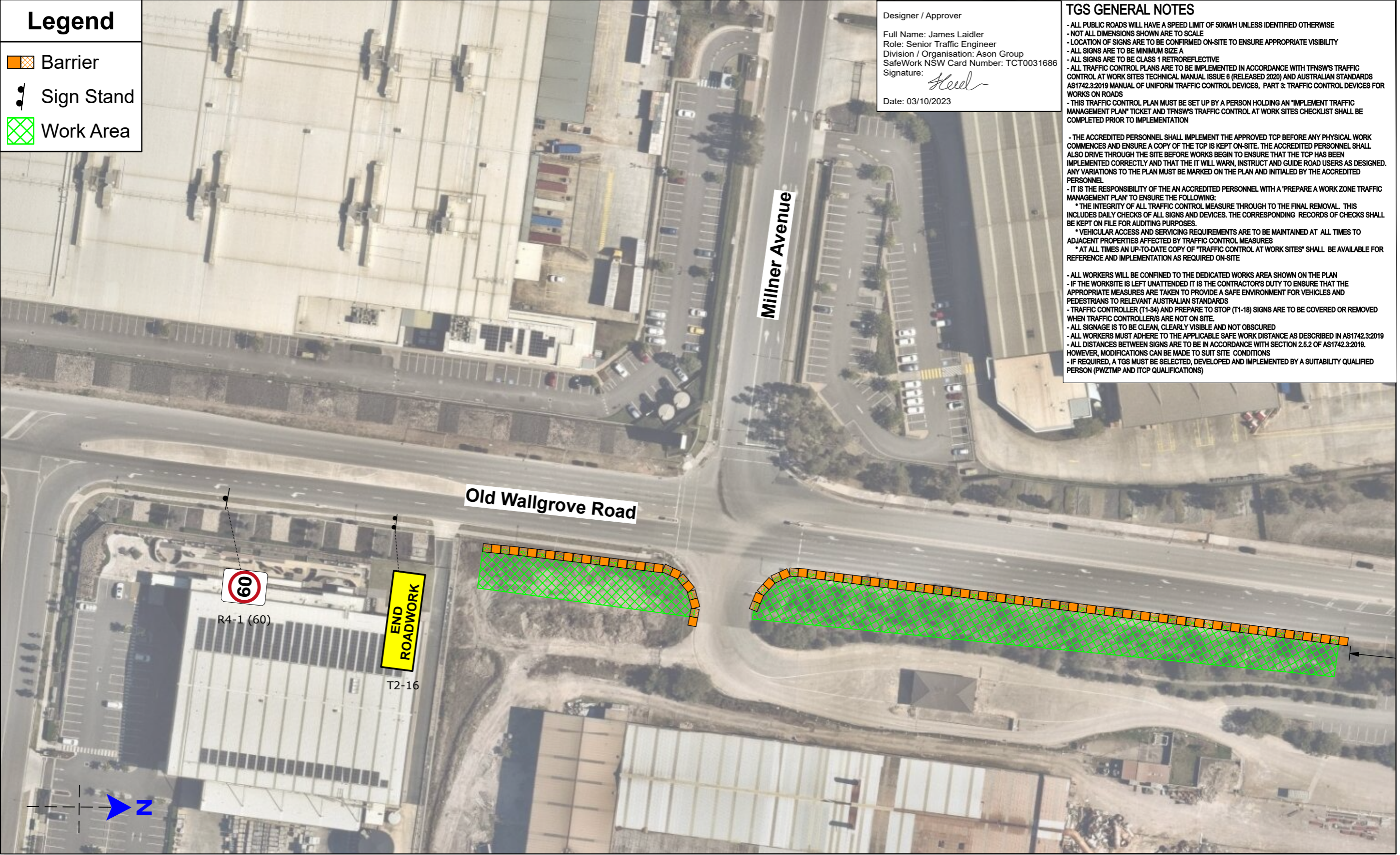
Legend

-  Barrier
-  Sign Stand
-  Work Area

Designer / Approver
 Full Name: James Laidler
 Role: Senior Traffic Engineer
 Division / Organisation: Ason Group
 SafeWork NSW Card Number: TCT0031686
 Signature: *James Laidler*
 Date: 03/10/2023

TGS GENERAL NOTES

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AMENDMENTS

REV	DATE	DESCRIPTION	DRW	CHK	APP
1	03/10/23	TGS	JL	JL	JL

GENERAL NOTES

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Old Wallgrove Road has a posted speed limit of 80km/h.
 Millner Avenue has a posted speed limit of 50 km/h.

DESIGNED	Jayden Lam
CHECKED BY	James Laidler
APPROVED BY	James Laidler

PAPER SIZE	A3
DATE	03/10/2023
SCALE	1:1000




CLIENT	Goodman
PROJECT	P1546
DOCUMENT INFORMATION	Traffic Guidance Scheme SP03 Intersection Upgrade Works (South)
DRAWING STATUS	Issue 1



Suite 17.02, Level 17, 1 Castlereagh St
 Sydney NSW 2000
 info@asongroup.com.au

FILE NAME	AG1546-13-v01
SHEET	AG04

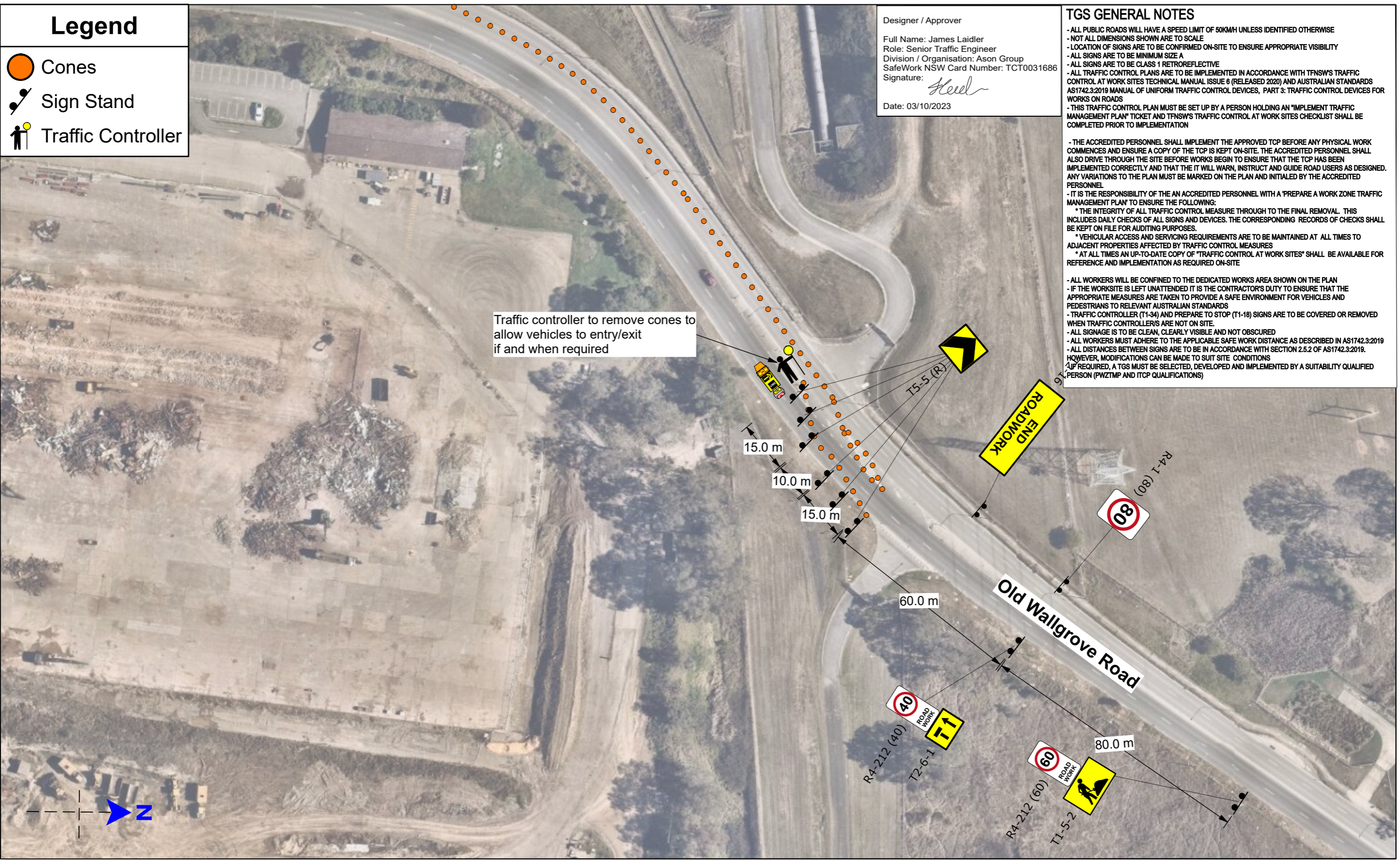
Legend

-  Cones
-  Sign Stand
-  Traffic Controller

Designer / Approver
 Full Name: James Laidler
 Role: Senior Traffic Engineer
 Division / Organisation: Ason Group
 SafeWork NSW Card Number: TCT0031686
 Signature: *Heel*
 Date: 03/10/2023

TGS GENERAL NOTES

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Traffic controller to remove cones to allow vehicles to entry/exit if and when required

AMENDMENTS

REV	DATE	DESCRIPTION	JL	JL	JL
			DRW	CHK	APP
1	03/10/23	TGS			

GENERAL NOTES

This drawing is provided for information purposes only and should not be used for construction.

Old Wallgrove Road has a posted speed limit of 80km/h.
 Millner Avenue has a posted speed limit of 50 km/h.

DESIGNED

Jayden Lam

CHECKED BY

James Laidler

APPROVED BY

James Laidler

PAPER SIZE

A3

DATE

03/10/2023

SCALE

1:1000

CLIENT

Goodman

PROJECT

P1546

2 Old Wallgrove Road, Horsley Park

DOCUMENT INFORMATION

Traffic Guidance Scheme

SP03 Intersection Upgrade Works (Line Marking Nightworks)

DRAWING STATUS

Issue 1







Suite 17.02, Level 17, 1 Castlereagh St
 Sydney NSW 2000
 info@asongroup.com.au

FILE NAME	SHEET
AG1546-14-v01	AG05

I warrant that the information contained in this drawing is true and correct to the best of my knowledge and belief and that I am not aware of any circumstances which might render the information misleading or inaccurate. I warrant that the information contained in this drawing is true and correct to the best of my knowledge and belief and that I am not aware of any circumstances which might render the information misleading or inaccurate.

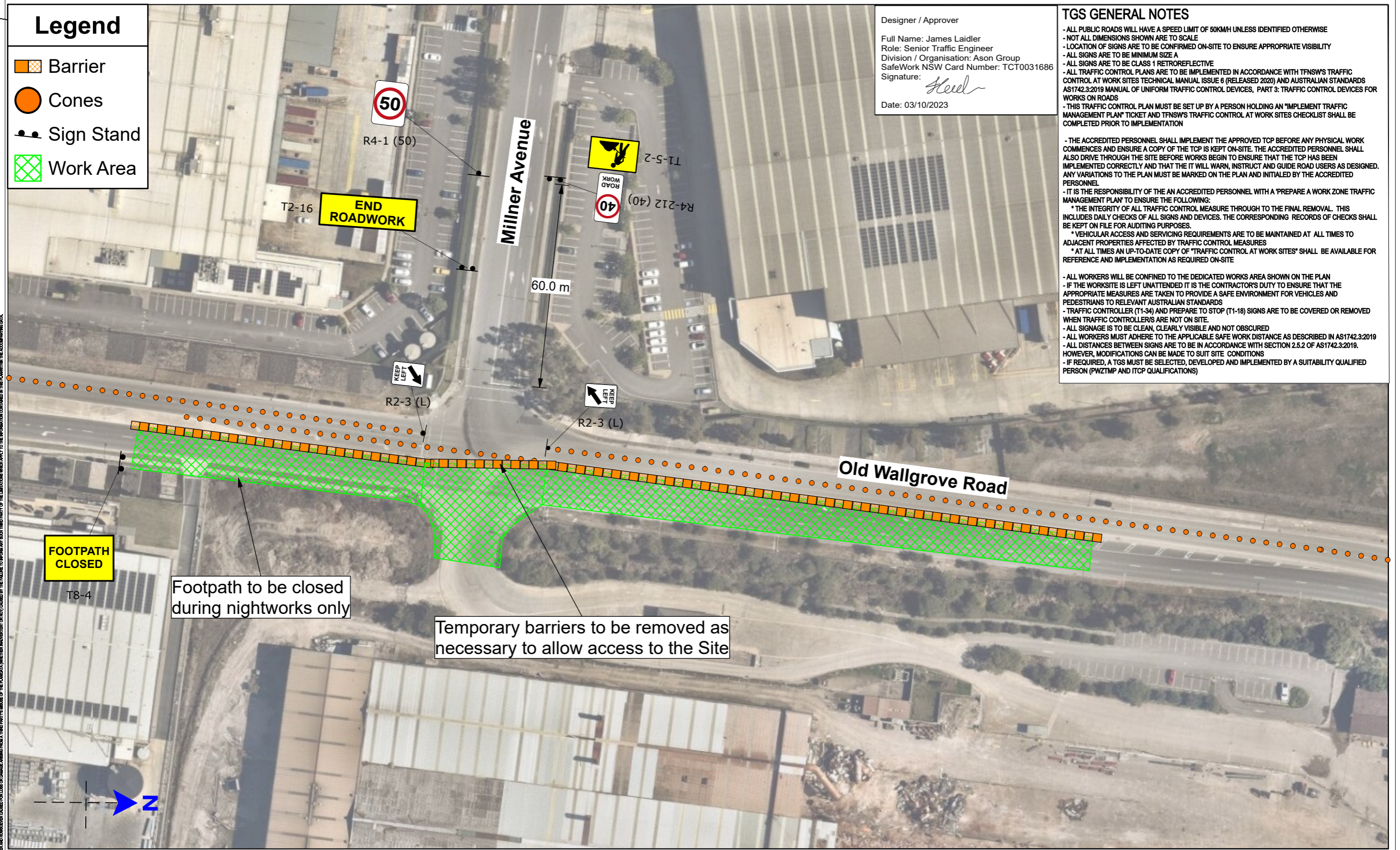
Legend

-  Barrier
-  Cones
-  Sign Stand
-  Work Area

Designer / Approver
 Full Name: James Laidler
 Role: Senior Traffic Engineer
 Division / Organisation: Ason Group
 SafeWork NSW Card Number: TCT0031686
 Signature: *Heel*
 Date: 03/10/2023

TGS GENERAL NOTES

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AMENDMENTS

REV	DATE	DESCRIPTION	DRW	CHK	APP
1	03/10/23	TGS	JL	JL	JL

GENERAL NOTES

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Old Wallgrove Road has a posted speed limit of 80km/h.
 Millner Avenue has a posted speed limit of 50 km/h.

DESIGNED

Jayden Lam

CHECKED BY
James Laidler

APPROVED BY
James Laidler

PAPER SIZE

A3

DATE
03/10/2023

SCALE
1:1000

CLIENT

Goodman

PROJECT
P1546

2 Old Wallgrove Road, Horsley Park

DOCUMENT INFORMATION

Traffic Guidance Scheme

SP03 Intersection Upgrade Works (Line Marking Nightworks)

DRAWING STATUS
Issue 1







Suite 17.02, Level 17, 1 Castlereagh St
 Sydney NSW 2000
 info@asongroup.com.au

FILE NAME
AG1546-15-v01

SHEET
AG06

I warrant that the information contained in this drawing is true and correct to the best of my knowledge and belief and that I am not aware of any circumstances which may render the information misleading or deceptive. I warrant that the information contained in this drawing is true and correct to the best of my knowledge and belief and that I am not aware of any circumstances which may render the information misleading or deceptive.

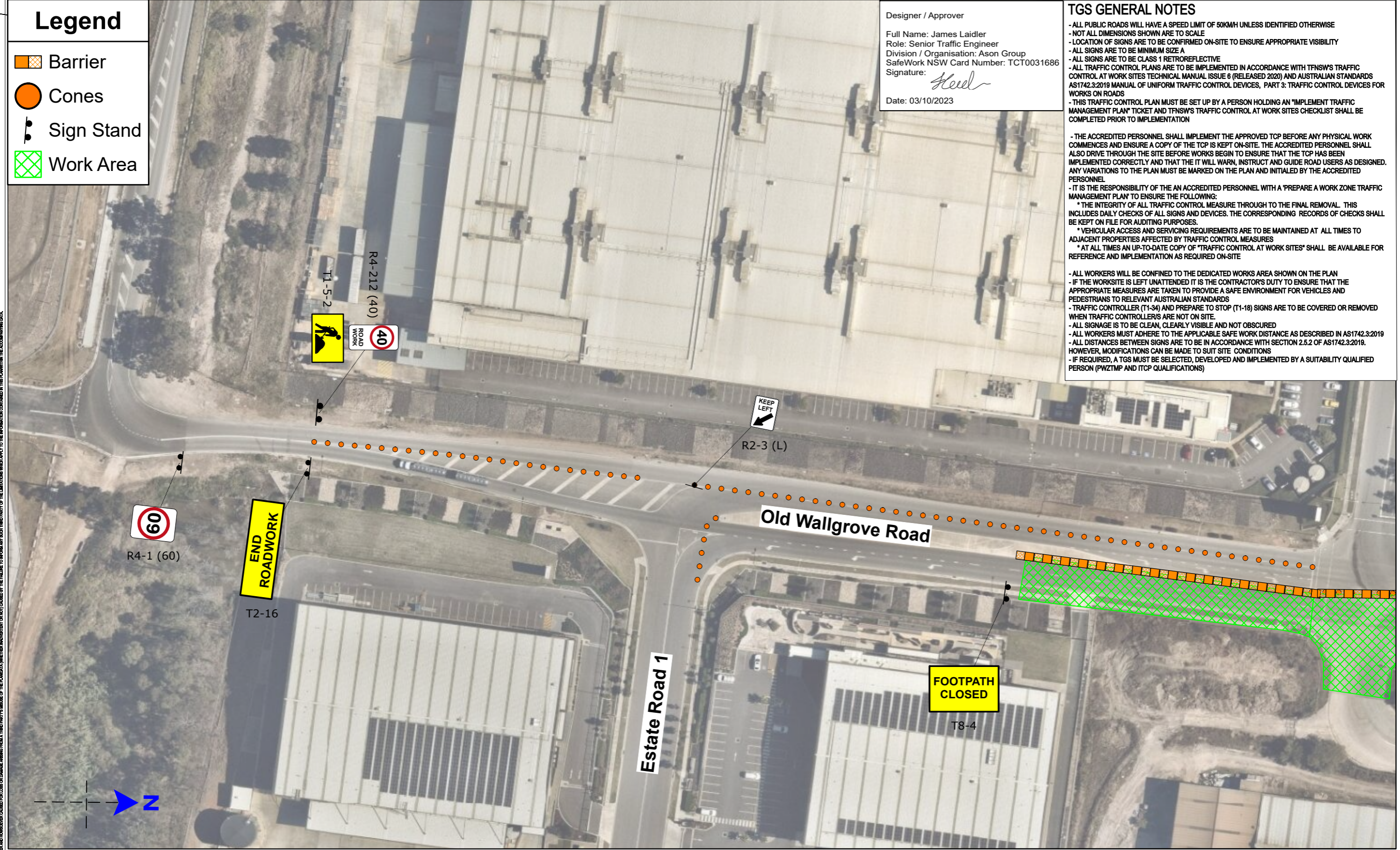
Legend

-  Barrier
-  Cones
-  Sign Stand
-  Work Area

Designer / Approver
 Full Name: James Laidler
 Role: Senior Traffic Engineer
 Division / Organisation: Ason Group
 SafeWork NSW Card Number: TCT0031686
 Signature: *Heel*
 Date: 03/10/2023

TGS GENERAL NOTES

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AMENDMENTS	
REV	DESCRIPTION
1	03/10/23 TGS

GENERAL NOTES
 This drawing is provided for information purposes only and should not be used for construction.

Old Wallgrove Road has a posted speed limit of 60km/h.
 Millner Avenue has a posted speed limit of 50 km/h.

DESIGNED Jayden Lam	PAPER SIZE A3
CHECKED BY James Laidler	DATE 03/10/2023
APPROVED BY James Laidler	SCALE 1:1000

CLIENT Goodman	PROJECT P1546
2 Old Wallgrove Road, Horsley Park	

DOCUMENT INFORMATION Traffic Guidance Scheme	DRAWING STATUS Issue 1
SP03 Intersection Upgrade Works (Line Marking Nightworks)	

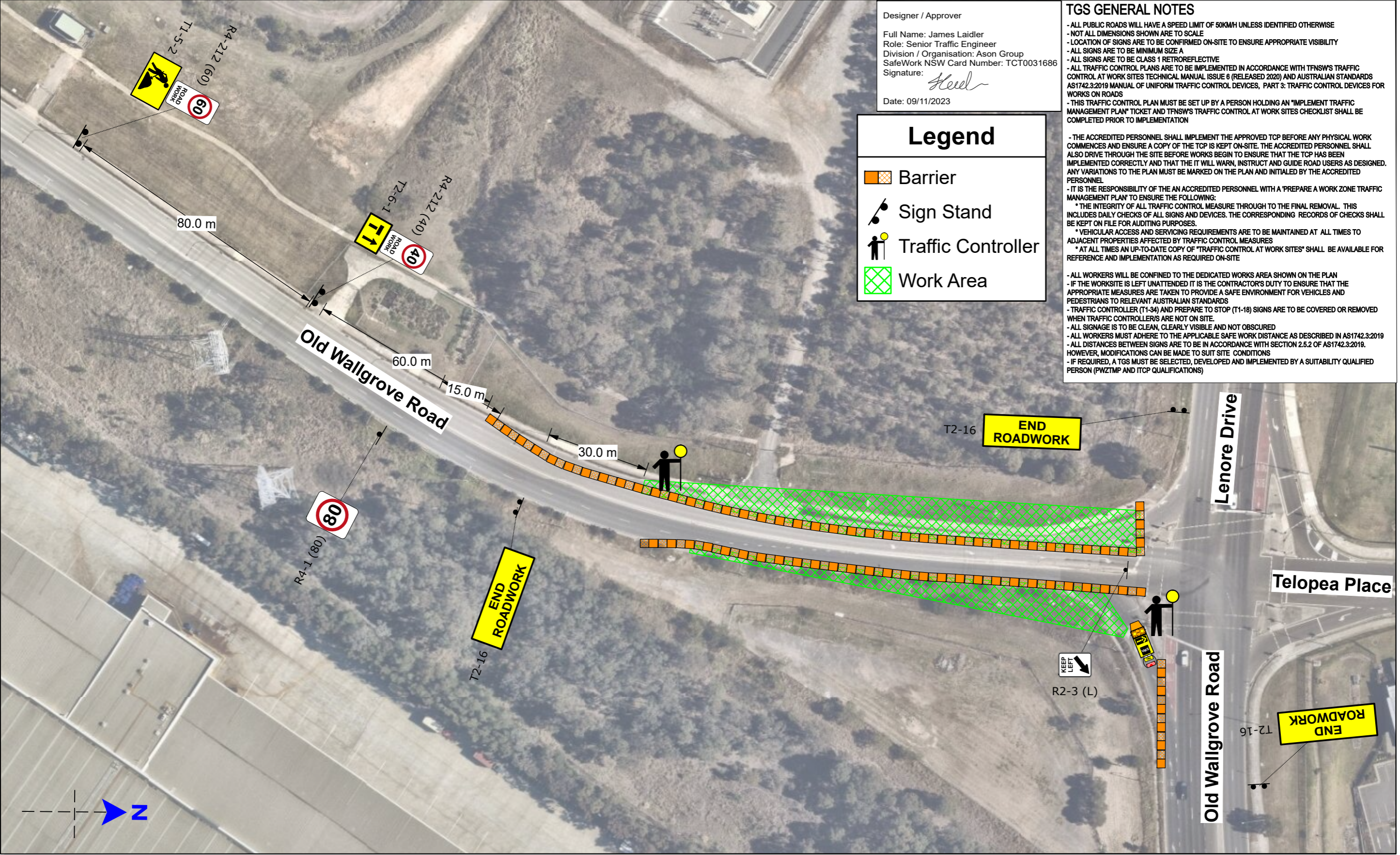


Suite 17.02, Level 17, 1 Castlereagh St
 Sydney NSW 2000
 info@asongroup.com.au

FILE NAME AG1546-16-v01	SHEET AG07
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I warrant that the information contained in this drawing is true and correct to the best of my knowledge and belief and that I am not aware of any circumstances which might render the information misleading or deceptive. I warrant that the information contained in this drawing is true and correct to the best of my knowledge and belief and that I am not aware of any circumstances which might render the information misleading or deceptive.

AUTHORISED FOR THE USE OF IMPROVED PLANS IN ANY CONSTRUCTION OR ANY COMMERCIAL PURPOSES. THE USER SHALL BE RESPONSIBLE FOR THE ACCURACY OF ALL DIMENSIONS AND LOCATIONS SHOWN ON THIS PLAN. THE USER SHALL BE RESPONSIBLE FOR THE ACCURACY OF ALL DIMENSIONS AND LOCATIONS SHOWN ON THIS PLAN. THE USER SHALL BE RESPONSIBLE FOR THE ACCURACY OF ALL DIMENSIONS AND LOCATIONS SHOWN ON THIS PLAN.



Designer / Approver
 Full Name: James Laidler
 Role: Senior Traffic Engineer
 Division / Organisation: Ason Group
 SafeWork NSW Card Number: TCT0031686
 Signature: *James Laidler*
 Date: 09/11/2023

TGS GENERAL NOTES

- ALL PUBLIC ROADS WILL HAVE A SPEED LIMIT OF 50KMH UNLESS IDENTIFIED OTHERWISE
- NOT ALL DIMENSIONS SHOWN ARE TO SCALE
- LOCATION OF SIGNS ARE TO BE CONFIRMED ON-SITE TO ENSURE APPROPRIATE VISIBILITY
- ALL SIGNS ARE TO BE MINIMUM SIZE A
- ALL SIGNS ARE TO BE CLASS 1 RETROREFLECTIVE
- ALL TRAFFIC CONTROL PLANS ARE TO BE IMPLEMENTED IN ACCORDANCE WITH TfNSW'S TRAFFIC CONTROL AT WORK SITES TECHNICAL MANUAL ISSUE 6 (RELEASED 2020) AND AUSTRALIAN STANDARDS AS1742.3:2019 MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, PART 3: TRAFFIC CONTROL DEVICES FOR WORKS ON ROADS
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 - * VEHICULAR ACCESS AND SERVICING REQUIREMENTS ARE TO BE MAINTAINED AT ALL TIMES TO ADJACENT PROPERTIES AFFECTED BY TRAFFIC CONTROL MEASURES
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Legend

- Barrier
- Sign Stand
- Traffic Controller
- Work Area

AMENDMENTS

REV	DATE	DESCRIPTION	DRW	CHK	APP
2	09/11/23	TGS	JL	JL	JL
1	03/10/23	TGS	JL	JL	JL

GENERAL NOTES

This drawing is provided for information purposes only and should not be used for construction.

Old Wallgrove Road and Lenore Drive have a posted speed limit of 80km/h.

DESIGNED	Jayden Lam
CHECKED BY	James Laidler
APPROVED BY	James Laidler

PAPER SIZE	A3
DATE	09/11/2023
SCALE	1:1000
CLIENT	Goodman
PROJECT	P1546
CLIENT ADDRESS	2 Old Wallgrove Road, Horsley Park

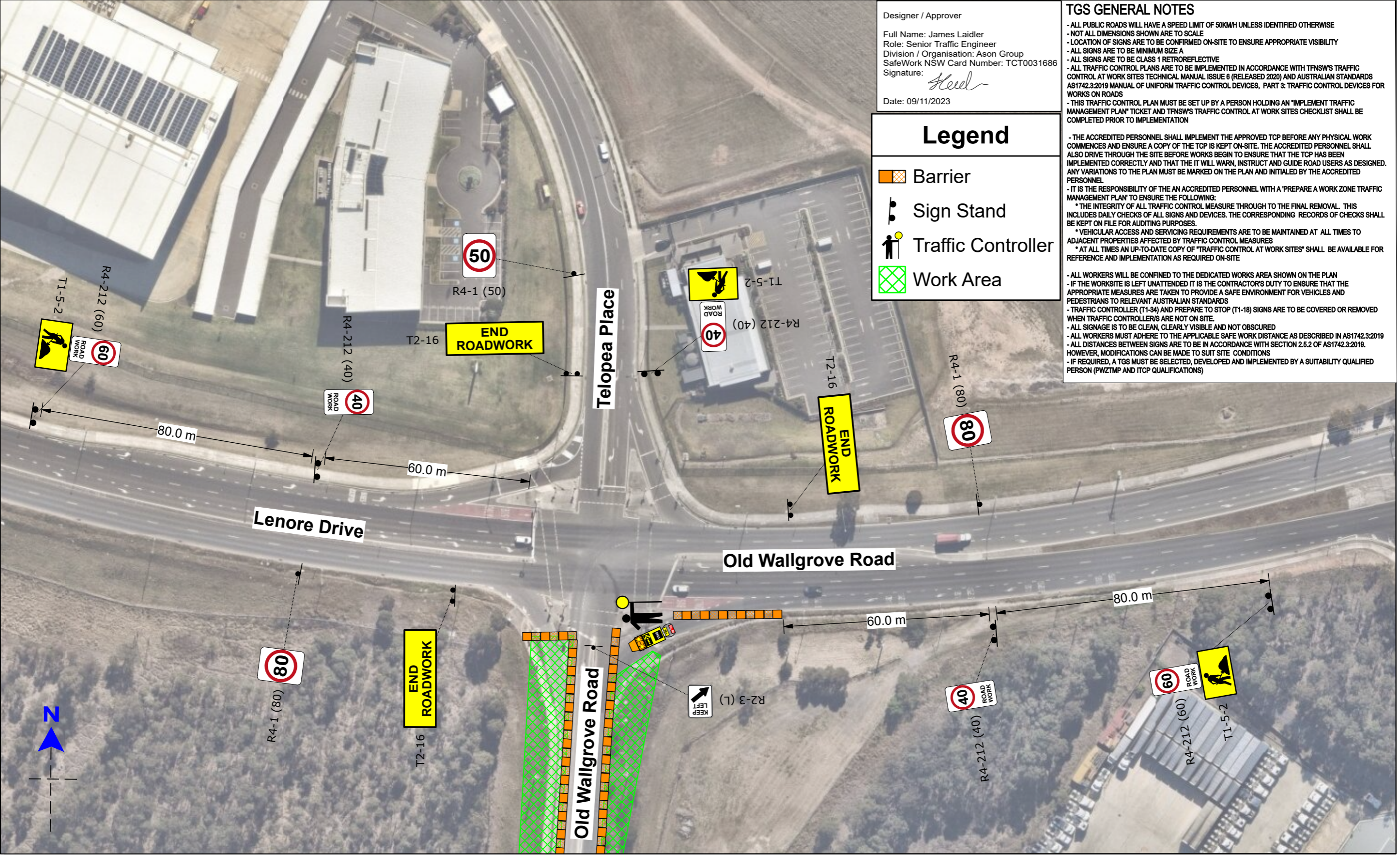
DOCUMENT INFORMATION	Traffic Guidance Scheme
	SP04 Intersection Upgrade Works (Nightworks)
DRAWING STATUS	Issue II

asongroup

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 Sydney NSW 2000
 info@asongroup.com.au

FILE NAME	AG1546-17-v02
SHEET	AG08

I AM A DESIGNER AND I HAVE PREPARED THIS DRAWING FOR THE USE OF THE CLIENT. I HAVE CHECKED THE DRAWING FOR ACCURACY AND I HAVE BEEN ADVISED BY THE CLIENT THAT THE INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT. I AM NOT RESPONSIBLE FOR THE CONSEQUENCES OF ANY ERRORS OR OMISSIONS IN THIS DRAWING. I HAVE BEEN ADVISED BY THE CLIENT THAT THE INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT. I AM NOT RESPONSIBLE FOR THE CONSEQUENCES OF ANY ERRORS OR OMISSIONS IN THIS DRAWING.



Designer / Approver
 Full Name: James Laidler
 Role: Senior Traffic Engineer
 Division / Organisation: Ason Group
 SafeWork NSW Card Number: TCT0031686
 Signature: *Heel*
 Date: 09/11/2023

Legend

- Barrier
- Sign Stand
- Traffic Controller
- Work Area

TGS GENERAL NOTES

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REV	DATE	DESCRIPTION	DRW	CHK	APP
2	09/11/23	TGS	JL	JL	JL
1	03/10/23	TGS	JL	JL	JL

GENERAL NOTES

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Old Wallgrove Road and Lenore Drive have a posted speed limit of 80km/h.

DESIGNED	Jayden Lam
CHECKED BY	James Laidler
APPROVED BY	James Laidler

PAPER SIZE	A3
DATE	09/11/2023
SCALE	1:1000

CLIENT	Goodman
PROJECT	P1546
DOCUMENT INFORMATION	Traffic Guidance Scheme SP04 Intersection Upgrade Works (Nightworks)
DRAWING STATUS	Issue II

Suite 17.02, Level 17, 1 Castlereagh St
 Sydney NSW 2000
 info@asongroup.com.au

FILE NAME	AG1546-18-v02
SHEET	AG09

Appendix E. Driver Code of Conduct

Objectives of the Driver Code of conduct

- To minimise the impact of earthworks and construction on the local and regional road network.
- Minimise conflict with other road users.
- Minimise road traffic noise; and
- Ensure truck drivers use project approved routes only.

Code of Conduct

The code of conduct applies to users driving any vehicle for work-related purposes. Drivers are to be issued with a copy of the Driver Code of Conduct, and must comply with all the following:

- Demonstrate safe driving and road safety activities.
- Abide by traffic, road, and environmental legislations.
- Follow site signage and instructions.
- Drivers must only enter and exit the site via the approved entry and exit points and travel routes.
- Drivers must not utilise Bakers Lane for any reason while travelling to or from the Site.

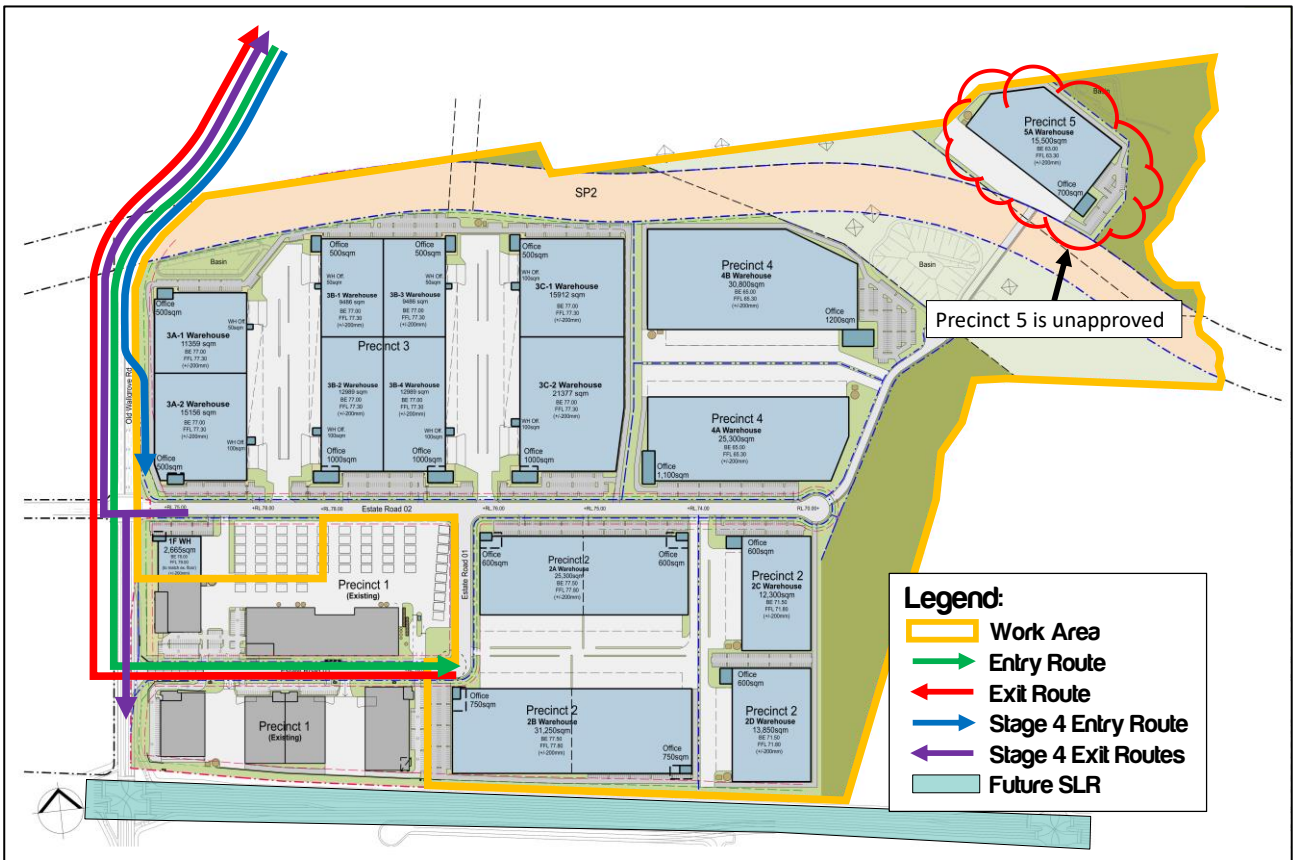
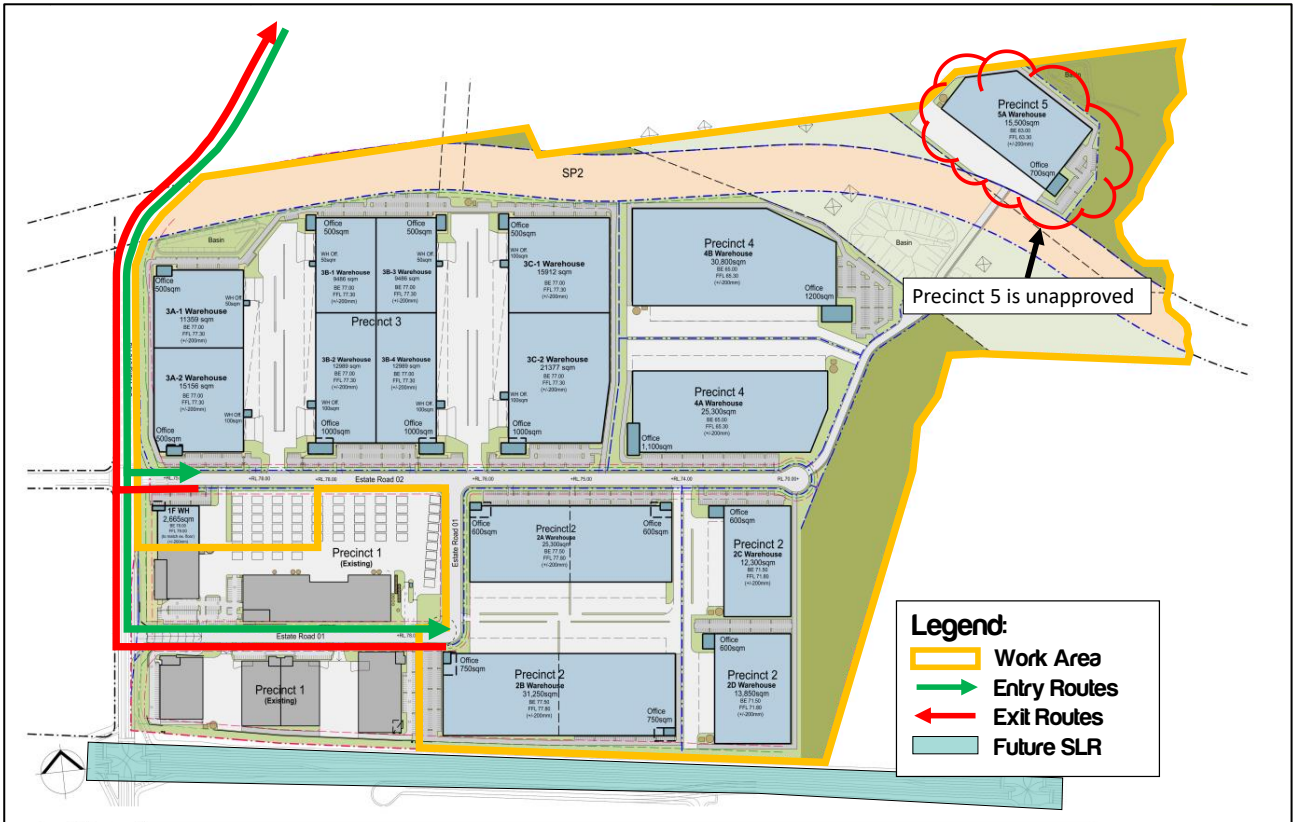
The below activities in any vehicles will be considered as a breach of conduct and will result in removal from site:

- 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 use of roads other than internal roads, and Old Wallgrove Road to arrive and/depart from the site to access the wider road network.
- Use of Bakers Lane is not permitted, for any reason.

Driver Responsibilities

All Drivers on site must:

- Abide with the following routes to and from the Site for internal work stages only and during Stage 4 – Milner Ave/Old Wallgrove Road Intersection upgrades respectively.



- Be responsible and accountable for their actions when operating a company vehicle or driving for the purposes of work.
- Display the highest level of professional conduct when driving a vehicle.
- Ensure they have a current driver licence for the class of vehicle they are driving, and this licence is to be always 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 when driving.
- Assess hazards while driving.
- Undertake daily pre-start checks of oil, tyre pressures, radiator, and battery levels of company vehicles they regularly use.
- Drive within the legal speed limits, including driving to the conditions.
- Not drive outside of the approved heavy vehicle routes. All drivers must obey weight, length and height restrictions imposed by the National Vehicle Regulator, and other Government agencies. Heavy Vehicles shall adhere to the routes outlined above.
- Be cognisant of the noise and emissions requirements imposed within the EIS, and in a broader sense, the NSW/ Australian Road Rules. Works must be constructed with the aim of achieving the construction noise management levels detailed in the Interim Construction Noise Guideline.
- Do not queue on public roads unless a prior approval has been sought.
- Be aware that at no time may a tracked plant 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.
- All drivers to report to their supervisor if they have been prescribed medication prior to the start of work.
- 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 ALL near misses, crashes, and scrapes to their manager,
- Report infringements to a manager at the earliest opportunity.
- Report vehicle defects to a manager prior to the next use of the vehicle.
- Follow the approved site access/egress routes only.
- Follow speed limits as imposed within the estate.
- Keep loads covered at all times.

The Site Team Responsibilities

The Contractor is responsible in taking all steps necessary to ensure company vehicles are as safe as possible and will not require staff to drive under conditions that are unsafe.

This will be achieved by undertaking the following:

- Ensure that all drivers adhere to the designated heavy vehicle routes as required by the route designated above. 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.
- Ensuring all vehicles are well maintained and that the equipment enhances driver, operator, and passenger safety by way of:
 - Pre-commencement checks for all new plant arriving on-site and prior to undertaking any work.
 - Daily prestart inspections for all plant, vehicles, and equipment currently on-site.

- All construction plant must be fitted with a flashing light, fire extinguisher and reverse alarms (or squawkers).
- Ensure all operators onsite have a current verification of competency (VOC) for their current driver's licence of the appropriate class.
- Ensure maintenance requirements are met and recorded.
- Identify driver training needs and arranging appropriate training or re-training. This may include providing the below:
 - Operator VOC assessment as part of all inductions.
 - Regular Toolbox discussions on safety features, managing fatigue, approved heavy routes, driver responsibility and drink-driving.
- Encouraging Safe Driving behaviour by:
 - Ensuring the subcontractor is informed if their staff become unlicensed.
 - Not covering or reimbursing staff speeding or other infringement notices.
 - Ensuring Legal use of mobile phones in vehicles while driving only
- 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.

Crash or Incident Procedure

- 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.

Environmental Procedures.

A range of measures shall be implemented to ensure the following.

- No dirt or debris from the construction vehicles is tracked on to the public road network.
- Reduce the impacts to sensitive receivers, including, where practicable, starting noisy equipment away from sensitive receivers and implementing respite periods.
- Watering of dusty activities will be undertaken, or activities temporarily halted and then resumed once weather conditions have improved.
- Containment measures for spillages will be provided at appropriate locations and in close proximity to staff car park areas, dangerous goods stores areas and main Project work areas.
- All vibratory compactors must not be used closer than 30 metres from residential buildings unless vibration monitoring confirms compliance with the vibration criteria, and
- Keep an accurate record which includes the range of measures undertaken to reduce environmental impacts.

Appendix F. TfNSW Correspondence

Lachlan O'Reilly

From: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>
Sent: Wednesday, 1 November 2023 4:37 PM
To: Lachlan O'Reilly; Development CTMP CJP
Cc: Luke Ridley; Stephanie Partridge
Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

Thank you Lachlan.

Kind Regards,

Heather Trengove
Principal Transport Planner
Customer Journey Planning
Greater Sydney
Transport for NSW

T: 0481 482 667
231 Elizabeth Street, Sydney 2000
Note: I work Mon, Tue, Wed

OFFICIAL

From: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>
Sent: Wednesday, 1 November 2023 4:30 PM
To: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>
Cc: Luke Ridley <Luke.Ridley@goodman.com>; Stephanie Partridge <Stephanie.Partridge@goodman.com>
Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

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Thanks Heather and noted regarding the below.

Confirming that the CTMP currently endorsed by TfNSW captures the following stages highlighted yellow:

Stage	Description	Planning Status	Anticipated / Actual Construction Commencement
0	Precinct 1 – Building Works Latitude Drive (Estate Road 01). Refer to Figure 1 below.	Approved (DA No. 93.1/2019)	Completed
1	Rehabilitation Works	Approved (DA No. 347.1/2921)	Underway
2a	Estate-wide Infrastructure Works – temporary erosion and sediment control basins (per condition D58), revegetation of riparian corridor and biodiversity offsets, estate road construction and completion of services (see Section 4.1 below). Intersection Works – Old Wallgrove Road / Lenore Drive and Old Wallgrove Road / Millner Avenue Precinct 1 – Hardstand expansion works and Retaining Wall Works Estate-wide subdivision	Approved (SSD 37486043)	November 2023
2b	Precinct 3 – Building Works	Approved (SSD 37486043)	April 2024
2c	Precinct 1 – Building Works	Approved (SSD 37486043)	February 2025
3	Precinct 2 - Building works	Future DA or SSDA	DA / SSDA yet to be lodged. Construction commencement to be confirmed.
4	Precinct 4 - Building works and completion of Noise Walls	Future DA or SSDA	DA / SSDA yet to be lodged. Construction commencement to be confirmed.
5	Precinct 5 bulk earthworks, retaining wall works and Basin D Building 5 - Building works	Future DA or SSDA	DA / SSDA yet to be lodged. Construction commencement to be confirmed.

Based on this, we would then consult with TfNSW on amended CTMP for Stage 3-5 as they are not approved yet and would be subject to future DA or SSDA as noted.

On the basis we consider you are aligned with this approach, we will close this consultation.

Thanks in advance and any issues please reach out.

Regards,
Lachie

OFFICIAL

From: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>

Sent: Wednesday, 1 November 2023 4:12 PM

To: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>; Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>

Cc: Luke Ridley <Luke.Ridley@goodman.com>; Stephanie Partridge <Stephanie.Partridge@goodman.com>

Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

Hi Lachlan,

Sorry for not responding to the staging plan. The only comment would be that for each subsequent stage TfNSW will require an updated CTMP. If nothing has changed and the current CTMP is still valid, the CTMP will still need to be submitted to us for endorsement with a note stating that the CTMP has not changed between stages.

Kind Regards,

Heather Trengove
Principal Transport Planner
Customer Journey Planning
Greater Sydney
Transport for NSW

T: 0481 482 667
231 Elizabeth Street, Sydney 2000
Note: I work Mon, Tue, Wed

OFFICIAL

From: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>
Sent: Wednesday, 1 November 2023 3:58 PM
To: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>
Cc: Luke Ridley <Luke.Ridley@goodman.com>; Stephanie Partridge <Stephanie.Partridge@goodman.com>
Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

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Thanks Heather,

Greatly appreciated and will have the below noted and tracked in the CEMP/CTMP for consistency.

May I please ask also if you could provide an update on the Staging Plan issued separately ? Does TfNSW have any objections with this ?

Attached again for ease.

Any issues please reach out.

Regards,
Lachie

OFFICIAL

From: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>
Sent: Wednesday, 1 November 2023 2:20 PM
To: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>; Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>
Cc: Luke Ridley <Luke.Ridley@goodman.com>; Stephanie Partridge <Stephanie.Partridge@goodman.com>
Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

Hi Lachlan,

My apologies in our delay in responding to you. However, I am happy to advise that TfNSW has endorsed the attached CTMP as per the below.

Transport for NSW (TfNSW), Greater Sydney Division has reviewed the CTMP and endorse the proposed temporary construction arrangements, subject to the following conditions:

- Any Traffic Guidance Schemes (TGS) prepared are to comply with AS1742.3 and Transport for NSW's "Traffic Control at Worksites" manual and be signed by a person with TfNSW certification to prepare a TGS.
- Traffic volumes utilising the westbound slip lane off Old Wallgrove Road will not support daytime occupancy during the week.
- Proponent must apply and obtain approval from the Transport Management Centre for a Road Occupancy Licence (ROL) for any required lane closures and/or Speed Zone Authorisations as part of the ROL that may impact the state road network or is within 100m of traffic signals.
- Access to be maintained for residents, businesses and emergency vehicles at all times.
- No marshalling or queuing of construction vehicles is to occur on public roads. Arriving vehicles that are not able to use parking bay/work zone must continue to a holding point until space becomes available.
- When heavy vehicles are entering or leaving the site a traffic controller is to be provided to manage any conflicts between pedestrians and heavy vehicles.
- Access to the site should be at the farthest point from the intersection as practicable to reduce additional conflicting vehicle manoeuvres.
- Transport for New South Wales reserve the right to alter the CTMP Conditions at any time to maintain safe and efficient traffic and pedestrian movements in this area.
- Any approved Works Zone should only be used for work activities. No infrastructure, including bins, tanks or traffic control equipment should be left on the road when the works zone is not in use by a vehicle. All non-vehicular items must be contained with the work area and not on the carriageway. When a work zone is not in use, the area/lane must be opened up to allow for normal trafficable conditions
- Should TfNSW Network and Asset Management, Network Operations, CJP Operations, Network and Safety or other TfNSW business area determine that that more information is to be provided for review and acceptance, including other TCS locations, this information must be submitted prior to the CTMP being implemented, or otherwise agreed upon.
- Any traffic control devices, including signage and line marking, should be installed by the proponent and must conform with Australian Standards 1742

Endorsement of the CTMP is not an approval to the type of traffic management or delineation devices used, nor is it an approval to any traffic guidance schemes depicted within the CTMP. It is assumed that the proponent has used type approved devices and has developed its traffic guidance schemes in accordance with the relevant Australian Standards and Guidelines.

The proponent is to ensure local residents, businesses, schools and other stakeholders in the affected area as well as emergency service organisations are notified of the changes associated with the CTMP, prior to its implementation.

Please ensure this CTMP is shared and adhered to by all contractors.

Kind Regards,

Heather Trengove
Principal Transport Planner
Customer Journey Planning
Greater Sydney
Transport for NSW

T: 0481 482 667
231 Elizabeth Street, Sydney 2000

Note: I work Mon, Tue, Wed

OFFICIAL

From: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>
Sent: Tuesday, 31 October 2023 3:59 PM
To: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>
Cc: Luke Ridley <Luke.Ridley@goodman.com>; Stephanie Partridge <Stephanie.Partridge@goodman.com>
Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

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Hi Heather et TfNSW team,

I hope the week has started well.

Apologies, I have tried to call to discuss the below.

Would you please be able to provide an updated on the CTMP and Staging plan issued for consultation?

We have received majority of the consultation comments on all the plans required under the SSD, and keen to address any comments from TfNSW.

Appreciate your help in advance, and any issues please advise.

Regards,
Lachie

OFFICIAL

From: Lachlan O'Reilly
Sent: Thursday, 26 October 2023 8:48 PM
To: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>
Cc: Luke Ridley <Luke.Ridley@goodman.com>; Stephanie Partridge <Stephanie.Partridge@goodman.com>
Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

Hi Heather,

I hope you have had a great week.

Just following up on the consultation.

If possible could we receive any comments by COB tomorrow ?

A 'no comment' response will also suffice our consultation needs.

Appreciate your help with this, and any issues please let me know.

Cheers,
Lachie

From: Lachlan O'Reilly
Sent: Friday, 20 October 2023 9:37 AM
To: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>
Cc: Luke Ridley <Luke.Ridley@goodman.com>; Stephanie Partridge <Stephanie.Partridge@goodman.com>
Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

Hi Heather,

That timing below sounds good and is greatly appreciated.

Appreciate your assistance and any issues let me know.

Regards,
Lachie

From: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>
Sent: Friday, 20 October 2023 9:17 AM
To: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>; Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>
Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

Hi Lachlan,

The SME's working on reviewing the CTMP have been inundated with requests over the last two weeks. They are still working through the CTMP's and hope to have comments to me by mid next week.

Kind Regards,

Heather Trengove
Principal Transport Planner
Customer Journey Planning
Greater Sydney
Transport for NSW

T: 0481 482 667
231 Elizabeth Street, Sydney 2000
Note: I work Mon, Tue, Wed

OFFICIAL

From: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>
Sent: Thursday, 19 October 2023 7:11 PM
To: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>
Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

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Hi Heather,

I hope you are well.

I just wanted to see if you had any updates on the CTMP review ?

Really appreciate your assistance with this, and any questions please reach out.

Regards,

OFFICIAL

From: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>

Sent: Monday, 9 October 2023 9:52 AM

To: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>; Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>

Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

Hi Lachlan,

As some of our SME's work in our operations space and have multiple transport based projects they manage along with reviewing CTMP's we usually have a 2-3 week turnaround on comments.

Unfortunately, COB 13th October will be unachievable.

As soon as I have comments for you I will share them with you.

In the meantime if you have any other questions please don't hesitate to contact me.

Kind Regards,

Heather Trengove
Principal Transport Planner
Customer Journey Planning
Greater Sydney
Transport for NSW

T: 0481 482 667
231 Elizabeth Street, Sydney 2000

Note: I work Mon, Tue, Wed

OFFICIAL

From: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>

Sent: Monday, 9 October 2023 9:29 AM

To: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>

Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

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Thankyou Heather,

Any issues throughout the review process please let me know.

Just so I can communicate internally, do you have a rough timeline how long this review takes ? Is the below timeline of COB 13 Oct 23 achievable ?

Thanks in advance and have a great day.

Regards,

OFFICIAL

From: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>

Sent: Monday, 9 October 2023 9:23 AM

To: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>; Brett Morrison (TAR TECHN) <Brett.Morrison4@transport.nsw.gov.au>; Simon Turner <Simon.Turner2@transport.nsw.gov.au>; Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>

Cc: Stephanie Partridge <Stephanie.Partridge@goodman.com>; Luke Ridley <Luke.Ridley@goodman.com>; Guy Smith <Guy.Smith@goodman.com>; Ali Rasouli <ali.rasouli@asongroup.com.au>; James Laidler <james.laidler@asongroup.com.au>; Jayden Lam <Jayden.Lam@asongroup.com.au>; Pahee Rathan <Pahee.RATHAN@transport.nsw.gov.au>

Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

Hi Lachlan,

I have your CTMP for circulation to SME's and review now.

Kind Regards,

Heather Trengove
Principal Transport Planner
Customer Journey Planning
Greater Sydney
Transport for NSW

T: 0481 482 667
231 Elizabeth Street, Sydney 2000

Note: I work Mon, Tue, Wed

OFFICIAL

From: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>

Sent: Monday, 9 October 2023 8:54 AM

To: Brett Morrison (TAR TECHN) <Brett.Morrison4@transport.nsw.gov.au>; Simon Turner <Simon.Turner2@transport.nsw.gov.au>; Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>

Cc: Stephanie Partridge <Stephanie.Partridge@goodman.com>; Luke Ridley <Luke.Ridley@goodman.com>; Guy Smith <Guy.Smith@goodman.com>; Ali Rasouli <ali.rasouli@asongroup.com.au>; James Laidler <james.laidler@asongroup.com.au>; Jayden Lam <Jayden.Lam@asongroup.com.au>; Pahee Rathan <Pahee.RATHAN@transport.nsw.gov.au>

Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

You don't often get email from lachlan.oreilly@goodman.com. [Learn why this is important](#)

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Thanks Brett,

Do I need to send the CTMP to this email separately, or has this been done by yourself ?

Appreciate your help with this.

Regards,

OFFICIAL

From: Brett Morrison (TAR TECHN) <Brett.Morrison4@transport.nsw.gov.au>

Sent: Monday, 9 October 2023 8:20 AM

To: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>; Simon Turner <Simon.Turner2@transport.nsw.gov.au>; Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>

Cc: Stephanie Partridge <Stephanie.Partridge@goodman.com>; Luke Ridley <Luke.Ridley@goodman.com>; Guy Smith <Guy.Smith@goodman.com>; Ali Rasouli <ali.rasouli@asongroup.com.au>; James Laidler <james.laidler@asongroup.com.au>; Jayden Lam <Jayden.Lam@asongroup.com.au>; Pahee Rathan <Pahee.RATHAN@transport.nsw.gov.au>

Subject: RE: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

Thank you for your email. Any further submissions regarding CTMP please send to Development CTMP CJP development.CTMP.CJP@transport.nsw.gov.au for registration and allocation.

Brett Morrison

Senior Land Use Planner
Land Use Assessment Western
Planning and Programs
Greater Sydney

Transport for NSW

E Brett.Morrison4@transport.nsw.gov.au

27-31 Argyle Street
Parramatta NSW 2150



**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.

OFFICIAL: **Sensitive – NSW Government**

OFFICIAL

From: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>

Sent: Saturday, 7 October 2023 11:10 AM

To: Simon Turner <Simon.Turner2@transport.nsw.gov.au>; Brett Morrison (TAR TECHN) <Brett.Morrison4@transport.nsw.gov.au>

Cc: Stephanie Partridge <Stephanie.Partridge@goodman.com>; Luke Ridley <Luke.Ridley@goodman.com>; Guy Smith <Guy.Smith@goodman.com>; Ali Rasouli <ali.rasouli@asongroup.com.au>; James Laidler <james.laidler@asongroup.com.au>; Jayden Lam <Jayden.Lam@asongroup.com.au>; Pahee Rathan <Pahee.RATHAN@transport.nsw.gov.au>

Subject: Oakdale East Estate | SSD 37486043 CTMP Consultation - Transport for NSW

Importance: High

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Hi Simon & Brett,

I trust you have both been well.

Hoping I have come to the right people and/or you could point me in the right direction.

As you are aware, we are shortly about to commence construction of the scope associated with SSD 37486043, which is for the Infrastructure and Stage 2 Development associated with Oakdale East Industrial Estate.

As part of the SSD 37486043 Consent, we are required to consult with yourself in respect of the Construction Traffic Management Plan ('CTMP'):

The below extract from SSD 37486043 outlines the requirement for consultation to occur with TfNSW

- D27. Prior to the commencement of construction of the development, the Applicant must prepare a Construction Traffic Management Plan for the development to the satisfaction of the Planning Secretary. The plan must form part of the CEMP required by condition E2 and must:
- (a) be prepared by a suitably qualified and experienced person(s);
 - (b) be prepared in consultation with Council, TfNSW and Water NSW;
 - (c) detail the measures to be implemented to ensure safe and efficient access to the site during construction both on-site and for the external road upgrades;
 - (d) detail truck numbers, hours of operation, heavy vehicle routes, access arrangements, traffic controls and parking;
 - (e) 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;
 - (iii) minimise road traffic noise; and
 - (iv) ensure truck drivers use specified routes;
 - (f) include a program to monitor the effectiveness of these measures; and
 - (g) if necessary, detail procedures for notifying residents and the community, of any potential disruptions to routes.

Please note, this plan has been prepared by Ason Group and follows the same principles as per the Oakdale East Rehabilitation Approval CTMP and the previous endorsed Oakdale West CTMP's by TfNSW.

Based on the above, can you please review the plan and confirm if you have any changes or comments ? A 'no comment' response is also satisfactory to close out our consultation requirement.

As we are seeking to commence works as soon as possible, would it be possible to receive your comments back by **COB 13 October 23** ?

I really do appreciate your help with this, and any issues please give me a call.

Regards,
Lachie



Lachlan O'Reilly
Project Manager
Lachlan.OReilly@goodman.com

T. +61 2 9230 7284
M. +61 481 254 556

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Goodman Limited ABN 69 000 123 071

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Appendix G. Fairfield City Council Correspondence

Lachlan O'Reilly

From: Lachlan O'Reilly
Sent: Tuesday, 7 November 2023 3:43 PM
To: Sanchit Kapoor
Cc: Patrick Warren; Stephanie Partridge; Luke Ridley
Subject: RE: Oakdale East Industrial Estate | SSD 37486043 CEMP Consultation - Fairfield City Council
Attachments: D28 (b) - TfNSW CTMP Endorsement.pdf; RE: Oakdale East Industrial Estate | SSD 37486043 CEMP Consultation - Fairfield City Council

Hi Sanchit,

Thanks for your comments.

Just tried to give you a call to discuss the following.

Please see below comments in Red. These have been responded to on the basis that we have shared the CTMP for consultation, to manage Construction Traffic. All of the items (aside from Item 8) are not related to CTMP plan.

Notwithstanding the above, your comments are noted and will be addressed in the Operational Traffic Management Plan and relevant designs as applicable.

Please advise if you disagree with the below, otherwise will include comments as relevant in the CTMP and close this consultation accordingly.

Regards,

From: Sanchit Kapoor <skapoor@fairfieldcity.nsw.gov.au>
Sent: Tuesday, 7 November 2023 2:10 PM
To: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>
Cc: Patrick Warren <PWarren@fairfieldcity.nsw.gov.au>; Stephanie Partridge <Stephanie.Partridge@goodman.com>; Luke Ridley <Luke.Ridley@goodman.com>
Subject: RE: Oakdale East Industrial Estate | SSD 37486043 CEMP Consultation - Fairfield City Council

Hi Lachlan,

Thank you for your email and our apologies for the delayed response.

We have reviewed the ~~CTMP staging plan~~ and have the following comments:

1. The estate roads are to be designed to accommodate the swept paths for 30m B Double vehicle in the operational stage of the development. Turnaround (cul-de-sac) must be sufficient for a for 30m B Double vehicle to turn around (precinct 4). This is to ensure road safety of motorists and avoiding three point turn movements. **Noted however this is an Operational Traffic Item and not a CTMP item. Notwithstanding this, Condition D14 of the SSDA Approves 30M B-Double as the design submitted allowed for this. GMG consider this closed.**
2. Regulatory signage including No Stopping and No parking must be implemented at no cost to Council. This includes costs of installation, consultation, referral to Traffic and/or Services Committees for the public road. **Condition D43 of the consent notes this. GMG consider this closed.**
3. Temporary sealed turnaround area (adjacent to Precinct 1) must be provided within Estate Road 01 unless this road is already constructed. If turnaround is expected to last more than 5 days, the turnaround area must be constructed as a permanent infrastructure including preparing designs addressing pavement, seal and turn swept

paths design for the design vehicle. **Noted and will consider if the programming of works requires this. As this is an operational item GMG consider closed.**

4. Construction traffic management plan referred to as Operational Traffic Management Plan must be submitted to Council. The plan must address, parking, access and turnaround area. Work must not commence prior to the approval of this plan. **Noted and as per Condition D47 (b), GMG will consult this with FCC. As this is the CTMP, GMG consider this closed.**

5. The pavement must be suitable for Higher Mass Loading (HML) and road widths must be designed to meet the AusRoad Guidelines. Any departures from the guidelines must be noted and explanation provided before the issue of Construction Certificate. **Noted and will consider in accordance with the Conditions of Consent and in consultation with the Civil Engineer. As this is the CTMP, GMG consider this closed.**

6. Issues raised in Council's memorandum dated 11 August 2023 must be addressed to the satisfaction of Council. Unless otherwise agreed, all conditions raised in the memorandum shall be complied with. **Assume you are referring to the Response to Submission from FCC ? These have been responded to via the RtS and conditioned accordingly. As such GMG consider this closed.**

7. Based on the number of vehicles that will use the state road per day, this Construction Traffic Management Plan shall be referred to Transport for NSW for review and comments. Issues raised by TfNSW shall be satisfactorily addressed, if any. The applicant shall provide details of the contact person who has been contacted regarding this CTMP. **As per Condition D28 (b), this has been complete and plan endorsed by TfNSW. Refer attached. GMG consider this closed.**

8. The applicant shall ensure that the largest vehicle (19m articulated vehicle and/or truck and dog trailer) to be used during construction can satisfactorily traverse the entire construction vehicle route and can satisfactorily turn into and out of the site. **As per the CTMP(Section 2), Truck and Dog is the Max Vehicle size. The contractor will ensure adequate access through the site, and Figure 4 and 5 show access arrangements to the site, which work with these vehicles. As such GMG consider this closed.**

9. The applicant needs to apply for a Road Occupancy Permit from Council's Assets team branch when occupying any part of public roads owned by Council. **Noted and will complete as required. As such GMG consider this closed**

10. Restricted access vehicles must not travel on local roads unless the applicant has obtained permits from National Heavy Vehicle Regulator (NHVR). Requests to use these vehicles on public road(s) must be submitted to the NHVR at least 28 days prior to the vehicles' scheduled travel dates. Information on restricted access vehicles can be found on the [website](http://www.nhvr.gov.au) at www.nhvr.gov.au. **Noted however this is an Operational Traffic Item and not a CTMP item. Notwithstanding this, GMG will apply if required. GMG consider this closed.**

11. The relocation of the existing bus stop shall be consulted with the affected stakeholders. Any issues raised by the affected businesses, TfNSW and bus company need to be satisfactorily addressed. Any changes to the existing parking restrictions on a local road require the applicant to apply to the Fairfield Traffic Committee for approval. **GMG are not proposing to move any bus tops, as the work under this consent are all in a new estate. Furthermore, if this was relevant, this is an Operational Traffic Item and not a CTMP item. GMG consider this closed.**

12. The applicant needs to provide a staging plan to show what works associated with the development proposal would be required to be undertaken at various stages of the construction works. This would help Council to determine if any relevant approvals (Section 138 Approval of the Roads Act 1993 and Traffic Committee) are required to be obtained. Also, staging plan needs to consider the legibility of the road network and access/turning areas provided function properly and have the correct capacity and connections when each stage is completed. **Please see attached staging plan consultation issued to Patrick. This has been reviewed and closed by FCC. As such, GMG consider this closed**

Please let us know if any questions.

Thanks.

Kind regards,

Sanchit Kapoor
Traffic and Transport Coordinator | Design Services
City Delivery
PO Box 21, Fairfield NSW 1860
P 9725 0859

www.fairfieldcity.nsw.gov.au

SKapoor@fairfieldcity.nsw.gov.au





We acknowledge the Cabrogal of the Darug nation who are the Traditional Custodians of this Land. We also pay our respect to the Elders both past, present and emerging of the Darug Nation.



From: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>
Sent: Thursday, 19 October 2023 10:19 AM
To: Patrick Warren <PWarren@fairfieldcity.nsw.gov.au>
Cc: Stephanie Partridge <Stephanie.Partridge@goodman.com>; Luke Ridley <Luke.Ridley@goodman.com>
Subject: RE: Oakdale East Industrial Estate | SSD 37486043 CEMP Consultation - Fairfield City Council

Hi Patrick,

Thanks for your help with the Waste and Traffic plans thus far.

As mentioned the other day and per the below, please see attached next document required to be consulted with FCC, the Staging Plan.

The consultation of this plan with FCC is required as indicated by Condition A11 (a) as noted below.

STAGING PLAN

A11. 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;
- (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

Condition A11-A13 have been respond to within the attached plan as required under the consent.

Could you please review or share with the relevant business unit that will review this plan ?

Any issues please let me know, otherwise thanks in advance.

Cheers,
Lachie

From: Patrick Warren PWarren@fairfieldcity.nsw.gov.au
Sent: Wednesday, 18 October 2023 10:01 AM

To: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>

Subject: RE: Oakdale East Industrial Estate | SSD 37486043 CEMP Consultation - Fairfield City Council

Hi Lachlan,

The waste management plan and Construction traffic management plan have been referred out to the following teams.

- Traffic and transport team
- Waste Management and cleansing operations

I have provided your details to the coordinators of these teams who will delegate review and feedback to an officer for review.

Should they have comments/concerns they will forward them to directly by 01 November 2023.

I also note the other plans yet to be submitted.

Kind Regards

Patrick Warren

Senior Strategic Land Use Planner | Strategic Land Use Planning

02 9725 0215 | pwarren@fairfieldcity.nsw.gov.au

Customer Service: 9725 0222 | PO Box 21 Fairfield NSW 1860

www.fairfieldcity.nsw.gov.au

mail@fairfieldcity.nsw.gov.au



We acknowledge the Cabrogal of the Darug Nation who are the Traditional Custodians of this Land. We also pay our respect to the Elders both past, present and emerging of the Darug Nation.



From: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>

Sent: Tuesday, 17 October 2023 6:27 PM

To: Patrick Warren <PWarren@fairfieldcity.nsw.gov.au>

Cc: Stephanie Partridge <Stephanie.Partridge@goodman.com>; Luke Ridley <Luke.Ridley@goodman.com>

Subject: Oakdale East Industrial Estate | SSD 37486043 CEMP Consultation - Fairfield City Council

Importance: High

Hi Patrick,

Thanks for your time on the phone this afternoon.

As discussed, SSD 37486043 was approved by DPE on 11 October 2023.

As part of the SSD 37486043 Consent, we are required to consult with yourself in respect of the following plans prior to the commencement of Construction.

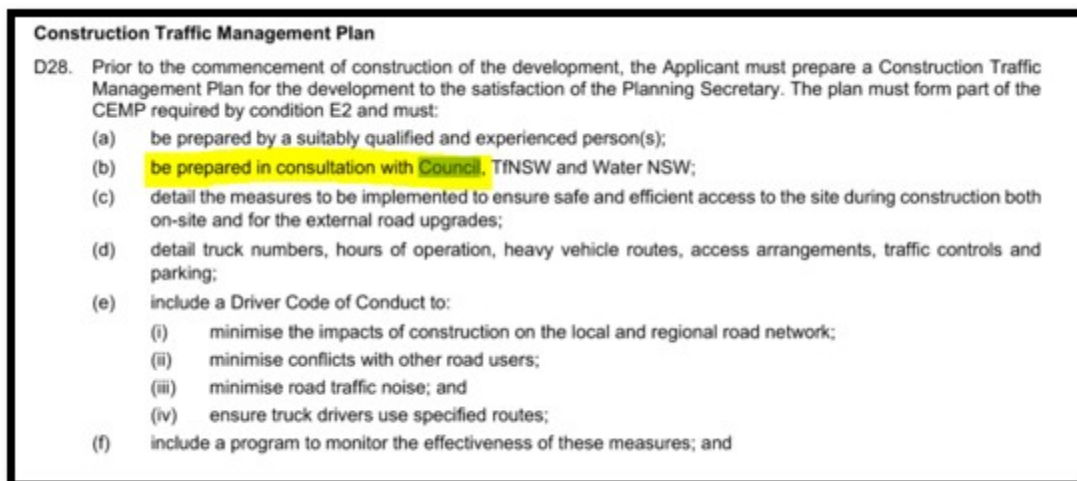
- Staging Plan (Condition A11 (a));
- Construction Traffic Management Plan (Condition D28 (b));
- Road Safety Audit (Internal Estate Roads) (Condition D40 (b));
- Stormwater Management System Design (Condition D58 (b));
- Waste Management Plan (Condition D77)

A summary of the relevant consent conditions in respect of each plan is as follows:

Construction Traffic Management Plan

Please see attached Construction Traffic Management Plan ('CTMP') in respect of the SSDA works.

The below extract from SSD 37486043 outlines the requirement for consultation to occur with Council



Please note, this plan has been prepared by Ason Group and follows the same principles as per the endorsed Rehabilitation CTMP

Based on the above, can you please review the plan and confirm if you have any changes or comments? A 'no comment' response is also satisfactory to close out our consultation requirement.

Waste Management Plan

Please see attached Waste Management Plan ('WMP').

The below extract from SSD 37486043 outlines that we are required to obtain agreement with Council on the Waste Storage Area design.

Waste Management Plan

- D75. Prior to the commencement of construction of the Stage 2 development, the Applicant must update the Waste Management Plan included in the EIS for the development. The Plan must:
- detail the type and quantity of waste to be generated during construction and operation of the Stage 2 development;
 - describe the handling, storage and disposal of all waste streams generated on site, consistent with the *Protection of the Environment Operations Act 1997*, *Protection of the Environment Operations (Waste) Regulation 2014* and the *Waste Classification Guideline* (Environment Protection Authority, 2014); and
 - detail the materials to be reused or recycled, either on or off site.
- D76. The Applicant must implement the Waste Management Plan for the duration of construction and operation.

Waste Storage and Processing

- D77. Prior to the commencement of construction of the Stage 2 development, the Applicant must obtain agreement from Council for the design of the waste storage area for the Stage 2 development.

Please note, this plan is the same plan that Council have seen as part of the SSDA referral process, however it has been updated to now include the specific conditions within the SSD.

Furthermore, Condition D77 is responded to via Section 5.6.2, 6.4 and Figure 6 of the attached, where the FCC requirements are outlined and will be adhered to.

Based on the above, can you please review the plan and confirm if you have any changes or comments? A 'no comment' response is also satisfactory to close out our consultation requirement.

In respect of the following plans, these will be shared once we finalise them imminently:

- Staging Plan (Condition A11 (a));
- Road Safety Audit (Internal Estate Roads) (Condition D40 (b));
- Stormwater Management System Design (Condition D58 (b));

As per our conversation, could you please forward this thread and/or point me in the right direction to the correct individuals in FCC?

We are seeking to commence works as soon as possible, thus would it be possible at all to receive your comments back by **COB 27 October 23**?

Really do appreciate your help with this, and any issues please give me a call.

Regards,
Lachie



Lachlan O'Reilly
Project Manager
Lachlan.OReilly@goodman.com

T. +61 2 9230 7284
M. +61 481 254 556

The Hayesbery
1-11 Hayes Road
Rosebery NSW 2018



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Appendix H. WaterNSW Correspondence

Lachlan O'Reilly

From: Justine Clarke <Justine.Clarke@waternsw.com.au>
Sent: Thursday, 26 October 2023 3:11 PM
To: Lachlan O'Reilly
Cc: Stephanie Partridge; Luke Ridley; Alanna Ryan; Jessica Keegan
Subject: RE: Oakdale East Estate | SSD 37486043 CTMP/ CNVMP and Staging Plan Consultation - WaterNSW

Hi Lachlan

Thank you for reviewing our comments and responding. We are supportive of your proposed changes and they satisfy our requirements.

Agree that this is sufficient and closes your consultation requirement with WaterNSW.

Can we please request final copies of the revised documents when approved by the department (for our records).

Regards

Justine Clarke
Catchment and Asset Protection Adviser



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From: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>
Sent: Thursday, October 26, 2023 11:28 AM
To: Justine Clarke <Justine.Clarke@waternsw.com.au>
Cc: Stephanie Partridge <Stephanie.Partridge@goodman.com>; Luke Ridley <Luke.Ridley@goodman.com>; Alanna Ryan <aryan@slrconsulting.com>; Jessica Keegan <jkeegan@slrconsulting.com>
Subject: [EXTERNAL] RE: Oakdale East Estate | SSD 37486043 CTMP/ CNVMP and Staging Plan Consultation - WaterNSW

This message is from an External Sender. Be careful opening emails, attachments and links from unknown senders.

Hi Justine,

Thanks for the below and your time on the phone yesterday.

Further to the below, and our discussion, please see comments in Red.

Please let me know if you have any queries, otherwise we will make the amended changes and deem this will suffice WaterNSW to confirm consultation can be closed.

Any issues with this approach please let me know.

Regards,
Lachie



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From: Justine Clarke <Justine.Clarke@waterNSW.com.au>

Sent: Wednesday, 25 October 2023 1:46 PM

To: Lachlan O'Reilly <Lachlan.OReilly@goodman.com>

Subject: Oakdale East Estate | SSD 37486043 CTMP/ CNVMP and Staging Plan Consultation - WaterNSW

Dear Lachlan

Thank you for your consultation request with WaterNSW related to the Oakdale East Industrial Estate (OEIE) approval conditions and Stage 2 development under SSD 37486043. WaterNSW appreciates being involved early in this project and the continued consultation.

WaterNSW acknowledges receipt of the following documents, related to Condition A11 (a), Condition D27 (b), and Condition D21 (b) respectively.

- Staging Plan
- Construction Traffic Management Plan (CTMP)
- Vibration Monitoring Plan (VMP)

Construction Traffic Management Plan

It is noted that **no** access to the site is proposed via the WaterNSW pipeline corridor. All access is via Old Wallgrove Road as identified in Section 3.1 of the CTMP report (Ason, 6/10/2023).

WaterNSW has reviewed the CTMP and advise the following:

- WaterNSW affirm that no access to the WaterNSW pipelines corridor is allowed without written approval of WaterNSW **GMG confirm no access will be provided to the WaterNSW Corridor without prior approval. Furthermore Figure 4 of the CTMP confirms the access to site which is via Latitude Drive and/or Milner Ave. As such, GMG consider this closed.**
- It is acknowledged that the CTMP does not allow queuing to occur on the public road network (section 4.1.3). This is essential, as it will ensure that access the WaterNSW pipelines corridor from Old Wallgrove Road will not be impeded. **GMG are aligned with this, and as such GMG consider this closed.**

Vibration Management Plan (VMP)

WaterNSW has reviewed the VMP (SLR, 9/10/2023) and provides the following comments:

- Vibration mitigation measures are to be implemented as per the approved VMP (including any prescribed changes post consultation), especially the proposed mitigation and management measures listed in section 7 (table 12). **Confirmed and GMG will implement measures as per the VMP, once approved by DPE.**

- WaterNSW accepts the current German Standard DIN 4150-3:2016 when addressing vibration. Specifically Part 3 - “Structural Vibration Part 3: Effects of vibration in structures”. **Noted and will be implemented. GMG consider closed**
- It is understood that to ensure consistency with the Oakdale West Industrial Estate vibration requirements, SLR have proposed to use the same vibration acceptance criteria, being 15 mm/s PPC (peak particle velocity), for all vibration intensive works within 50m of the Warragamba to Prospect Pipelines (including the buried section). And while these levels were no where near reached for Oakdale West and specifically the construction of the North South Link Road over the pipelines, WaterNSW requests that the vibration values prescribes in line 3 of Table 1 within the German Standard DIN 4150-3:2016 be adopted instead. We are confident that these levels will not be reached (from past adjacent vibration intensive development). This change to the VMP will then ensures consistency with our own Guideline (*Guideline for Development Adjacent to the Upper Canal and Warragamba Pipelines*) (WaterNSW, September 2021). **Noted and GMG will ammend the plan accordingly. GMG consider this closed on the basis we ammend the plan accordingly.**
- It is preferred that all vibration monitoring equipment required to measure vibration levels from construction be placed within the OEIE, that being at the property boundary. However, WaterNSW will accept the vibration monitoring methodology set out in the VMP (section [7.2.2.1](#)). Access to set-up the monitoring equipment will require written access approval from WaterNSW. It is recommended that this application is submitted as early as possible (greater than 28 business days) to ensure its approval inline with the construction schedule. Applications can be made via the WaterNSW website at [Special Areas and Controlled Areas Consent Application form - WaterNSW](#) **Since the issue of the CNVMP, GMG have identified some proprietary systems that do not require monitoring on top of the WaterNSW pipeline, and can be installed on the perimeter of the GMG site, within our boundary. Please refer to Figure 1 for details of this system and confirmation it monitors in accordance with DIN 4150-3 Standard. As such, to meet WaterNSW preferred method of vibration by containing within the site, GMG propose to ammend the plan to reflect this system. Criteria thresholds will be as per the comment above and will be measured closer than the pipeline itself, thus a better outcome GMG deem. GMG consider this closed on the basis we ammend the plan accordingly.**
- WaterNSW requests that Goodman (or its consultants) consult with WaterNSW on the vibration monitoring locations prior to their installation. **Please refer to the below. On the basis these are within our site, GMG deem this closed.**
- WaterNSW requests to receive the monthly vibration monitoring reports for any vibration monitoring set up to monitor the WaterNSW pipelines. **Noted. We will work with the team to have these issued once works commence.**

Staging Plan

- WaterNSW acknowledge receipt of this document and has no specific comment to make. **Noted. Thankyou and GMG consider this closed**

Erosion and sediment control

- In addition, WaterNSW would like to see (for our records) the project construction erosion and control plan (ESCP), to ensure no predicted impacts to our adjacent land. **Please see attached ESCP for your records as relevant under the SSDA. As such GMG consider this closed.**

I trust this information enables you to meet your consultation requirements. WaterNSW requests that our consultation comments be considered and the plans updated as required.

If you have any questions regarding this response, please reach out.


Regards

Justine Clarke

Catchment and Asset Protection Adviser


Figure 1

Choose from the SiteHive Hexanode family




SiteHive Hexanode Multi
 Innovative noise and dust monitoring in a single, compact device.

- NATA-certified sound level meter (IEC 61672)
- Sound and dust direction of arrival
- Images and audio capture
- Optical particle counter (PM2.5 & PM10)
- See pricing



SiteHive Hexanode Noise
 A noise monitoring device that's small and lightweight, with very low power requirements.

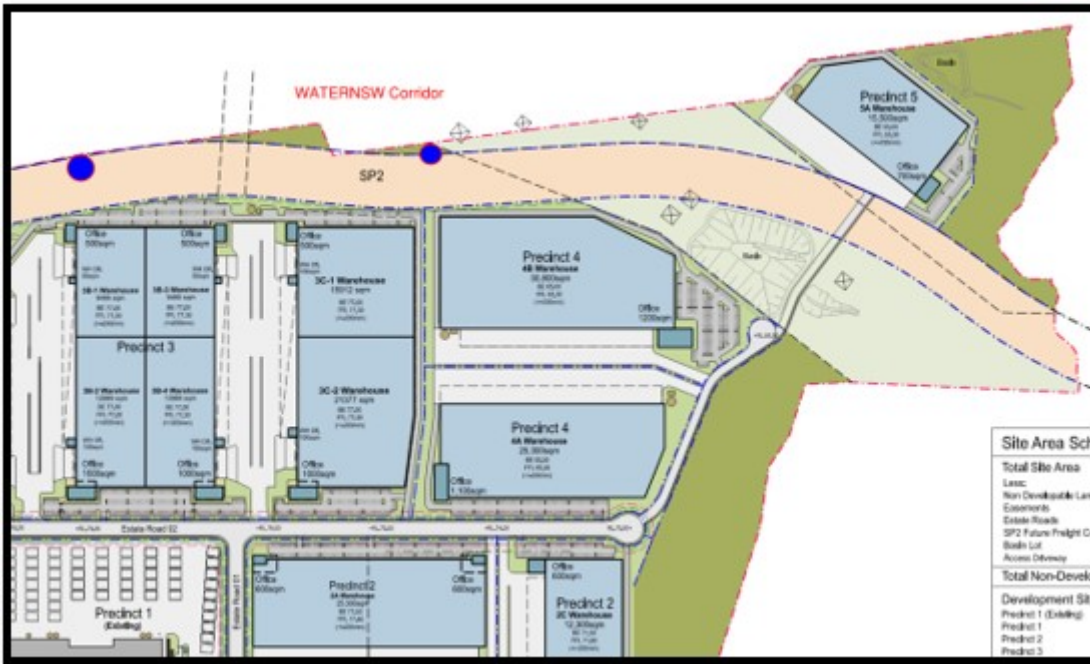
- NATA-certified sound level meter (IEC 61672)
- Sound direction of arrival
- Images and audio capture
- See pricing



SiteHive Hexanode Vibration
 Small, compact and automated vibration monitor, lasting months on a single battery.

- Structural damage PPV (DIN 4150-3, BS 7385-2)
- Human comfort VDV (DIN 4150-2, BS 6472)
- Ground-borne noise (Leq)
- See pricing

Figure 2



Appendix H Erosion and Sediment Control Plan

Construction Environmental Management Plan

**SSD-37486043: Oakdale East Industrial Estate
2-10 Old Wallgrove Road, Horsley Park**

Goodman Property Services (Aust) Pty Ltd

SLR Project No.: 630.V10611.00001

13 November 2023

OAKDALE EAST ESTATE – STAGE 2

EROSION & SEDIMENT CONTROL PLAN

November 2023 – Revision 2

Prepared for:



Prepared by:

ANDREW LITTLEWOOD

CPESC & Senior Soil Conservationist

Document Control Details

Project Name	Oakdale East Estate – Stage 2
Document Type	Management Plan
Document Name	Erosion & Sediment Control Plan
Prepared by	Andrew Littlewood
Document Approver	
Original Issue Date	02/06/2023
Revision Number	2
Current Issue Date	06/11/2023

Revision Control Table

Version	Sections Amended & Description of Changes	Date
1	First Issue	02/06/2023
2	Revision 1 – Revised for updated SSD Conditions of Consent	05/10/2023
3	Revision 1 – Revised for standard naming conventions	06/11/2023

Document Authorship Information

Document Author	Andrew Littlewood – Senior Soil Conservationist
Qualification	Certified Professional in Erosion and Sediment Control (CPESC No. 5988).
Relevant Training	<ul style="list-style-type: none"> SEEC and IECA (Australasia) – ‘Water Management on Construction sites’ & ‘Preparing and Reviewing Plans for Soil and Water Management’ – 2009 University of Western Sydney and Hawkesbury Global Ltd - Certificate of Attainment in Soil and Water Management for Urban Development - 2000
Experience – Years	23 years (2000 – 2023)
Current Employment	Director & Principal - Rubicon Enviro Pty Ltd (2016-2022)
Previous Employment	Senior Soil Conservationist & CPESC – TREES Pty Ltd (2008-2016)
Previous Employment	Erosion and Sediment Control Officer - Lake Macquarie City Council (2000 – 2007)
Professional Affiliations	Member of International Erosion Control Association (Australasia)

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Appendices

Appendix A	Site Characteristics & Revised Universal Soil Loss Equation Assessment ()
Appendix B	RUSLE Catchment Assessment & Sediment Basin Calculations
Appendix C	Sediment Basin Management & Dewatering Procedure
Appendix D	Wet Weather Contingency Procedure
Appendix E	Progressive Erosion & Sediment Control Plans
Appendix F	Standard drawings

Oakdale East Estate – Stage 2: Erosion and Sediment Control Plan

1 Introduction

This Primary Erosion and Sediment Control Plan (ESCP) has been prepared to support a State Significant Development (SSD) No. 37486043 application for the Oakdale East Estate (OEE) and development consent for Stage 2 works at 2-10 Wallgrove Road, Horsley Park.

Goodman Property Services (Aust) Pty Ltd is developing the Oakdale East Estate located at 2-10 Wallgrove Road, Horsley Park within the Fairfield Local Government Area (LGA). The land is legally described as Lot 102 and Lot 103 in DP 1268366. A Concept Plan and Stage 2 Development Application (SSD-37486043) was approved for the estate in October 2023 by Department of Planning & Environment. This report covers the approval associated with Stage 2 Development is as follows:

- Completion of lead-in infrastructure works including intersection upgrades at Millner Ave / Old Wallgrove Road and Lenore Drive / Old Wallgrove Road,
- Clearing of 2.28 ha of vegetation,
- Completion of the internal road network,
- Reticulation of services infrastructure to provide serviced development pads to all precincts,
- Completion of retaining walls across the entire Estate,
- Completion of Building works to Precinct 1 expansion and Precinct 3 including any ancillary on lot infrastructure and detailed civil works required.

This ESCP has been prepared in accordance with the Project SWMP and referred to as Appendix A in the SWMP. This Sub-plan has been prepared to reduce the potential for risk of environmental impacts caused by erosion and sedimentation associated with project activities.

2 Purpose

The purpose of this Sub-plan is to outline the planning, methodologies, techniques, and monitoring to minimise the potential environmental impacts of erosion and sedimentation arising from the Project construction activities.

3 Scope

The scope of the Primary ESCP will;

- Provide a strategy and framework for construction to be planned, implemented and maintained to mitigate any adverse environmental impacts,
- Propose control measures and management procedures to be implemented during construction, to avoid or minimise potential adverse impacts to soils, surface water and groundwater,

This Primary ESCP has been prepared in accordance with the requirements of the 'Blue Book' being a collective of;

- Managing Urban Stormwater: Soils and Construction 4th Edition Volume 1 – Landcom, reprinted 2006
- Volume 2A: Installation of Services – NSW Department of Environment & Climate Change (DECC), 2007

Oakdale East Estate – Stage 2: Erosion and Sediment Control Plan

4 Objectives

The key objectives of the Primary ESCP is to;

- Identify potential impacts to soil and water quality such as erosion and sedimentation arising from construction activities,
- Outline the soil and water management strategy for the construction phase of the development,
- Promote the adoption of sound principles and criteria for planning and implementation of erosion and sediment controls,
- Ensure the design and construction of controls is undertaken in accordance with the relevant guidelines,
- Minimise the adverse risks to soils and water by detailing mitigation measures and strategies,
- Provide an outline of a monitoring, inspection and reporting framework for the ongoing assessment of adherence to the ESCP.

5 Performance Criteria

The performance criteria for the ESCP are to:

- Limit potential for adverse environmental impacts on downstream waterways, riparian zones, and other identified sensitive areas,
- Minimise the risk and subsequent occurrence of erosion and sedimentation, to mitigate the impacts on project areas, sensitive areas, and downstream environments,
- Prevent the occurrence of pollution incidents causing environmental harm,
- Maintain existing downstream waterway attributes and water quality parameters,
- Manage erosion and sedimentation with sound management practices of effective planning and formation of relevant controls,
- Ensure compliance with legislative & regulatory requirements, and to maintain liaison and communication with statutory authorities and/or delegates.

6. Guidelines, Standards and Procedures

Name of Document/Publication	Author	Published
Acid Sulfate Soil Manual	ASSMAC	1998
Approved Methods for the Sampling and Analysis of Water Pollutants in NSW	NSW EPA	2004
Australian and New Zealand Guidelines for Fresh and Marine Water Quality	ANZECC and ARMCANZ	2000
Storing and Handling of Liquids: Environmental Protection – Participants Manual	NSW DECC	2007
Environmental Best Management Practice Guideline for Concreting Contractors	NSW DEC	2004
Guidelines for the Management of Acid Sulphate materials: Acid Sulphate Soils, Acid Sulphate Rock and Monosulphidic Black Ooze	NSW RTA	2005
Guideline for Environmental Management - Spraying Bituminous Materials	VIC EPA	2002
Guideline for Handling Liquids	NSW DECCW	2007
Managing Urban Stormwater ('Blue Book'): Soils and Construction Volume 1, 4 th Edition	NSW Landcom	2004
'Blue Book' - Volume 2A Installation of Services	NSW DECCW	2008
'Blue Book' - Volume 2D Main Roads Construction	NSW DECCW	2008
Noxious and environmental weed control handbook	NSW DPI	2014

Oakdale East Estate – Stage 2: Erosion and Sediment Control Plan

7. Environmental Planning

Erosion and sediment control planning is based on the principle that preventing erosion where possible provides the best environmental outcomes, is more economical, and effective than controlling the capture of sediment. This is a significant goal, given the Project topography, drainage patterns and soils that have a significant proportion of sodic soils that are highly erodible.

7.1 Construction Activities

The scope and anticipated duration of the Project works present risks of environmental impacts to the environment. Key aspects of the project that could result in adverse impacts to soils and water include:

- Installation of preliminary erosion and sediment controls and establishment of off-site water diversions.
- Establishment of compounds, exclusion zones, stockpile areas, and soils treatment area/s.
- Minor earthworks, site preparation and site access/temporary access roads.
- Trenching and earthworks for service installation.
- In-situ concrete works and concrete curing.
- Operation of internal haulage and access routes.
- Stormwater construction and drainage stabilisation, including temporary sediment basins.
- Dewatering 'dirty' water from site areas and sediment basin operations
- Importing, handling, stockpiling and transporting materials & resources.
- Compound operation including fuel and chemical storage, refuelling and chemical handling.
- Storage of chemicals, fuels & oils.
- Spills & leaks of fuels & oils from mobile and static machinery.
- Plant maintenance.
- Generation of building and construction waste
- General putrescible waste from compound/s & works areas
- Noxious weed treatment including herbicide spraying.
- Topsoil replacement, revegetation, and landscaping
- Landscaping.

Refer also to the Aspects and Impacts Register included in the CEMPs developed for each package of Stage 2 works.

7.2 Impacts

The possible impacts on soil and water from the activities described include;

- Unnecessary disturbance of existing areas outside the Project footprint,
- Erosion of soils that degrade the water quality of runoff to downstream receivers, dependant flora and fauna, and sensitive areas,
- Degraded soil or water quality from exposure to contaminated soils or ASS material, or runoff from these soils,
- Contamination of soils, and surface and groundwater from accidental spills or oil leaks
- Disturbance or degradation of groundwater aquifers,
- Litter and gross pollutants from construction activities
- Atmospheric dust pollution affecting air quality of areas surrounding the Project.

Oakdale East Estate – Stage 2: Erosion and Sediment Control Plan

7.3 ‘Blue Book’ receiving waters classification and design criteria

The recommended minimum design criteria for temporary erosion and sediment control measures are based upon an assessment of the sensitivity of receiving environments. In accordance with the SWMP assessment, the attributes of the receiving waters in the vicinity of the Project have been assessed as ‘standard’. The design criteria adopted will be in accordance with Blue Book Volume 1- Sect. 6.3.4 – (f) & Volume 2A – Table 5.1. however, we have elected to adopt the 5-day - 85th percentile rainfall depth for Blacktown of 32.2mm.

7.4 Key Management Strategies

The following list outlines the Key Management Strategies that will be implemented to mitigate potential erosion and sediment impacts;

- Specialist expertise and advice will be sought from an accredited Environmental Consultant (CPESC) in regard to the broad spectrum of erosion and sediment control issues, including but not limited to site establishment, temporary access routes, off-site water diversion, on-site drainage, sediment basin construction/operation/decommissioning, soil handling and storage, water management, stabilisation and rehabilitation/revegetation of Project areas.
- Implementation of structured erosion and sediment control training program for all relevant site personnel in the form of inductions, toolbox talks and workshops/training presentations.
- Minimising the extent and duration of construction disturbance.
- Control and diversion of off-site water flows around or across site.
- Control and diversion of on-site flows to installed sediment controls and sediment basins.
- Conservation of topsoils for site rehabilitation and revegetation.
- Implementation of progressive erosion methods & techniques throughout various work stages.
- Construction and management of suitable sediment controls including sediment filters, traps, sumps and basins.
- A thorough inspection and maintenance program to monitor, record and schedule actions for maintenance and upgrades of controls, rectification works, and sediment removal and handling.
- Establishing a procedure to monitor forecast weather events and implementing response plans for significant wind or rainfall events and flooding.
- Timely and progressive stabilisation of disturbed areas prior to final landscaping.
- Monitoring stabilisation measures and promoting prompt & effective revegetation and permanent stabilisation.

7.5 Preparation of Progressive Erosion and Sediment Control Plans (PESCP’s)

This ESCP will be supplemented with Progressive Erosion and Sediment Control Plans (PESCP’s) prepared as required for the relevant work areas. The PESCP’s illustrate the strategy for erosion and sediment control and provides detail on structures and controls to be implemented in concert with construction activities. The PESCP’s will outline structural and non-structural measures to;

- Intercept and divert clean water runoff around worksites,
- Prevent erosion,
- Limit the movement of sediment,
- Remove or filter sediment from runoff,
- Detain or control the discharge of runoff from site,
- Promote timely rehabilitation or stabilisation of disturbed areas.

Oakdale East Estate – Stage 2: Erosion and Sediment Control Plan

There are a number of control measure options available for selection and use. The selection of controls will be in accordance with sound management practices to achieve the desired outcomes.

The PESCP's will be revised as necessary to address changes in the site conditions and nature of works. The PESCP's will be formulated in conjunction with construction personnel prior to the commencement of specific onsite activities. The plans will be prepared to manage the various works or construction stages such as:

- Compound, access, stockpile operations, and construction facilities
- Bulk earthworks for road formation, drainage, services, etc.
- Major off-site and on-site water drainage works or structures such as diversions, drains, outfalls and treatment/sediment basins
- Construction activities such as paving, kerbing/guttering, stormwater drainage and outlets, etc.
- Stabilisation of disturbed areas, access and works areas, and perimeter areas
- Decommissioning of temporary erosion and sediment controls.

The formulation of Environmental Work Method Statements (EWMS) will be sub-ordinate to the requirements of the primary ESCP, supplement the PESCP's, and will outline methods and strategies for works in critical areas such as clearing & grubbing, topsoil stripping & earthworks, works around watercourses & culvert works, construction & operation of sediment basins, drainage works and dewatering.

7.6 Erosion and Sediment Control Training for Site Personnel

Prior to the commencement of onsite activities, all site personnel will be instructed to observe site constraints and be made aware of environmental controls, in particular;

- Avoidance of disturbing or damaging 'No-Go' zones
- Effects of erosion and sedimentation and off-site or downstream impacts
- Environmental legislation, responsibilities, and 'due diligence'
- Correct establishment and maintenance of erosion and sediment controls
- 'End-of-day' site maintenance, emergency procedures, and spill response
- Personnel to monitor, review and improve controls as appropriate.

Key construction personnel would undertake additional environmental training including a specific training session for erosion and sediment control addressing:

- Environmental impacts
- Relevant legislation
- Principles and techniques of erosion and sediment control
- Preparation of PESCP's.

The structure and content of the Erosion and Sediment Control training would be developed in conjunction with Project management and construction personnel.

7.7 Inspection and Maintenance

A self-auditing program will be established for erosion and sediment control based on a check sheet developed for the site. A site inspection using the developed check sheet will be undertaken by relevant Project personnel:

- At least weekly
- Immediately before extended site shut down or prior to forecast rainfall exceeding 10mm
- At the conclusion of all rainfall events exceeding 10mm 20mm. and during periods of prolonged rainfall as soon as practicable).

Oakdale East Estate – Stage 2: Erosion and Sediment Control Plan

The self-audit will include:

- Noting the condition of installed erosion and sediment controls onsite
- Detailing maintenance requirements (if any) for installed erosion and sediment controls
- Recording the volumes of sediment removed from sediment controls and sediment traps, where applicable
- Recording the location to where extracted sediments are disposed.

8. Erosion Control Measures and Sediment Control Methods

The formulation of the ESCP assumes that controls will generally be installed in the following progression;

- Installation of preliminary erosion and sediment controls and exclusion fencing to nominated areas of initial works and establishing exclusion zones,
- Establishing any temporary roads and machinery access points in addition to those existing,
- Installation of stabilised site access, site compound and facilities,
- Forming temporary drains or banks to maximise diversion of off-site flows away from works area to watercourses, existing drainage lines or to temporary drainage diversion structures,
- Construction of on-site water diversion drains or banks to direct runoff to the installed sediment controls,
- Installation of diversion drains/banks upslope and sediment controls down slope of proposed topsoil and spoil stockpile areas,
- Bulk earthworks such as cut excavations, filling, trenching, and engineered formation are controlled with a suite of erosion controls such as exclusion bunding, surface stabilisation treatments, trench stops, batter berms/chutes, contour banks, check dams, etc.,
- Drainage and run-off from site areas directed to adequately designed and constructed sediment controls with regular maintenance and repair as required,
- Completed areas are progressively stabilised as soon as practical with emphasis on critical areas such as drainage outlets, batters, etc.,
- Sediment controls are to be maintained until adequate soil surface protection levels (>70% ground cover) are achieved in the catchment.

The erosion and sediment control measures required for Project areas during the various construction areas will be determined by reference to the guidance and measures detailed in Appendix D – in the Blue Book Volumes 2A - 2D:– DECC 2007. Commonly employed methods and techniques that may be likely to be utilised on the Project are detailed in the following table;

Table 8

Erosion Control – Raindrop Impact	
Situation	Control measure or method
Soil surface protection - Vegetation	<ul style="list-style-type: none"> • Temporary vegetation (cover crop only) • Permanent vegetation – introduced (exotic) pasture species or native (endemic) species
Soil surface protection - Batter protection	<ul style="list-style-type: none"> • Organic rolled erosion control products (RECP's) such as jute mesh, jute mat, coir fibre blankets • Non-organic RECP's such as non-woven geotextile membrane or heavy grade plastic sheeting.

Oakdale East Estate – Stage 2: Erosion and Sediment Control Plan

Table 8

Situation	Control measure or method
Soil surface protection - Mulching	<ul style="list-style-type: none"> • Hydromulch or hydraulic bonded-fibre matrix • Straw mulching with bitumen tack • Rock or gravel mulch
Soil surface protection - geobinders	<ul style="list-style-type: none"> • Organic tackifiers • Co-polymer emulsions • Bitumen emulsion •
Erosion control - Concentrated Water Flow	
Up-slope diversions	<ul style="list-style-type: none"> • Excavated channel-type bank • Back push-type bank or windrow • Catch drains •
Soft armour channels	<ul style="list-style-type: none"> • Trapezoidal or parabolic shape design drain cross sections • Organic rolled erosion control products (RECP's) such as jute mesh, jute mat, coir fibre blankets • Non-organic RECP's such as non-woven geotextile membrane or heavy grade plastic sheeting • Organic tackifiers & co-polymer emulsions • Bitumen emulsion • Hydro mulch • Standard or reinforced turf
Hard armour channels	<ul style="list-style-type: none"> • Loose rock – hard quarry rock • Rock-filled wire mattresses • Grouted rock • Cast in-situ concrete • Underlays utilising heavy grade plastic lining or geotextile lining
Check dams	<ul style="list-style-type: none"> • Stacked rock • Sandbags and aggregate filter bags • Geotextile covered straw bales • Coir logs
Batter drainage	<ul style="list-style-type: none"> • Geotextile lined or heavy grade plastic chutes • Pipes and Half pipes • Loose-rock rip rap • Concrete (pre-cast or on-site) • Rock-filled wire mattresses

Oakdale East Estate – Stage 2: Erosion and Sediment Control Plan

Table 8

Situation	Control measure or method
Grade control structures and flumes	<ul style="list-style-type: none"> • Geotextile lined or heavy grade plastic chutes • Pipes and Half pipes • Concrete chutes • Loose-rock rip rap • Gully pits and field inlets • Sandbag drop structures • Rock-filled wire gabions and mattress structures
Outlet dissipation structures	<ul style="list-style-type: none"> • Loose-rock rip-rap apron diffusers • Rock-filled wire mattresses • Pinned geotextile aprons • Level spreaders
Revetments and retaining walls	<ul style="list-style-type: none"> • Rip rap • Rock-filled wire gabions and mattresses
Sediment control - Sheet Flows	
Vegetative filters	<ul style="list-style-type: none"> • Turf strips
Sediment barriers/filters	<ul style="list-style-type: none"> • Sediment fencing • Topsoil berms stabilised with vegetation or geotextile with filter outlets at intervals • Excavated and geotextile lined sediment traps • Geotextile covered rock or gravel windrows • Coir logs
Site exit points	<ul style="list-style-type: none"> • Shaker grids with paved or rock aprons and sediment sumps • Wheel wash equipment and designated/controlled areas
Sediment control - Concentrated Flows	
Sediment traps	<ul style="list-style-type: none"> • Sediment basins • Stacked rock with geotextile • Excavated and geotextile lined sediment traps • Straw bale or sand bag structures • Gully pit, field inlet and kerb inlet traps

Oakdale East Estate – Stage 2: Erosion and Sediment Control Plan

9 Soil & Water Management Activities & Controls

The following table outlines the environmental management and mitigation measures proposed to be implemented, together with responsibilities and frequency of actions;

Table 9

1. Planning, permits & personnel		
Environmental Management Controls	Person Responsible	Timing / Frequency
1. All necessary licences, permits and approvals required by legislation will be obtained prior to works commencing.	Project Manager / Site Manager / Contractors WHS&E Advisor	Duration
2. Copies of any relevant licences, permits and approvals will be kept on site for inspection upon request or otherwise, as required.	Project Manager / Site Manager / Contractors WHS&E Advisor	Site establishment
3. All works and site activities will comply with the explicit requirements of any relevant licence, permit or approval.	Project Manager / Site Manager / Contractors WHS&E Advisor	Duration
4. Recordings and data from site inspections, testing, audits, and monitoring will be retained, with associated documentation maintained to demonstrate remedial action/s have occurred.	Project Manager / Site Manager / Contractors WHS&E Advisor	Duration
5. Erosion and sediment control planning is required prior to the commencement of works. The approved CEMP & SWMP is supplemented by concept Progressive Erosion & Sediment Control Plans (PESCP's) which have been developed in accordance with the requirements of ' <i>Soils and Construction: Managing Urban Stormwater</i> ' 4 th Edition. - Landcom 2006.	Project Manager / Site Manager / Contractors WHS&E Advisor	Site establishment & duration
6. The CEMP & SWMP & construction PESCP's may be supplemented by site-specific Environmental Management Plans (EMP's) which would be developed in response to a significant environmental issue emerging. The EMP's would outline the relevant environmental risks and issues, mitigation of potential risks, and detail strategies for remediation and/or management.	Project Manager / Site Manager / Contractors WHS&E Advisor	Site establishment & duration
7. The induction of employees and contractors to include a component promoting environmental awareness, legislative requirements & penalties, and basic erosion and sediment control tasks	Project Manager / Site Manager / Contractors WHS&E Advisor	Site establishment & duration
8. Toolbox talks will regularly focus on specific works, associated risks, potential impacts, and mitigation measures. Specific erosion and sediment control awareness training and workshops will be undertaken by personnel with direct involvement with erosion and sediment control.	Site Manager / Contractors WHS&E Advisor	Site establishment & duration

Oakdale East Estate – Stage 2: Erosion and Sediment Control Plan

Environmental Management Controls	Person Responsible	Timing / Frequency
9. Promote planning for seasonal restrictions for high-risk areas and/or activities ((i.e., late summer/autumn rainfall events for culvert works or cold winter temperatures affecting revegetation)	Project Manager / Site Manager / Contractors WHS&E Advisor	Site establishment & duration
2. Clearing, site establishment, topsoil stripping & stockpiling		
1. Exclusion areas ('No Go' zones) to be identified, delineated where practical, and personnel instructed to avoid disturbance in these areas.	Site Manager / Contractors WHS&E Advisor	Site establishment
2. Temporary fencing or barricading such as parawebbing or perimeter tape is to be utilised on the perimeter with accompanying signage as required.	Site Manager / Contractors WHS&E Advisor	Site establishment
3. Areas of proposed works with identified noxious weed infestations to be treated with appropriate herbicide, in accordance with product directions. The weed treatment will occur in sufficient time prior to disturbance to ensure complete 'die back' prior to topsoil handling.	Site Manager / Contractors WHS&E Advisor	Site establishment
4. In areas requiring weed control, spray drift will be mitigated by conducting spraying activities in calm weather and application by hand sprayer unit where practical.	Site Manager / Contractors WHS&E Advisor	Site establishment
5. The extent of earthworks will be demarcated to the footprint necessary for the proposed works.	Site Manager / Contractors WHS&E Advisor	Site establishment & duration
6. Construct erosion resistant access routes, site access/egress points, and compound roads to be formed and stabilised as early works. Car parking areas and frequently utilised areas should be stabilised (e.g., geotextile with asphaltic millings, rock aggregate overlay, bitumen chip seal or similar) to prevent soil churning, where required. Any rock or aggregate required for vehicle access should be clean and free from soil or other contaminants.	Site Manager / Contractors WHS&E Advisor	Site establishment & duration
7. Temporary drains, banks or diversions are to be formed and stabilised to divert concentrated 'clean' flows around disturbed works areas.	Site Manager / Contractors WHS&E Advisor	Site establishment & duration
8. The installation of preliminary sediment controls such as perimeter sediment fencing, excavated sediment traps, check dams, coir log/straw bale filters, etc, will be implemented prior to disturbance within the catchment.	Site Manager / Contractors WHS&E Advisor	Site establishment
9. Stockpiles and material will not be located within the 1 in 10-year ARI floodplain and the stockpile locations are to avoid concentrated surface flows or areas subject to inundation during wet weather.	Site Manager / Contractors WHS&E Advisor	Site establishment & duration
10. The long-term soil stockpile locations are to be located 5 metres away from major drainage lines and at least 10 m from waterways. The stockpiles will not be established in areas subject to concentrated surface flows, waterlogging or prolonged inundation during wet weather.	Site Manager / Contractors WHS&E Advisor	Site establishment & duration

Oakdale East Estate – Stage 2: Erosion and Sediment Control Plan

Environmental Management Controls	Person Responsible	Timing / Frequency
11. Stockpiles should be stabilised if they are to remain in place for more than 20 days. Rolled Erosion Control Products (RECP's such as geotextile, jute mesh, coco fibre mat, etc) or soil binders can be used on smaller stockpiles, however, larger stockpiles should be formed into crowned structures to minimise erosion and be subsequently stabilised with cover crop seeding or applied geobinders. Plastic covers should only be utilised for short term cover for wind or storm protection.	Site Manager / Contractors WHS&E Advisor	Site establishment & duration
12. Maintain minor benches or contour berms on fill batter formations until profiling for topsoiling is imminent	Site Manager / Contractors WHS&E Advisor	Duration
13. Temporary scour protection lining for major 'dirty' drains for steep or long drains to sediment basins or other controls.	Site Manager / Contractors WHS&E Advisor	Duration
14. Access to the works area, and movements on the site during construction will be limited to the defined access and project areas, where possible. Minimise vehicle movements & speed on unsealed areas and access tracks.	Site Manager / Contractors WHS&E Advisor	Duration
15. Earthworks and hauling, and vehicular movements to be limited in wet conditions.	Site Manager / Contractors WHS&E Advisor	Duration
16. Appropriate sediment tracking controls such as an aggregate/geotextile apron, shaker grid, etc will be installed at exit points from the site, where required.	Site Manager / Contractors WHS&E Advisor	Duration
17. The adjoining local road network to be regularly monitored for tracked sediments with affected areas cleaned as soon as possible in a safe manner.	Site Manager / Contractors WHS&E Advisor	Duration
18. Vehicles transporting bulk materials such as soils and fill are to correctly cover loads to prevent loss of load and/or dust generation on public roads.	Site Manager / Contractors WHS&E Advisor	Duration
19. Imported quarry products and fill materials required for construction are to be clean, and free of contaminants (i.e.. weeds, waste, liquids, etc).	Site Manager / Contractors WHS&E Advisor	Duration
20. Water carts are to regularly spray access tracks, works areas, & temporary stockpiles, during dry weather conditions.	Site Manager / Contractors WHS&E Advisor	Duration
21. Bunded or controlled areas for re-fuelling, material stockpiling, (and contaminated soil treatment area if required) are to be formed prior to commencement of those works in the relevant risk areas.	Site Manager / Contractors WHS&E Advisor	Site establishment & duration
22. The progress of earthworks will minimise slope lengths and gradients where practical utilising contour berms, batter berms, diversion banks, etc.	Site Manager / Contractors WHS&E Advisor	Duration
23. Personnel to ensure visual dust monitoring is maintained during works, and dust suppression is undertaken regularly.	Site Manager / Contractors WHS&E Advisor	Duration

Oakdale East Estate – Stage 2: Erosion and Sediment Control Plan

Environmental Management Controls	Person Responsible	Timing / Frequency
24. Minimise earthworks, soil handling and general disturbance during periods of strong and/or gusty winds.	Site Manager / Contractors WHS&E Advisor	Duration
25. Apply water sprays for dust suppression where works, soil handling and/or potentially contaminated soils are generating dust.	Site Manager / Contractors WHS&E Advisor	Duration
3. Drainage and water management		
1. Construct diversion drains or banks upslope of proposed works to direct off-site water flows to existing drainage or adequately stable vegetated areas.	Site Manager / Contractors WHS&E Advisor	Duration
2. Immediately line any constructed off-site water diversion with appropriate RECP's, OFM's and/or geobinders. Temporary spillways and associated structures to be suitably stabilised for the volume and turbulence of flows.	Site Manager / Contractors WHS&E Advisor	Duration
3. Sheet flows in work areas have erosion measures such as surface roughening, scribed drains and/or contour banks to reduce slope lengths. Flows from diversions to have velocities controlled and directed to sediment controls.	Site Manager / Contractors WHS&E Advisor	Duration
4. Temporary 'dirty' water drainage will be adjusted progressively to maximise flows to sediment filters and traps.	Site Manager / Contractors WHS&E Advisor	Duration
5. Permanent storm water drains and outlet structures will be stabilised as soon as possible following completion.	Site Manager / Contractors WHS&E Advisor	Duration
6. Check dams are to be constructed from geotextile/aggregate bags, sandbags, staked coir logs/straw bales or geotextile/rock formations to reduce flow velocities in unlined drains and other areas of concentrated flow (i.e. against diversion banks). Check dams are to be installed at the required intervals in drains with the frequency of the dams increasing as the grade increases	Site Manager / Contractors WHS&E Advisor	Duration
7. Trenching works on grade will be controlled with methods detailed in the 'Blue Book' – Volume 2A' - Section 6	Site Manager / Contractors WHS&E Advisor	Duration
8. Flooded excavations, ponded water, etc will be extracted as required and utilised for site purposes or treated to achieve acceptable water quality prior to discharge.	Site Manager / Contractors WHS&E Advisor	Duration
9. Flooded excavations and groundwater encountered in ASS areas or potentially contaminated areas will be tested and assessed prior to being extracted for treatment & subsequent discharge or conveyed to a licensed liquid waste facility.	Site Manager / Contractors WHS&E Advisor	Duration
10. Site water that is to be discharged directly to a flow line, drain, watercourse, etc, will be tested, treated, and recorded prior to discharge.	Site Manager / Contractors WHS&E Advisor	Duration
11. Water quality should meet the following minimum criteria prior to discharge to any waterway or drainage line: <ul style="list-style-type: none"> • Total suspended solids (TSS) – less than 50 mg/L • pH – 6.5 to 8.5 • oil and grease – not visible and less than 10 mg/L 	Site Manager / Contractors WHS&E Advisor	Duration

Oakdale East Estate – Stage 2: Erosion and Sediment Control Plan

Environmental Management Controls	Person Responsible	Timing / Frequency
12. Dewatering devices or transfer pumps will be positioned to ensure that settled sediments are not disturbed or extracted. Discharge of concentrated, treated flows to lands will occur in well vegetated areas with diffusers or level spreaders to prevent erosion. Flows transferred from in-stream works to downstream areas be released in a diffused manner.	Site Manager / Contractors WHS&E Advisor	Duration
13. The appearance of water quality at the discharge outlet will be regularly monitored for any increase in turbidity, and dewatering suspended until acceptable water quality levels are regained	Site Manager / Contractors WHS&E Advisor	Duration
14. Adequately designed and constructed concrete washout facilities will be constructed in a suitable location away from drainage lines and 40m from waterways. Concrete wash down to occur directly into lined receptacles or formed washouts.	Site Manager / Contractors WHS&E Advisor	Duration
4. Sediment Controls		
1. Commonly used sediment control devices are outlined in Section 8 – Table 8, and some construction details are shown in the Standard Drawings shown at Appendix F. Alternative controls or methods may be employed in certain circumstances for practicality or efficiency purposes. Alternative controls or methods must demonstrate efficacy and be in accordance with the intent and objectives of the 'Blue Book'.	Site Manager / Contractors WHS&E Advisor	Duration
2. Substitute materials may be utilised in the construction of erosion or sediment controls where functionality is not affected.	Site Manager / Contractors WHS&E Advisor	Duration
3. Sediment fencing, non-woven geotextile, mulch berms, etc, will be installed on down slope work boundaries, down slope of stockpiles, cut/fill batters, access tracks, etc, to filter sheet flows.	Site Manager / Contractors WHS&E Advisor	Duration
4. Sediment filters will be formed from rock & shade cloth/geotextile structures, aggregate & geotextile filter bags, coir logs, etc, to control concentrated on-site water flows as required	Site Manager / Contractors WHS&E Advisor	Duration
5. Excavated sediment traps may be utilised at critical locations at the toe of the contributing catchment. They will be desilted at 60% capacity and are to be dewatered prior to the onset of further rainfall.	Site Manager / Contractors WHS&E Advisor	Duration
6. The excavated sediment traps should be regarded as a secondary control, relying on retention of coarse sediment in upslope controls within the construction area.	Site Manager / Contractors WHS&E Advisor	Duration
7. Aggregate filter bags or sandbag inlet traps are to be deployed on roadside pit inlets or other inlets to the drainage system.	Site Manager / Contractors WHS&E Advisor	Duration
8. Gully pit inlets will be protected with filter inlet controls formed from sediment fence, filter bags, straw bales & geotextile, coir logs, etc.	Site Manager / Contractors WHS&E Advisor	Duration
9. The sediment captured by control devices is to be removed when 40% of capacity is reached. Regular desilting is also to maintain catchment and settling capacity, and to reduce re-entrainment of settled materials in subsequent rain events.	Site Manager / Contractors WHS&E Advisor	Duration

Oakdale East Estate – Stage 2: Erosion and Sediment Control Plan

5. Soil Contamination		
Environmental Management Controls	Person Responsible	Timing / Frequency
10. Excavation of sub-soils to be inspected and monitored as works proceeds, to identify potential contamination. Any potentially contaminated soils to be stripped or excavated separately and transported directly to the designated stockpile, treatment area or licensed waste facility.	Site Manager / Contractors WHS&E Advisor	Duration
11. Potentially contaminated soils are to be stored within an appropriately bunded area and covered with heavy grade plastic or other impermeable covers for the duration of rainfall.	Site Manager / Contractors WHS&E Advisor	Duration
12. Potentially contaminated excavated material that are required to be removed from site are to be assessed and classified in accordance with the Protection of the Environment Operations Act 1997 and ' <i>Waste Classification Guidelines: Parts 1 and 2</i> ' (DECC 2008)'.	Site Manager / Contractors WHS&E Advisor	Duration
13. Excavated soils and materials (that have been assessed, classified, treated, and re-assessed on site) will be re-used as fill material on site where appropriate.	Site Manager / Contractors WHS&E Advisor	Duration
14. Vehicles transporting potentially contaminated soils both on internal access tracks and public roads will correctly cover loads to mitigate dust generation or spillage.	Site Manager / Contractors WHS&E Advisor	Duration
15. The ground disturbance and machinery/vehicle movements in potentially contaminated areas will be minimised to essential works.	Site Manager / Contractors WHS&E Advisor	Duration
16. Earthworks, soil handling and general disturbance in potentially contaminated areas are to be avoided during periods of strong and/or gusty winds.	Site Manager / Contractors WHS&E Advisor	Duration
17. Water sprays are to be utilised to mitigate dust from contaminated soils in works areas, contaminated soil handling or temporary stockpile areas.	Site Manager / Contractors WHS&E Advisor	Duration
6. Soil & Water pollution control		
1. All waste will be handled, stored, and disposed of in accordance with the ' <i>Waste Classification Guidelines: Parts 1 and 2</i> ' (DECC 2008)'.	Site Manager / Contractors WHS&E Advisor	Duration
2. Waste construction materials such as steel, concrete, etc will be removed to an appropriate recycling facility, to a suitable location for appropriate re-use, or to a licensed waste disposal facility.	Site Manager / Contractors WHS&E Advisor	Duration
3. All putrescible, construction, and food wastes are to be immediately captured and stored correctly, prior to removal to a licensed waste facility. Putrescibles and food wastes will be removed from site on a least a weekly basis.	Site Manager / Contractors WHS&E Advisor	Duration
4. The effluent from concrete wash down is to be captured by an excavated wash out pit lined with an impervious membrane at least 5 metres away from any waterway or major drainage lines. The pit is to be protected by a diversion bund to prevent entry of site run-off that may subsequently displace alkaline water/slurry. Concrete washouts to be covered for the duration of significant or prolonged rainfall.	Site Manager / Contractors WHS&E Advisor	Duration

Oakdale East Estate – Stage 2: Erosion and Sediment Control Plan

Environmental Management Controls	Person Responsible	Timing / Frequency
5. The water levels in concrete washout pits will be monitored and dewatered regularly. The water pH will be tested and treated where it is outside the parameters of pH 6.5-8.5. Where suitable pH is attained, the water can then be used site purposes.	Site Manager / Contractors WHS&E Advisor	Duration
6. The site machinery 'lay-up' area, re-fuelling areas and chemical storage areas are to be located at least 5 meters away from major drainage line.	Site Manager / Contractors WHS&E Advisor	Duration
7. The re-fuelling and servicing of machinery is to be undertaken at approved premises off-site where possible. Onsite refuelling and servicing only to occur with appropriate spill control measures at hand, or where established or temporary bunded areas are available.	Site Manager / Contractors WHS&E Advisor	Duration
8. Mobile plant, machinery and vehicles are to be regularly inspected and maintained to manufacturer's specifications.	Site Manager / Contractors WHS&E Advisor	Duration
9. Appropriate spill kits are to be always kept on site and any spillage is to be immediately cleaned up. In the event of a large or hazardous spill, contact will be made with emergency and relevant authorities, where required.	Site Manager / Contractors WHS&E Advisor	Duration
10. All site personnel will be instructed about emergency spill procedures, spill kit locations and requirements. The location of spill response kits will be established close to works or operations areas.	Site Manager / Contractors WHS&E Advisor	Duration
11. Storage of liquid construction materials (chemicals, fuels, oils, etc) will be provided in appropriately bunded areas on site to prevent leaching into soils, leaking or other transfer of material into waterways.	Site Manager / Contractors WHS&E Advisor	Duration
12. Containment bunds are to be monitored regularly and captured materials removed as required to ensure bund capacity is maintained.	Site Manager / Contractors WHS&E Advisor	Duration
13. Bunded areas will satisfy requirements of the relevant Australian Standards and 'Storing and Handling of Liquids: Environmental Protection – Participants Manual' (Department of Environment and Climate Change, 2007).	Site Manager / Contractors WHS&E Advisor	Duration
14. The requirements of the Australian Dangerous Goods Code will be observed for storage and transport of any hazardous materials. The compatibility of all chemicals, pesticides and fuels transported and stored will be assessed to avoid potential risk from reactions, explosion, etc.	Site Manager / Contractors WHS&E Advisor	Duration
15. All chemicals, pesticides and fuel will be stored and transported in approved containers. Chemicals, pesticides and fuels are to be labelled correctly and clearly, including using approved warning symbols etc.	Site Manager / Contractors WHS&E Advisor	Duration
16. A MSDS register and will be maintained and be readily accessible on site for all hazardous chemicals transported, handled or applied.	Site Manager / Contractors WHS&E Advisor	Duration
17. An adequate record or log of all environmentally hazardous chemicals received, used and/or disposed of will be maintained.	Site Manager / Contractors WHS&E Advisor	Duration

Oakdale East Estate – Stage 2: Erosion and Sediment Control Plan

Environmental Management Controls	Person Responsible	Timing / Frequency
18. Substitution of less hazardous materials or chemicals or modifying methods of use/storage etc. will be implemented where possible.	Site Manager / Contractors WHS&E Advisor	Duration
19. The quantities of hazardous materials and chemicals stored or used will be minimised as far as practical.	Site Manager / Contractors WHS&E Advisor	Duration
20. Sensitive areas (ie. drainage lines) will be identified before utilising or applying chemicals. Where sensitive areas are identified, appropriate guidance and relevant restrictions will be formulated for chemical use or applications.	Site Manager / Contractors WHS&E Advisor	Duration
21. The application methods and dilution ratios specified in manufacturer's directions and/or associated MSDS will be observed by personnel.	Site Manager / Contractors WHS&E Advisor	Duration
7. Stabilisation		
1. Promote efficient staging planning for early stabilisation of perimeter or completed areas. (i.e. stabilisation of permanent drains, batters, Sealing & paving, and decommissioning of temporary controls)	Site Manager / Contractors WHS&E Advisor	Duration
2. Stabilisation of areas is to occur progressively in conjunction with the completion of earthworks.	Site Manager / Contractors WHS&E Advisor	Duration
3. Suitable design and construction techniques are to be selected for stabilisation of relevant areas such as drain linings, batter treatments, etc.	Site Manager / Contractors WHS&E Advisor	Duration
4. Completed earthworks areas will be backfilled and compacted in a staged manner as soon as possible. Adjacent disturbed areas will be suitably trimmed and stabilised as required.	Site Manager / Contractors WHS&E Advisor	Duration
5. Erosion and sediment controls are to be maintained until the relevant catchments are stabilised, re-vegetated, or sealed adequately to achieve soil surface protection factors as per the 'Blue Book', SWMP & ESCP requirements.	Site Manager / Contractors WHS&E Advisor	Duration
6. Any aggregate placed for vehicle access or as a work platform should be removed to a suitable location for recycling, appropriate re-use, or to a licensed waste disposal facility.	Site Manager / Contractors WHS&E Advisor	Duration
7. Cover crop seeding to occur dependent on the seasonal conditions and timing of final landscaping.	Site Manager / Contractors WHS&E Advisor	Duration

Appendix A

Site Characteristics & Revised Universal Soil Loss Equation Assessment

Oakdale East Estate – Stage 2: Erosion and Sediment Control Plan

Site Characteristics Table & Revised Universal Soil Loss Equation (Rusle) Data

Location	Oakdale East Estate – Stage 2 SSDA
Construction duration	>12 months earthworks – 85 th ile adopted (Sect. 6.3.4 – (f). Blue Book)
Erosion Hazard	Very Low (On slopes <4%) (Sect 4.4.1 & Figure 4.6 – Blue Book)
Soil Loss Class	Class 1-4 (Very Low on slopes <4% ranging to Moderate on slopes <10%) (Sect 4.4.2. & Table 4.2 – Blue Book)
Batter Restrictions	Yes Generally, >20m batter length @ 2H:1V ranging to >30m @ 3H:1V (Sect 4.4.2 – (a) & Figure 4.7 – Blue Book)
Seasonal erosion hazard	No (Sect 4.4.2 – (c), Figure 4.9 & Table 4.3 – Blue Book)
Soil texture group 'Blacktown' (bt) Soil Landscape: Moderate to High Erosion Hazard landscape	bt1—Friable brownish black loam.
	bt2—Hard setting brown clay loam.
	bt3—Strongly pedal, mottled brown light clay.
	bt4—Light grey plastic mottled clay.
Soil texture group 'South Creek' (sc) Soil Landscape: Very High to Extreme Erosion Hazard landscape	sc1—Brown apedal single-grained loam
	sc2—Dull brown clay loam
	sc3—Bright brown clay
USCS Class	Blacktown: ML (Low Plasticity Silts) to CL (Low Plasticity Clays) South Creek: CL (Low Plasticity Clays)
Soil erodibility factor – K factor	Blacktown (bt) Soil Landscape: 0.038 South Creek (sc) Soil Landscape: 0.05 (0.055 Adopted) (Appendix C – Table 19 – Penrith Soil Landscapes – Blue Book)
Sediment Type	Blacktown (bt) Soil Landscape: Type F & D South Creek (sc) Soil Landscape: Type A (Type D Adopted) (Appendix C – Table 19 – Penrith Soil Landscapes – Blue Book))
Soil hydrologic group	Blacktown (bt) Soil Landscape: Group C South Creek (sc) Soil Landscape: Group C & D (Group D Adopted) (Appendix C – Table 19 – Penrith Soil Landscapes – Blue Book))

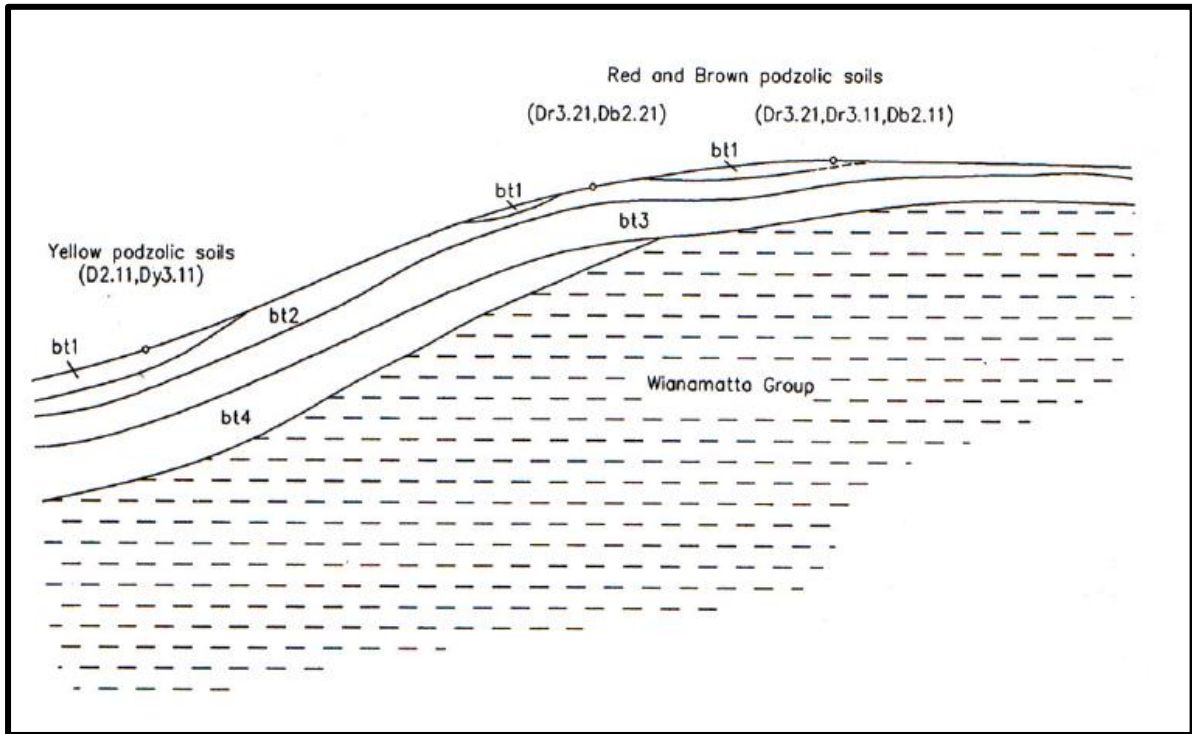
Oakdale East Estate – Stage 2: Erosion and Sediment Control Plan

Site Characteristics Table & Revised Universal Soil Loss Equation (RUSLE) Data

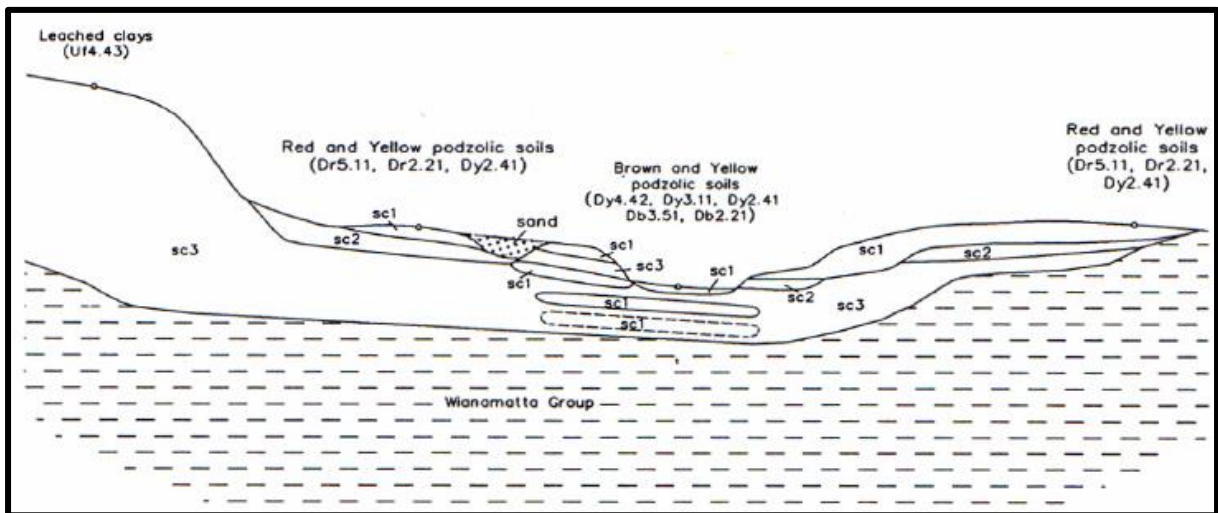
Location	Oakdale East Estate – Stage 2 SSDA
85th %ile, 5-day rainfall event	32.2 mm - Blacktown (Sect 6.3.4 – Table 6.3a - Blue Book)
Rainfall Intensity - millimetres per hour	9.13mm/hour (2 Year, 6 Hour storm – BOM IFD Table)
Rainfall Erosivity – R factor	1892 (Calculated from 2-year ARI, 6 Hour storm, where S=9.13mm/hour and where $R = 164.74(1.1177)^S S^{0.6444}$ Blue Book - Appendix A2 & B)
Volumetric runoff coefficient - C _v	0.64 (Blue Book – Appendix F: Table F2)
Grade	Blacktown (bt) Soil Landscape - commonly 5% occasionally ranging to 10%) South Creek (sc) Soil Landscape - commonly <5%
Slope Length	80 metres adopted
LS Factor	Variable
Erosion control practice factor – P factor	1.3
Ground cover – C Factor	1.0
Sediment Storage Zone Volume design	2 months soil loss (Sect 6.3.4.- I (ii) - Blue Book)

Typical Soil Profile diagrams

Blacktown (bt) Soil Landscape



'South Creek' (sc) Soil Landscape



Appendix B

RUSLE Catchment Assessment & Sediment Basin Calculations

1. Erosion Hazard and Sediment Basins

Site Name: Oakdale East Estate

Site Location: Horsley Park NSW NSW 2175

Precinct/Stage: Stage 2 Works

Other Details:

Site area	Sub-catchment or Name of Structure						Notes
	1%/80	2%/80	1%/85	2%/85			
Total catchment area (ha)	1	1	1	1			
Disturbed catchment area (ha)	1	1	1	1			

Soil analysis (enter sediment type if known, or laboratory particle size data)

Sediment Type (C, F or D) if known:	D	D	D	D			From Appendix C (if known)
% sand (fraction 0.02 to 2.00 mm)							Enter the percentage of each soil fraction. E.g. enter 10 for 10%
% silt (fraction 0.002 to 0.02 mm)							
% clay (fraction finer than 0.002 mm)							
Dispersion percentage							E.g. enter 10 for dispersion of 10%
% of whole soil dispersible							See Section 6.3.3(e). Auto-calculated
Soil Texture Group	D	D	D	D			Automatic calculation from above

Rainfall data

Design rainfall depth (no of days)	5	5	5	5			See Section 6.3.4 and, particularly, Table 6.3 on pages 6-24 and 6-25.
Design rainfall depth (percentile)	80	80	85	85			
x-day, y-percentile rainfall event (mm)	24.6	24.6	32.2	32.2			
Rainfall R-factor (if known)	1892	1892	1892	1892			Only need to enter one or the other here
FD: 2-year, 6-hour storm (if known)	9.13	9.13	9.13	9.13			

RUSLE Factors

Rainfall erosivity (R-factor)	1892	1892	1892	1892			Auto-filled from above
Soil erodibility (K-factor)	0.055	0.055	0.055	0.055			RUSLE LS factor calculated for a high nit/intermii ratio.
Slope length (m)	80	80	80	80			
Slope gradient (%)	1	2	1	2			
Length/gradient (LS-factor)	0.19	0.41	0.19	0.41			
Erosion control practice (P-factor)	1.3	1.3	1.3	1.3	1.3	1.3	
Ground cover (C-factor)	1	1	1	1	1	1	

Sediment Basin Design Criteria (for Type D/F basins only. Leave blank for Type C basins)

Storage (soil) zone design (no of months)	2	2	2	2	2	2	Minimum is generally 2 months
Cv (Volumetric runoff coefficient)	0.54	0.54	0.54	0.54			See Table F2, page F-4 in Appendix F

Calculations and Type D/F Sediment Basin Volumes

Soil loss (t/ha/yr)	26	55	26	55			
Soil Loss Class	1	1	1	1			See Table 4.2, page 4-13
Soil loss (m ³ /ha/yr)	20	42	20	42			Conversion to cubic metres
Sediment basin storage (soil) volume (m ³)	3	7	3	7			See Sections 6.3.4(i) for calculations
Sediment basin settling (water) volume (m ³)	133	133	174	174			See Sections 6.3.4(i) for calculations
Sediment basin total volume (m ³)	136	140	177	181			

NB for sizing of Type C (coarse) sediment basins, see Worksheet 3 (if required).

Appendix B
Sediment Basin Management & Dewatering Procedure

1.1 Purpose

The purpose of the Sediment Basin Management & Dewatering Procedure (the Procedure) is to detail the actions to be taken in regard to site dewatering in general and specific measures for the construction and maintenance of sediment basins including steps to be taken prior to any discharge.

Adherence to the methodology outlined in the procedure will ensure that works are carried out in accordance with industry standard and environmental conditions.

1.2. Scope

The Procedure applies to the following works:

- Sediment basin management and maintenance; and
- Dewatering of excavations and construction water generally, and
- Acid sulfate leachate ponds in the event that acid sulfate soils or rock is encountered.

1.3. Objectives

The objectives of this Procedure are to:

- Ensure all Project personnel are aware of the requirements of this procedure,
- Detail personnel responsible for undertaking actions relating to sediment basin, construction dewatering and acid sulfate leachate management on the site,
- Providing a uniform, controlled methodology and clear criteria for water releases from the site,
- Implement industry standard methods for managing sediment basins and dewatering in accordance with best practice guidelines such as Managing Urban Stormwater Soils and Construction (Landcom 2004) and Acid Sulfate Soil Manual (ASSMAC 1998),
- Ensure water discharges from site are compliant with:
 - the NSW EPA Water Quality Criteria,
 - Managing Urban Stormwater Soils and Construction (Landcom 2004),
 - Approved Erosion and Control Plan; and
- Comply with environmental requirements of the Project, including all legal requirements and contractual obligations.

The procedure shall ensure appropriate environmental protection measures are in place relating to sediment basins, construction water management (dewatering of excavations, culverts, etc) and management of leachate collected in ponds from acid sulfate material stockpiles.

2. Sediment Basin Management & Dewatering Procedure

Environmental Management Controls	Person Responsible	Timing / Frequency
Planning		
A copy of this Sediment Basin Management and Discharge Procedure will be kept on site and be made available to all relevant project personnel	Site Manager / Contractors WHS&E Advisor	Site Establishment / Duration
All relevant project personnel will be made aware of this document during the site induction and again in Toolbox Talks and targeted training sessions.	Site Manager / Contractors WHS&E Advisor	Site Establishment / Duration
Training and Awareness		
Training, instruction and equipment familiarisation for environmental personnel undertaking water quality monitoring, equipment calibration and maintenance will be the responsibility of the Contractors WHS&E Advisor. This will be completed prior to the initial use of equipment or as new equipment arrives on site.	Contractors WHS&E Advisor	Site Establishment / Duration
Training sessions will be conducted with Site Managers, Foreman, and Environmental Work Crew and relevant personnel. The training will address: <ul style="list-style-type: none"> • Construction of Sediment Basins • Preliminary post-rainfall inspections • Testing and recording • Treatment methods and recording • Details of the Water Discharge Permit • Dewatering requirements, methods, and recording • Maintenance requirements, methods, and recording • Storage, Handling and Application of Flocculants 	Site Manager / Contractors WHS&E Advisor	Site Establishment / Duration
Any personnel that are responsible for monitoring pumps during dewatering activities, and that have not undertaken training described above, will undertake a specific toolbox talk to ensure awareness of requirements.	Site Manager / Contractors WHS&E Advisor	Site Establishment / Duration
Construction of Sediment Basins		
Refer to the relevant PESCPs for the location of the sediment basin/s.	Site Manager / Contractors WHS&E Advisor	Site Establishment / Duration
The location and design criteria (volume – length, width & depth) for the sediment basin/s will be outlined in the relevant PESCP. The following criteria will be observed: <ul style="list-style-type: none"> • All requirements of Landcom's - Managing Urban Stormwater: Soils and Construction Volume 1 (the Blue Book). Refer to Section 6.3.3 volume 1 of the Blue Book for detailed design of the sediment basin. • Impervious clay to be used where required in construction of the internal basin invert and embankments. • Inlet and outlet structures will be appropriately constructed to cater for the nominated rainfall event. • Markers will be present to indicate sediment storage volume and to ensure adequate capacity levels are available. 	Site Manager / Contractors WHS&E Advisor	Site Establishment / Duration
Sediment basins will be constructed in a way that predominantly only site run-off is collected, and clean water is diverted around them. Earthworks will be conducted in a way so as to avoid ponding of water.	Site Manager / Contractors WHS&E Advisor	Site Establishment / Duration

Environmental Management Controls	Person Responsible	Timing / Frequency
The sediment basin/s to be constructed prior to any earthworks or topsoil stripping in the catchment being undertaken. Necessary clearing to access the basin location and associated earthworks will occur with appropriate erosion and sediment controls installed.	Site Manager / Contractors WHS&E Advisor	Site Establishment / Duration
Where applicable, the formation of operational sediment basins will be partially or fully constructed in early stages of works and managed as a temporary sediment basin to capture construction runoff.	Site Manager / Contractors WHS&E Advisor	Site Establishment / Duration
Effective diversions such as drains and berms will be implemented to ensure that the diversion of site runoff is maximised to basins during all stages of construction.	Site Manager / Contractors WHS&E Advisor	Site Establishment / Duration
Water Quality Testing, Treatment & Criteria for Discharge		
Captured water to be discharged from sediment basins must meet the following criteria: <ul style="list-style-type: none"> • pH between 6.5 – 8.5 • TSS < 50mg/L and • Oil and grease - no visible trace. 	Site Manager / Contractors WHS&E Advisor	Duration
<u>Correlation between TSS and Turbidity</u> A correlation between TSS and turbidity may be developed for the basin/s to allow discharge based on turbidity levels. This correlation will be submitted to the relevant Approval Authority for approval prior to implementation. If approved, a TSS sample will be taken from every tenth discharge and tested to confirm compliance with required criteria. These results will be used to check and revise the correlation. If these tests indicate an exceedance of TSS criteria, discharges on the basis of turbidity measurements will be suspended until the correlation can be re-established and approved.	Environmental Manager/ Contractors WHS&E Advisor	Duration
Potential contamination of any basin or ponded waters will be considered prior to discharge. Where the main source is from storm water, TSS and oil and grease are considered to be the likely pollutants. Where groundwater is a significant contributing source, influence from ASS/PASS, or other contaminants will be considered as potential pollutants and additional testing in the form of pH and metals may be undertaken.	Site Manager / Contractors WHS&E Advisor	Duration
Water Treatment		
The drain inverts upslope from sediment basin inlets will be pre-dosed with suitable flocculants/coagulants (Gypsum or Calcium Chloride broadcast in the drain invert and/or Anionic Polyacrylamide gel blocks suspended in cages in locations of turbulent water flow.) to pre-treat run-off before it enters the basin during rainfall	Site Manager / Contractors WHS&E Advisor	Duration
The implementation of rain-activated, passive dosing units will deploy suitable liquid flocculants/coagulants during prolonged rainfall events to promote rapid coagulation/flocculation of sediment laden water in the treatment forebay of sediment basins.	Site Manager / Contractors WHS&E Advisor	Duration
Onsite reuse of ponded stormwater or infiltrated groundwater should always be the first dewatering option considered. Onsite reuse may include application for dust suppression, earthworks compaction and vegetation establishment.	Site Manager / Contractors WHS&E Advisor	Duration
If water is to be used for construction purposes (e.g. compaction, dust control) no treatment is required. However, the water should be removed to re-secure design capacity of sediment basins within 5 days.	Site Manager / Contractors WHS&E Advisor	Duration

Environmental Management Controls	Person Responsible	Timing / Frequency
All sediment basins to be inspected for capacity and water quality daily on work days and within 24 hours (out of site hours) following cessation of a rain period.	Site Manager / Contractors WHS&E Advisor	Duration
<p>Before any de-watering of site areas, excavations, etc, the parameters of pH, T.S.S. and oil and grease are to be tested and meet the following criteria:</p> <ul style="list-style-type: none"> • pH between 6.5 – 8.5 • TSS < 50mg/L; and • Oil and grease < 10mg/L (and no visible trace). <p>Treatment should commence as soon as practical following cessation of a rain to allow enough time for settlement of suspended solids.</p>	Site Manager / Contractors WHS&E Advisor	Duration
<p>Records of water quality management must be maintained, and the required records include:</p> <ul style="list-style-type: none"> • The date(s) on which the sample was taken; • The time(s) at which the sample was collected; • The name of the person who collected the sample. 	Site Manager / Contractors WHS&E Advisor	Duration
<p>pH</p> <p>Treatment should be undertaken as follows:</p> <ul style="list-style-type: none"> • Test basin water with a suitable pH meter. No action is required if the pH reading is between 6.5 and 8.5, • Lime to be added if pH below 6.5 or Hydrochloric Acid (32% Muriatic) or Sulfuric Acid to be added if pH above 8.5, • Determine volume of water to be treated in the sediment basin, • Determine the percentage of lime or acid required by taking a 10-litre sample of basin water and adding a known amount of lime or acid (initially 0.004%). If the pH is still not acceptable, vary the amount of lime or acid until within the limits, • Once the required percentage has been determined, calculate the actual amount of lime or acid to be added by multiplying the volume of water in the basin by the determined percentage, • Add the required amount of lime or acid to the basin and mix the water in the sediment basin well, • Treat for pH prior to T.S.S. 	Site Manager / Contractors WHS&E Advisor	Duration
<p>Total Suspended Solids</p> <ul style="list-style-type: none"> • Test the sediment basin water initially for NTU using a turbidity tube, nephelometer (Turbidity tester) or by comparing with water samples contained in jars with representative readings up to 100mg/l, • When the comparative NTU readings indicate T.S.S. levels are <50mg/l obtain a grab sample in accordance with approved sampling methods. The water sample to be promptly analysed by a laboratory that is NATA certified in T.S.S. testing, • No further treatment action is required if T.S.S. results are <50mg/l, 	Site Manager / Contractors WHS&E Advisor	Duration

Environmental Management Controls	Person Responsible	Timing / Frequency
<p><u>Total Suspended Solids</u></p> <ul style="list-style-type: none"> • Test the sediment basin water initially for NTU using a turbidity tube, nephelometer (Turbidity tester) or by comparing with water samples contained in jars with representative readings up to 100mg/l. • When the comparative NTU readings indicate T.S.S. levels are <50mg/l obtain a grab sample in accordance with approved sampling methods. The water sample to be promptly analysed by a laboratory that is NATA certified in T.S.S. testing. • No further treatment action is required if T.S.S. results are <50mg/l. • If basins require flocculation (e.g. T.S.S. >50mg/l), a flocculant/coagulant is to be utilised at the determined dosage initially, then treated with incremental doses should more flocculant be required. • Basins should be monitored daily after flocculation until desired TSS is achieved and to assist in determination of optimal dosage levels. <p>Methods of application to include:</p> <ul style="list-style-type: none"> • broadcast by shovels on small sumps and excavations is acceptable. This method requires spreading powdered coagulants (i.e., gypsum, calcium chloride, etc) evenly and thinly (i.e. “dusting”) over as much of the water surface as possible. • For sediment basins or areas with a large water surface area. The powdered or flake style coagulants should be pre-mixed thoroughly in a drum with clean water and sprayed over the maximum surface area of water as possible. • When spraying coagulant mixtures, the mixture should hit the water at between 10 to 20 degrees to increase surface areas exposure to the water column. • Alternative water treatment utilising liquid flocculants/coagulants will require the assessed dosage to be pre-mixed and discharged into the basin. Following dosing, the basin water is to be gently re-circulated for a suitable period (2-4 hours) to allow chemical reaction time, and to keep precipitated flocculant/coagulant in suspension a sufficient time to collect the maximum quantity of fine suspended particles into floc clusters. • The process outlined may need to be repeated if acceptable water quality is not achieved initially. <p><u>Oil and Grease</u></p> <ul style="list-style-type: none"> • Examine surface of water for evidence (e.g., sheen, discoloration). • No action if no visual contamination. • Oil absorbent material to be spread if there is contamination (e.g., cell-u-sorb). Leave basins to compensate for 24 to 48 hours. 	<p>Site Manager / Contractors WHS&E Advisor</p>	<p>Duration</p>

Environmental Management Controls	Person Responsible	Timing / Frequency
After retesting, and once the above field tests indicate, the water quality is acceptable, pumping or siphoning can commence with the water extraction inlet protected to prevent extraction of sediment.	Site Manager / Contractors WHS&E Advisor	Duration
Discharging Water		
Where possible ponded water and sediment basin water will be reused on site for compaction, dust suppression, and irrigation.	Site Manager / Contractors WHS&E Advisor	Duration
The whole process of water quality management in sediment basins will be completed within 5 days of cessation of a rain period.	Site Manager / Contractors WHS&E Advisor	Duration
Water may be discharged from site where the tested water quality meets NSW EPA criteria and the Site Representative gives approval. The discharge outlet will be constructed to prevent erosion and scour.	Site Manager / Contractors WHS&E Advisor	Duration
The Site Manager is to ensure that treated water has been re-tested for pH and turbidity (NTU) in-situ immediately prior to discharge.	Site Manager / Contractors WHS&E Advisor	Duration
The preferred method for dewatering a sediment basin is by the use of a static siphon system with sufficient flow capacity to discharge the volume of supernatant water within a reasonable timeframe (i.e. 12 to 24 hours). The siphon inlet is to be positioned so that settled sediments are not extracted during dewatering. The siphon system is to be installed above the sediment basin embankment and <u>not</u> within the basin spillway.	Site Manager / Contractors WHS&E Advisor	Duration
Where sediment basins are to be <u>dewatered by pump</u> , suitable inlet protection devices (i.e. float & housing or extraction tube) will be provided to prevent the extraction of settled sediments within the basin. The flows from the pump outlet and basin are to be constantly monitored during discharge.	Site Manager / Contractors WHS&E Advisor	Duration
Only personnel who have undertaken the relevant training and been approved by the Site Manager may operate pumps and discharge sediment basins. During dewatering <u>pumps</u> must be monitored at all times to ensure that settled sediment is not disturbed or extracted, and that water is discharged in a diffused manner to prevent erosion.	Site Manager / Contractors WHS&E Advisor	Duration
A Sediment Basin Management Register will be maintained for each basin that details discharge volumes, dates, water treatment. The Sediment Basin Management Register will be updated when treated water is discharged from the basin.	Site Manager / Contractors WHS&E Advisor	Duration
Maintenance		
<p>Maintenance of the sediment basins will be ongoing for the duration of the Project and will comprise the following:</p> <ul style="list-style-type: none"> • The sediment storage capacity limit will be defined through the installation of a marker inside the basin. Sediment will be removed from the basin in accordance with the maintenance schedule, or when the accumulated sediment exceeds 60% of the sediment storage zone. • Sediment removed from basins may be reused on site by incorporating into spoil. • All sediment that will not be reused on site will be disposed of in locations that it will not be conveyed back into the construction areas or watercourses. • Maintenance inspections will be undertaken and the results incorporated into the Weekly Environmental Inspection Checklist. 	Site Manager / Contractors WHS&E Advisor	Duration

Environmental Management Controls	Person Responsible	Timing / Frequency
The stormwater capacity of sediment basins will be reinstated within 5 days of the cessation of a rainfall event that causes runoff to occur	Site Manager / Contractors WHS&E Advisor	Duration
Assessment and use of Coagulants & Flocculants		
<p>Coagulation is the neutralisation and/or destabilisation of electrical charge on suspended soil colloids, whereas flocculation utilises bridging type interactions involving polyelectrolyte chains adsorbing to multiple colloid particles and aggregates through electrostatic charge interactions.</p> <p>The following procedure will be implemented to determine the suitability and effectiveness of the various water treatment products.</p> <ul style="list-style-type: none"> • The product will be sourced from a reputable and traceable supplier together with MSDS and any other supporting documentation. • Controlled 'jar testing' will be undertaken using site sourced water from the sediment basin. The jar testing will establish the site-specific dosing rates for any given products. • Initial dosing will be undertaken incrementally up to the site specific/determined dosing rate in the event that the basin water responds to a lower dose in the 'real world' application. • Settling rates in the basin will be assessed to determine the efficiency of each product. • On site water sampling and testing will progressively assess the water's pH and turbidity in NTU's prior to lab testing. • NATA certified lab testing for TSS, NTU & pH will be completed prior to any dry weather/controlled discharge to downstream waterways. 	Site Manager / Contractors WHS&E Advisor	Duration
<p>The range and type of suitable flocculants/coagulants (including typical dosing rates described as product required to water volume) that may be utilised include;</p> <ul style="list-style-type: none"> • Calcium Sulphate (Gypsum - powder) – 300ppm (30kg/100m3) • Anionic Polyacrylamide (gel blocks) – 200ppm (20kg/100m3) • Calcium Chloride (solid - flakes), – 200ppm (20kg/100m3) • Aluminium Chlorohydrate (liquid) – 40ppm (4L/100m3) • PAC23 (poly aluminium chloride 23% - solution) - 50ppm (12.5L/100m3) • Aluminium Sulphate (crystals) – 200ppm (20kg/100m3) 	Site Manager / Contractors WHS&E Advisor	Duration
Storage and Handling of Flocculants		
Environmental Management Controls	Person Responsible	Timing / Frequency
Gypsum and agricultural lime will be stored on site as either bagged or bulk product. Storage of bulk gypsum and agricultural lime will be covered, within erosion and sediment controls in a position where run on water will not erode the stockpiles.	Site Manager / Contractors WHS&E Advisor	Duration
All treatment chemicals particularly acids and basics will be stored in appropriately bunded and covered locations that are locked to prevent unauthorised access.	Site Manager / Contractors WHS&E Advisor	Duration
All chemicals on site will be stored with MSDSs for ease of reference in the event of a spill or irritation/injury to handlers.	Site Manager / Contractors WHS&E Advisor	Duration
Requirements of the Material Safety Data Sheets (MSDSs) will be met to ensure compatible storage with other chemicals to ensure safety.	Site Manager / Contractors WHS&E Advisor	Duration

Monitoring and Record Keeping		
Environmental Management Controls	Person Responsible	Timing / Frequency
<p>All sediment basins will be inspected on a weekly basis as a minimum, with any defects or maintenance requirements reported immediately.</p> <p>Sediment basins will be inspected immediately after rainfall events to assess:</p> <ul style="list-style-type: none"> • Water Storage capacity and water quality treatment requirements prior to discharge • Following treatment and discharge from the sediment basin the sediment storage capacity and requirement for clean out will be assessed. 	Site Manager / Contractors WHS&E Advisor	Duration
Records to be kept of the rainfall events, inspections undertaken, field tests undertaken, dosage rates and when basin water is released etc.	Site Manager / Contractors WHS&E Advisor	Duration
The results of all inspections, including inspection reports will be retained in the site environmental inspection register	Site Manager / Contractors WHS&E Advisor	Duration
<p>All discharges will be recorded on a discharge permit which will include:</p> <ul style="list-style-type: none"> • Volume to be discharged • Treatment details (e.g. Coagulant/ flocculant used, dosage, duration and treatment date) • Water quality monitoring results (including date and time of testing) • Discharge water quality results • Date and time of discharge 	Site Manager / Contractors WHS&E Advisor	Duration
Pumped discharge of any water off site will be monitored regularly to ensure that tested water quality meets all applicable criteria.	Site Manager / Contractors WHS&E Advisor	Duration
Decommissioning Construction Sediment Basins		
Construction sediment basins will remain in place until all upstream areas have been stabilised to achieve a 'C' Factor of 0.05 which equates to 70% groundcover as per Blue Book 7.1	Site Manager / Contractors WHS&E Advisor	Duration
All operational sediment basins will be desilted and reformed as per design requirements prior to completion of major works within the catchment.	Site Manager / Contractors WHS&E Advisor	Duration
<p>Construction Sediment basins will be removed by restoring the ground disturbed by the construction of the basin similar to pre-existing conditions. This will be achieved by:</p> <ul style="list-style-type: none"> • Removing all redundant basin equipment such as basin markers, siphons, spillway linings, etc. • Spreading and compacting the embankment material in the basin area • Disturbed ground will be compacted to at least the relative density of the material in the ground adjacent to it. 	Site Manager / Contractors WHS&E Advisor	Duration

3. Procedure Review

The procedure will be regularly reviewed as part of the CEMP audit requirements. This document will be updated when needed in response to audit findings or changes to site conditions. The Contractors WHS&E Advisor will modify the procedure where improvements are identified.

Appendix C
Sediment Basin Management and Discharge Record

Sediment Basin Management and Discharge Record

Date Inspected		Basin/discharge point ID:		
Date of last rainfall event:		Amount of rainfall received:		
Estimated basin level in %?		Approximate volume of water in basin prior to treatment:		
Initial turbidity reading of the basin in NTU's		Initial pH of the basin? (range of 6.5 -8.5 required)		
The initial amount of acid/lime used if pH correction is required.		Date & time of acid/lime dosing	/ /	
			am/pm	
Subsequent amount of acid/lime used if pH correction is required.		Date & time of acid/lime dosing	/ /	
			am/pm	
Type of flocculant or coagulant product used (and typical dosing volume)	Yes	No	Flocculant or coagulant product used	Date & time of flocculant or coagulant dosing
Calcium Sulphate (Gypsum - powder) 300ppm (30kg/100m3)				/ /
				am/pm
Anionic Polyacrylamide (gel blocks) 200ppm (20kg/100m3)				/ /
				am/pm
Calcium Chloride (solid - flakes) 200ppm (20kg/100m3)				/ /
				am/pm
Aluminium Chlorohydrate (liquid) 40ppm (4L/100m3)				/ /
				am/pm
PAC23 (poly aluminium chloride 23% - solution) 50ppm (12.5L/100m3)				/ /
				am/pm
Aluminium Sulphate (crystals) 200ppm (20kg/100m3)				/ /
				am/pm
Turbidity reading of the basin in NTU's			Laboratory TSS Result: (if applicable)	
Time and Date of dewatering (i.e. siphon valve opened for discharge or commencement of pump operation)				/ /
				am/pm
Site Manager responsible for discharge:	Name:			
Date:	Signed:			
Comments? (E.g. next rainfall predicted – slight, moderate, severe?) Was rainfall received during treatment period affecting basin (start a new sheet)				

Appendix D

Wet weather contingency procedure

1.1 Purpose

The purpose of the Wet Weather Contingency Procedure (the Procedure) is to detail the actions to be taken by construction personnel in response to an imminent severe rainfall event as forecast by the Australian Government - Bureau of Meteorology (BOM). The procedure provides guidance for monitoring BOM rainfall & storm event forecasts and other resources, to assist with Project preparations to minimise adverse site impacts where practical.

Adherence to the methodology outlined in procedure will ensure that works for wet weather contingency planning & implementation will be carried out in accordance with contract specifications and to maximise adherence to environmental obligations.

The purpose of the Wet Weather Contingency Procedure is to;

- Identify rainfall events which may cause significant precipitation over the site areas which would result in flash flooding and/or exacerbate erosion and sediment impacts;
- Include monitoring procedures of the Bureau of Meteorology (BOM) weather forecasts to predict severe rainfall events;
- Ensure emergency procedures are developed for the management of work areas, facilities and materials in a severe rainfall event that has the potential to impact areas of the Site;
- Ensure hazardous chemical & fuel/oil storage and stockpile areas are positioned in locations to limit the potential for adverse impacts from major runoff flows and/or flash flooding;
- Outline control measures for the protection of water quality in the event of a flood over the site;
- Ensure progressive stabilising methods for areas that may be potentially affected by flash flooding and/or significant scouring & erosion are implemented.

1.2. Scope

The Procedure applies to the following:

- Weather forecast monitoring and works planning,
- Implementation, monitoring and maintenance of erosion and sediment controls,
- Stockpile and hazardous materials storage,
- Sediment basin management, dewatering and maintenance.

1.3. Objectives

The objectives of this Procedure are to:

- Ensure all Project personnel are aware of the requirements of this procedure
- Detail personnel responsible for undertaking actions relating to works planning, erosion and sediment control management, sediment basin management & construction dewatering on the site;
- Comply with environmental requirements of the Project, including all legal requirements and contractual obligations.

2. Wet Weather Contingency & Management

Environmental Management Controls	Person Responsible	Timing / Frequency
Planning		
A copy of this Wet Weather Contingency Procedure will be kept on site and be made available to all relevant project personnel	Site Manager / Contractors WHS&E Advisor	Site Establishment / Duration
All relevant project personnel will be made aware of this document during the site induction and again in Toolbox Talks and targeted training sessions.	Site Manager / Contractors WHS&E Advisor	Site Establishment / Duration
Training and Awareness		
Training & instruction of site personnel will be the responsibility of the Environment Manager/ Contractors WHS&E Advisor.	Contractors WHS&E Advisor	Site Establishment / Duration
Training sessions will be conducted with Site Managers, Foreman, Environmental Work Crew and relevant personnel. The training will address <ul style="list-style-type: none"> Weather forecast monitoring procedures and interpretation of forecasting by BOM and other sources Site erosion and sediment control status and high-risk areas Roles and responsibilities for wet weather preparation Temporary measure selection for augmentation or additional ERSED measures Pre & post-rainfall inspections and recording Dewatering requirements, methods and recording Identification of stabilisation and rectification works required. 	Site Manager / Contractors WHS&E Advisor	Site Establishment / Duration
Identification of significant rainfall events		
The daily BOM forecasts for the local area are issued each morning and late afternoon. The forecasts will be monitored daily, at the start of the shift and prior to shut down. The BOM three-day forecast outlook will be reviewed daily.	Site Manager / Contractors WHS&E Advisor	Duration
BOM forecasts indicating a high likelihood of storm fronts or rainfall events of >10mm with an occurrence probability of more than 50% will be regarded as a potential rainfall event.	Site Manager / Contractors WHS&E Advisor	Duration
In periods of forecast storm weather or likely rainfall events, the tracking and intensity of approaching weather fronts is to be monitored regularly (where possible) to anticipate the time of the onset of wet weather.	Site Manager / Contractors WHS&E Advisor	Duration
Wet Weather Management Procedures		
Where a potential rainfall event is deemed likely in the BOM three-day outlook, Project personnel are to review the scope and progress of existing and imminent site works to determine high risk areas and prioritise works to stabilise the nominated areas. High risk works include culvert works, scour protection installation, permanent drainage installation, trenching on grade, and sediment basin construction or maintenance.	Project Manager / Senior Engineer / Site Manager / Contractors WHS&E Advisor	Duration

Environmental Management Controls	Person Responsible	Timing / Frequency
Wet Weather Management Procedures		
<p>The high-risk work areas that are identified will be managed by;</p> <ul style="list-style-type: none"> • Completion and temporary/permanent stabilisation of the high-risk work areas where time & resource constraints allow, prior to the onset of the potential rainfall event. • Re-allocating resources from low-risk activities to assist with completion of high risk works prior to the onset of a rainfall event. • Implementation of erosion controls in high-risk areas to minimise sediment control requirements. Erosion controls will be employed such as; <ul style="list-style-type: none"> ○ temporary geotextile linings or soil binders will be installed around culverts, scour protection works and drain junctions, ○ sandbag check dams, rock baffles, trench stops, etc will be utilised in open trenching on grade, temporary diversion drains, or concentrated flow paths over unstabilised areas. 	Project Manager / Senior Engineer / Site Managers / Contractors WHS&E Advisor	Duration
<p>The site sediment controls and sediment basins are to be inspected and any necessary rectification works undertaken such as;</p> <ul style="list-style-type: none"> • Sediment basins are to be managed in accordance with Sediment Basin Management Procedure to regain the maximum runoff capacity parameters, where possible, • Sediment traps and filters to be desilted where more than 60% storage capacity is exceeded, • Spillways and discharge points from sediment traps to be inspected and reinstated as required. • Sediment fences, mulch bunds, earth berms to be inspected and repairs or reinstatement implemented as required. 	Site Manager / Contractors WHS&E Advisor	Duration
<p>The chemical, fuel and other hazardous material storage areas to be inspected to ensure their location is protected from the ingress of rainfall or concentrated overland flows. Bund controls to be inspected and accumulated liquids or other residues removed to a controlled waste location on site or for offsite disposal at licensed premises.</p>	Site Manager / Contractors WHS&E Advisor	Duration
<p>Following the onset of a significant storm event or rainfall event, the site controls to be inspected as soon as site conditions and safety requirements allow. The inspection to focus on high-risk areas to review the function and status of the installed erosion and sediment controls.</p>	Site Manager / Contractors WHS&E Advisor	Duration
Post-Rainfall/Storm Procedure		
<p>The Post Rainfall Inspection will be conducted in accordance with the PESCP. The identified high-risk areas will be prioritised for any rectification or maintenance works, followed by areas with lower risk.</p>	Site Manager / Contractors WHS&E Advisor	Duration
<p>Records detailing the necessary works to reinstate the controls will be conducted in accordance with the PESCP.</p>	Site Manager / Contractors WHS&E Advisor	Duration
<p>Sediment basins are to be managed in accordance with Sediment Basin Management Procedure. Flocculation of the sediment basins may occur soon after the cessation of a rainfall event to improve the water quality parameters in circumstances where further significant rainfall is anticipated.</p>	Site Manager / Contractors WHS&E Advisor	Duration

Environmental Management Controls	Person Responsible	Timing / Frequency
High risk work areas that are inundated will be prioritised for dewatering by; <ul style="list-style-type: none"> • Dewatering to a sediment basin where sufficient capacity is available, • Flocculated in-situ and discharged at a licensed discharge point when EPL water quality parameters are attained, • Dewatered by water cart and utilised for construction purposes. 	Site Manager / Contractors WHS&E Advisor	Duration
Repair and reinstatement of erosion and sediment controls to be implemented as site conditions allow, proceeding from high-risk areas to lower risk areas on site.	Site Manager / Contractors WHS&E Advisor	Duration

3. Procedure Review

The procedure will be regularly reviewed as part of the CEMP audit requirements. This document will be updated when needed in response to audit findings or changes to site conditions. The Project Environmental Representative in consultation with the Client will modify the procedure where improvements are identified.

Appendix E
Progressive Erosion and Sediment Control Plans

Oakdale East Estate: Stage 2 Works - Progressive Erosion & Sediment Control Plan

NOTES - Administration & General

1. This progressive plan is to be read in conjunction with the SWMP, CEMP, relevant specifications, and procedures.
2. Works programming to maximise the mitigation of erosion by the early implementation of permanent drainage measures, temporary and permanent soil surface stabilisation measures, and minimising the area and duration of soil disturbance.
3. Bureau of Meteorology weather forecasting to be monitored daily for the local 7-Day weather outlook. Site management measures to be planned for imminent storm/rainfall/flood/wind events include, but are not limited to;
 - avoiding additional soil disturbance immediately prior to an event,
 - provision of additional erosion and sediment controls in critical locations,
 - installing, repairing, and/or adjusting 'clean' (off site water) and 'dirty' (on site) water drainage measures,
 - desilting and re-instating sediment controls as required,
 - implementing stockpile protection measures,
 - stabilising and sealing disturbed soil surfaces,
 - minimising dry soil handling in windy conditions,
 - evacuating or protecting erodible materials in lower lying area.
4. The plan is to be revised as necessary (i.e. progression of works, altered site conditions or weather). **The controls depicted are subject to staging and the controls may be progressively implemented or removed according to progression of works. The symbols depicting controls are not to scale and are only indicative of the general location and type of control selected.**
5. All erosion and sediment controls generally to be constructed in accordance with 'Blue Book' specifications and standard drawings & RMS Specifications being
 - MANAGING URBAN STORM WATER: SOILS AND CONSTRUCTION - 4th EDITION, LANDCOM, MARCH 2004;
 - MANAGING URBAN STORM WATER: SOILS AND CONSTRUCTION – VOLUME 2D MAIN ROAD CONSTRUCTION, DEC, 2008;
6. Substitute materials may be utilised in the construction of erosion or sediment controls where functionality is not affected, i.e. compacted mulch bunds in place of sediment fences, stabilised earth Berms in place of excavated drains near underground services or timber pegs in place of star pickets where electrical or gas.
7. Personnel constructing controls to have demonstrated competence and experience. Specific awareness training and workshops to be undertaken by personnel with direct involvement with erosion and sediment control. Toolbox talks to regularly focus on erosion and sediment control for specific works, associated risks, potential impacts and mitigation measures.
8. All existing vegetated or undisturbed areas outside of the works area to be regarded as "No Go" zones and to be delineated with fencing, tape or other markers, as required. All site personnel to be instructed to avoid "No Go" zones or damaging installed controls.

Erosion Control

9. Prior to commencement of significant works, install surface drains, sediment traps, sumps & filters, and other surface runoff control measures to control runoff onto, across, and from the works zones to prevent the loss of sediment from the site.
10. Construction zones in constrained areas to be managed in smaller, defined sub-catchments to reduce slope lengths and minimise sediment loads to boundary controls.
11. Stripped topsoil to be stripped and stockpiled generally as per SD 4-1. Any viable stripped topsoil to be stored in stockpiles, preferably less than two metres in height.
12. Short term on-site stockpiles to be located away from drains and flow lines and be controlled with sediment fence or storm covers.
13. Any significant (long & steep) cut/fill batters should be progressively overlaid with Rolled Erosion Control Products (RECP's such as jute mesh, coir fibre mesh, etc), mulching, Organic Fibre Mulches (OFM's) or geobinders to reduce erosion and rilling, prior to permanent stabilisation with cover crops, mulching or other long-term surface protection
14. Vehicles transporting bulk materials on public roads are to correctly cover loads to prevent loss of load and/or dust generation.
15. Temporary controls in addition to those shown may be required at strategic locations as required by the progression of works or weather conditions

Water Management (Cont'd)

16. Maximise the interception and diversion of 'clean' (off site water) away from works areas. The 'clean' flows to be conveyed in stabilised drainage lines to suitable discharge points. The flows to be discharged to off-site areas at non-erosive velocities with adequate diffusers, level spreaders, etc. Ensure drainage paths and controls are adjusted as required to maximise the separation of 'clean' (off site) and 'dirty' (on site) water flows through/off site.
17. Flows paths with high velocity flows over unstabilised areas to be controlled with
 - applied soil surface stabilisers i.e. geotextile lining, applied soil binders, coarse rock lining, etc
 - suitably constructed check dams placed at intervals to maximise flow suppression and settling of coarse sediment.
18. Where possible, provide sand bag or other bunding controls at on-site collection points & pit inlets to prevent flows bypassing controls to downslope areas.
19. Protect all existing and constructed inlets to pits & culverts from sediment ingress.
20. Where practical, maintain and/or improve existing stabilised drains to assist in the diversion of 'clean' (off site) flows.
21. Flooded excavations, ponded water, etc. to be extracted where required and utilised for site purposes, or treated to achieve acceptable water quality prior to discharge.

Sediment Control

22. The installation of preliminary sediment controls such as perimeter sediment fencing, excavated sediment traps, check dams, coir log filters, etc, will be implemented prior to soil disturbance within the catchment.
23. Accumulated water in sediment traps/sumps cannot be pumped, discharged or released from site without completing a dewatering checklist or approval by an authorised Site Manager.
24. Appropriate sediment tracking controls such as an aggregate/geotextile apron, shaker grid, etc. will be installed at exit points from the site. Personnel to monitor roadways & tracked sediments to be removed as required.
25. Personnel to ensure visual dust monitoring is maintained during works, and dust suppression is undertaken regularly. Dust control to be regularly conducted with water carts and soil stockpiles to suitably covered. Additional dust suppression measures to be utilised to minimise dust pollution during periods of high winds.
26. Temporary 'dirty' water drainage will be adjusted progressively to maximise flows to sediment control devices.

Contamination

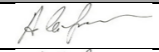

29. Excavation of sub-soils to be inspected and monitored as works proceeds, to identify potential contamination. Any potentially contaminated soils to be stripped or excavated separately and transported directly to the designated stockpile, treatment area or licensed waste facility.
30. Potentially contaminated soils are to be stored within an appropriately bunded area and covered with heavy grade plastic or other impermeable covers for the duration of rainfall.
31. Ground disturbance and machinery/vehicle movements in potentially contaminated areas will be minimised to essential works.

Monitoring & Reporting and Inspection & Maintenance

32. Inspections of erosion and sediment controls will occur following rainfall events >10mm (daily on work days or as soon as practical during site shutdown periods), with any necessary repairs implemented as soon as possible.
33. Relevant checklists and records to be maintained noting details such as rainfall received, repairs to controls and amounts of sediments cleaned from controls.
34. Sediment traps, sumps and filters are to be desilted when 60% of storage capacity is reached.
35. All site personnel to report any spill, leaks, or other failure to relevant response staff as soon as possible.

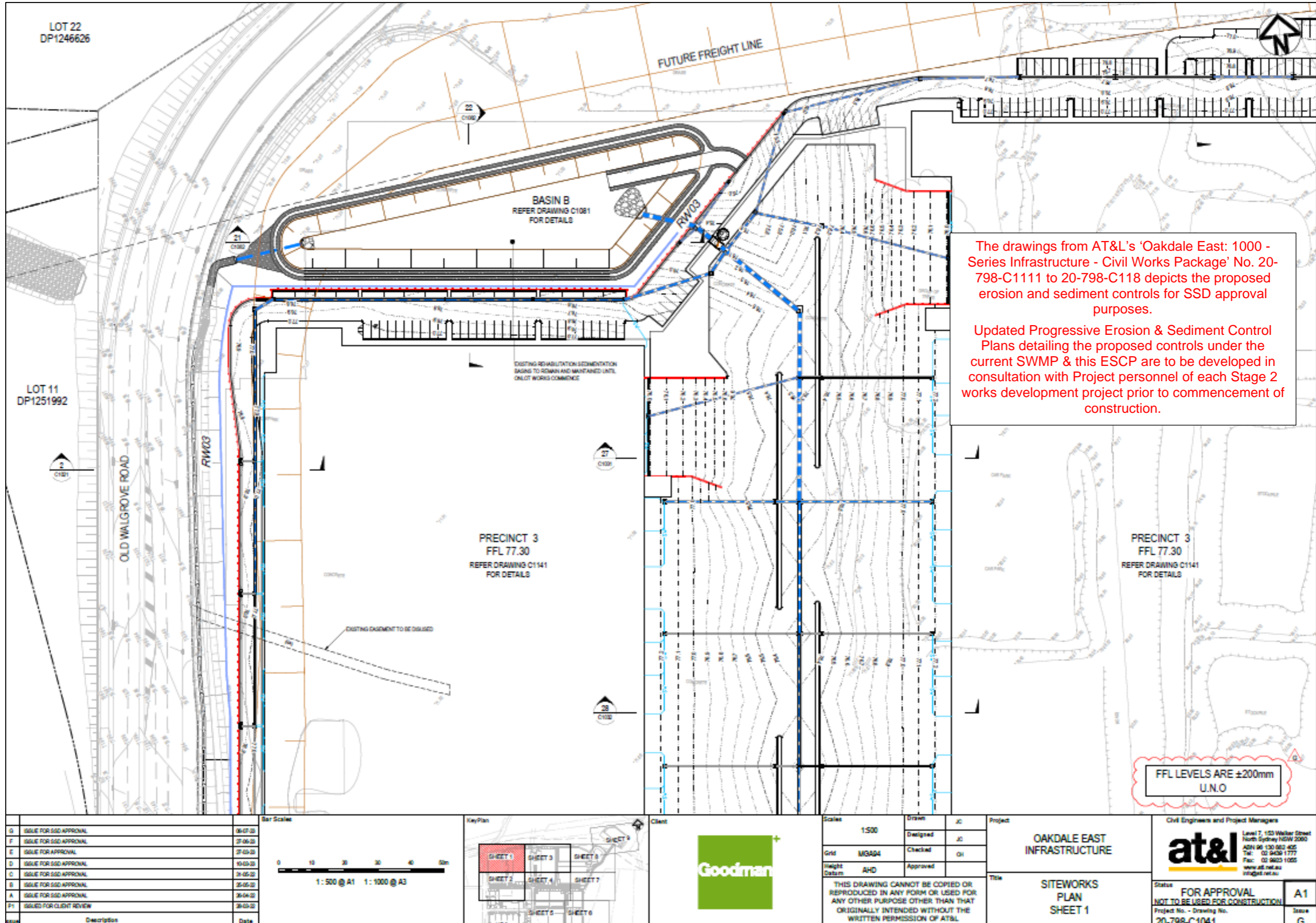
Stabilisation

36. Erosion and sediment controls are to be maintained until the relevant catchments are stabilised, re-vegetated, or sealed adequately to achieve soil surface protection factors as per the 'Blue Book' and SWMP requirements.
37. Completed earthworks areas will be backfilled and compacted in a staged manner as soon as possible. Adjacent disturbed areas will be suitably trimmed and stabilised as required.
38. Stabilisation of areas is to occur progressively in conjunction with the completion of earthworks.
39. Areas subject to heavy compaction and disturbance from vehicle movements and machinery to be scarified to a depth >100mm prior to topsoiling and seeding.

Version	Drawn by	Date	Signed	Reviewed by	Date
01	A. Littlewood	02/06/2023			
02	A. Littlewood	05/10/2023			

Oakdale East Estate: Rehabilitation Earthworks & Infrastructure - Progressive Erosion & Sediment Control Plan

The drawings reproduced below are draft Erosion & Sediment Control Plans No. 20-798-C1111 to 20-798-C1119 extracted from AT&L's 'Oakdale East: 1000 - Series Infrastructure - Civil Works Package' - issued 06/07/2023.

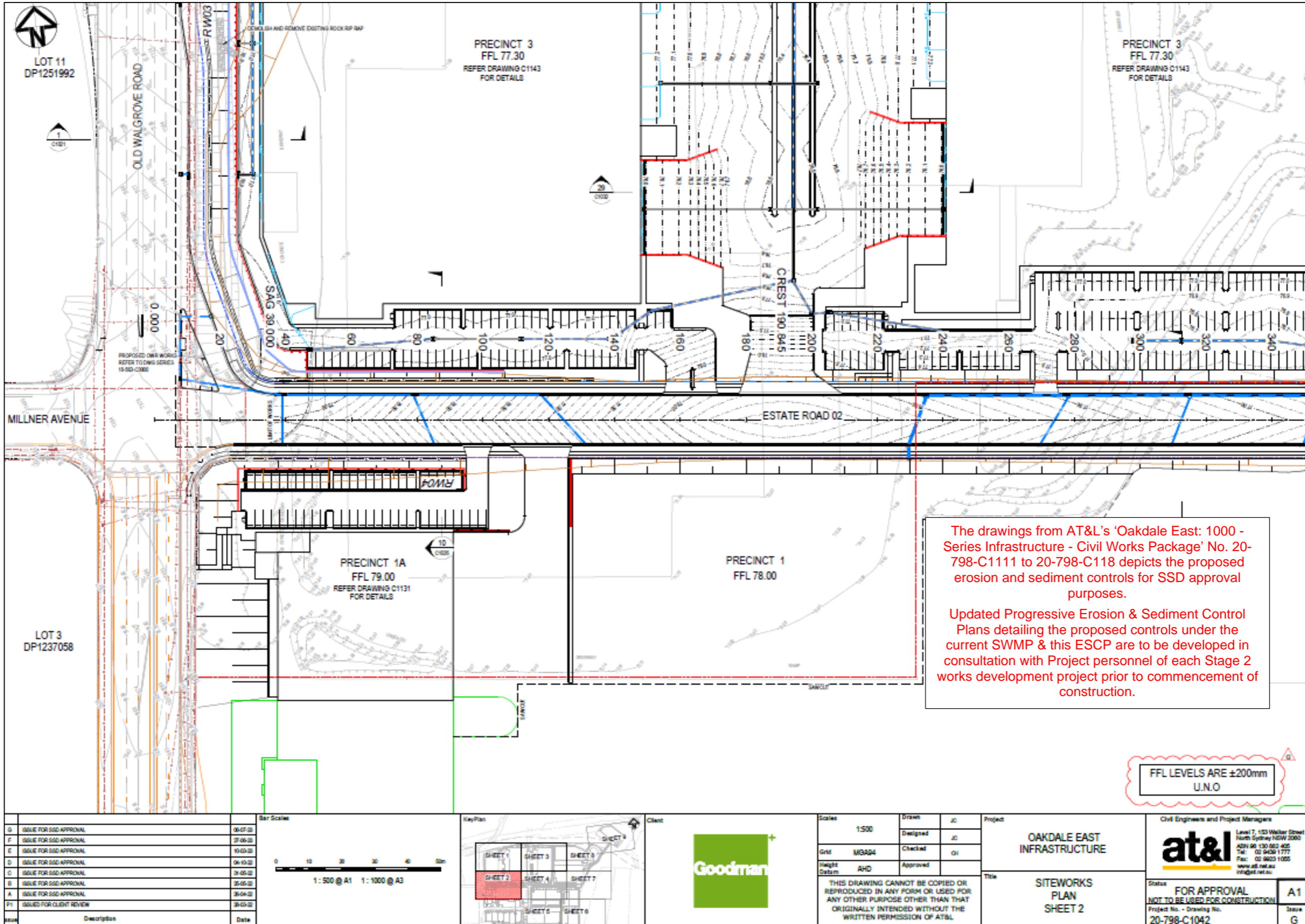


The drawings from AT&L's 'Oakdale East: 1000 - Series Infrastructure - Civil Works Package' No. 20-798-C1111 to 20-798-C1118 depicts the proposed erosion and sediment controls for SSD approval purposes.

Updated Progressive Erosion & Sediment Control Plans detailing the proposed controls under the current SWMP & this ESCP are to be developed in consultation with Project personnel of each Stage 2 works development project prior to commencement of construction.

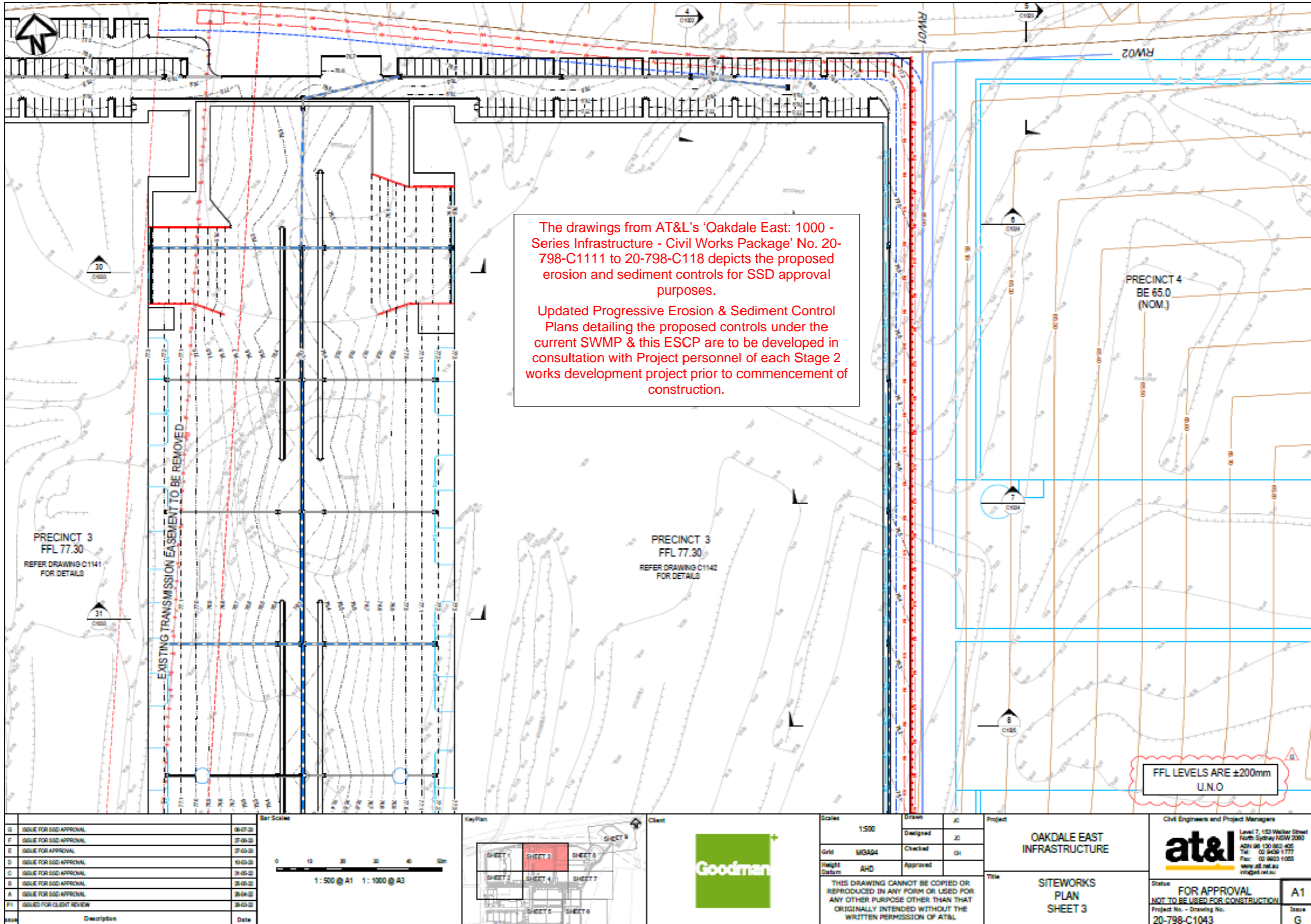
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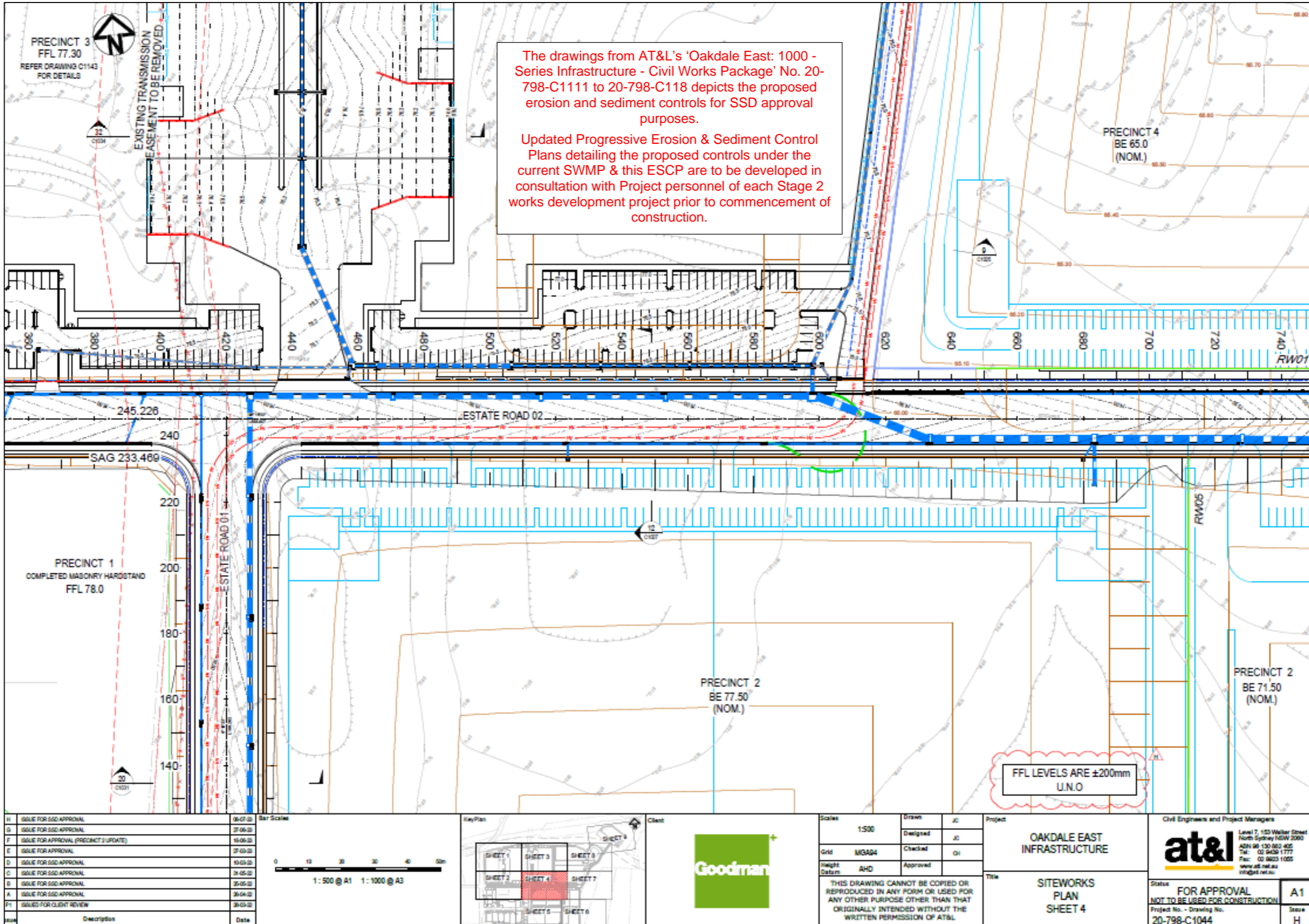
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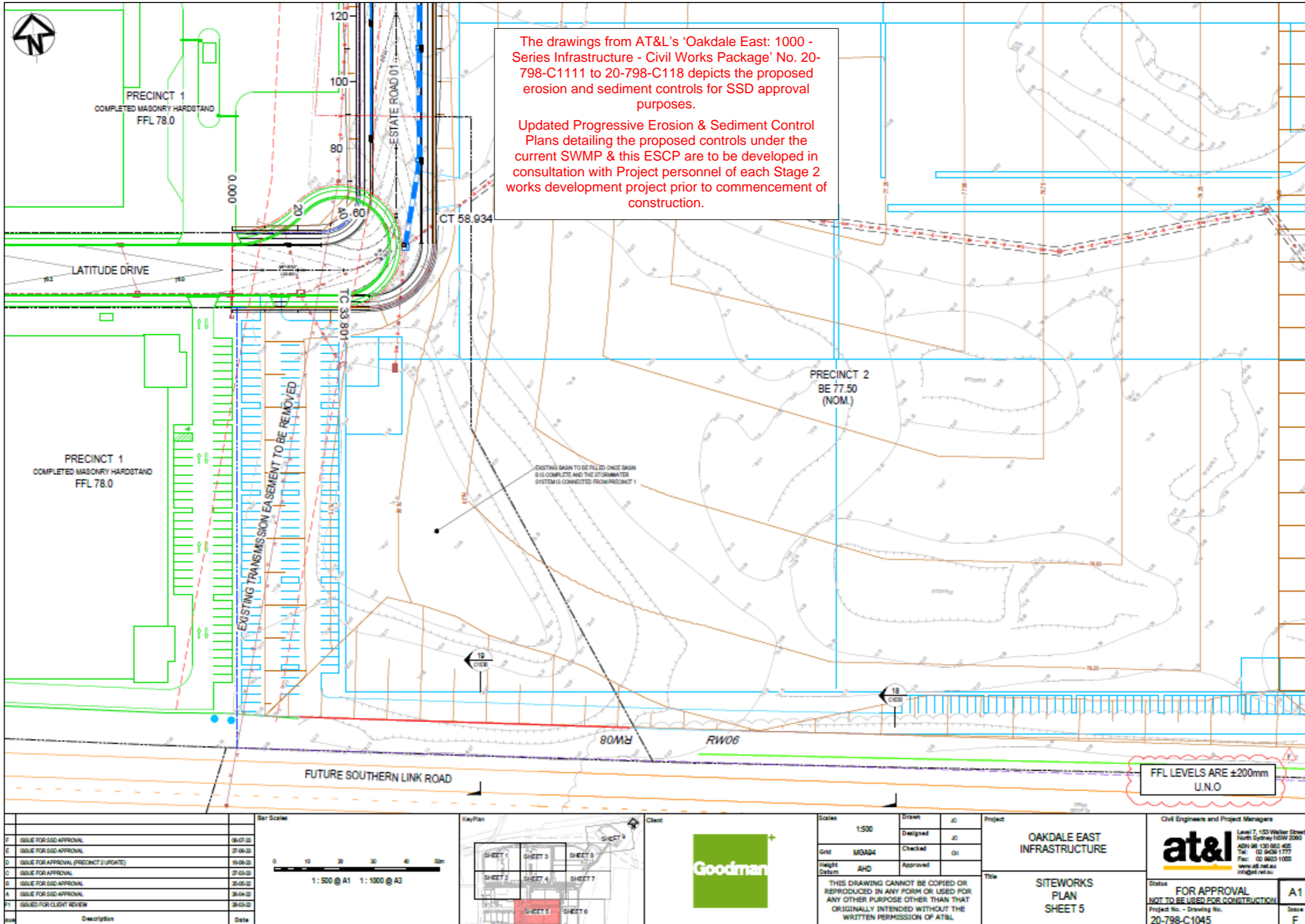
Oakdale East Estate: Rehabilitation Earthworks & Infrastructure - Progressive Erosion & Sediment Control Plan

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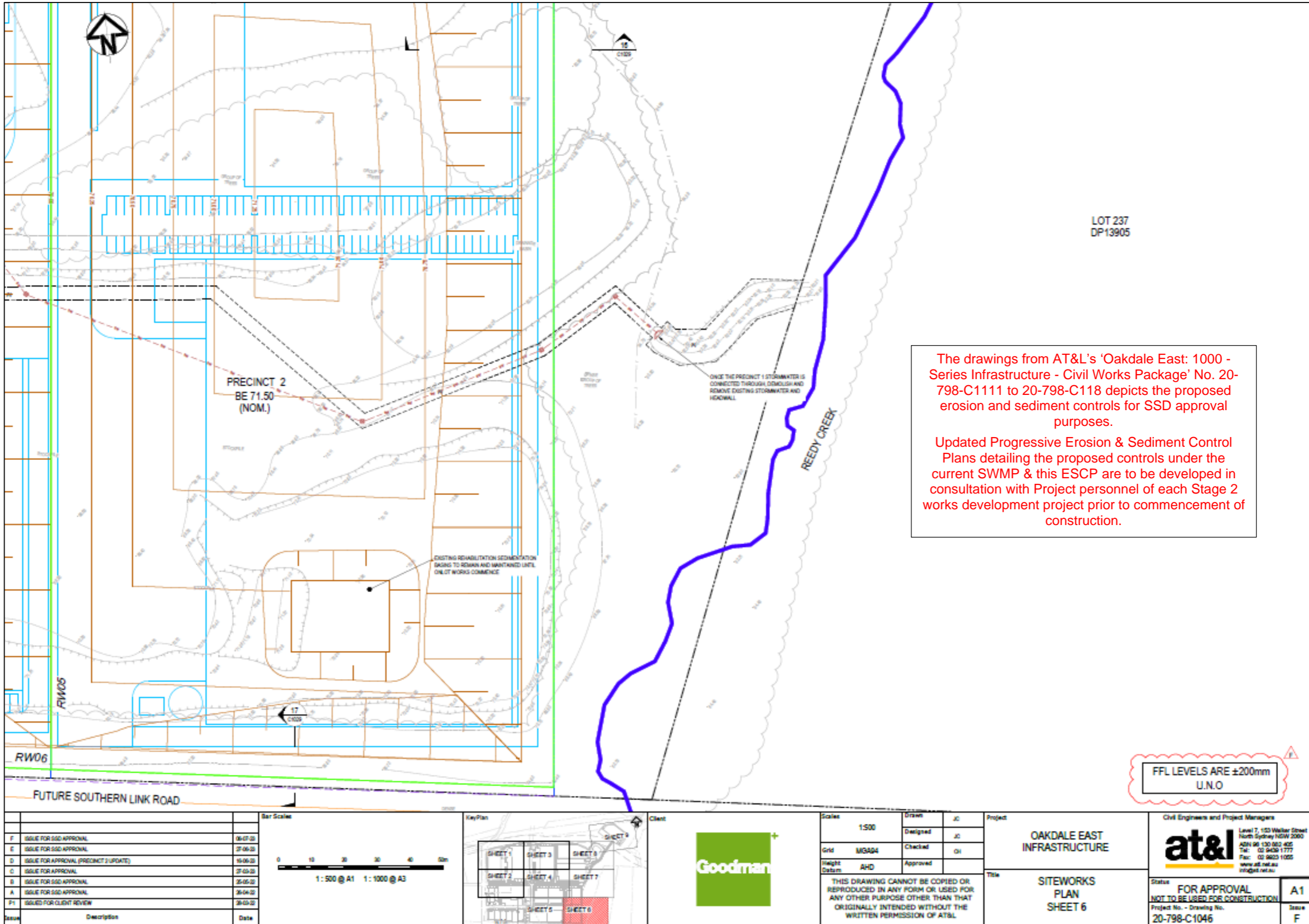
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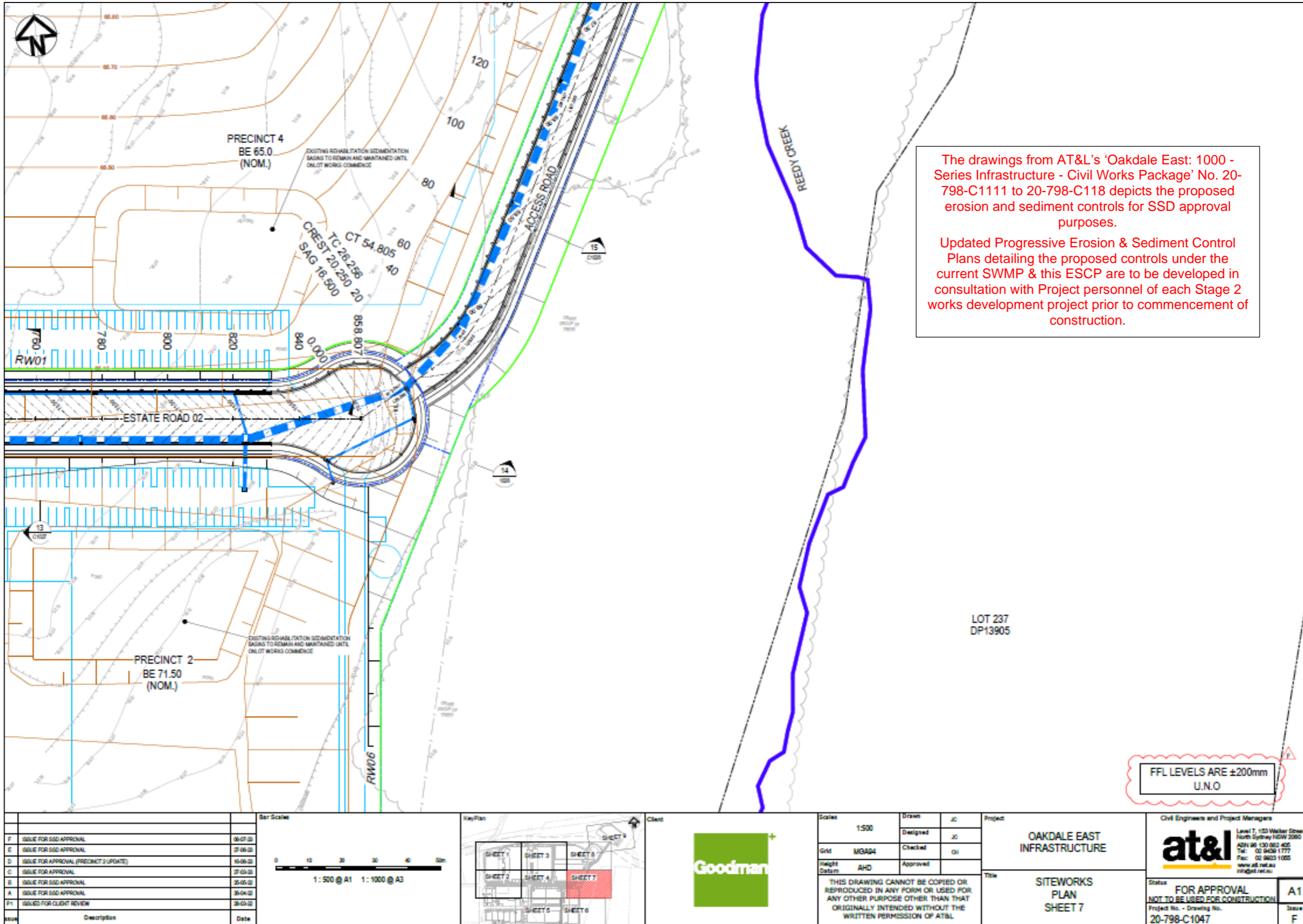


The drawings from AT&L's 'Oakdale East: 1000 - Series Infrastructure - Civil Works Package' No. 20-798-C1111 to 20-798-C118 depicts the proposed erosion and sediment controls for SSD approval purposes.

Updated Progressive Erosion & Sediment Control Plans detailing the proposed controls under the current SWMP & this ESCP are to be developed in consultation with Project personnel of each Stage 2 works development project prior to commencement of construction.

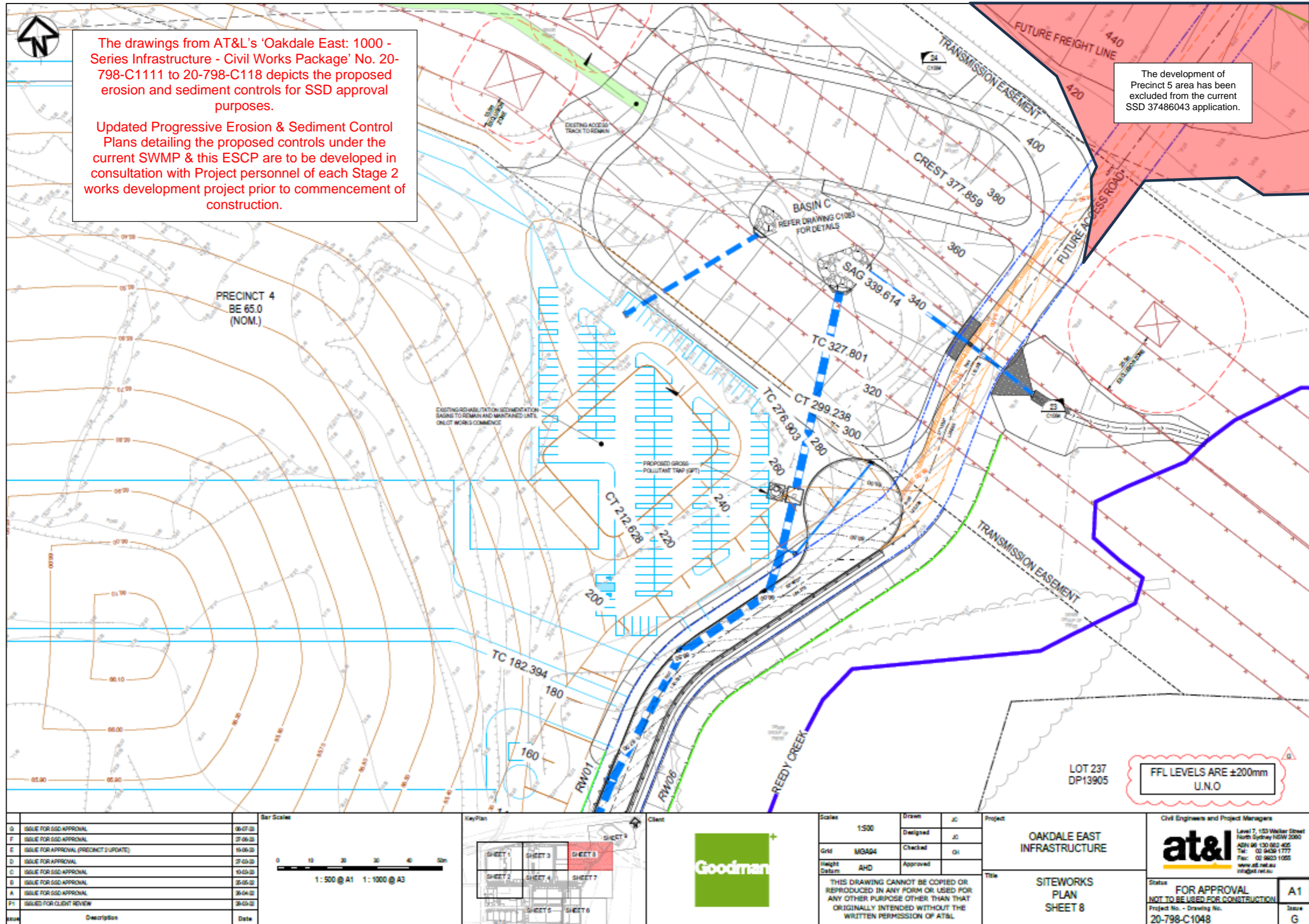
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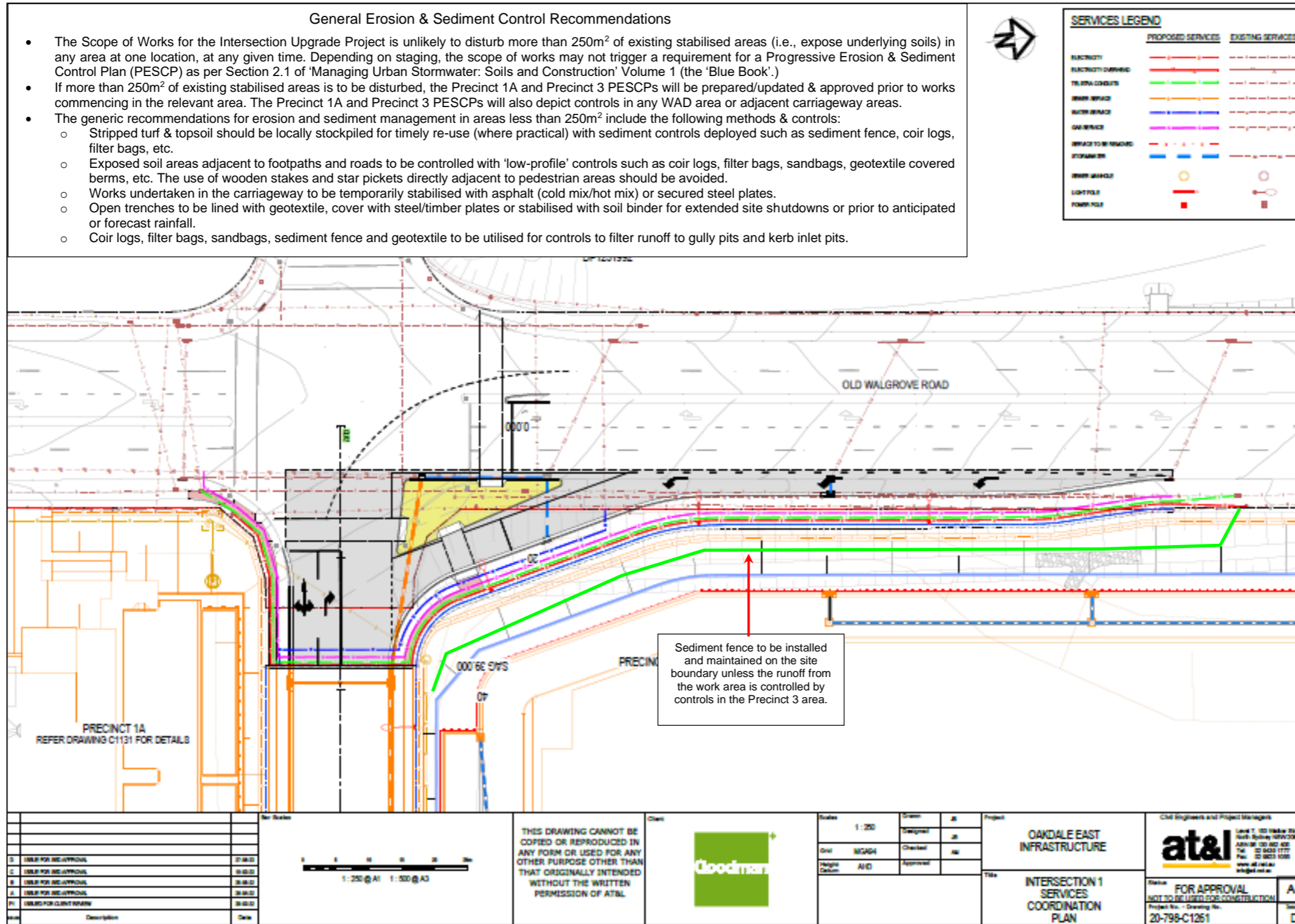
Oakdale East Estate: Rehabilitation Earthworks & Infrastructure - Progressive Erosion & Sediment Control Plan

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Oakdale East Estate: Rehabilitation Earthworks & Infrastructure - Progressive Erosion & Sediment Control Plan

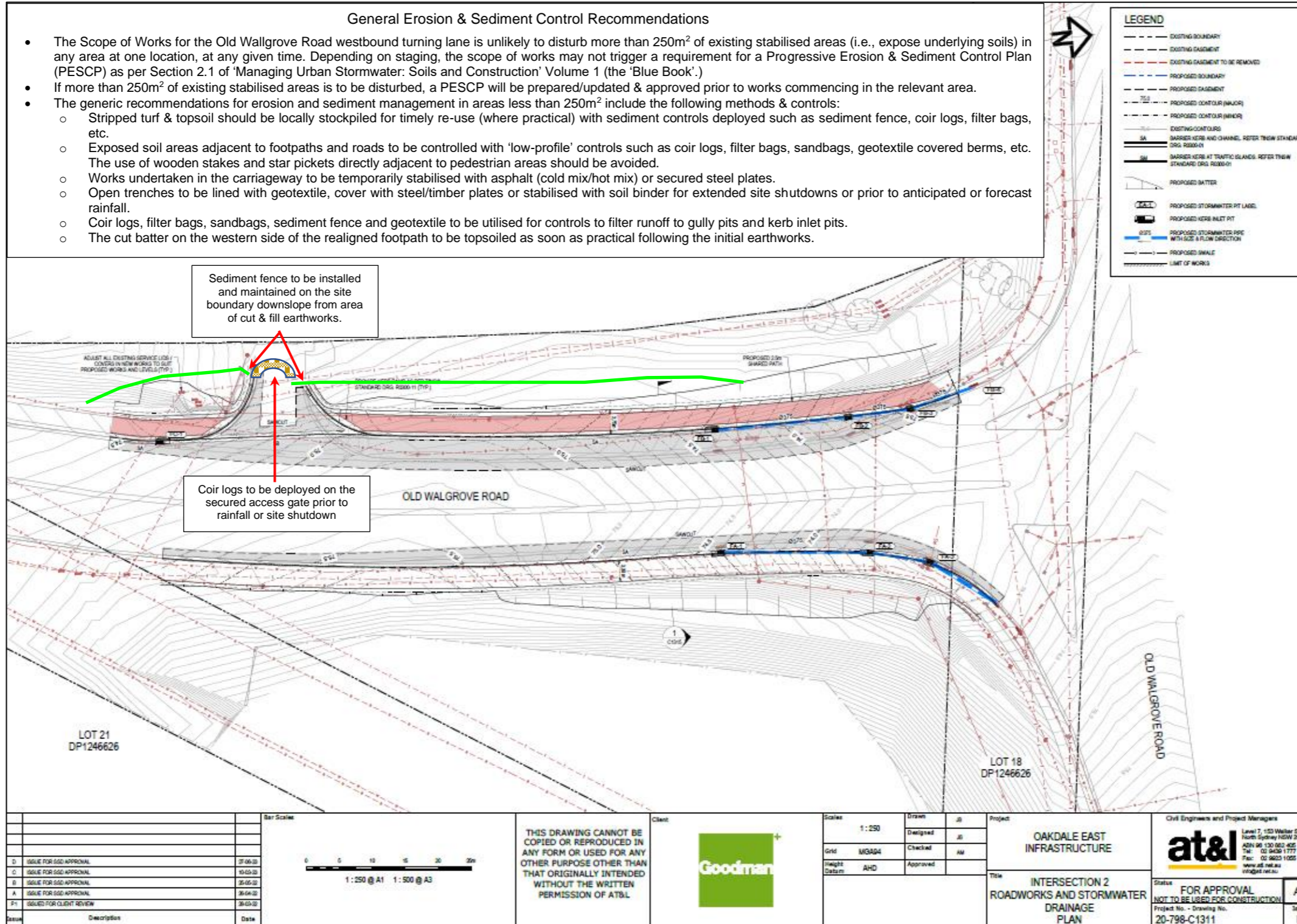
Estate Road Intersection with Old Wallgrove Road & Millner Avenue



Legend											
Off Site Water – Sheet Flows		Piped Drainage		Stabilised Topsoil Berm (geo/jute/seed)		Sediment basin / large sump		Filter bag or sediment fence inlet filter		Vegetated filter	
Off Site Water – Concentrated Flow/Drain		'Off site' water exclusion bank		Stabilised drain		Filter bag / rock & shade cloth sediment filter		Compacted mulch bund		Controlled site access	
On Site Water - Concentrated Flow/Drain		Off-site & onsite water cross-over		Vegetated drain		Compacted Mulch / Rock & Geotextile / topsoil sediment trap		Coir Log/s		Stabilised Haul Road/Compound/Access Track	
On Site Water – Sheet Flows		Level Spreader / Diffuser		Rock lined drain		Excavated sediment trap with spill weir		Straw bale or coir log filter		Hydrocarbon boom	
				Coarse rock / sandbag check dam				Sediment Fence			
								Geotextile Apron			

Oakdale East Estate: Rehabilitation Earthworks & Infrastructure - Progressive Erosion & Sediment Control Plan

Old Wallgrove Road & Lenore Drive Intersection Upgrade – Extension of turning lane for westbound Lenore Drive



Legend											
Off Site Water – Sheet Flows		Piped Drainage		Stabilised Topsoil Berm (geo/jute/seed)		Sediment basin / large sump		Filter bag or sediment fence inlet filter		Vegetated filter	
Off Site Water – Concentrated Flow/Drain		'Off site' water exclusion bank		Stabilised drain		Filter bag / rock & shade cloth sediment filter		Compacted mulch bund		Controlled site access	
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On Site Water – Sheet Flows		Level Spreader / Diffuser		Rock lined drain		Excavated sediment trap with spill weir		Straw bale or coir log filter		Sediment Fence	
				Coarse rock / sandbag check dam				Geotextile Apron		Hydrocarbon boom	

Appendix F
Standard drawings

Standard Drawings

Construction Notes

- Place stockpiles more than 2 (preferably 5) metres from existing vegetation, concentrated water flow, roads and hazard areas.
- Construct on the contour as low, flat, elongated mounds.
- Where there is sufficient area, topsoil stockpiles shall be less than 2 metres in height.
- Where they are to be in place for more than 10 days, stabilise following the approved ESCP or SWMP to reduce the C-factor to less than 0.10.
- Construct earth banks (Standard Drawing 5-5) on the upslope side to divert water around stockpiles and sediment fences (Standard Drawing 6-8) 1 to 2 metres downslope.

STOCKPILES **SD 4-1**

Construction Notes

- Remove any rocks, clogs, sticks or grass from the ground surface before laying the matting.
- Spread topsoil to at least 75 mm depth.
- Where appropriate, complete fertilising and seeding on a properly prepared seedbed (Standard Drawing 7-1) before laying the matting.
- Ensure the fabric can be continuously in contact with the soil by grading the surface carefully first.
- Lay the matting in "hinge-fashion" with the ends of each upstream roll overlapping the next roll downslope.
- Ensure sufficient staples are used to maintain a good contact between the soil and the matting.

RECP : SHEET FLOW **SD 5-2**

Construction Notes

- Remove any rocks, clogs, sticks or grass from the surface before laying matting.
- Ensure that topsoil is at least 75 mm deep.
- Complete fertilising and seeding before laying the matting.
- Ensure fabric will be continuously in contact with the soil by grading the surface carefully first.
- Lay the fabric in "hinge-fashion", with the end of each upstream roll overlapping those downstream. Ensure each roll is anchored properly at its upslope end (Standard Drawing 5-7b).
- Ensure that the full width of flow in the channel is covered by the matting up to the design storm event, usually in the 10-year ARI time of concentration storm event.
- Divert water from the structure until vegetation is stabilised properly.

RECP : CONCENTRATED FLOW **SD 5-7**

Construction Notes

- Check dams can be built with various materials, including rocks, logs, sandbags and straw bales. The maintenance program should ensure their integrity is retained, especially where constructed with straw bales. In the case of bales, this might require their replacement each two to four months.
- Trench the check dam 200 mm into the ground across its whole width. Where rock is used, fill the trenches to at least 100 mm above the ground surface to reduce the risk of undercutting.
- Normally, their maximum height should not exceed 500 mm above the gully floor. The centre should act as a spillway, being at least 150 mm lower than the outer edges.
- Space the dams to the top of the upstream dam is level with the spillway of the next downstream dam.

ROCK CHECK DAM **SD 5-4**

Construction Notes

- Build with gradients between 1 percent and 5 percent.
- Avoid removing trees and shrubs if possible - work around them.
- Ensure the structures are free of projections or other irregularities that could impede water flow.
- Build the drains with circular, parabolic or trapezoidal cross sections, not V-shaped.
- Ensure the banks are properly compacted to prevent failure.
- Complete permanent or temporary stabilisation within 10 days of construction.

EARTH BANK (LOW FLOW) **SD 5-5**

Construction Notes

- Construct at the gradient specified on the ESCP or SWMP, normally between 1 and 5 percent.
- Avoid removing trees and shrubs if possible - work around them.
- Ensure the structures are free of projections or other irregularities that could impede water flow.
- Build the drains with circular, parabolic or trapezoidal cross sections, not V-shaped, at the dimensions shown on the SWMP.
- Ensure the banks are properly compacted to prevent failure.
- Complete permanent or temporary stabilisation within 10 days of construction following Table 5.2 in Landcom (2004).
- Where discharging to erodible lands, ensure they outlet through a properly constructed level spreader.
- Construct the level spreader at the gradient specified on the ESCP or SWMP, normally less than 1 percent or level.
- Where possible, ensure they discharge waters onto either stabilised or undisturbed disposal sites within the same subcatchment area from which the water originated. Approval might be required to discharge into other subcatchments.

EARTH BANK (HIGH FLOWS) **SD 5-6**

Stabilised topsoil diversion bank

Construction Notes

- CONSTRUCT WITH GRADIENT OF 1% TO 5%.
- AVOID REMOVING TREES AND SHRUBS IF POSSIBLE - WORK AROUND THEM.
- DRAINS TO BE CIRCULAR, PARABOLIC OR TRAPEZOIDAL CROSS SECTION NOT V-SHAPED.
- EARTH BANK TO BE ADEQUATELY COMPACTED IN ORDER TO PREVENT FAILURE.
- PERMANENT OR TEMPORARY STABILISATION OF THE EARTH BANK TO BE COMPLETED WITHIN 10 DAYS OF CONSTRUCTION.
- ALL OUTLETS FROM DISTURBED LANDS ARE TO BE FED INTO A SEDIMENT BASIN OR SIMILAR.
- DISCHARGE RUNOFF COLLECTION FROM UNDISTURBED LANDS ONTO EITHER A STABILISED OR AN UNDISTURBED DISPOSAL SITE WITHIN THE SAME SUBCATCHMENT AREA FROM WHICH THE WATER ORIGINATED.
- COMPACT BANK WITH A SUITABLE IMPLEMENT IN SITUATIONS WHERE THEY ARE REQUIRED TO FUNCTION FOR MORE THAN FIVE DAYS.
- EARTH BANK TO BE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT WILL IMPEDE NORMAL FLOW.

GENERAL CONSTRUCTION NOTES

- CONSTRUCT WITH GRADIENT OF 1% TO 5%.
- AVOID REMOVING TREES AND SHRUBS IF POSSIBLE - WORK AROUND THEM.
- DRAINS TO BE CIRCULAR, PARABOLIC OR TRAPEZOIDAL CROSS SECTION NOT V-SHAPED.
- EARTH BANK TO BE ADEQUATELY COMPACTED IN ORDER TO PREVENT FAILURE.
- PERMANENT OR TEMPORARY STABILISATION OF THE EARTH BANK TO BE COMPLETED WITHIN 10 DAYS OF CONSTRUCTION.
- ALL OUTLETS FROM DISTURBED LANDS ARE TO BE FED INTO A SEDIMENT BASIN OR SIMILAR.
- DISCHARGE RUNOFF COLLECTION FROM UNDISTURBED LANDS ONTO EITHER A STABILISED OR AN UNDISTURBED DISPOSAL SITE WITHIN THE SAME SUBCATCHMENT AREA FROM WHICH THE WATER ORIGINATED.
- COMPACT BANK WITH A SUITABLE IMPLEMENT IN SITUATIONS WHERE THEY ARE REQUIRED TO FUNCTION FOR MORE THAN FIVE DAYS.
- EARTH BANK TO BE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT WILL IMPEDE NORMAL FLOW.

Standard Drawings

Construction Notes

- Strip the topsoil, level the site and compact the subgrade.
- Cover the area with needle-punched geotextile.
- Construct a 200-mm thick pad over the geotextile using road base or 30-mm aggregate.
- Ensure the structure is at least 15 metres long or to building alignment and at least 3 metres wide.
- Where a sediment fence joins onto the stabilised access, construct a hump in the stabilised access to divert water to the sediment fence.

STABILISED SITE ACCESS SD 6-14

Construction Notes

- Construct sediment fences as close as possible to being parallel to the contours of the site, but with small returns as shown in the drawing to limit the catchment area of any one section. The catchment area should be small enough to limit water flow if concentrated at one point to 50 litres per second in the design storm event, usually the 10-year event.
- Cut a 150-mm deep trench along the upslope line of the fence for the bottom of the fabric to be entrenched.
- Drive 1.5 metre long star pickets into ground at 2.5 metre intervals (max) at the downslope edge of the trench. Ensure any star pickets are fitted with safety caps.
- Fix self-supporting geotextile to the upslope side of the posts ensuring it goes to the base of the trench. Fix the geotextile with wire ties or as recommended by the manufacturer. Only use geotextile specifically produced for sediment fencing. The use of shade cloth for this purpose is not satisfactory.
- Join sections of fabric at a support post with a 150-mm overlap.
- Backfill the trench over the base of the fabric and compact it thoroughly over the geotextile.

SEDIMENT FENCE SD 6-18

Construction Notes

- Install this type of sediment fence when use of support posts is not desirable or not possible. Such conditions might apply, for example, where approval is granted from the appropriate authorities to place these fences in highly sensitive estuarine areas.
- Use bent trench mesh to support the F82 welded mesh facing as shown on the drawing above. Attach the geotextile to the welded mesh facing using UV resistant cable ties.
- Stabilise the whole structure with sandbag or rock anchoring over the trench mesh and the leading edge of the geotextile. The anchoring should be sufficiently large to ensure stability of the structure in the design storm event, usually the 10 year event.

ALTERNATIVE SEDIMENT FENCE SD 6-9

Construction Notes

- Install the fence to the height specified in the ESCP/SWMP.
- Cut a channel 200 mm deep along the fence line.
- Place wire and tight resistant, open-weave polymer mesh with 40 percent porosity on the prevailing wind side of fence.
- Fasten the mesh to all wires using ring fasteners at 100 mm to 150 mm intervals on top wire and 300 mm intervals on other wires.
- Use one 75-mm to 100-mm diameter treated round timber post every 20 metres.
- Where star pickets are used, ensure they are fitted with safety caps.

CONTROL OF WIND EROSION SD 6-15

SANDBAG SEDIMENT TRAP FOR KERB INLET N.T.S.

GEOTEXTILE INLET FILTER (SD 6-12) - PERSPECTIVE N.T.S.

SEDIMENT BARRIER (SD 5-4) DETAIL

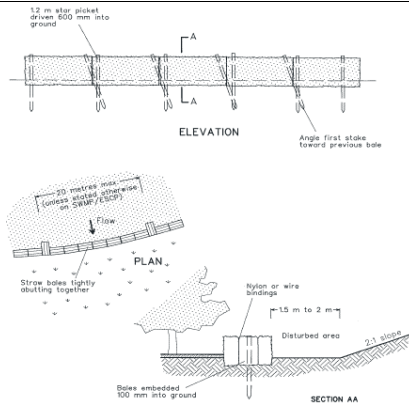
Coir Log Filter

Star pickets / wooden stakes 35mm x 38mm x 900mm min (minimum 2 per bale)

Stakes through anchor straps held in place by cable ties

Anchor straps pinned to ground with U pins

Standard Drawings

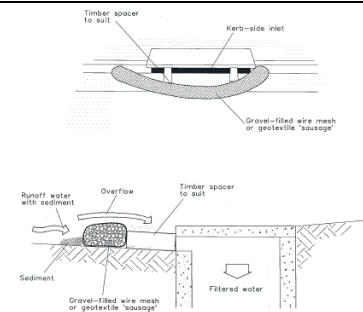


Construction Notes

1. Construct the straw bale filter as close as possible to being parallel to the contours of the site.
2. Place bales lengthwise in a row with ends tightly abutting. Use straw to fill any gaps between bales. Straws are to be placed parallel to ground.
3. Ensure that the maximum height of the filter is one bale.
4. Embed each bale in the ground 75 mm to 100 mm and anchor with two 1.2 metre star pickets or stakes. Angle the first star picket or stake at each bale towards the previously laid bale. Drive them 600 mm into the ground and, if possible, flush with the top of the bales. Where star pickets are used and they protrude above the bales, ensure they are fitted with safety caps.
5. Where a straw bale filter is constructed downslope from a disturbed batter, ensure the bales are placed 1 to 2 metres downslope from the toe.
6. Establish a maintenance program that ensures the integrity of the bales is retained - they could require replacement each two to four months.

STRAW BALE FILTER

SD 6-7



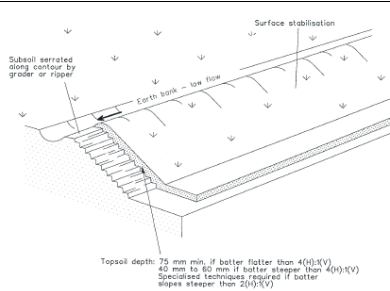
NOTE: This practice only to be used where specified in an approved SWMP/ESCP.

Construction Notes

1. Install filters to kerb inlets only at sag points.
2. Fabricate a sleeve made from geotextile or wire mesh longer than the length of the inlet pit and fill it with 25 mm to 50 mm gravel.
3. Form an elliptical cross-section about 150 mm high x 400 mm wide.
4. Place the filter at the opening leaving at least a 100-mm space between it and the kerb inlet. Maintain the opening with spacer blocks.
5. Form a seal with the kerb to prevent sediment bypassing the filter.
6. Sackbags filled with gravel can substitute for the mesh or geotextile providing they are placed so that they firmly abut each other and sediment-laden waters cannot pass between.

MESH AND GRAVEL INLET FILTER

SD 6-11

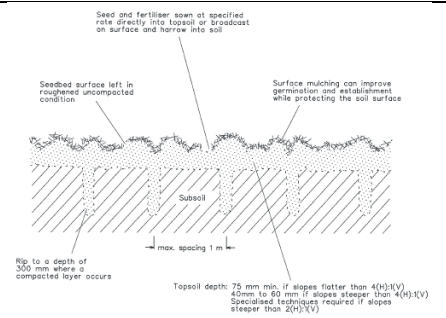


Construction Notes

1. Scarify the ground surface along the line of the contour to a depth of 50 mm to 100 mm to break up any hardsetting surfaces and to provide a good bond between the respread material and subsoil.
2. Add soil ameliorants as required by the ESCP or SWMP.
3. Rip to a depth of 300 mm if compacted layers occur.
4. Where possible, replace topsoil to a depth of 40 to 60 mm on lands where the slope exceeds 4(H):1(V) and to at least 75 mm on lower gradients.

REPLACING TOPSOIL

SD 4-2

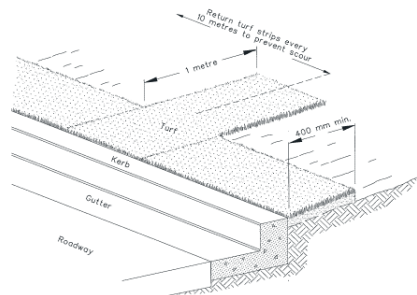


Construction Notes

1. Loosen compacted soil before sowing any seed. If necessary, rip the soil to a depth of 300 mm. Avoid rotary hoe cultivation.
2. Work the ground only as much as necessary to achieve the desired tilth and prepare a good seedbed.
3. Avoid cultivation in very wet or very dry conditions.
4. Cultivate on or close to the contour where possible, not up and down the slope.

SEEDBED PREPARATION

SD 7-1



Construction Notes

1. Install a 400-mm minimum wide roll of turf on the footpath next to the kerb and at the same level as the top of the kerb.
2. Lay 1.4 metre long turf strips normal to the kerb every 10 metres.
3. Rehabilitate disturbed soil behind the

KERBSIDE TURF STRIP

SD 6-13

Appendix I Soil and Water Management Plan

Construction Environmental Management Plan

**SSD-37486043: Oakdale East Industrial Estate
2-10 Old Wallgrove Road, Horsley Park**

Goodman Property Services (Aust) Pty Ltd

SLR Project No.: 630.V10611.00001

13 November 2023

OAKDALE EAST ESTATE – STAGE 2

SOIL & WATER MANAGEMENT PLAN

November 2023 – Revision 2

Prepared for:



Prepared by:

ANDREW LITTLEWOOD

CPESC & Senior Soil Conservationist

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2	Revision 1 – Revised for updated SSD Conditions of Consent	05/10/2023
3	Revision 1 – Revised for standard naming conventions	06/11/2023

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APPENDICES

Appendix A: Erosion & Sediment Control Plan

Appendix B:

- General Arrangement Plan – AT & L Drawing No. 20-798-C1009 – Date 06/07/2023
- Lenore Drive & Old Wallgrove Intersection Upgrade: AT & L Drawing No. 20-798-C1311 – *‘Intersection 2 - Roadworks And Stormwater Drainage Plan’* – Date 27/06/2023

REFERENCED DOCUMENTS

Document	Prepared by	Date
‘Oakdale East Industrial Estate Aboriginal Heritage Due Diligence Assessment’ report	Artefact	June 2021
Detailed Site Investigation - Groundwater	JBS&G Australia Pty Ltd	July 2021
Environmental Impact Statement	Keylan Consulting Pty Ltd	July 2022
Civil and Stormwater Management Report	AT&L	March 2023
Flood Assessment for Oakdale East Industrial Estate Masterplan and Stage 2 Works - Addendum No. 1	BMT Commercial Australia Pty Ltd	March 2023
Oakdale East: 1000 - Series Infrastructure - Civil Works Package	AT&L	March 2023
Oakdale East: 1000 - Series Infrastructure - Civil Works Package	AT&L	June 2023
SSD 37486043 Development Consent	NSW Government - Department of Planning and Environment	October 2023

Oakdale East Estate – Stage 2 - Soil and Water Management Plan

1.0 INTRODUCTION

1.1 Context

This Soil and Water Management Plan (SWMP) has been prepared to support a State Significant Development (SSD) No. 37486043 application for the Oakdale East Estate (OEE) and development consent for Stage 2 works at 2-10 Wallgrove Road, Horsley Park.

Goodman Property Services (Aust) Pty Ltd is developing the Oakdale East Estate located at 2-10 Wallgrove Road, Horsley Park within the Fairfield Local Government Area (LGA). The land is legally described as Lot 102 and Lot 103 in DP 1268366. A Concept Plan and Stage 2 Development Application (SSD-37486043) was approved for the estate in October 2023 by Department of Planning & Environment. This report covers the approval associated with Stage 2 Development is as follows:

- Completion of lead-in infrastructure works including intersection upgrades at Millner Ave / Old Wallgrove Road and Lenore Drive / Old Wallgrove Road,
- Clearing of 2.28 ha of vegetation,
- Completion of the internal road network,
- Reticulation of services infrastructure to provide serviced development pads to all precincts,
- Completion of retaining walls across the entire Estate,
- Completion of Building works to Precinct 1 expansion and Precinct 3 including any ancillary on lot infrastructure and detailed civil works required.

Stage 1 of the works were completed in September 2021 and included Precinct 1 building and infrastructure works. Subsequent to the Stage 1 works, a Rehabilitation Development Application was approved on 21/04/2023 by Fairfield City Council (DA 347.1/2021) which approved works for the Precinct 1 expansion, and rehabilitation works in Precincts 2, 3 and 4. The approved works included:

- Demolition of the Brick Factory and rehabilitation of the surrounding land;
- Clearing of 2.58 ha of vegetation;
- Cut and fill works to provide bulk pad levels;
- Provision of Estate stormwater infrastructure including completion of detention basins and swales;
- Installation of retaining walls to Precinct 3; and
- Consideration for Aboriginal Heritage and Geotech assessments.

1.2 Background

The Project site forms part of State Environmental Planning Policy (Western Sydney Employment Area) 2009 (WSEA SEPP) which was established to encourage the development of land, and subsequently, encourage business enterprises to base their operations near major road transport corridors, and the new Western Sydney Airport. The development of the area is attractive to businesses involved in transport, logistics, and warehousing.

The Environmental Impact Statement (EIS) produced for SSD No. 37486043 has assessed the impacts of the project on surface water and soils. The EIS prepared by Keylan Consulting Pty Ltd (Keylan) noted at 'Section 6.3 – Soil & Water' that:

'The application is supported by detailed civil engineering design plans (Appendix 12) and a Civil Infrastructure and Stormwater Management Report (CISMR) (Appendix 13) prepared by AT&L. The potential impacts on flooding in Reedy Creek are assessed by BMT (Appendix 14).

Oakdale East Estate – Stage 2 - Soil and Water Management Plan

With the exception of Precinct 5, the site rehabilitation DA (DA 347.1/2021) currently under assessment addresses the flooding and site stormwater management of the site as established by the remediation earthworks – through the construction of a network of stormwater control basins (see Figure 5).

The CISMR addresses the stormwater management of the estate as it is proposed to be developed on the landform provided by the rehabilitation works under DA 347.1/2021. The key issues covered in the CISMR include:

- *erosion and sedimentation control*
- *stormwater management, including:*
 - *On Site Detention (OSD) – Site Storage Requirement (SSR) and Permissible Site Discharge (PSD)*
 - *piped and overland flows*
 - *Water Sensitive Urban Design (WSUD) including the use of rainwater capture and storage to achieve a 40% reduction in water consumption*
- *utility servicing*
- *road design*

6.3.1 Erosion and sediment control

The CISMR includes a detailed Soil and Water Management Plan (SWMP) prepared in accordance with Managing Urban Stormwater – Soils and Construction (Landcom, 2004) for the site.

The SWMP demonstrates that adequate controls can be established to avoid the pollution of receiving waters during construction of the development, including three sediment basins, diversion structures, ongoing maintenance, and inspections.

Prior to commencing construction, a detailed ESCP will be prepared to include sediment and erosion controls to be designed, installed, and maintained in accordance with the requirements of Landcom 2004.

1.3 Environmental management systems overview

The overall Environmental Management System for each of the individual development projects will be described in the Construction Environmental Management Plans (CEMPs) that will be prepared for each the various developments within the ambit of the OEE Stage 2 Project's SSD consent.

This SWMP will form part of each of the selected Contractor's environmental management framework in the CEMPs developed for each package of Stage 2 works.

The Progressive Erosion and Sediment Control Plans (PESCPs) will be prepared in consideration of the Primary Erosion and Sediment Control Plan (ESCP) attached to this SWMP as Appendix A. The ESCP describes the intentions and fundamental principles for erosion and sediment control management for the duration of, and within the ambit of the OEE Stage 2 Project consent.

The PESCPs will be developed by each project's environmental team in consultation with construction personnel, and with the assistance of a Environmental Consultant (Certified Professional in Erosion & Sediment Control - CPESC) when required.

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They will be developed prior to any construction works commencing in the work zone and will be modified as required when:

- Site conditions evolve.
- Flow paths change.
- Construction activities that affect the characteristics of ground conditions change.

Management measures identified in these plans will be incorporated into site or activity specific Environmental Work Method Statements (EWMS). EWMS will be developed and signed off by environment and management representatives prior to associated works. Construction personnel will be required to undertake works in accordance with the identified mitigation and management measures. Works that are proposed in or near to identified Environmentally Sensitive Areas will have an EWMS prepared that details relevant environmental protection measures.

A Environmental Consultant (CPESC) will be engaged and consulted throughout construction of each project to provide advice on erosion and sediment control design, installation, maintenance, and the development of PESCPs.

Used together, the CEMP, SWMP strategies, ESCP procedures, PESCP's and EWMS form management guides that clearly identify required environmental management actions for reference by the Contractor's personnel and sub-contractors.

The review and document control processes for this Plan will be described in the CEMPs developed for each package of Stage 2 works.

2.0 PURPOSE & OBJECTIVES

2.1 Purpose

The purpose of this Plan is to describe how the Contractor will manage and minimise soil and water impacts during construction of the project.

2.2 Objectives

The key objective of the SWMP is to ensure that the potential impacts to soil and water quality are minimised. To achieve this objective, each Contractor will be required undertake the following:

- Ensure appropriate controls and procedures are implemented during construction activities to avoid or minimise erosion and sedimentation impacts and potential impacts to water quality in creeks, waterways, and groundwater along the project corridor.
- Ensure compliance with the Project's anticipated Consent Conditions of the SSDA.
- Ensure appropriate measures are implemented to address the relevant mitigation measures detailed in the CEMP, SWMP, ESCP, PESCP's & EWMS.
- Ensure appropriate measures are implemented to comply with all relevant legislation and other requirements as described in Section 3.1 of this Plan.

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2.3 Targets

The following targets have been established for the management of soil and water impacts during the project:

- Ensure compliance with the relevant legislative requirements and environmental safeguards.
- Meet New South Wales Environment Protection Authority (NSW EPA) water quality discharge parameters for all planned basin discharges and site dewatering.
- Manage downstream water quality impacts attributable to the project (i.e., maintain waterway health by avoiding the introduction of nutrients, sediment and chemicals outside of that permitted by the NSW EPA and ANZECC guidelines).
- Ensure training on soil and water management is provided to all construction personnel through targeted training, site inductions and toolbox talks.

3.0 ENVIRONMENTAL REQUIREMENTS

3.1 Legislation

Legislation and regulations relevant to soil and water management includes:

- *Environmental Planning and Assessment Act 1979* (EP&A Act).
- *Environmental Planning and Assessment Regulation 2000*.
- *Protection of the Environment Operations Act 1997* (POEO Act).
- *Water Management Act 2000*.
- *National Parks and Wildlife Act 1974*

Relevant provisions of the above legislation are explained in the register of legal and other requirements included in the CEMP.

Section 120 of the NSW POEO Act states that it is illegal to pollute waters. Under the POEO Act, 'water pollution' includes introducing litter, sediment, oil, grease, wash water, debris, and flammable liquids such as paint etc. into waters or placing such material where it is likely to be washed or blown into waters or the stormwater system or percolate into groundwater. All feasible steps should be taken to minimise the risk of pollution of waters.

3.2 Guidelines and standards

The main guidelines, specifications, and policy documents relevant to this Plan include:

- Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (EPA, March 2004).
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC and ARMICANZ 2000).
- Storing and Handling of Liquids: Environmental Protection – Participants Manual (Department of Environment and Climate Change, 2007)..

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- Managing Urban Stormwater: Soils and Construction. Landcom, (4th Edition) March 2004 (reprinted 2006) (the “Blue Book”). Volume 1 and Volume 2.
- Volume 2A Installation of Services (DECCW 2008).
- Water quality guidelines for the protection of aquatic ecosystems for lowland rivers and estuaries. (ANZECC, 2000).

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3.3 Environmental management measures

Environmental safeguards and management measures are included in the EIS in Section 6. The relevant Draft SSD 37486043 Conditions of Consent are described at ‘Part D Stage 2 Development Specific Environmental Conditions’, and ‘Part E Stage 2 Development Environmental Management, Reporting And Auditing’.

The environmental management measures relevant to this Plan are listed in Table 3-1 and Table 3-2 below. This includes reference to specific issues and the relevant section of this Plan, the ESCP, or other management system document which addresses the requirement.

Table 3-1 Management measures from the EIS relevant to construction soil and water management

Issue	SSDA Component	EIS Mitigation Measure	SWMP & ESCP Management Measures
Soils and Water	Stage 2 Development	<i>‘an erosion and sediment control plan will be prepared prior to commencing construction’</i>	<ul style="list-style-type: none"> • Please refer to the Primary Erosion & Sediment Control Plan (ESCP) at Appendix A of this SWMP.
Contaminated land	Stage 2 Development	<i>‘implement the recommendations of the Preliminary Site Investigation prepared by JBS&G (dated 31 March 2022) to undertake planned intrusive investigations to provide a quantitative assessment of contaminant levels prior to and during earthworks associated with the development of Precinct 5’</i>	<ul style="list-style-type: none"> • SWMP – Table 6-1 • ESCP – Table 9 • Identified areas of potential contamination to be subject to further investigation prior to the development of affected land.
Air Quality	Stage 2 Development	<ul style="list-style-type: none"> • <i>dust suppression including covering or stabilizing stockpiled materials and wetting exposed surfaces,</i> • <i>site management, site inspections and monitoring procedures, including observation of speed limits, minimisation of vehicle use, and engine idling will be utilised to minimise any potential air quality impacts during the operation phase,</i> • <i>revegetating disturbed surfaces will occur as soon as practicable,</i> • <i>minimise dust generating activities in areas close to receptors,</i> • <i>in case of exposed surfaces, land stabilisation works are to be carried out progressively on site to minimise the impact of exposed surfaces,</i> • <i>remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site,</i> • <i>erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site,</i> 	<ul style="list-style-type: none"> • SWMP – Table 6-1 • ESCP – Section 7.4 • ESCP – Section 8 • ESCP – Table 9

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Issue	SSDA Component	EIS Mitigation Measure	SWMP & ESCP Management Measures
Air Quality	Stage 2 Development	<ul style="list-style-type: none"> • <i>fully enclose site or specific operations where there is a high potential for dust production and the activity is occurring for an extensive period (e.g. more than 1-2 weeks)</i> • <i>...maintain vehicles in good condition and in accordance with manufacturer's specifications, and so that the exhaust Appendix 20 emissions comply with the Protection of the Environment Operations Act 1997,</i> • <i>stationary trucks are to switch off engines if idling time on-site is likely to exceed 5 minutes,</i> • <i>vehicle speed limit restrictions are to be implemented on site,</i> • <i>minimise truck queuing and unnecessary trips through effective logistical planning,</i> • <i>ensure trucks associated with Estate operations do not track dirt onto the public road network, and any spills or dust track-out is to be cleaned up as soon as possible.</i> • <i>only use cutting, grinding, or sawing equipment fitted with suitable dust suppression systems, such as water sprays,</i> • <i>ensure an adequate water supply on the site for effective dust/particulate matter suppression/ mitigation, using non-potable water,</i> • <i>use a watercart or sprays to suppress dust emissions from unsealed roads (if relevant,</i> • <i>ensure equipment is 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,</i> • <i>potential dusty activities are not to be carried out during strong winds or in weather conditions where high levels of airborne particulates are likely,</i> • <i>no on-site burning of waste materials, timbers, or any other combustible materials,</i> • <i>all trucks entering or leaving the Site with potentially dusty loads are to have their loads covered,</i> 	<ul style="list-style-type: none"> • SWMP – Table 6-1 • ESCP – Section 7.4 • ESCP – Section 8 • ESCP – Table 9

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Table 3-2 - Management measures required for the Draft SSD 37486043 Conditions of Consent relevant to construction soil and water management.

Issue	SSDA Condition No.	Draft SSD Conditions of Consent requirement	SWMP & ESCP Management Measures
Erosion and Sediment Control	D55	Prior to the commencement of earthworks for the Stage 2 development, the Applicant must install 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 E2.	<ul style="list-style-type: none"> • This SWMP – Table 6-1 • See Primary Erosion & Sediment Control Plan (ESCP) at Appendix A of this SWMP.
Erosion and Sediment Control	D56	The Applicant must maintain the erosion and sediment control measures installed on-site in accordance with condition D55 for the duration of earthworks and construction of the development.	<ul style="list-style-type: none"> • SWMP – Table 6-1 • ESCP – Section 8 • ESCP – Table 9 – Section 7
Discharge Limits	D57	The Stage 2 development must comply with section 120 of the POEO Act, which prohibits the pollution of waters, except as expressly provided for in an EPL.	<ul style="list-style-type: none"> • ESCP – Table 9 – Section 7 • ESCP – Appendix B & C
Dust Minimisation	D63	The Applicant must take all reasonable steps to minimise dust generated during all works authorised by this consent.	<ul style="list-style-type: none"> • SWMP – Table 6-1 • ESCP – Table 9 – Section 2
Dust Minimisation	D64	During construction, the Applicant must ensure that: <ul style="list-style-type: none"> (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 the Stage 2 development 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. 	<ul style="list-style-type: none"> • SWMP – Table 6-1 • ESCP – Table 9 – Section 2 & Section 7
Bunding	D72	The Applicant must store all chemicals, fuels and oils used on-site in accordance with: <ul style="list-style-type: none"> (a) the requirements of all relevant Australian Standards; and (b) for liquids, the NSW EPA's Storing and Handling of Liquids: Environmental Protection – Participants Manual (Department of Environment and Climate Change, 2007). 	<ul style="list-style-type: none"> • ESCP – Table 9 – Section 6

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Table 3-2 - Management measures required for the Draft SSD 37486043 Conditions of Consent relevant to construction soil and water management.

Issue	SSDA Condition No.	Draft SSD Conditions of Consent requirement	SWMP & ESCP Management Measures
Construction Environmental Management Plan (CEMP)	E3 (e)	As part of the CEMP required under condition E2 of this consent, the Applicant must include the following: (e) Erosion and Sediment Control Plan (see condition D56);	<ul style="list-style-type: none"> • See Primary Erosion & Sediment Control Plan (ESCP) at Appendix A of this SWMP.

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4.0 EXISTING ENVIRONMENT

The following sections summarise what is known about factors influencing soils and water quality within and adjacent to the Project boundaries.

4.1 Topography and soil characteristics

The pre-existing topography has been significantly altered to accommodate the factory building footprints and external brick storage areas in the western sector of the site, whilst the majority of the central and eastern sector has been heavily disturbed by quarry operations. An area of remnant landform and its associated vegetation occupies small, linear tract of land along the eastern boundary area.

The pre-disturbance landform would have been relatively uniform, with undulating rises and alluvial flats occurring across the site, intersected by a series of permanent and ephemeral watercourses.

The 'Oakdale East Industrial Estate Aboriginal Heritage Due Diligence Assessment' report prepared by Artefact – June 21 adequately describes the site geology as follows;

'The geology of the study area is characterised by the Triassic Wianamatta group which consists of black to dark grey shale and laminate on top of medium to coarse-grained quartz sandstone, very minor shale, and laminate. The landforms are a result of the weathering of local bedrock. The underlying geology is the Hawkesbury sandstone that was laid down as river sediments and is described as medium to coarse grained quartz sandstone, this is overlain by the finer sedimentary material caps of Ashfield Shale. Hawkesbury Sandstone weathers to form thin, sandy soils with low water-retaining qualities. ('Geoscience Australia Interactive Maps' n.d.).

The western portion of the study area is comprised of the Blacktown Residual soil landscape which has shallow to moderately deep, hard setting mottled texture contrast soils, red and brown podzolic soils on crests grading to yellow podzolic soils on lower slopes and in drainage lines.

The eastern portion of the study area, which contains a relic creek channel and the current course of the creek line known as Reedy Creek, is the current active floodplain of many drainage networks of the Cumberland Plain. The soil landscape is known as South Creek, an alluvial environment characterised by floodplains, valley flats and drainage depressions. The soils are often very deep, layered sediments over bedrock or relic soils. Plastic clays or structured loams occur in and immediately adjacent to drainage lines. Red and yellow podzolic soils are most common on terraces with small areas of structured grey clays, leached clay and yellow solodic soils (Bannerman and Hazelton 1990). The South Creek soil landscape has the potential to retain stratified archaeological deposits.

The study area has had extensive modification with the natural Blacktown soil profile almost entirely absent from the area. There is some potential for remnant intact South Creek soils along the eastern boundary which is less disturbed.'

Further reference to NSW Office of Environment & Heritage website resource 'eSPADE', identified the extent and characteristics of the 'Blacktown' (bt) soil landscape unit, and the 'South Creek' (sc) soil landscape unit that occur within the project footprint,

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4.1.1. 'Blacktown' (bt) landscape unit

The 'Blacktown' landscape unit is the predominant soil landscape in the western Sydney area. The soil landscape occurs over the Wianamatta Group and Ashfield Shale which consists of laminite and dark grey siltstone, Bringelly Shale which consists of shale with occasional calcareous claystone, laminite and infrequent coal, and Minchinbury Sandstone consisting of fine to medium-grained quartz lithic sandstone.

The soils are characterised by Red and Brown Podzolic soils on mid to upper slopes grading to Yellow Podzolic soils on lower slopes and drainage lines.

The erosion hazard of the varying soil types is rated as Slight to Moderate for non-concentrated flows, ranging to Moderate to High for concentrated flows. Other physical limitations of the landscape unit include hard setting soil profiles, moderately reactive deep clays and High shrink-swell potential (localised). The chemical soil characteristics include generally acidic soils (pH commonly ranging from 5.0 – 7.0), low to moderate fertility, and localised sub-soil salinity.

Figure 4.1.1 – Extract map of the occurrence of the 'Blacktown' (bt) soil landscape unit from NSW Office of Environment & Heritage website resource 'eSPADE'



4.1.2. 'South Creek' (sc) landscape unit

This 'South Creek' soil landscape commonly occurs over the present active floodplain of many drainage networks of the Cumberland Plain. The topography consists of floodplains, valley flats and drainage depressions of the channels on the Cumberland Plain, with slopes being less than 5% generally and local relief of less than 10 metres. The geology is similar to adjoining soil landscapes with Quaternary alluvium derived from Wianamatta Group shales and Hawkesbury Sandstone

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The soils commonly encountered are often very deep layered sediments over bedrock or relict soils. Red and Yellow Podzolic Soils are most common on terraces, with small areas of Structured Grey Clays, leached clays, and Yellow Solodic Soils. Structured Plastic Clays or Structured Loams are found in and immediately adjacent to drainage lines.

The erosion hazard of this soil landscape is rated as is potentially very high to extreme as the area is an active floodplain and is presently being reworked by fluvial processes. Other physical limitations of the landscape unit include high erodibility, hard setting soil profiles, shrink-swell potential (localised), seasonal waterlogging, localised permanent high water tables, localised stoniness, and soil salinity. The chemical soil characteristics include strongly acidic soils, potential aluminium toxicity, low fertility, and localised potential for sodic soils.

Figure 4.1.2 – Extract map of the occurrence of the 'South Creek' soil landscape unit from NSW Office of Environment & Heritage website resource 'eSPADE'



4.2 Acid Sulphate Soils

Potential Acid Sulfate Soils are soils that have concentrations of iron sulphide layers that can oxidise when exposed to oxygen generating sulphuric acid. In general, these soils occur less than 5 metres elevation above sea level and are predominantly restricted to low-lying coastal areas, adjoining estuarine areas. More recently, acid sulphate soils have been identified in long-term, drought-affected inland areas where water levels have dropped in waterways and wetlands, exposing acid sulphate material that has subsequently oxidised.

Given the general elevation and the soil types described within the Project area, acid sulphate soils are unlikely to occur in the area. A review of the relevant Acid Sulfate Soil Risk Map (ASSMAC – DLWC 1998) confirmed the Project area falls outside the study area of this resource.

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Further reference to the online soil mapping resource 'eSpade' (NSW Department of Environment & Heritage) indicate that the site is not situated in an area at risk of Acid Sulphate soils. The map indicates the closest known occurrence is in the upper reaches of the Parramatta River and Georges River to the east and south east of the Project.

4.3 Surface water

The proposed development is located within the Reedy Creek floodplain, which forms part of the larger Hawkesbury-Nepean Basin. The pre-existing drainage patterns have been significantly altered by the infrastructure in the western sector of the site, with the central and eastern sector heavily disturbed by quarry operations. As noted above, the pre-disturbance landform would have been relatively uniform, with undulating rises and alluvial flats occurring across the site, intersected by a series of creeks and tributaries associated with the South Creek drainage system.

Reedy Creek is a tributary of Eastern Creek permanent and ephemeral watercourses. An anabranch of Reedy Creek flows within the quarry area on a south-west to north-east alignment along the south-eastern flank of the Project site. This anabranch then joins with another anabranch of the creek which then flows along the eastern boundary, continuing on a similar orientation, flowing to Eastern Creek which is approximately 2.7 km to the north-east of the site.

4.4 Water Quality and Receiving Environment Assessment

The Project activities that have the potential risk of negative impacts on water quality parameters include:

- Installation of erosion and sediment controls.
- Vegetation clearing, debris removal & maintenance of access to site areas/temporary access roads.
- Ancillary site preparation, establishment, and operation.
- Demolition of existing buildings, paved roads & parking areas, and hardstand areas.
- Establishing or relocating 'dirty' water drains and 'clean' water diversions.
- Bulk earthworks, trenching and earthworks for service installation.
- In-situ concrete works and concrete curing.
- Stormwater construction and drainage stabilisation.
- Dewatering 'dirty' water from site areas and sediment basin operations.
- Spills & leaks of fuels & oils from mobile and static machinery.
- Storage of chemicals, fuels & oils.
- Generation of building and construction waste.
- Importing, handling, stockpiling and transporting materials & resources.
- Plant maintenance.
- General waste generation from compound/s & works areas.

The determination of the assessment of the drainage patterns, the heavily modified existing receiving environments, and the attributes of the receiving waters in the vicinity of the Project have been assessed as 'standard' in accordance with Blue Book Volume 1- Sect. 6.3.4 – (f) & Volume 2D – Table 6.1.

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4.5 Groundwater

The presence of groundwater primarily impacts on erosion and sediment control during construction with regard to piling, foundation earthworks, trenching for drainage and services, culvert construction, and sediment basin construction.

There are no obvious indicators of shallow groundwater sources, however the detectable presence of groundwater at or near the soil surface is highly dependent on seasonality and rainfall rates. Further assessment was undertaken utilising the NSW Groundwater Bore Database (Department of Primary Industries – Water 2018).

The database was reviewed for information on existing groundwater bores in a two-kilometre radius of the Project area. Two (2) groundwater sites were located in close proximity to the Project. Groundwater drill records for several sites were reviewed with final bore depths of 11.5m and 29m below ground level.

We also note that a detailed assessment of groundwater characteristics at the Site has been undertaken by JBS&G Australia Pty Ltd (JBS&G), which is detailed in the report titled 'Detailed Site Investigation – July 2021'. The report details the investigations into groundwater occurrence and assessed water quality. In summary, the Report states;

'The measured depth to groundwater at the time of gauging was between 1.301m (MW04) and 12.975m (MW01) below top of collar (toc), which was more elevated than the water strike zones observed within the weathered shale rock during the drilling program - thus indicating that groundwater at the site is likely to be present within a confined / semi-confined system.

Review of the field parameters recorded for the samples indicates that the groundwater has a relatively neutral pH and ranged from relatively low in oxygen levels to having moderate oxygen levels, with groundwater at the down-gradient extent of the site (MW04) identified as having the highest oxygen levels. The EC values correlate with brackish to moderately saline waters as expected within the shale bedrock and the hydrogeological setting of the site.

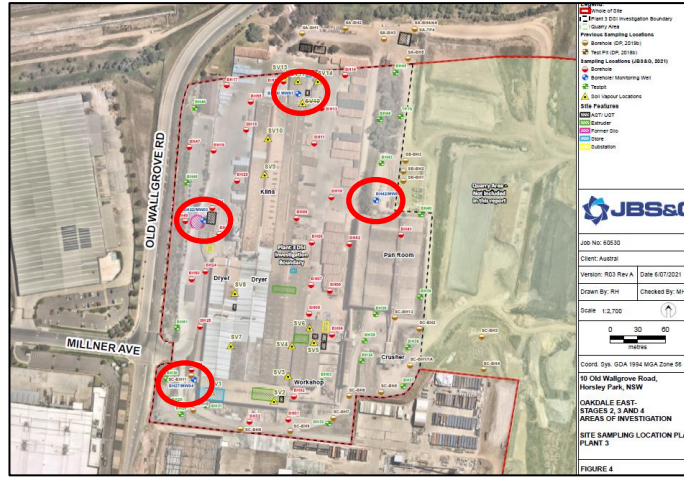
Groundwater monitoring wells installed at targeted locations were sampled for contaminants of potential concern including heavy metals, TRH/BTEX/VOCs, PFAS and PAHs. Elevated levels of several heavy metals were recorded in several monitoring wells at the site, however these are considered to reflect background conditions within the hydrogeological setting of the site.

No petroleum hydrocarbon or PFAS concentrations were identified at the groundwater sampling locations.'

In summary, the assessment indicates that groundwater is not likely to impact on the scope of the Project works, however, construction activities such as piling, foundation earthworks, trenching, culverts, and basin construction should be closely monitored during works. The following site sampling location plan has been extracted from the 'Detailed Site Investigation – July 2021' by JBS&G that shows the four (4) groundwater monitoring bore locations which are circled in red.

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Figure 4.5 – Extract map of the occurrence of the groundwater monitoring bore locations in the western sector of the Project vicinity.



4.6 Rainfall & temperature

Rainfall data was assessed from the Horsley Park Equestrian Centre Automatic Weather Station (AWS), located approximately 5 kilometres south-east of the Project at Horsley Park. This data was recorded between 1997 to 2023. (Bureau of Meteorology, 2023). The Sydney Equestrian Centre AWS was also selected for the Project as it will provide real time weather monitoring during the proposed construction period.

Rainfall data collected shows that typically rainfall is higher during summer and autumn. Winter and spring are generally drier periods during the year. February is the wettest month, with an average rainfall of 123.2 millimetres. The mean annual rainfall total is 780.3mm, with a median average annual rainfall total of 724.7 millimetres respectively. Table 4-6 below provides a summary of climate data at the weather station.

Table 4-6 - Summary of rainfall records

Summary of climate records from 1997 - 2023													
	Summer		Autumn			Winter			Spring			Summer	
	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Year
Mean rainfall (mm)	75.2	123.2	94.5	69.2	44.7	68.6	53.0	38.0	38.3	64.3	77.4	64.2	780.3
Median rainfall (mm)	68.9	93.3	66.3	58.0	33.8	50.2	26.0	26.6	26.2	49.6	54.0	62.6	724.7
Mean of rain days >1mm	7.9	7.5	8.9	6.7	5.2	6.1	5.5	4.0	5.0	6.1	7.0	7.1	77.0
Mean 9am temperature	22.0	21.5	19.4	17.5	13.8	11.1	10.3	12.0	15.6	18.1	19.2	20.9	16.
Mean 3pm temperature	28.2	27.1	25.3	22.2	19.2	16.6	16.1	17.8	20.8	22.5	24.2	26.5	22.2

Red = highest value blue = lowest value

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4.7 Rainfall erosivity factor and design rainfall depth

The rainfall erosivity factor is a measure of the ability of rainfall to cause erosion (referred to as “R” in the Revised Universal Soil Loss Equation - RUSLE). The rainfall erosivity factor is used to determine the soil loss in tonnes per hectare over one year and is used in calculations when sizing construction sediment basins.

The rainfall erosivity factor which is referred to as the ‘R’ Factor has been assessed from an Intensity Frequency Duration Table (see below) prepared for the site based on the 2-year, 6 hours storm event of 9.13 mm/hour. The R Factor value of 1892 is calculated from the 0.5 ‘Exceedances per year’, 6 Hour storm of 9.13 mm/hour being ‘S’, where $R = 164.74(1.1177)^S S^{0.6444}$, as per the Blue Book - Appendix A2 & B.

The nearest ‘Blue Book’ centre for detailed rainfall depths is Blacktown which is approximately 12kms north-east of The Project (Blue Book Volume 1- Table 6.3a). As noted above at Section 4.3, the Project was assessed as ‘standard’ in accordance with Blue Book Volume 1- Sect. 6.3.4 – (f) & Volume 2D – Table 6.1, however, we have elected to adopt the 5-day 85th percentile rainfall depth for Blacktown of 32.2mm.

Table 4.7 - Intensity Frequency & Duration Table

Location		Exceedance per Year (EY)						
Duration	12EY	6EY	4EY	3EY	2EY	1EY	0.5EY#	0.2EY*
1 min	0.817	0.942	1.17	1.33	1.58	2.03	2.57	3.31
2 min	1.39	1.63	2.01	2.28	2.66	3.32	4.15	5.24
3 min	1.89	2.21	2.75	3.14	3.68	4.61	5.79	7.33
4 min	2.32	2.72	3.41	3.90	4.59	5.80	7.31	9.30
5 min	2.70	3.17	3.98	4.57	5.41	6.87	8.69	11.1
10 min	4.11	4.83	6.13	7.07	8.44	10.9	13.9	18.0
15 min	5.09	5.97	7.57	8.75	10.5	13.6	17.3	22.5
20 min	5.83	6.84	8.67	10.0	12.0	15.6	19.9	25.7
25 min	6.44	7.55	9.55	11.0	13.2	17.1	21.8	28.2
30 min	6.96	8.15	10.3	11.9	14.2	18.4	23.4	30.2
45 min	8.18	9.57	12.0	13.8	16.5	21.4	27.0	34.6
1 hour	9.11	10.6	13.4	15.3	18.3	23.6	29.7	37.7
1.5 hour	10.5	12.3	15.4	17.6	20.9	26.9	33.7	42.5
2 hour	11.7	13.6	17.0	19.5	23.1	29.6	37.0	46.3
3 hour	13.4	15.6	19.5	22.4	26.5	34.0	42.3	52.7
4.5 hour	15.4	18.0	22.5	25.9	30.7	39.5	49.0	60.9
6 hour	17.0	19.9	25.0	28.7	34.2	44.1	54.8	68.1
9 hour	19.6	22.9	28.9	33.4	40.0	51.9	64.7	80.8
12 hour	21.5	25.3	32.1	37.2	44.7	58.4	73.1	91.9
18 hour	24.5	29.0	37.2	43.2	52.3	69.0	86.9	111
24 hour	26.8	31.8	41.0	47.9	58.2	77.5	98.1	127

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4.8 Flooding

In June 2022, BMT Commercial Australia Pty Ltd (“BMT”) completed a flood assessment to address the Planning Secretary’s Environmental Assessment Requirements (SEARs) related to flooding for State Significant Development Application SSD-37486043 for the Concept Plan and Stage 2 works for the Oakdale East Industrial Estate. This assessment was documented within the ‘Flood Assessment for Oakdale East Industrial Estate Masterplan and Stage 2 Works’ (BMT, 2022) (reference: L.A10908.001.01.FIA_Oakdale_Estate_SSDA.pdf) (hereafter referred to as the “*Oakdale East Flood Assessment*”).

The assessment detailed the flooding risks and characteristics of the Project area. The flood modelling assessment concluded that;

‘Under the developed scenario, 1% AEP flood conditions within the Site (outside of the OSD basin) are typified by shallow inundation (low depths) and low velocities (<0.2 m/s). AT&L have indicated that any ponding or flood impacts currently mapped on-site will be addressed by detailed design of the on-site drainage infrastructure during later phases of the design process for Stages 2 to 5 of the Estate.

Outside of the Site, the flood impact mapping shows localised impacts within the Reedy Creek channel and creek corridor surrounding the pipe outlet from the basin and resulting from the concentration of outflow from the site at this discharge location.’

The ‘*Oakdale East Flood Assessment*’ has since been superseded by ‘Addendum No. 1 to the Oakdale East Flood Assessment’ prepared by BMT. that details the flooding risks and characteristics of the Project area. The flood modelling assessment concluded that;

‘This addendum to the Oakdale East Flood Assessment provides additional information requested by WaterNSW on pre- and post-development flows for the 1% AEP and 5% AEP events in the vicinity of the Reedy Creek crossing of the pipeline, and addresses WaterNSW’s concerns about a potential increase in flow and associated impacts on its infrastructure in the area due to the proposed development.

Our findings indicate that, whilst the is predicted to be a minor impact on peak 1% AEP and 5% AEP flows, it is unlikely to significantly impact on flow behaviour and flood conditions in the Reedy Creek floodplain in the vicinity of the Water NSW pipeline (as reported in the Oakdale East Flood Assessment), nor the flood risk to the WaterNSW pipeline and associated infrastructure downstream of the development.’

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Figure 4.8 – Extract of Drawing A3 (Page 10 of the ‘Oakdale East Flood Assessment’ prepared by BMT) which depicts the ‘Peak Flood Depth - Developed Scenario - 1% AEP Flood’



4.9 Wind erosion hazard

The EIS prepared for DA SSD-37486043 at Section 6.10.1. examines air quality, and potential for dust emissions due to wind erosion impacting the Project area. The EIS notes:

‘During the construction phase of the OEE, dust emissions are anticipated to have the most significant impact on air quality. These emissions are expected to be a result of earthworks, construction and trackout.

Notwithstanding the anticipated emissions above, the surrounding area is considered to be of low sensitivity for both residential and commercial uses.....

There is no known documented method for assessing or ranking wind erosion hazard in Australia. Sandy soils are more at risk of wind erosion due to the larger soil particles drying more rapidly than smaller particles and single grained particles are easier to detach by the wind.

The erosive power of wind increases exponentially with velocity and the length of unobstructed terrain (fetch) over which the wind flows is important in allowing the wind to gain momentum and increase its erosive power. Movement of highly erosive soils typically starts at a wind velocity of 25–30 kilometres per hour (km/hr) at a height of 0.3 cm above the soil surface.

The presence of soil surface cover (vegetation, aggregates, or mulch) is mitigating factor as surface roughness decreases the velocity of the wind at the soil surface. Alternatively, hydraulically applied soil binders can also be effective at mitigating dust emissions.

Wind speed data was assessed from Horsley Park Equestrian Centre AWS, This data was recorded between 1997 to 2022 (Bureau of Meteorology, 2023).

Mean wind speed data collected shows that windier conditions typically occur during Spring & early Summer. The 9am wind speeds indicate calmer conditions during the winter months, however, the mean 9am wind speeds show less variation between the seasons, with Autumn and Winter marginally calmer than other seasons. The 3pm wind speeds also indicate calmer conditions during the winter months, with a marked increase of wind speeds during Spring & Summer

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Table 4-8 below provides a summary of wind data at the weather station.

Table 4-8 -Summary of wind speed data at Horsley Park Equestrian Centre AWS.

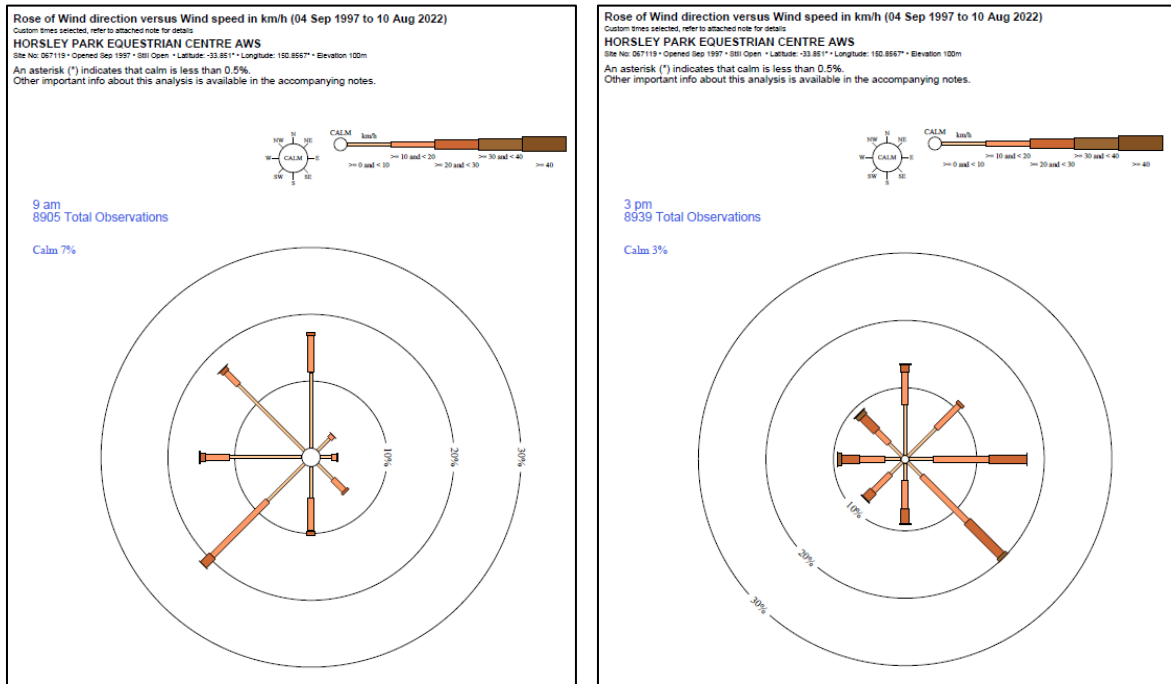
Summary of wind condition records from 1997 - 2023													
Summer		Autumn			Winter			Spring			Summer		Annual
Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec		
Mean 9am wind speed (km/h)	10.1	9.7	8.9	10.5	10.7	10.3	10.8	11.7	12.2	12.5	11.8	10.7	10.8
Mean 3pm wind speed (km/h)	19.4	17.0	14.8	14.4	13.0	12.9	13.9	16.1	18.1	19.8	19.5	19.9	16.6

The following Figure 4.8 are the BOM wind rose diagrams that depict the mean 9am and 3pm wind speeds and directions recorded at the Horsley Park Equestrian Centre AWS.

The 9am wind rose indicates that south-westerly winds are most prevalent, however the wind speed velocities rarely exceed 30km/h. Northerly winds are the second most dominant winds, but again the wind speed velocities rarely exceed 30km/h.

The 3pm wind rose indicates that south-easterly winds remain the most prevalent wind direction, however the wind speed velocities rarely exceed 30km/h. Easterly winds are the second most dominant winds, with wind speed velocities rarely in excess of 30km/h.

Figure 4.8 - 9am & 3pm wind speeds and directions recorded at the Horsley Park Equestrian Centre AWS



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In summary:

- The Horsley Park Equestrian Centre AWS 9am and 3pm wind roses indicate that the median wind speeds in the area rarely exceed 30km/h, noting that the wind observations have been obtained at a height of several metres above ground level. It is anticipated that wind speeds will generally remain below 25km/h at 0.3m above the ground surface.
- The areas adjacent to the Project site would be generally regarded as being resistant to wind erosion due to the established structures and soil surface cover.
- The Project site has a south-easterly facing aspect which will pose a slightly increased risk of wind-borne dust impacts.
- We refer the reader to the SWMP - Appendix A: ESCP – Table 9 for wind erosion & dust management and mitigation measures.

5 ENVIRONMENTAL ASPECTS AND IMPACTS

5.1 Construction activities

Key aspects of the project that could result in adverse impacts to soils and water include:

- Installation of preliminary erosion and sediment controls and establishment of off-site water diversions.
- Establishment of compounds, exclusion zones, stockpile areas, and soils treatment area/s.
- Minor earthworks, site preparation and site access/temporary access roads.
- Trenching and earthworks for service installation.
- In-situ concrete works and concrete curing.

- Operation of internal haulage and access routes.
- Stormwater construction and drainage stabilisation, including temporary sediment basins.
- Dewatering 'dirty' water from site areas and sediment basin operations
- Importing, handling, stockpiling and transporting materials & resources.
- Compound operation including fuel and chemical storage, refuelling and chemical handling.
- Storage of chemicals, fuels & oils.
- Spills & leaks of fuels & oils from mobile and static machinery.
- Plant maintenance.
- Generation of building and construction waste
- General putrescible waste from compound/s & works areas
- Noxious weed treatment including herbicide spraying.
- Topsoil replacement, revegetation, and landscaping
- Landscaping.

Refer also to the Aspects and Impacts Register included in the CEMP.

5.2 Impacts

The potential for impacts on soil and water will depend on a number of factors. Primarily, impacts will be dependent on the nature, extent and magnitude of construction activities and their interaction with the natural environment. Potential impacts attributable to construction might include:

- Exposure and disturbance of soils during earthworks, creating the potential for off-site transport of eroded sediments and pollutants.
- Alteration of surface and subsurface flows that could cause disturbances to hydrology and hydraulics.
- Off-site discharge of water containing sediment from dewatering activities.
- Contamination of soils, and surface and groundwater from accidental spills or oil leaks. This might include grease or fuel from machinery and vehicles, construction sites or compounds, or spills of other chemicals that may be used during the course of construction.
- Disturbance of unidentified contaminated land e.g. pesticide/chemical concentrations in soil from historical land use practices, and subsequent generation of contaminated runoff.
- Litter and gross pollutants from construction activities.
- Erosion and sedimentation of active construction zones during construction of the project as a result of a large rainfall event or storm event.

Some impacts on soil and water attributable to the Project are anticipated. Relevant aspects and the potential for related impacts have been considered in a risk assessment in the CEMP.

A full list of management measures associated with soil and water are detailed in Section 6 of this Plan below.

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6 ENVIRONMENTAL CONTROL MEASURES

Specific measures and requirements to address soil and water management are outlined in in Table 6-1.

Table 6-1 - Management and mitigation measures

ID	Measure / Requirement	When to implement	Responsibility	Reference
General				
SW1	Training will be provided to all project personnel, including relevant sub-contractors on sound erosion and sediment control practices and the requirements from this plan through inductions, toolboxes, and pre-start briefings.	Pre-construction Construction	Contractors Project Manager / Contractors WHS&E Advisor	Managing Urban Stormwater: Soils and Construction Volumes 1 & 2A
SW2	A Environmental Consultant (CPESC) will be engaged and consulted throughout construction to provide advice and review SWMP preparation, erosion and sediment control design, installation, maintenance, and the development of PESCPs.	Pre-construction Construction	Contractors Project Manager / Contractors WHS&E Advisor	Best Practice
SW3	EWMSs may be prepared and implemented to manage soil and water impacts that include but are not limited to: <ul style="list-style-type: none"> • Activities assessed as having high environmental risk; • Activities that impact on environmentally sensitive areas; • Activities that pose a risk to receiving water quality; • Earthworks including temporary stockpiling and disposal of excavated material and protocols for the management of contaminated material; • Work around drainage lines and where construction water may be discharged into natural waterways; • Construction and operation of sediment basins including connecting drainage for the associated catchment area; and drainage works. 	Construction	Contractors Project Engineer / Site Manager / Contractors WHS&E Advisor	Best Practice
SW4	Contaminated soils and Acid Sulfate Soils and / or Potential Acid Sulfate Soils are to be managed in accordance with the Erosion and Sediment Control Plan, which forms Appendix A of this SWMP.	Pre-construction / Construction	Contractors Project Manager / Site Manager / Contractors WHS&E Advisor	Managing Urban Stormwater: Soils and Construction Volumes 1 & 2A
Erosion and sediment control				
SW5	A Primary Erosion and Sediment Control Plan (ESCP) has been prepared by the Soil Conservationist (CPESC) and are included in Appendix A of this Plan. The plan includes arrangements for managing wet weather events, including monitoring of potential high-risk events (such as storms) and specific controls and follow-up measures to be applied in wet weather. The Primary Erosion and Sediment Control Plan is to be referred to and considered when preparing progressive erosion and sediment control plans.	Pre-construction and construction	Contractors WHS&E Advisor / Environmental Consultant	EIS – Appendix 6 Managing Urban Stormwater: Soils and Construction Volumes 1 & 2A

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ID	Measure / Requirement	When to implement	Responsibility	Reference
SW6	Progressive Erosion and Sediment Control Plans (PESCPs) will be prepared and implemented in advance of construction. PESCPs will be updated as required.	Pre-construction and construction	Contractors WHS&E Advisor / Environmental Consultant	EIS – Appendix 6 Managing Urban Stormwater: Soils and Construction Volumes 1 & 2A
SW7	Hardstand material, rumble grids or similar will be provided at exit points from construction areas onto public roads to minimise the tracking of soil and particulates onto public roads.	Pre-construction / Construction	Contractors Project Engineer / Site Manager	EIS – Appendix 6 Managing Urban Stormwater: Soils and Construction Volumes 1 & 2A
SW8	Site compounds, access tracks, stockpile sites and temporary work areas will be designed and located to minimise erosion.	Pre-construction / Construction	Contractors Project Manager / Site Manager / Contractors WHS&E Advisor	EIS – Appendix 6 Managing Urban Stormwater: Soils and Construction Volumes 1 & 2A
SW9	Works will be programmed to minimise the extent and duration of unstabilised soil surfaces.	Pre-construction / Construction	Contractors Project Manager / Site Manager / Contractors WHS&E Advisor	EIS – Appendix 6 Managing Urban Stormwater: Soils and Construction Volumes 1 & 2A
SW10	Clean and dirty water runoff will be adequately separated to avoid mixing where possible through the use of diversions, clean water drains, and the early installation of permanent drainage infrastructure.	Pre-construction / Construction	Site Manager	Managing Urban Stormwater: Soils and Construction Volumes 1 & 2A
SW11	Stabilisation will be implemented for dormant areas exposed for four weeks or more (including stockpiles and batters); by providing soil surface protection (i.e., geotextile fabric, stabilised mulch, soil binder or spray grass)	Construction	Contractors Project Engineer / Site Manager	EIS – Appendix 6 Managing Urban Stormwater: Soils and Construction Volumes 1 & 2A
SW12	Drains, banks, or diversions will be formed (and stabilised where required) to direct runoff from disturbed areas to sediment basins or to areas with adequate sediment control devices, and away from watercourses or tributary drainage lines. Lip berms and batter chutes with velocity dams will be progressively formed and maintained on fill formations.	Construction	Contractors Project Engineer / Site Manager	Managing Urban Stormwater: Soils and Construction Volumes 1 & 2A

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ID	Measure / Requirement	When to implement	Responsibility	Reference
SW13	Staged re-vegetation and/or other permanent stabilisation will be implemented in Site areas as work proceeds.	Construction	Contractors Project Engineer / Site Manager / Contractors WHS&E Advisor	EIS – Appendix 6 Managing Urban Stormwater: Soils and Construction Volumes 1 & 2A
Stockpiles				
SW14	<p>Stockpiles will be:</p> <ul style="list-style-type: none"> • located in designated stockpile sites, above 10-year flood levels, • located at least 5 m from likely areas of concentrated water flows and drainage lines, • Topsoil stockpiles formed to heights to no greater than 2 m, and all other soil materials to be no higher than 5m, and batter slopes to be no steeper than 2:1, • established so that any slump of the stockpile will not affect erosion and sediment control measures or infringe on specified minimum clearance requirement, • covered or otherwise protected from erosion where stockpiles will be in place for more than 20 days, or temporary stockpiles that are susceptible to wind or water erosion, within 5 days of forming each stockpile. • Managed to avoid contamination with noxious weeds and cross-mixing with other stockpiled materials. Weed growth on stockpiles will be monitored and suppressed as required. 	Construction	Contractors Project Engineer / Site Manager / Contractors WHS&E Advisor	EIS – Appendix 6 Managing Urban Stormwater: Soils and Construction Volumes 1 & 2A
Sediment basins				
SW15	Construction sediment basins will be designed and constructed in accordance with the requirements and procedures detailed in the Blue Book Volume's 1 & 2D. The construction sediment basin design/s, restoration and revegetation methodology will be formulated and/or reviewed by the Environmental Consultant.	Pre-construction / Construction	Environmental Consultant / Site Manager	Best Practice Managing Urban Stormwater: Soils and Construction Volume 1
SW16	All sediment basins will have depth indicators installed that clearly show the sediment storage zone together with basin identification signage basin number.	Construction	Contractors Project Engineer / Site Manager / Contractors WHS&E Advisor	Best Practice Managing Urban Stormwater: Soils and Construction Volume 1
SW17	Run-off from areas within catchments (that are controlled by sediment basins) is to be diverted to the sediment basins in stabilised drainage lines where possible.	Construction	Site Manager	Best Practice Managing Urban Stormwater: Soils and Construction Volume 1
SW18	Suitable all-weather access will be constructed and maintained to sediment basins to allow for basin testing, treatment, discharge, and maintenance.	Pre-construction / Construction	Contractors Project Engineer / Site Manager /	Best Practice

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ID	Measure / Requirement	When to implement	Responsibility	Reference
			Contractors WHS&E Advisor	Managing Urban Stormwater: Soils and Construction Volume 1
SW19	Water quality basins shall be flocculated with an appropriate approved flocculant (eg. gypsum) using an early dosing system to minimise the settling time of suspended dispersible and small sediment particles and to maximise the efficiency of the basins.	Construction	Site Manager	NSW POEO Act 1997 Best Practice Managing Urban Stormwater: Soils and Construction Volume 1
SW20	Prior to discharging any water from a sediment basin, representative water samples will be obtained and tested to ensure that it meets the NSW EPA water quality criteria.	Construction	Contractors WHS&E Advisor / Site Manager	NSW POEO Act 1997 Best Practice Managing Urban Stormwater: Soils and Construction Volume 1
SW21	Flocculant or coagulant (whether gypsum or another approved material) will be applied to settle suspended sediments within 24 hours of the conclusion of each rain event causing runoff. The cycle time to treat, dewater and return the maximum storage capacity to any individual construction water quality basin prior to the next rainfall event shall not exceed 5 days.	Construction	Contractors WHS&E Advisor / Site Manager	NSW POEO Act 1997 Best Practice Managing Urban Stormwater: Soils and Construction Volume 1
SW22	Subsequent to the initial series of basin sample tests, where a statistical correlation can be demonstrated between turbidity and Total Suspended Solids (TSS), an application will be made to the Principal to allow for the discharge of supernatant waters based on turbidity measurements before confirmatory laboratory data is available.	Construction	Contractors WHS&E Advisor	NSW POEO Act 1997 Best Practice Managing Urban Stormwater: Soils and Construction Volume 1
SW23	A sediment basin management register will be maintained for each sediment basin that records; <ul style="list-style-type: none"> • personnel approving the dewatering activities; • time & date; • water quality test results and estimated volumes for each discharge. 	Construction	Contractors WHS&E Advisor / Contractors Project Engineer	NSW POEO Act 1997 Best Practice Managing Urban Stormwater: Soils and Construction Volume 1
Dewatering				
SW24	Personnel responsible for approval and/or carrying out dewatering activities will be adequately trained and inducted on the dewatering procedures and requirements.	Construction	Contractors WHS&E Advisor / Site Manager	Best Practice Managing Urban Stormwater: Soils and Construction Volume 1
SW25	Water to be discharged from site will be discharged in accordance with a Site Dewatering Procedure.	Construction	Contractors WHS&E Advisor / Site Manager	NSW POEO Act 1997 Best Practice

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ID	Measure / Requirement	When to implement	Responsibility	Reference
	<p>In accordance with NSW EPA water quality criteria, the water quality parameters for discharge from site discharge points will be:</p> <ul style="list-style-type: none"> • Total Suspended Solids <50mg/L, • pH 6.5 - 8.5, • Oil & grease – not visible. 			Managing Urban Stormwater: Soils and Construction Volume 1
SW26	<p>A site dewatering register will be maintained for site areas (other than sediment basins) that require treatment, dewatering and discharge to off-site areas. The register will record;</p> <ul style="list-style-type: none"> • dewatering procedure, • date and time for each discharge at each location, • water quality test results for each discharge, • personnel approving the dewatering activities, • evidence of discharge monitoring, or risk assessment and mitigation measures used to eliminate the risks of pollution or erosion. 	Pre-construction / Construction	Contractors WHS&E Advisor / Contractors Project Engineer	NSW POEO Act 1997 Best Practice Managing Urban Stormwater: Soils and Construction Volume 1
SW27	<p>Water captured in sediment basins and other site works areas will be reused for dust suppression, compaction, or other construction activities where possible. If a proposed source, other than a town water supply or natural water source, procedures will be developed for regular testing to ensure that the water is suitable for the purpose and is not hazardous to health and the environment.</p>	Construction	Contractors WHS&E Advisor / Contractors Project Engineer / Site Manager	Best Practice Managing Urban Stormwater: Soils and Construction Volume 1
SW28	<p>All dewatering activities will be subject to prior approval from relevant project personnel. The dewatering activities will be monitored to ensure:</p> <ul style="list-style-type: none"> • intake suction devices are positioned to prevent extraction or disturbance of settled sediments, • no erosion is occurring at discharge locations and/or downstream areas, • no inadvertent or intentional controlled discharge of untreated waters occurs. 	Construction	Contractors WHS&E Advisor / Site Manager	NSW POEO Act 1997 Best Practice Managing Urban Stormwater: Soils and Construction Volume 1
Site stabilisation and restoration				
SW29	<p>Management and procedures for site stabilisation will be in accordance with the primary Erosion and Sediment Control Plan at Appendix A of this SWMP.</p>	Construction	Environment Manager / Environmental Consultant	EIS – Appendix 6 Managing Urban Stormwater: Soils and Construction Volume 1
SW30	<p>The rehabilitation of disturbed areas will be undertaken progressively as construction stages are completed and in accordance with procedures detailed in the Blue Book Volume's 1 & 2D.</p>	Construction / Post construction	Contractors WHS&E Advisor / Site Manager	EIS – Appendix 6 Managing Urban Stormwater: Soils and Construction Volume 1
SW31	<p>Restoration of these areas includes;</p> <ul style="list-style-type: none"> • topsoiling of the areas; 	Construction / Post construction	Contractors WHS&E Advisor / Site Manager	EIS – Appendix 6

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ID	Measure / Requirement	When to implement	Responsibility	Reference
	<ul style="list-style-type: none"> • seeding, planting, watering, and maintenance; • removal of temporary erosion control devices and of accumulated sediments • removal of unused construction materials and waste materials. 			Managing Urban Stormwater: Soils and Construction Volume 1
Spill prevention and response				
SW32	Management for spill prevention and response will be in accordance with the CEMP. An Emergency Spill Response Procedure has been developed in the CEMP.	Pre-construction / Construction	Contractors WHS&E Advisor / Site Manager / Contractors Project Manager	NSW POEO Act 1997 Best Practice
SW33	Emergency wet and dry spill kits will be kept on site at locations described within the Emergency Spill Response Management Procedures (ie at compounds). All personnel will be made aware of the spill kit locations and will be trained in their use.	Construction	Contractors WHS&E Advisor / Site Manager	NSW POEO Act 1997 Best Practice
SW34	A schedule of all hazardous materials kept on site during construction will be maintained for the duration of the project.	Construction	Contractors WHS&E Advisor / Site Manager	Best Practice
SW35	The ancillary facilities will be managed within the ESCP. The following measures will be included to limit sediment and other contaminations entering receiving waterways: <ul style="list-style-type: none"> • Chemicals will be stored within a sealed or banded area not within 5 m of any aquatic habitat, any areas of concentrated water flow, flood prone or poorly drained areas, or on slopes steeper than 1:10, • Vehicle movements will be restricted to designated pathways where feasible and appropriate controls will be in place where plant is stored, • Areas that will be exposed for extended periods, such as car parks and main access roads, will be stabilised where feasible. 	Contractor	Contractors WHS&E Advisor / Site Manager	NSW POEO Act 1997 Best Practice
SW36	All spills and associated environmental incidents are to be reported in accordance with the CEMP, and where applicable, in accordance with Section 148 of the NSW POEO Act 1997.	Construction	Contractors WHS&E Advisor / Site Manager	NSW POEO Act 1997 Best Practice
Monitoring and inspections				
SW37	Nominated project personnel will conduct site inspections of erosion and sedimentation controls at least weekly.	Construction	Contractors WHS&E Advisor / Site Manager	Managing Urban Stormwater: Soils and Construction Volume 1
SW38	All disturbed areas, revegetated/stabilised areas and all permanent and temporary erosion and sediment control works will be inspected: <ul style="list-style-type: none"> • At least weekly, • Immediately before extended site shut down, • At the conclusion of all rainfall events exceeding 10mm and during periods of prolonged rainfall as soon as practicable. 	Construction	Contractors WHS&E Advisor / Site Manager	Managing Urban Stormwater: Soils and Construction Volume 1

Oakdale East Estate – Stage 2 - Soil and Water Management Plan

ID	Measure / Requirement	When to implement	Responsibility	Reference
SW39	<p>Any rectification measures which are identified will be addressed and / or recorded to ensure appropriate rectification within the nominated timeframe. The timeframe for rectification works is based on a risk assessment of deficiencies in controls, being;</p> <ul style="list-style-type: none"> • High: within 24 hours of inspection, • Medium: within 3 working days of inspection; and, • Low: within 3 working days of inspection. 	Construction	Contractors WHS&E Advisor / Site Manager	Managing Urban Stormwater: Soils and Construction Volume 1
SW40	Monitoring of rainfall events (with observations of rainfall in millilitres) will be undertaken daily during normal work days.	Construction	Contractors WHS&E Advisor	Managing Urban Stormwater: Soils and Construction Volume 1

7 COMPLIANCE MANAGEMENT

7.1 Roles and responsibilities

The Contractor's Project Team's organisational structure and overall roles and responsibilities will be outlined in the CEMPs to be developed for each package of Stage 2 works. Specific responsibilities for the implementation of environmental controls are detailed in Section 6 of this Plan.

7.2 Training

All employees, contractors and utility staff working on site will undergo site induction training relating to soil and water management issues. The induction training will address elements including:

- Existence and requirements of this sub-plan.
- Relevant legislation.
- Incident response, management, and reporting.
- Roles and responsibilities for soil and water management.
- Water quality management and protection measures.

Targeted training in the form of toolbox talks or specific training will also be provided to personnel with a key role in soil and water management. Examples of training topics include:

- ERSED control installation methodology.
- Sediment basin construction.
- Sediment basin operation.
- Sediment basin maintenance.
- Working near or in drainage lines.
- Emergency response measures in high rainfall events.
- Preparedness for high rainfall events.
- Lessons learnt from incidents and other event e.g. high rainfall/flooding.
- Spill response.
- Stockpile location criteria.

Further details regarding staff induction and training are outlined in the CEMP.

7.3 Monitoring and inspection

Regular monitoring and inspections will be undertaken during construction. Monitoring and inspections will include, but not be limited to:

- Immediate areas and drainage lines adjacent to the Project area
- Construction sediment basin water quality prior to discharge.
- Weekly and post rainfall inspections to evaluate the effectiveness of erosion and sediment controls measures in accordance with Table 6-1.

Oakdale East Estate – Stage 2 - Soil and Water Management Plan

Table 7-3 Inspection Schedule

Activity	Frequency	Location	Responsibility	Record
Environmental Site Inspection	Weekly	Site wide	Contractors WHS&E Advisor	Site inspection log
Rainfall Inspection (10mm or greater rainfall).	Prior to rainfall event, during event, within 24 hours after the event	Site wide	Contractors WHS&E Advisor	Site inspection log

Additional requirements and responsibilities in relation to inspections, in addition to those in Table 6-1, are documented in the CEMP.

7.4 Licences and permits

The water quality discharge criteria for the project are listed below, in Table 7-4.

Table 7-4 Discharge water quality criteria

Parameter	Criteria	Sampling method	Frequency
pH	6.5 –8.5	Probe	Daily during any discharge
Turbidity	TBA following correlation with TSS results	Probe or Grab Sample	Likely to be required daily during any discharge
Total Suspended Solids*	50 mg/L	Grab Sample	Daily during any discharge
Oil and Grease*	No visible	Visual inspection	Daily during any discharge

Any other relevant licences or permits will be obtained in the lead up to and during construction as required.

7.5 Weather monitoring

A rain gauge to be installed in the main compound for each package of Stage 2 works that will be used in the monitoring of rainfall events. The Wet Weather Contingency Procedure is detailed in the Project ESCP at Annexure E.

7.6 Auditing

Audits (both internal and external) will be undertaken to assess the effectiveness of environmental mitigation and management measures, compliance with this plan and other relevant approvals, licences and guidelines. Audit requirements will be detailed in the CEMPs developed for each package of Stage 2 works.

7.7 Reporting

Reporting requirements and responsibilities are documented in the will be detailed in the CEMPs developed for each package of Stage 2 works.

8 REVIEW AND IMPROVEMENT

8.1 Continuous improvement

Continuous improvement of this Plan will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives, and targets for the purpose of identifying opportunities for improvement.

The continuous improvement process will be designed to:

- Identify areas of opportunity for improvement of environmental management and performance.
- Determine the cause or causes of non-conformances and deficiencies.
- Develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies.
- Verify the effectiveness of the corrective and preventative actions.
- Document any changes in procedures resulting from process improvement.
- Make comparisons with objectives and targets.

8.2 SWMP update and amendment

The processes detailed in the CEMPs developed for each package of Stage 2 works may result in the need to update or revise this Plan. This will occur as needed.

Any revisions to the SWMP will be in accordance with the process detailed in the CEMPs developed for each package of Stage 2 works.

A copy of the updated plan and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure detailed in the CEMPs developed for each package of Stage 2 works.

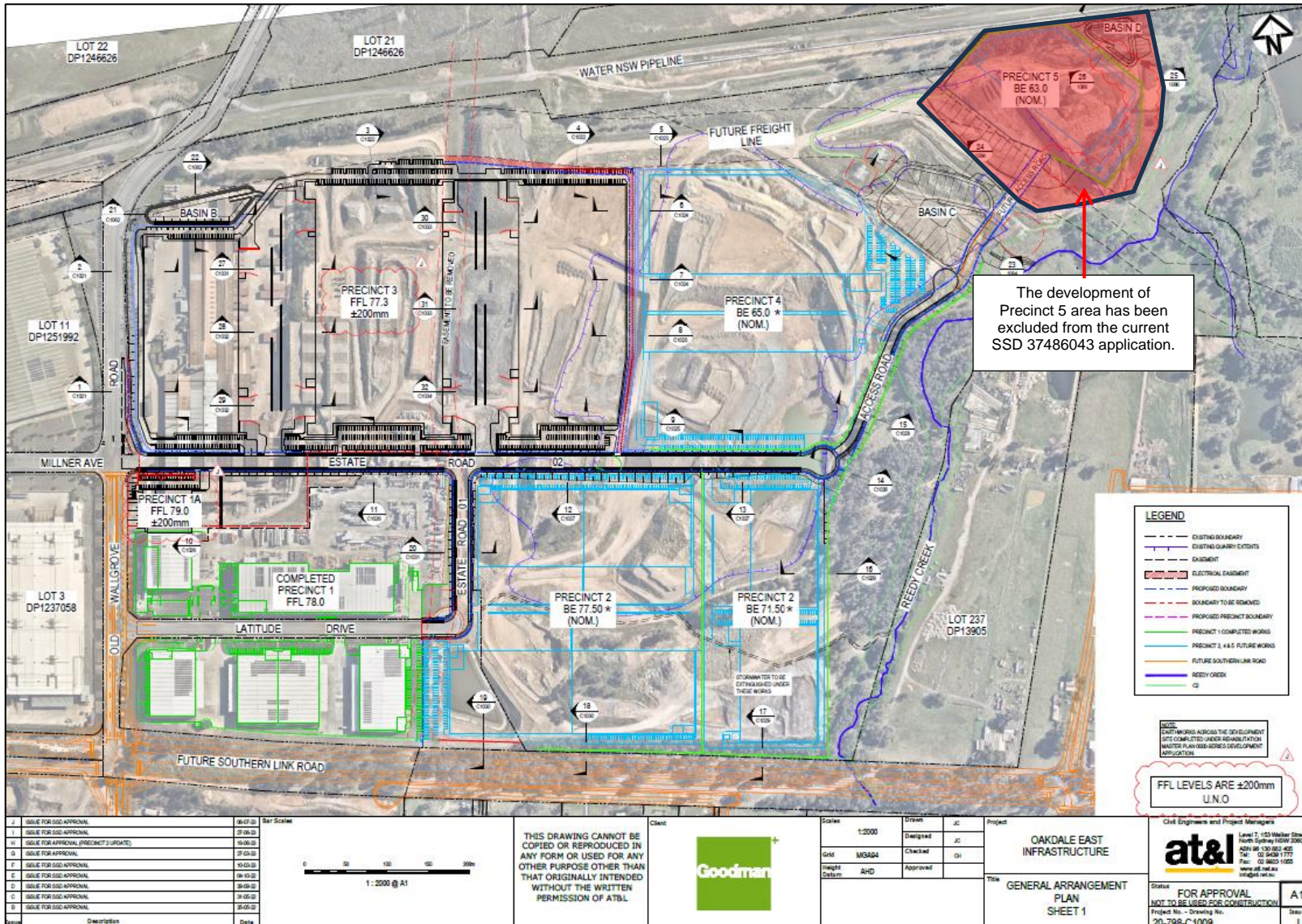
Appendix A
Erosion and Sediment Control Plan

Appendix B

General Arrangement Plan – AT & L Drawing No.
20-798-C1009 – Date 06/07/2023

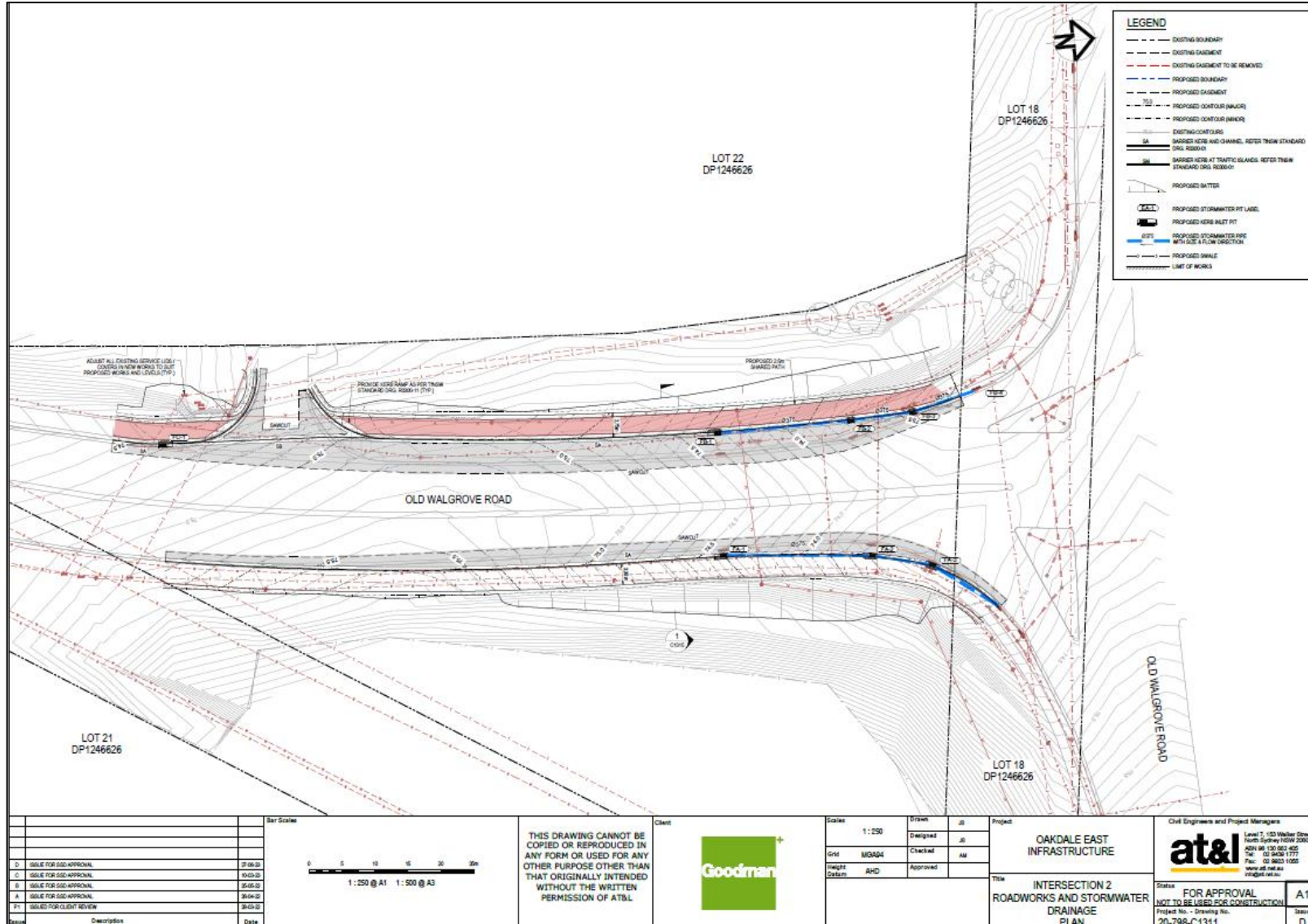
Appendix B

General Arrangement Plan – AT & L Drawing No. 20-798-C1009 – Date 06/07/2023



Appendix B

Lenore Drive & Old Wallgrove Intersection Upgrade – AT & L Drawing No. 20-798-C1311 – ‘Intersection 2 Roadworks And Stormwater Drainage Plan’ – Date 27/06/2023



Issue	Description	Date
D	ISSUE FOR SSD-APPROVAL	27/06/23
C	ISSUE FOR SSD-APPROVAL	15/03/23
B	ISSUE FOR SSD-APPROVAL	25/05/22
A	ISSUE FOR SSD-APPROVAL	26/04/22
P1	ISSUED FOR CLIENT REVIEW	28/03/22



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Scale	Drawn	JD
1:250	Designed	JL
Grid	Checked	AM
Height Datum	AHD	Approved

Project
OAKDALE EAST INFRASTRUCTURE
Title
INTERSECTION 2 ROADWORKS AND STORMWATER DRAINAGE PLAN

Civil Engineers and Project Managers	
at&l	Level 7, 153 Walker Street North Sydney NSW 2060 Tel: 02 9339 4000 Fax: 02 9339 1777 www.at&l.net.au info@at&l.net.au
Status	FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION
Project No. - Drawing No.	20-798-C1311
Issue	A1
Date	D

Appendix J Waste Management Plan

Construction Environmental Management Plan

**SSD-37486043: Oakdale East Industrial Estate
2-10 Old Wallgrove Road, Horsley Park**

Goodman Property Services (Aust) Pty Ltd

SLR Project No.: 630.V10611.00001

13 November 2023

OAKDALE EAST ESTATE

Stage 2 Waste Management Plan

Prepared for:

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

SLR Ref: 610.30733.00100-R03
Version No: -v11.0
November 2023

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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 Limited (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
610.30733.00100-R03-v11.0	9 November 2023	Andrew Quinn	Damian Balas	Andrew Quinn
610.30733.00100-R03-v10.0	27 September 2023	Andrew Quinn	Damian Balas	Andrew Quinn
610.30733.00100-R03-v9.0	26 September 2023	Andrew Quinn	Damian Balas	Andrew Quinn
610.30733.00100-R03-v8.0	24 March 2023	Andrew Quinn	Damian Balas	Andrew Quinn
610.30733.00100-R03-v7.0	13 March 2023	Andrew Quinn	Damian Balas	Andrew Quinn

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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 a state significant development application (SSDA). This application seeks approval for a Concept Plan across Goodman’s Oakdale East Industrial Estate and approval for Stage 2 of works at the Estate (the Development). The site is located within the Fairfield Local Government Area and is legally described as Lot 103 in DP1268366.

This WMP applies to the waste generated from construction and operational stages of the Development and has been prepared using architectural drawings supplied by the Client. A development application for rehabilitation of the site is currently being considered by Fairfield City Council (Council). This DA includes demolition of buildings on the site. As a result, demolition is not covered by this WMP.

The relevant requirements of the SEARs issued for SSD-37486043 are addressed in this report as shown in Table 1. SLR has also referred to the Fairfield Citywide Development Control Plan (Fairfield DCP) 2013¹ and Council’s *Waste Management Plan - Demolition, Construction & Ongoing Management* to assist in preparing this waste management plan.

Table 1 SSD-34786043 Conditions for Waste Management

Waste Conditions	Relevant Sections in this WMP
Waste Management – including: <ul style="list-style-type: none"> • details of the quantities and classification of all waste streams to be generated during demolition, construction and operation and proposed storage, handling and disposal requirements 	For waste classification please refer to: <ul style="list-style-type: none"> • Table 4 Potential waste types and their management methods and • Table 8 Potential waste types, classifications and management methods for operational waste For waste quantities please refer to: <ul style="list-style-type: none"> • Table 6 Estimated types and quantities of construction waste and • Table 10 Estimated quantities of operational general waste and recycling. For proposed storage, handling and disposal requirements for demolition and construction waste please refer to: <ul style="list-style-type: none"> • Section 5.5 Reuse, Recycling and Disposal • Section 5.6 Waste Storage and Servicing • Section 5.9 Monitoring and Reporting and • Section 5.10 Roles and Responsibilities For proposed storage, handling and disposal requirements for operational waste please refer to: <ul style="list-style-type: none"> • Section 6.4 Waste Storage Area • Section 6.5 Waste Servicing • Section 6.6 Waste Avoidance, Reuse and Recycling Measures • Section 6.9 Monitoring and Reporting and • Section 6.10 Roles and Responsibilities

¹ <https://www.fairfieldcity.nsw.gov.au/Planning-and-Building/Developments-and-Buildings/Development-Control-and-Structure-Plans>

Waste Conditions	Relevant Sections in this WMP
<ul style="list-style-type: none"> a waste management plan reflecting the targets in the NSW Waste and Sustainable Material Strategy 2041 and the National Waste Policy 2018. 	Please refer to: <ul style="list-style-type: none"> Section 4.1 Section 5.1 and Section 6.1

1.2 Conditions of Consent

Conditions of consent have been received from the Department of Planning and Environment for the Concept Plan and Stage 2 DA approvals for Oakdale East. Those relating to waste management and shown in Table 2 below.

Table 2 Waste management conditions of consent

Condition Number	Requirement	Comment	Recommendation	Responsibility
D75	Update the Waste Management Plan included quantities, handling and storage of waste and materials to be reused on site	This is included in this waste management plan. For waste quantities please refer to: <ul style="list-style-type: none"> Table 6 Estimated types and quantities of construction waste and Table 10 Estimated quantities of operational general waste and recycling. For proposed storage, handling, reuse and disposal requirements for demolition and construction waste please refer to: <ul style="list-style-type: none"> Section 5.5 Reuse, Recycling and Disposal Section 5.6 Waste Storage and Servicing Section 5.9 Monitoring and Reporting and Section 5.10 Roles and Responsibilities For proposed storage, handling, reuse and disposal requirements for operational waste please refer to: <ul style="list-style-type: none"> Section 6.4 Waste Storage Area Section 6.5 Waste Servicing Section 6.6 Waste Avoidance, Reuse and Recycling Measures Section 6.9 Monitoring and Reporting and Section 6.10 Roles and Responsibilities 	No action required	N/A
D76	Applicant must implement the Waste Management Plan for the duration of construction and operation	Section 5.10 states that during demolition and construction <i>It will be the responsibility of the Building Contractor to implement the WMP.</i> Section 6.10 states that <i>It will be the responsibility of the Building Manager to implement the WMP</i>		Building Contractor and Building Manager

Condition Number	Requirement	Comment	Recommendation	Responsibility
D77	Applicant must obtain agreement from Council for the design of the waste storage area for the Stage 2 development	Specifications for the waste storage areas are included in this waste plan in: <ul style="list-style-type: none"> • Section 5.6.2 Waste Storage Areas and • Section 6.4 Waste Storage Area, particularly Section 6.4.4 Waste Storage Area Features 	Architects design waste storage area according to the DCP and specifications in the waste plan.	Goodman
D78	Waste must be secured and maintained within designated waste storage areas		Goodman, tenants and waste contractors will be responsible for this over the course of the facility's operation	Tenants and waste contractor
D79	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 waste management facility or premises lawfully permitted to accept the waste	Details of likely waste types and their classifications can be found in this waste plan in: <ul style="list-style-type: none"> • Table 4 Potential waste types and their management methods and • Table 8 Potential waste types, classifications and management methods for operational waste 	Goodman, tenants and waste contractors will be responsible for this over the course of the facility's operation	Tenants and waste contractor

1.3 Objectives

The principal objective of this WMP is to identify all potential waste likely to be generated at the Development site during 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 Council's 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 identify procedures and chain of custody records for waste 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.

2 Project Description

2.1 Overview of Proposed Development

Stage 1 of the works were completed in September 2021 and included Precinct 1 building and infrastructure works as indicated on the proposed Estate Masterplan.

The Concept Plan is proposed to set the development controls for the Estate which will override the Development Control Plan (DCP) that is currently with Department of Planning and Environment (DPE) for consideration. The existing DCP was approved to support the Rehabilitation Development Application that has been approved by Fairfield City Council (DA 347.1/2021).

The Rehabilitation Development Application seeks approval for works only to Precinct 1 expansion, Precincts 2, 3 and 4 and includes the following:

- Cut and Fill works to provide bulk pad levels
- Provision of Estate stormwater infrastructure including completion of detention basins and swales
- Removal of 2.58 ha of vegetation
- Demolition of the Brick Factory and rehabilitation of the surrounding land
- Installation of retaining walls to Precinct 3
- Consideration for Aboriginal Heritage and geotechnical assessments

The proposed Concept Plan approval seeks approval for:

- The Estate masterplan allowing development of an additional 294,982 m² of GLA, creating an Estate GLA of 333,754 m²
- Operation 24 hours per day, seven days per week
- Building Height of 43 m for Precinct 3, excluding roof-top plant and solar, and 15 m, excluding roof-top plant and solar, to the remainder of the Estate
- Estate subdivision
- Estate wide planning controls as shown in the EIS
- Construction hours 7 am to 6 pm Monday to Friday, 8 am to 1 pm Saturday.

The Stage 2 works considered under this application include the following:

- Completion of lead-in infrastructure works including intersection upgrades at Millner Ave and Old Wallgrove Road and Lenore Drive and Old Wallgrove Road
- Clearing of 2.58 ha of native vegetation
- Completion of the internal road network, including the proposed private driveway providing permanent access to Precinct 4 through the transmission easement
- Reticulation of services infrastructure to provide serviced development pads to all precincts
- Completion of retaining walls across the entire Estate
- Completion of Building works to Precinct 1 expansion and Precinct 3 including any ancillary on lot infrastructure and detailed civil works required.

Precinct 1 expansion:

- Construction, operation, fit-out and use approval of a warehouse with ancillary office spanning 3,122 m² of GLA
- Operation 24 hours per day, seven days per week

- 15 m building height, excluding solar and rooftop plant.

Precinct 3:

- Construction, operation, fit-out and use approval of multiple warehouses for distribution use with ancillary office spaces spanning a total of 120,664 sqm of GLA
- 14.6 m building height, excluding solar and rooftop plant
- Operation 24 hours per day, seven days per week.

The location of the Precinct 3 developments on the Oakdale East Estate are shown in Figure 1 below.

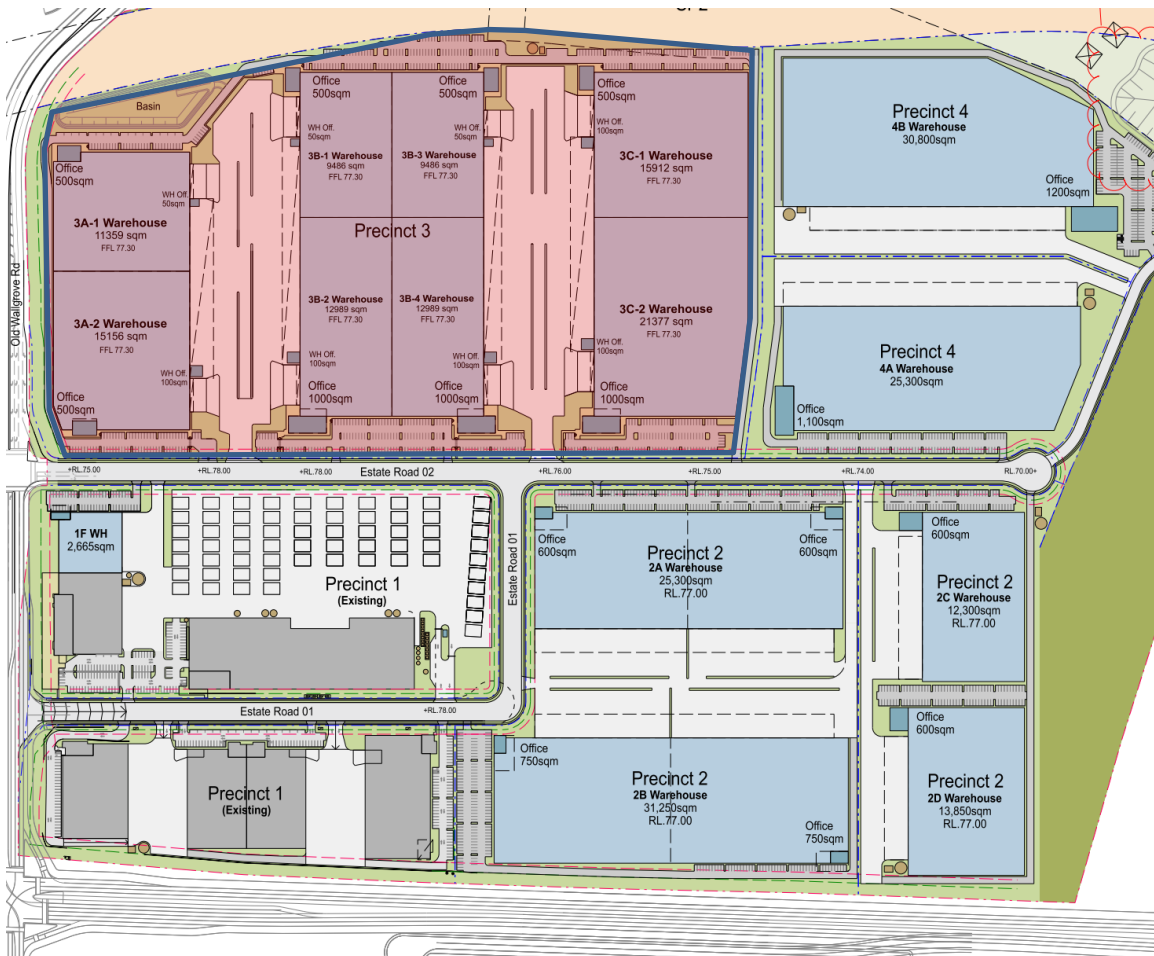


Figure 1 Precinct 3 Location in Estate

The design for Precinct 3 is shown in Figure 2 below.

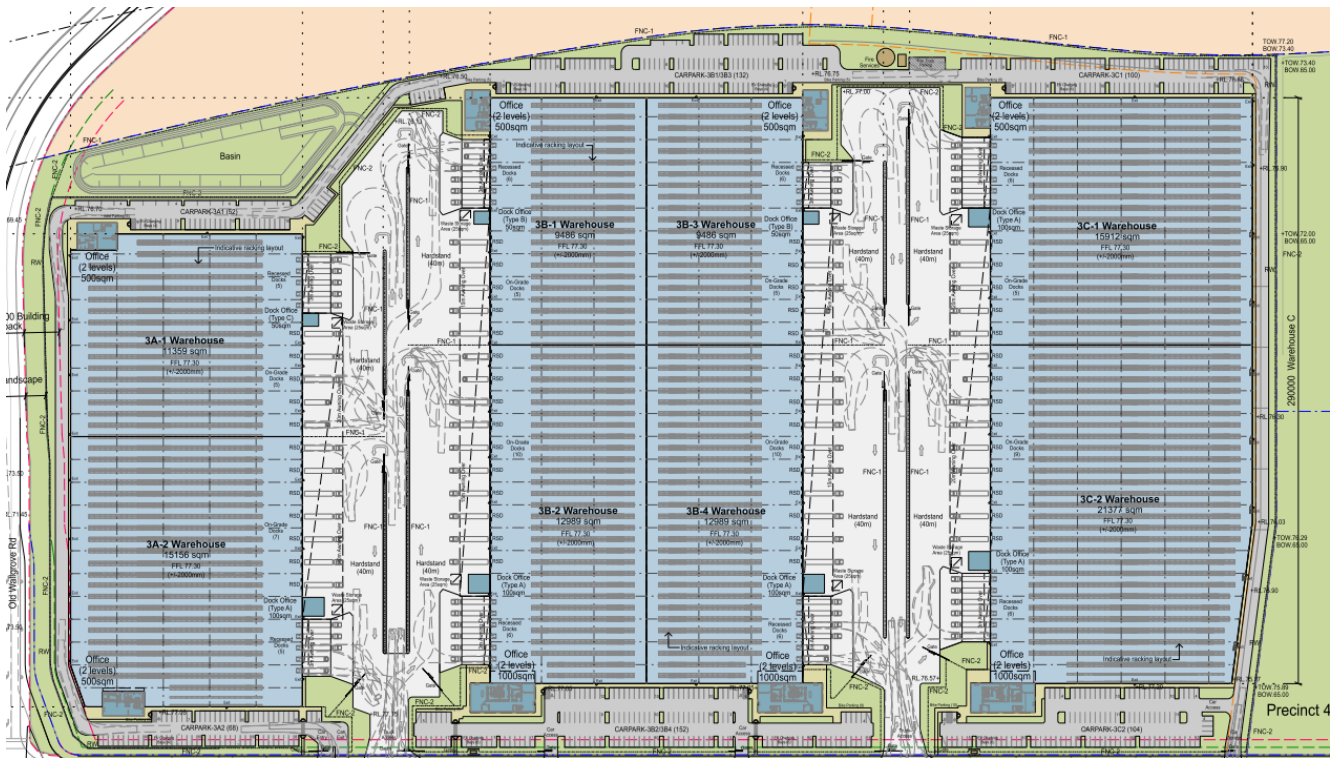


Figure 2 Precinct 3 Layout

The design for the warehouse expansion is shown in Figure 3 below.

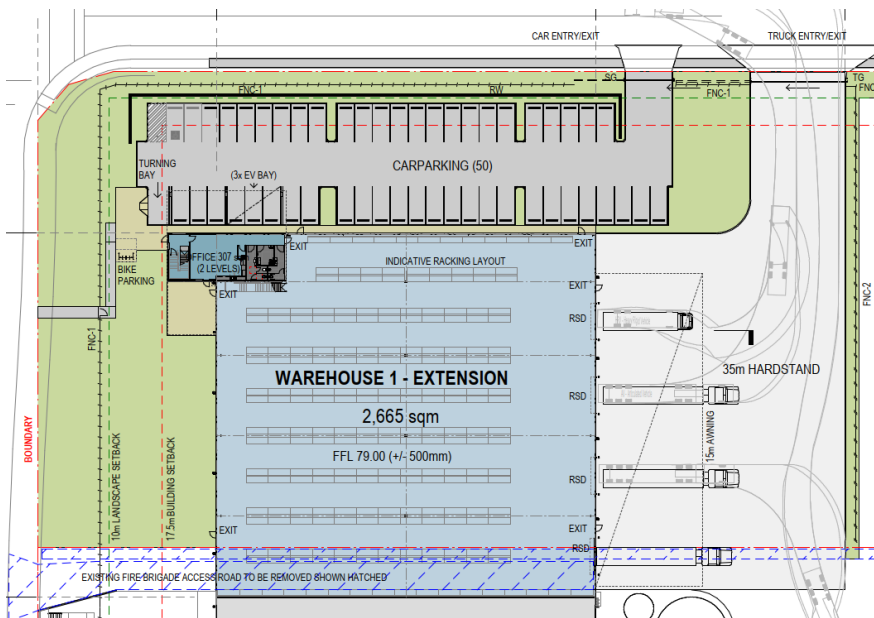


Figure 3 Warehouse expansion

2.2 Overview of Proposed Construction Work

The proposed work for the Development is expected to include construction activities.

The anticipated construction works includes the construction of the below:

- One warehouse building and offices
- Truck and car parking areas and associated site hardstands
- Warehouse expansion and hardstand, and
- Minor landscaping areas.

2.3 Overview of Proposed Operations

SLR understands that the Development will be used as a warehouse and distribution centre, with anticipated operations 24 hours a day.

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 4, 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.

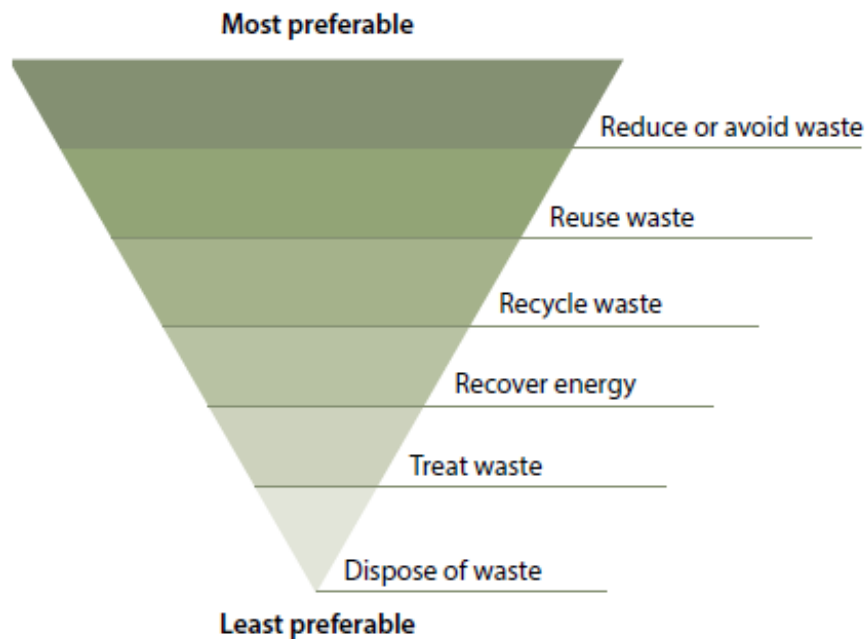


Image from NSW EPA (2014) NSW Waste Avoidance and Resource Recovery Strategy 2014-21.

Figure 4 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

4.1 National Waste Policy

The first National Waste Policy was published in 2009 with an updated version in 2018. The National Waste Policy Action Plan sets targets and actions to implement the 2018 National Waste Policy.

These targets and actions include:

- ban the export of waste plastic, paper, glass and tyres, commencing in the second half of 2020
- reduce total waste generated in Australia by 10% per person by 2030
- 80% average recovery rate from all waste streams by 2030

- significantly increase the use of recycled content by governments and industry
- phase out problematic and unnecessary plastics by 2025
- halve the amount of organic waste sent to landfill by 2030
- make comprehensive, economy-wide and timely data publicly available to support better consumer, investment and policy decisions.

How much this development contributes to these targets and actions depends somewhat on the occupant and its operations. The most direct influence will probably be an 80% reduction in waste by 2030, which also mirrors the NSW Strategy target. As stated in Section 5.1 and Section 6.1, the demolition, construction and operations stages of the Development are expected to contribute to this target. It is also likely that the Development will contribute to the other actions and targets even if in small ways.

4.2 Other Legislation and Guidance

The legislation and guidance outlined in Table 3 below should be referred to during the site preparation, construction and operational phases of the Development.

Table 3 Legislation and guidance

Legislation and Guidance	Objectives
Council legislation and guidelines	
Fairfield Local Environmental Plan 2013 (FLEP 2013) ²	The FLEP came into force for the local government area in 2013 and guides land use and development by zoning land, identifying what land uses are allowed in each zone, and specifying development standards such as maximum height and minimum lot sizes. LEPs are the main planning tool to shape the future of development in Fairfield City.
Fairfield Citywide Development Control Plan 2013 ³	The Fairfield DCP came into effect in 2013 and provides greater planning detail for developments, supplementing the zoning and development standards contained within the FLEP 2013. The DCP helps promote better development throughout the city, protecting the community's lifestyle and enjoyment of town centres and neighbourhoods. One of the objectives of the DCP is to assist in reducing Fairfield's ecological footprint by encouraging the diversion of waste from landfill. This WMP specifically addresses Appendix e – waste not policy to manage demolition and construction waste of the DCP and the waste management guidelines in chapter 9 for industrial use.
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 2016	The National Construction Code 2016 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.

² http://www.fairfieldcity.nsw.gov.au/info/20002/planning_and_building/237/leps_and_maps

³ http://www.fairfieldcity.nsw.gov.au/info/20002/planning_and_building/231/dcps_and_structure_plans

Legislation and Guidance	Objectives
NSW Waste and Sustainable Materials Strategy 2041: Stage 1 – 2021-2027	Replacing the <i>NSW Waste Avoidance and Resource Recovery Strategy (2014-21)</i> , 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 Resource Recovery Orders and Resource Recovery Exemptions	<p>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 waste that may be recovered for beneficial re-use. These waste typically include those from demolition and construction works, as well as operational waste such as food waste.</p> <ul style="list-style-type: none"> • 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 <i>Waste Classification Guidelines</i> 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 <i>POEO Act 1997</i> and is associated regulations.
<i>Protection of the Environment Operations Act (POEO) 1997 and Amendment Act 2011</i>	The <i>POEO Act 1997</i> and <i>POEO Amendment Act 2011</i> 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 waste 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 <i>The Work Health and Safety Act 2011</i> . 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.
<i>Waste Avoidance and Resource Recovery Act 2001</i>	<p>The <i>Waste Avoidance and Resource Recovery Act 2001</i> aims to promote waste avoidance and resource recovery and repeals the <i>Waste Minimisation and Management Act 1995</i>. Specific objectives of the <i>Waste Avoidance and Resource Recovery Act 2001</i> include:</p> <ul style="list-style-type: none"> • 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. <p>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.</p>

5 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 2018-2019 were 77%.

It is anticipated that the waste minimisation measures in the following sections will assist the Development to meet these targets. Waste reporting and audits can be used to determine the actual percentage of wastes that are being, or have been, recycled during the site preparation, demolition and construction stages of the Development.

5.2 Waste Streams and Classifications

The site preparation and construction of the Development is likely to generate the following broad waste streams:

- Construction waste
- Plant maintenance waste
- Packaging waste, 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 4.

For further information on how to classify a waste type refer to the NSW EPA (2014) *Waste Classification Guidelines*⁴. Further information on managing site preparation and construction waste is available from the NSW EPA website⁵.

⁴ Available online from <https://www.epa.nsw.gov.au/your-environment/waste/classifying-waste/waste-classification-guidelines>

⁵ <http://www.epa.nsw.gov.au/your-environment/waste/industrial-waste/construction-demolition>

Table 4 Potential waste types and their management methods

Waste Types	NSW EPA Waste Classification	Proposed Management Method
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 <i>Treated:</i> reused for formwork, bridging, blocking, propping or second-hand supplier <i>Untreated:</i> 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
Asbestos	Hazardous waste	Off-site disposal at a licenced landfill facility.
Fluorescent light fittings and bulbs	Hazardous waste	Off-site recycling or disposal; contact <i>FluoroCycle</i> for more information ⁶
Paint	Hazardous waste	Off-site recycling, Paintback collection ⁷ 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

⁶ Available online from <http://www.fluorocycle.org.au/> or <http://www.environment.gov.au/settlements/waste/lamp-mercury.html>

⁷ Available online from <https://www.paintback.com.au/>

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.
Air filters and rags	General solid waste (non-putrescible)	Off-site disposal
Oil filters	Hazardous waste	Off-site recycling
Batteries	Hazardous waste	Off-site recycling, Contact the Australian Battery Recycling Initiative ⁸ 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 <i>Business Recycling</i> for more information ⁹
Work Compound and Associated Offices		
Food Waste	General solid (putrescible) waste	Dispose to landfill with general garbage
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 ¹⁰
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 Construction Waste Types and Quantities

The Fairfield DCP does not provide waste generation rates for construction activities, so 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 Development.

⁸ <http://www.batteryrecycling.org.au/home>

⁹ Available online from <http://businessrecycling.com.au/search/>

¹⁰ Available online from <http://returnandearn.org.au/>

SLR has adopted the ‘Factory’ and ‘Office’ rates to measure waste expected from the Development, as the construction of a factory and office is the most relevant in representing the construction of an industrial warehouse and office precinct.

SLR has also referenced *Light Duty Asphalt Pavements - Design, Specification and Construction 2002* Australian Asphalt Pavement Association, specifically Table 10 Passenger Car Parking Areas, up to 50-500 Bays, for estimating the amounts of materials required for car park construction and assumed 10% waste.

The construction waste generation rates used are shown in Table 5 below.

Table 5 Construction waste generation rates

Rate Type	Per Area (m ²)	Waste types and quantities (m ³)								
		Timber	Concrete	Bricks	Gyprock	Sand or Soil	Metal	Other	Asphalt	Granular Base
Factory	1,000	0.25	2.1	1.65	0.45	4.8	0.6	0.5	0	0
Offices	1,000	5.1	18.8	8.5	8.6	8.8	2.75	5.0	0	0
Car Park 50-500 bays	100	0	0.225	0	0	0	0	0	0.3	1.25
Hardstand	1,000	0	2.1	0	0	4.8	0.6	0.5	0	0

Estimates of the quantities of construction waste generated from the Development are shown in Table 6 below.

Table 6 Estimated types and quantities of construction waste

Site	Element	Area (m ²)	Waste types and quantities (m ³)								
			Timber	Concrete	Bricks	Gyprock	Sand or Soil	Metal	Other	Asphalt	Granular Base
Precinct 3	Warehouses	108,754	27.2	179.4	48.9	522.0	65.3	54.4	-	228.4	-
	Car park	26,590	-	-	-	-	-	-	66.48	59.8	265.9
	Hardstand	50,290	-	-	-	241.4	30.2	25.1	-	105.6	-
	Offices	6,150	31.4	52.3	52.9	54.1	16.9	30.8	-	115.6	-
Warehouse Expansion	Warehouse	2,665	0.7	4.4	1.2	12.8	1.6	1.3	-	5.6	-
	Office	307	1.6	2.6	2.6	2.7	0.8	1.5	-	5.8	-
	Car park	1,338	-	-	-	-	-	-	3.3	3.0	13.4
	Hardstand	1,984	-	-	-	9.5	1.2	1.0	-	4.2	-
Total		198,078	60.8	238.7	105.7	842.5	116.0	114.1	69.82	528.0	279.3

The areas shown in Table 6 are based on the floor areas shown in *23103_Precinct_3_Drawings_230310.pdf* and *22103_DA101_F_Precinct 1 - Site & Warehouse Plan.pdf*.

5.4 Waste Avoidance

The Fairfield DCP states that:

As a community obligation and responsibility to sustainable living, the aim is always to reduce or avoid waste generation wherever possible. The focus of any waste collection must make provision to dispose of (general garbage), recycle (paper, plastics, metals) and re-use (green waste for compost) waste.¹¹

¹¹ Appendix E – Waste Not Policy. Section 5, page 4.

In accordance with the Fairfield DCP and better practice waste management, the Building Contractor, Building Designer and/or equivalent roles will:

- Develop a purchasing policy based on the approximate volumes of materials to be used so that the correct quantities are purchased.
- 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 Development 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 Development 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.

5.5 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 4 for an outline of the proposed reuse, recycling and disposal methods for potential site preparation and construction waste streams generated by the Development.

In accordance with the Fairfield DCP and best practice waste management, the following specific procedures will 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 Development'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.
- Dispose of all garbage via a council approved system.

5.6 Waste Storage and Servicing

5.6.1 Waste Segregation and Storage

As outlined in the Fairfield DCP,¹² 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 Development 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, will consult with the waste and recycling collection contractor to confirm which waste types may be co-mingled prior to removal from the site.

5.6.2 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 Development. 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 specified in the Fairfield DCP:

- there will be separate containers or storage areas for the recycling of materials
- waste containers will have minimum dimensions of 2.4 x 2.4 x 0.9 metres
- waste containers will be located on site and away from Council footpaths and land areas designated for waste storage.

¹² Appendix E – Waste Not Policy, Section 2, page 2

Waste storage areas will also:

- 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.

5.6.3 Waste Servicing and Record Keeping

The Site Manager or equivalent role will:

- 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 docket 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 will 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 Site Inductions

All staff, including sub-contractors and labourers, employed during the site preparation and construction phases of the Development will undergo induction training regarding waste management for the Site.

Induction training will 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.

5.8 Signage

Standard signage will be posted in all waste storage and collection areas. All waste containers will be labelled correctly and clearly to identify stored materials.

Signs approved by the NSW EPA for labelling of waste materials are available online¹³ and will be used where applicable. A selection of signs prepared by NSW EPA is provided in Figure 5.



Figure 5 Examples of NSW EPA labels for waste skips and bins

5.9 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.

¹³ NSW EPA approved waste materials signage <https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/business-government-recycling/standard-recycling-signs>

As specified in the Fairfield DCP, records of waste quantities 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 will 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.

5.10 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 will be appointed for the Development. Suggested roles and responsibilities are provided in Table 7.

Table 7 Suggested roles and responsibilities for site preparation and construction waste management

Responsible Person	General Tasks
Superintendent	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.
Site Manager	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 Development.
	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

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 the commercial and industrial waste recovery rate in 2019 was 53%.

It is anticipated that the waste minimisation measures in the following sections will assist the Development 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 Development 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, and
- Stores, plant and general maintenance wastes.

Potential ongoing waste types, their associated waste classifications, and management methods are provided in Table 8. 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 8 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
Food waste	General solid (putrescible) waste	Dispose to landfill with general garbage
Batteries	Hazardous waste	Off-site recycling, alternatively contact the Australian Battery Recycling Initiative for more information

Waste Types	NSW EPA Classification	Proposed Management Method
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
General garbage, including non-recyclable plastics	General solid (putrescible and non-putrescible) waste	Disposal at landfill
Maintenance		
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

6.3 Estimated Quantities of Operational Waste

In the absence of waste generation rates in the Fairfield DCP, SLR has adopted the 'Offices' and 'Warehouse' waste generation rates from the Penrith Council's *Industrial, Commercial and Mixed-Use Waste Management Guidelines* for estimating the type and quantities of waste generated from the operational activities of the Development. The operational waste generation rates used are shown below in Table 9.

Table 9 Operational waste generation rates

Type of Premises	General Waste Generation (L/100 m ² /day)	Recycling Generation (L/100 m ² /day)
Warehouse	10	10
Offices	10	10

Using the waste generation rates in Table 9 above, the approximate weekly waste quantities for the Development have been calculated. The operational waste quantities were additionally calculated based on the assumptions below:

- The floor areas shown in the drawings in *23103_Precinct_3_Drawings_230310.pdf* and *22103_DA101_F_Precinct 1 - Site & Warehouse Plan.pdf*

¹⁴ <https://www.fluorocycle.org.au/>

¹⁵ <https://www.lamprecyclers.com.au/>

- A week comprising seven days of operation.

The estimated quantities of operational waste generated by the Development are shown in Table 10.

Table 10 Estimated quantities of operational general waste and recycling

Building	Project area	Area (m ²)	(L/day)		(L/week)	
			General Waste	Recycling	General Waste	Recycling
Warehouse 3A-1	Warehouse	11,359	1,136	1,136	7,951	7,951
	Office	550	55	55	385	385
Warehouse 3A-2	Warehouse	15,156	1,516	1,516	10,609	10,609
	Office	600	60	60	420	420
Warehouse 3B-1	Warehouse	9,486	949	949	6,640	6,640
	Office	550	55	55	385	385
Warehouse 3B-2	Warehouse	12,989	1,299	1,299	9,092	9,092
	Office	1,100	110	110	770	770
Warehouse 3B-3	Warehouse	9,486	949	949	6,640	6,640
	Office	550	55	55	385	385
Warehouse 3B-4	Warehouse	12,989	1,299	1,299	9,092	9,092
	Office	1,100	110	110	770	770
Warehouse 3C-1	Warehouse	15,912	1,591	1,591	11,138	11,138
	Office	600	60	60	420	420
Warehouse 3C-2	Warehouse	21,377	2,138	2,138	14,964	14,964
	Office	1,100	110	110	770	770
Warehouse expansion Stage 1	Warehouse	2,665	267	267	1,866	1,866
	Office	307	31	31	215	215
	Total	117,876	11,788	11,788	82,513	82,513

6.4 Waste Storage Area

6.4.1 Garbage and Recycling Bins

The waste storage area for the Development must be large enough to adequately store all quantities of operational waste and recycling between collections. Given the nature of the development and its size and scope, a front lift waste collection service is the most likely to be used by a contractor.

The most common front lift bin capacity is 3 m³, and these have been assumed when calculating bin numbers for the warehouse expansion.

All waste storage area calculations have considered typical bin dimensions shown in Table 11.

Table 11 Dimensions and approximate footprint of bins

Bin Capacity	Height (mm)	Depth (mm)	Width (mm)	Footprint (m ²)
3 m ³	1,540	1,520	2,060	3.31

To allow for ready movement of bins into and out of the bin storage area, at least 200% of the total minimum bin storage area has been allowed for. This can also act as a contingency in the event of spikes in waste generation.

The recommended storage areas do not include the storage of bulky waste. For the additional storage space for bulky waste, refer to Section 6.4.2.

The estimated number of bins required for weekly storage of operational waste and recycling generated by the Development are shown in Table 12 and are based on:

- The estimated quantities of operational waste and recycling shown in Table 10
- Bin dimensions shown in Table 11.

Table 12 Recommended number of bins and storage area

Building	Bin Capacity	Collection Frequency per Week		Number of Bins Required		Total Number of Bins	Recommended Storage Area (m ²)
		Garbage	Recycling	Garbage	Recycling		
Warehouse 3A-1	3 m ³	2	2	2	2	4	25
Warehouse 3A-2		2	2	2	2	4	25
Warehouse 3B-1		2	2	2	2	4	25
Warehouse 3B-2		2	2	2	2	4	25
Warehouse 3B-3		2	2	2	2	4	25
Warehouse 3B-4		2	2	2	2	4	25
Warehouse 3C-1		2	2	2	2	4	25
Warehouse 3C-2		3	3	2	2	4	25
Warehouse expansion Stage 1		1	1	1	1	2	12.5

6.4.2 Bulky Waste

The bulky waste stream includes broken pallets, broken furniture, e-waste and other materials that cannot be disposed of in the general or recyclable waste stream. The Fairfield DCP provides no advice on storage space for bulky waste at industrial developments. In the absence of this advice, and given the capacity of the proposed bins, SLR recommends that no additional space be provided for bulky waste and that tenants would arrange bulky waste collections with contractors if and when required.

6.4.3 Waste Storage Area Location

The design for the waste storage areas of the Development to take into consideration better practice waste management and recommendations. The waste storage areas are located so that:

- They are located away from primary street frontages
- They are near any on-site loading bays

- They are convenient, safe, functional and directly accessible to users in each tenancy and servicing collection staff, but inaccessible to the public
- They avoid pedestrian or vehicular traffic hazards likely to be caused by waste collection and storage.

The warehouse expansion will use the waste storage and collection system at the existing warehouse. The waste storage areas in Precinct 3 are expected to be located as shown in Figure 6 below.

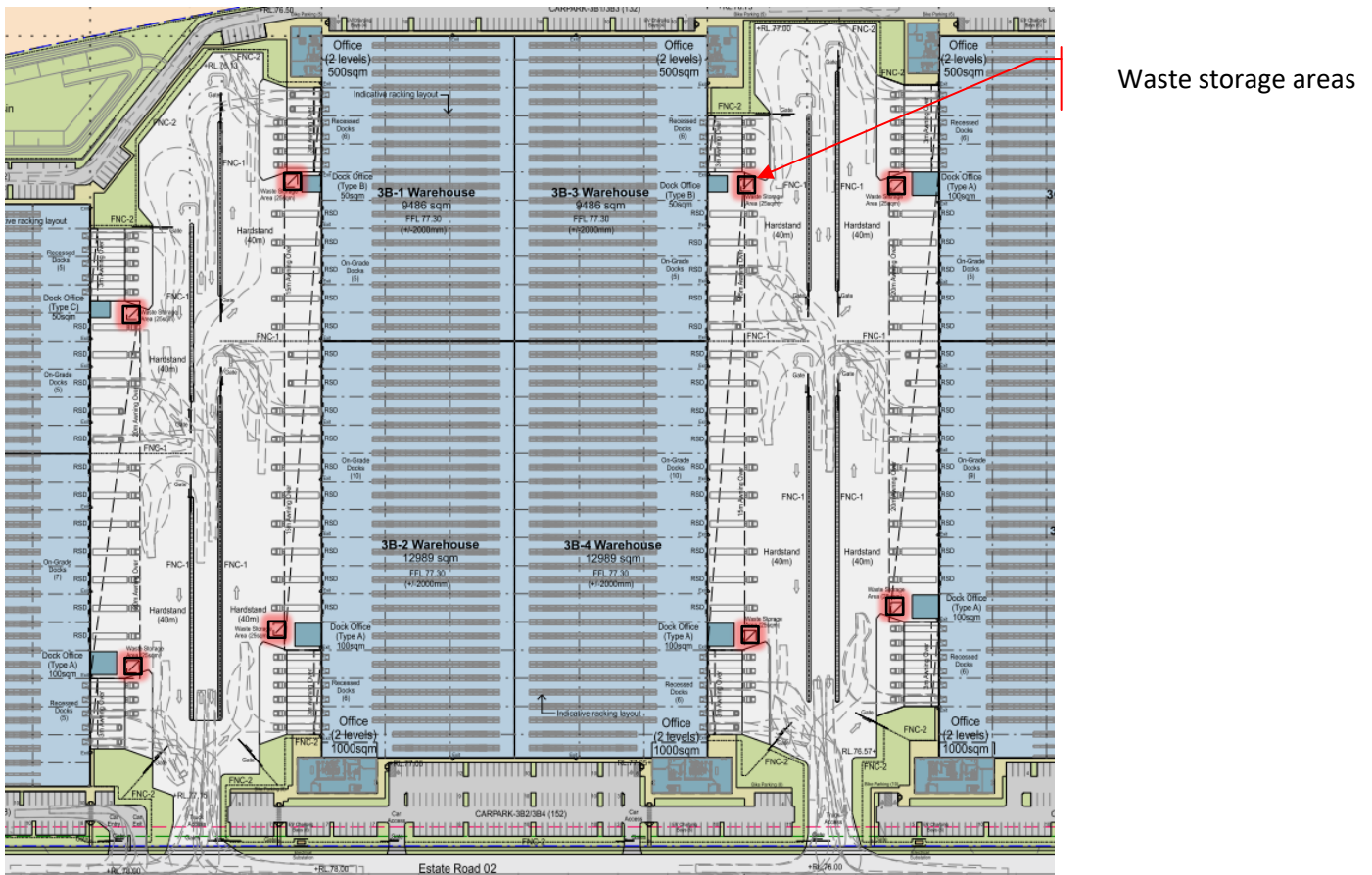


Figure 6 Waste storage in Precinct 3

6.4.4 Waste Storage Area Features

In accordance with better practice waste management, the Development's waste storage areas will have the following features:

- Blend in with the design of the wider development and the surrounding streetscape
- Be well lit and well-ventilated
- 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 BCA
- Waste equipment is protected from theft and vandalism
- Be fully enclosed, walled and not permit through access to other on-site waste infrastructure
- Adequate lighting and natural or mechanical ventilation in accordance with the BCA
- Provide administrative management, including signage to ensure appropriate use
- Be screened from public areas, preferably with landscape buffer planting, to reduce the impacts of noise, odour and visual amenity, and
- Flexible in design to allow for future changes in operation, tenancies and uses.

6.5 Waste Servicing

Waste collections will be undertaken through a private contractor. The following general waste servicing access requirements will be implemented:

- Waste will be removed regularly.
- Arrangements will be in place so that the waste and recycling storage rooms are not accessible to the general public.

In accordance with good and safe practice, the following is required for the access provisions for of waste collection vehicles:

- Collection vehicles will enter and exit the collection area in a forward direction
- Drawings will show the site's entry point, vehicle's route of travel and manoeuvring
- Unobstructed access, adequate driveways and ramps of sufficient strength to support waste collection
- Access for the collection vehicles must be separate from the entry and exit driveway of any car parking areas to and from public areas.

6.6 Waste Avoidance, Reuse and Recycling Measures

6.6.1 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.

6.6.2 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.

6.6.3 Recycling

Recycling opportunities include:

- Collecting and recycling e-waste
- 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.

6.7 Communication Strategies

Waste management initiatives and management measures will 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 will be considered:

- Use consistent signage and colour coding throughout the Development
- 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 will be clearly labelled and colour-coded to ensure no cross contamination, where applicable
- Employees and cleaners will adhere to the WMP for compliance, in consultation with management, and

- Repair signs and labels promptly to avoid breakdown of communications.

6.8 Signage

Waste storage and collection areas will be provided with appropriate signage. These signs will clearly identify waste management procedures and provisions to contractors, tenants and visitors will be distributed around the Development.

Signs which clearly identify waste management procedures and provisions to staff and visitors will be distributed around the Development. 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 7
- 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 Development, 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 will conform to the relevant Australian Standard and use labels approved by the NSW EPA¹⁶. The design and use of safety signs for waste rooms and enclosures will comply with Australian Standard AS 1319 Safety Signs for the Occupational Environment and clearly describes the types of materials designated for each bin.



Figure 7 Example of bin labels for operational waste

6.9 Monitoring and Reporting

Monitoring is recommended to ensure waste and recycling management arrangements and provisions for the Development are functional, practical and are maintained to the standard outlined in this plan, at a minimum.

Visual assessments of bins and bin storage areas will be conducted by the building manager, at minimum:

- Weekly, in the first two months of operation to ensure the waste management system is sufficient for the operation, and

¹⁶ NSW EPA waste signage and label designs <http://www.epa.nsw.gov.au/wastetools/signs-posters-symbols.htm>

- 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 docket, receipts and other physical records will 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 will 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 will 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 Development, review and updates to maintain suitability must be undertaken.

6.10 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 Development’s waste management system clearly explained. A summary of recommended roles and responsibilities are provided in Table 13.

Table 13 Operational waste management responsibility allocation

Responsible Person	General Tasks
Management	Ensure the WMP is implemented throughout the life of the operation.
	Regularly update the WMP, for example, yearly, to ensure it remains current and applicable.
	Undertake liaison with tenants on contracted waste collections.
	Organise internal waste audits on a regular basis.
	Manage any complaints and non-compliances reported through waste audits and other means.
	Perform inspections of all waste storage areas and waste management equipment on a regular basis.
Tenants’ Cleaners in any	Removal of general waste and recyclables and placed in bins.
	Cleaning of all bins and waste and recycling area 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.
Tenants	Undertake liaison with site management on contracted waste collections.
	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 area are kept clean and tidy.

Responsible Person	General Tasks
	Ensure that regular cleaning and transfer of bins is undertaken by cleaners or staff
	Ultimately responsible for the management of all waste management equipment, cleaning requirements, waste transfer and collection arrangements.
	Removal of general waste and recyclables and placed in bins.
	Cleaning of all bins and waste and recycling area as required.
	Compliance with the provisions of this WMP.

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Appendix K Flora and Fauna Management Plan

Construction Environmental Management Plan

**SSD-37486043: Oakdale East Industrial Estate
2-10 Old Wallgrove Road, Horsley Park**

Goodman Property Services (Aust) Pty Ltd

SLR Project No.: 630.V10611.00001

13 November 2023



Oakdale East Estate SSD-37486043

Flora and Fauna Management Plan

prepared for

Goodman Property Services (Aust.) Pty Ltd

Oakdale East Estate SSD-37486043 – Flora and Fauna Management Plan

prepared for

Goodman Property Services (Aust.) Pty Ltd

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- + EIANZ Certified Environmental Practitioner
- + Ecological Consultants Association of NSW Practising member



Revision Schedule

Rev No	Date	Description	Issued to
1	14/07/2023	DRAFT Flora and Fauna Management Plan (FFMP)	Goodman
2	12/10/2023	Flora and Fauna Management Plan (FFMP)	Goodman

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1. Introduction

1.1 Background

Oakdale East Estate (the “Estate”) is a State Significant Development (SSD-37486043) proposed by Goodman Property Services (Goodman). The Estate comprises five precincts, which will provide for industrial warehouses and distribution centres (refer Figure 1-1).

The Estate Stage 1 works were completed in September 2021 and included building and infrastructure works within Precinct 1. SSD-37486043 seeks approval for a Concept Plan across the Estate and approval for Stage 2 of works at the Estate.

A separate Rehabilitation Development Application (DA) approved by Fairfield City Council, is currently being implemented to enable the rehabilitation of the site for the future development proposed in the SSD-37486043. The rehabilitation works include, but are not limited to, the following:

- Demolition of the Brick Factory and rehabilitation of the surrounding land;
- Cut and fill works to provide bulk pad levels suitable for industrial end use; and
- The provision of a stormwater system suitable for industrial development including swales and detention basins.

A separate Flora and Fauna Management Plan approved by Fairfield City Council (Council) is currently being implemented as the rehabilitation works progress.

This Flora and Fauna Management Plan (FFMP) has been prepared as a subplan to the SSD-37486043 Construction Environmental Management Plan (CEMP) and is based on the findings of the Biodiversity Development Assessment Report (BDAR) (écologique, 2023a).

1.2 Consent conditions

The BDAR was submitted with the Project’s development application (SSDA) and has been updated to a final report to satisfy the relevant consent conditions (see Table 1-1 below).

Table 1-1. Consent conditions relevant to this FFMP

Condition	Where responded
D23. Prior to the commencement of earthworks, the Applicant must prepare a Flora and Fauna Management Plan (FFMP) for the development. The FFMP must form part of the CEMP required by condition E2 and must:	
a. be prepared by a suitably qualified and experienced person(s)	A brief CV of the FFMP’s author is provided in Appendix A.
b. describe pre-clearance and dam decommissioning protocols including fauna rescue and relocation procedures	Section 4 (terrestrial preclearance, clearance and relocation procedures) Section 5 (dam decommissioning preclearance, clearance and relocation procedures)
c. detail measures to protect retained native vegetation on site to avoid impacts during	Section 4.1.2 and Table 3-1

Condition	Where responded
construction, including but not limited, to fencing and signage	
d. detail the timing for undertaking clearing works including the removal of hollow bearing trees to avoid key fauna breeding seasons	Table 3-1
e. include a tree hollow replacement strategy	Section 4.1.1 and Appendix B.
D24. The Applicant must implement the Flora and Fauna Management Plan for the duration of earthworks and construction.	

1.2 Subject site

The subject site (the Site) is located at 10 Old Wallgrove Road and is legally identified as Lot 102 and Lot 103 in DP1268366. Zoning of each lot is as follows:

- Lot 102: wholly zoned as IN1 – General Industrial; and
- Lot 103: predominantly zoned as IN1 but includes land zoned as C2 – Environmental Conservation along its eastern margin.

Land zoned as C2 is more or less located along the eastern boundary of the site and is associated with the riparian zone of Reedy Creek. Reedy Creek flows in a northerly direction from the southeastern corner to the northeastern corner of the Site.

Lot 103 also contains a future infrastructure corridor, oriented north-west to south-east, which is located to the north of Precincts 3 and 4 and south of Precinct 5 (see Figure 1-1).

The Site has been operated as a plant and quarry by Austral Bricks for brick production since 1973. Consequently, the subject land, excluding the Reedy Creek riparian zone, contains highly modified and disturbed terrain.

Figure 1-2 illustrates the Site in the context of vegetation approved for clearing under prior DAs (133.2/2019 and DA/347.1/2021) and vegetation clearing under SSD-37486043.

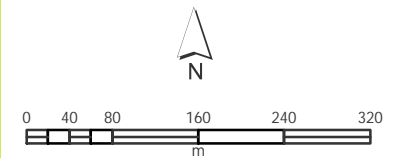
Oakdale East Estate SSD-37486043 FFMP



Figure 1.1. Subject site

Legend

- Reedy Creek
 - 2nd order
 - 2nd order tributary
 - 3rd order
- Site_boundary
- Precincts
- Future freight corridor



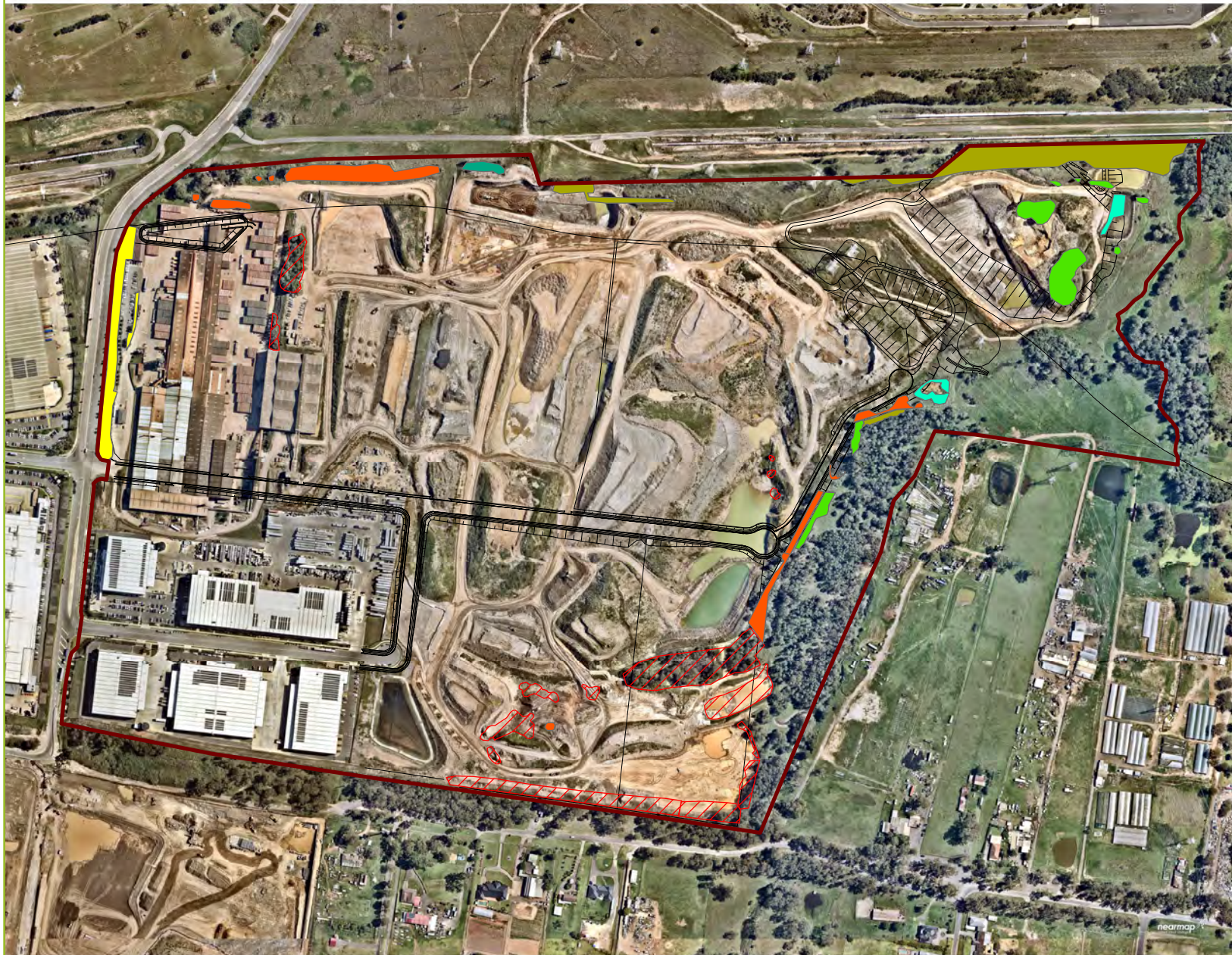
Coordinate System: MGA Zone 56 (GDA 2020)

Image sources: Nearmap 3 February 2023

Date prepared: 7 July 2023

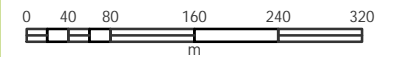
Oakdale East Estate SSD-37486043 FFMP

Figure 1.2. Site context



Legend

- Site_boundary
- SSDA (this FFMP) clearing**
 - PCT 4025
 - PCT 3320
 - PCT 3962
 - PCT 4023
 - Landscaping
- Approved clearing under other DAs**
 - To be cleared
 - Already cleared



Coordinate System: MGA Zone 56 (GDA 2020)

Image sources: Nearmap 3 February 2023

Date prepared: 7 July 2023

1.4 Relevant legislation

Specific legislation relevant to this FFMP is summarised in Table 1-1.

Table 1-2. Legislation relevant to this FFMP

Legislative mechanism	Relevance to proposal
<i>Biodiversity Conservation Act 2016</i> (BC Act)	<p>Impacts on threatened flora and fauna species, populations and ecological communities are administered by the NSW Environment Minister under the BC Act.</p> <p>Impacts on biodiversity values due to the construction of the Project have been assessed under the NSW Biodiversity Offset Scheme, which are detailed in the Project BDAR (écologique, 2023a), which has informed this FFMP.</p>
<i>Biosecurity Act 2015</i> (Biosecurity Act)	<p>Biosecurity is the protection of the economy, environment and community from the negative impacts of pests and diseases, weeds and contaminants.</p> <p>The Biosecurity Act introduces the premise that biosecurity is a shared community responsibility and introduces the legally enforceable concept of a General Biosecurity Duty (GBD). The GBD means that any person dealing with a biosecurity risk must take measures to prevent, minimise or eliminate the biosecurity risk (as far as is reasonably practicable).</p> <p>Biosecurity risks relevant to the Project include priority weeds, feral and pest animals, and the potential introduction and spread of pathogens and disease.</p> <p>A Biosecurity Management Plan (écologique, 2023c) has been prepared as a subplan to the Project CEMP, which specifies how biosecurity risks are to be mitigated.</p>
<i>Environment Protection and Biodiversity Conservation Act 1999</i> (the EPBC Act)	<p>The EPBC Act is the Australian Government's central piece of environmental legislation, which provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places—defined in the EPBC Act as matters of national environmental significance (MNES).</p> <p>No impacts on MNES are identified within the subject site, although areas of adjacent remnant vegetation are commensurate with threatened ecological communities (TECs) listed under the EPBC Act.</p>
<i>Fisheries Management Act 1994</i> (FM Act)	<p>The FM Act's objectives are to conserve, develop and share the fishery resources of the State for the benefit of present and future generations. Reedy Creek along the eastern boundary of the subject area is not mapped as key fish habitat (KFH) and the proposal will not impact on any fishery resources as defined under the FM Act, nor involve any activities that require approval under the FM Act.</p>

Legislative mechanism	Relevance to proposal
	<p>Dam decommissioning will require a permit under Section 37 of the FM Act for the relocation of any fin fish rescued for waterbodies in the subject site (refer Section 5).</p>
<p><i>Pesticides Act 1999</i></p>	<p>The Pesticides Act controls the use of pesticides in NSW. It aims to reduce risks to human health, the environment, property, industry and trade, and promote collaborative and integrated policies for pesticide use. Under this Act, all pesticide users in NSW must:</p> <ul style="list-style-type: none"> • Only use pesticides registered or permitted by the Australian Pesticides and Veterinary Medicines Authority (APVMA) • Obtain an APVMA permit if they wish to use a pesticide in a way not covered by the label • Read the approved label and/or APVMA permit for the pesticide product (or have the label/permit read to them) and strictly follow their directions • Only keep registered pesticides in containers bearing an approved label • Prevent injury to people, damage to property and harm to non-target plants and animals from using a pesticide
<p><i>Prevention of Cruelty to Animals Act 1979 (PCA Act)</i></p>	<p>Consultation with the Department of Primary Industries (DPI) and Secretary of the Animal Care and Ethics Committee (ACEC) has confirmed animal relocation, or in some cases euthanasia, does not require animal ethics approval as it is being performed under animal management practices and does not fit under the definition of animal research under the Animal Research Act 1985.</p> <p>Instead, the legislation pertaining to this activity is the Prevention of Cruelty to Animals Act 1979 (PCA Act). For this reason, an Animal Research Authority (ARA) is not required for the relocation of any terrestrial or aquatic fauna that may result from either clearing of native vegetation or dam decommissioning during the construction of the WNSLR.</p> <p>Under this Act Part 2 Clause 5(3), a person in charge of an animal shall not fail at any time:</p> <ol style="list-style-type: none"> a. to exercise reasonable care, control or supervision of an animal to prevent the commission of an act of cruelty upon the animal, b. where pain is being inflicted upon the animal, to take such reasonable steps as are necessary to alleviate the pain, or c. where it is necessary for the animal to be provided with veterinary treatment, whether or not over a period of time, to provide it with that treatment. <p>These clauses have been provisioned for in this FFMP.</p>
<p><i>Water Management Act 2000 (WM Act)</i></p>	<p>The WM Act is administered by Natural Resources Access Regulator (NRAR) and establishes an approval regime for activities within</p>

Legislative mechanism	Relevance to proposal
	<p>waterfront land, defined as the land 40 m from the highest bank of a river, lake or estuary. Both Precincts 4 and 5 within the Site are located within waterfront land and a Vegetation Management Plan (VMP) has been prepared for the SSDA, in accordance with the Departments guidelines for controlled activities on waterfront land.</p>

2. Biodiversity Values

2.1 Plant community types

This FFMP addresses the removal of 2.28 ha of native vegetation within the site, which includes four plant community types (PCTs) and additional native planted vegetation (landscaping).

Table 2-1 lists each PCT and the relevant status (where applicable) under the NSW *Biodiversity Conservation Act 2016* (BC Act) and Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Note: PCT names and IDs have changed since the BDAR was submitted for this project. The decommissioned PCT IDs are provided in parenthesis in Table 2-1.

Table 2-1. PCTs in the subject site being cleared

PCT name	PCT ID	BC Act	EPBC Act	Area (ha)
Cumberland Red Gum Riverflat Forest	PCT 4025 (ex835)	Endangered	Critically Endangered	0.49
Cumberland shale plains woodland	PCT 3320 (ex849)	Critically Endangered	Critically Endangered	0.05
Coastal Valleys Swamp Oak Riparian Forest	PCT 4023 (ex1800)	Endangered	Endangered	1.18
Coastal Floodplain Phragmites Reedland	PCT 3962 (ex1071)	Endangered	n/a	0.13
Landscaping	n/a	n/a	n/a	0.43
Total vegetation clearing				2.28

Approval is sought for the clearing of **2.28 ha** of native vegetation only, as shown in Figure 2-1 and summarised in Table 2-1.

Any additional clearing of native vegetation above that shown on Figure 2-1:

- will be subject to additional impact assessment and development approval.
- Any additional clearing of native vegetation above that shown on Table 2-1 is an offence under the BC Act.
- The maximum penalty is a Tier 1 monetary penalty or imprisonment for 2 years, or both.



Oakdale East Estate SSD-37486043 FFMP

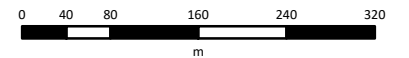
Figure 2-1. Clearing limits

Legend

- To be cleared
- To be retained / managed as APZ
- To be retained



écologique



Coordinate System: MGA Zone 56 (GDA 2020)
Image sources: Nearmap 12 August 2023
Date prepared: 6 September 2023

2.2 Threatened species

Despite the highly modified environment of the site, remnant and planted vegetation may still provide roosting and foraging habitat opportunities for a range of threatened species.

The subject site has been the focus of several threatened species surveys, which include the following surveys:

- 2018-2019: DCP development and BAM assessment for approved for the now operational Stage 1 of the Estate;
- 2020: Ecological constraints assessment to inform the Estate’s Concept and Stage 2 master planning;
- 2020-2021: BAM assessment for approved Rehabilitation DA; and
- 2021-2022: BAM assessment for the current SSDA.

Table 2-2 provides the list of threatened species that have been detected within the subject site or are considered a remote possibility of being encountered..

Table 2-2. Ecosystem credit species

Species Name	Common name	Likelihood of occurrence
Aves		
<i>Artamus cyanopterus cyanopterus</i>	Dusky woodswallow	Observed foraging in 2019
<i>Daphoenositta chrysoptera</i>	Varied sitella	Marginal foraging habitat available
<i>Glossopsitta pusilla</i>	Little lorikeet	
<i>Lathamus discolor</i>	Swift parrot	
<i>Melithreptus gularis gularis</i>	Black-chinned honeyeater	
<i>Neophema pulchella</i>	Turquoise parrot	
<i>Petroica boodang/phoenicea</i>	Scarlet robin/ Flame robin	
Bats		
<i>Miniopterus australis</i>	Little bent-wing bat	Potential roosting habitat beneath decorticating bark
<i>Miniopterus orianae oceanensis</i>	Large bent-wing bat	
<i>Micronomus norfolkensis</i>	Eastern coastal free-tailed bat	
<i>Saccolaimus flaviventris</i>	Yellow-tailed sheathtail bat	
Gastropods		
<i>Meridolum corneovirens</i>	Cumberland Plain land snail	Detected in Rehab DA area in 2018. Not found during pre-clearance surveys for Rehab DA. Not found in SSDA area
Flora		
<i>Grevillea juniperina subsp. juniperina</i>	Juniper-leaved grevillea	Potential to occur following disturbance

3. Implementation summary

3.1 Flora and Fauna Management Program

Safeguards to manage potential flora and fauna impacts are detailed in Table 3-1, together with who is responsible for their implementation, at what stage of the works and the relevant statutory mechanism (as discussed in Section 1.4).

Table 3-1. Flora and fauna management and mitigation measures

ID	Measure/Requirement	Responsibility	Timing / Frequency	Reference / Notes
[GENERAL]				
FF1	All employees and contractors will be inducted to ensure that procedures outlined in this FFMP are met. This will have a focus on no-go zones, clearing limits and compliance with statutory requirements applicable to flora and fauna.	Management / Contractors / Employees	Prior to each employee or contractor commencing work on site	Provisions under the BC Act, Biosecurity Act, FM Act, PCA Act Pesticides Act and best practice.
[VEGETATION CLEARING, PROTECTION AND MANAGEMENT]				
FF2	Pre-clearing surveys are to be undertaken immediately prior to clearing works by an experienced ecologist. Habitat features that will be cleared are to be appropriately marked and located by GPS.	Management / Project Ecologist	Pre-clearing	FFMP Section 4.1

ID	Measure/Requirement	Responsibility	Timing / Frequency	Reference / Notes
FF3	<p>Pre-clearance reporting (including GPS measurements and FFMP constraints mapping) must be prepared to inform the following:</p> <ul style="list-style-type: none"> Clearing limits, no-go zones, and areas that must be protected; Habitat features within clearing limits that require two-stage felling; and Amendments required to the Project’s CEMP. 	Management / Project Ecologist	Pre-clearing	FFMP Section 4.1
FF4	Environmentally sensitive areas are to be fenced and habitat features that will be felled are to appropriately marked.	Management / Project Ecologist / Construction Contractor	Pre-clearing	FFMP Section 4.1
[SEDIMENT AND EROSION CONTROLS]				
FF5	Sediment and erosion controls must be installed prior to any earthworks required.	Management / Contractors	Pre-clearing	FFMP Section 4.2
FF6	Temporary sediment sorting bunds/silt fenced areas are to be installed.	Management / Contractors	Pre-decommissioning of dams	FFMP Section 4.2
[TERRESTRIAL WILDLIFE PROTECTION]				
FF7	An ecologist is to be present for all felling of identified habitat features.	Management / Project Ecologist	Ongoing throughout construction	FFMP Section 4.3
FF8	Fauna rescue and release protocols will be followed to ensure native fauna are not impacted during construction.	Management / Project Ecologist	Ongoing throughout construction	FFMP Section 4.3

ID	Measure/Requirement	Responsibility	Timing / Frequency	Reference / Notes
FF9	Should unexpected fauna be encountered on site, a stop works procedure must be followed.	Management / Contractors / Employees	Ongoing throughout construction	FFMP Section 7
[AQUATIC FAUNA PROTECTION]				
FF10	Pre-decommissioning aquatic surveys are undertaken to describe the types and species of aquatic fauna that require capture and release, identify suitable relocation sites, with water quality sampling and analysis undertaken to support the identification of suitable relocation sites.	Management / Project Ecologist	Pre-decommissioning of dams	FFMP Section 5
FF13	A qualified ecologist must be present at all times with sufficient support personnel to ensure that the handling, storage and relocation is achieved with minimal stress to aquatic fauna.	Management / Contractors / Project Ecologist	During decommissioning	FFMP Section 5
FF14	Fauna handling protocols will be followed to ensure native aquatic fauna are not impacted during construction.	Management / Project Ecologist	During decommissioning	FFMP Section 5.4
[WEED AND PATHOGEN MANAGEMENT]				
FF15	General biosecurity duty shall be complied with at all times in order to minimise the risk of introduction and/or spread of biosecurity risks.	Management / Contractors / Employees	Throughout construction	FFMP Section 5.4, VMP, BMP

4. Terrestrial environment

4.1 Pre-clearance process

4.1.1 Pre-clearance surveys

Pre-clearing surveys are undertaken to provide a final check for presence of flora and fauna species and habitat on a site immediately before clearing begins. Pre-clearing surveys are required to:

- Identify habitat features suitable for native fauna that will require clear felling supervision and which will require a two-stage clearance procedure (refer Section 4.3);
- Identify any threatened flora or fauna that may have moved into the subject site since ecological surveys were conducted;
- Provide input into determining appropriate exclusion zones; through
 - Recording the details for all habitat features found in vegetation to be cleared (including where applicable: GPS location; species or type of habitat feature)
 - Marking the limits of clearing, habitat features in areas to be cleared and native vegetation to be protected during construction, using suitable methods
- Locate nearby habitat suitable for the release of fauna that may be encountered during the pre-clearing process or habitat removal.

This shall include suitable locations for the installation of nest boxes to replace hollow bearing trees that are felled.

- Prepare constraints mapping and relevant induction materials;
- Determine any additional management measures that may need to be incorporated into the CEMP

4.1.2 Marking limits of vegetation clearing

Prior to any clearing being undertaken within the subject site, clearing limits need to be clearly delineated, where clearing is adjacent to vegetation that is being retained. Clearing limits can be marked with high visibility tape, temporary fencing, or other appropriate boundary markers.

Materials and methods of marking trees to be removed or retained and protected will be agreed to prior to their employment. This will ensure there is no overlap with methods used by various Project contractors and that vegetation to be cleared, habitat features to be cleared, and vegetation to be retained and protected, are clearly identifiable.

Generally, to minimise confusion over growing amounts of flagging tape (or spray paint) generated by different surveys and the marking of environmental sensitive areas, certain colours will be used for specific purposes. The following colour coding system (that follows traffic light) is recommended:

- Green = trees to be cleared
- Orange (or yellow) = individual trees ready for clearing but in close proximity to habitat features (see below).
- Red (or pink) either flagging tape or spray painted “H” = habitat trees to be cleared that require fauna spotting and staged clearing.

To avoid unnecessary damage to adjacent vegetation or inadvertent habitat removal, the following shall apply:

- No-go / exclusion zones shall:
 - Be made completely visible and known to all contractors working on the Project;
 - Be suitably protected by exclusion fencing;

- Remain untouched and not impacted for the duration of construction; and
- Be marked on constraints mapping for use in site inductions.
- No stockpiling of equipment, soils, or machinery will occur beyond the no-go / exclusion boundary;
- Compaction of roots and / or physical damage in accordance with Australian Standard 4970 – 2009 Protection of Trees;
- Construction vehicles shall not enter into vegetation retained beyond the approved impact areas. At no point is cleared vegetation to be bulldozed into adjacent bushland retained beyond the limits of clearing;
- Where possible no plant, including motor vehicles, would be operated within 2x the dripline / canopy of retained trees, i.e., if the tree canopy is four metres in diameter, then an eight metre buffer will be placed around the tree trunk where the plant access is excluded;
- Sediment and erosion controls must be installed and maintained for the duration of the Project (see Section 4.2).

4.2 Sediment and erosion control

Sediment and erosion control measures are to be installed prior to earthworks and maintained for the duration of the works in accordance with the Project's CEMP and relevant erosion and sediment / soil and water control plans.

Specific controls required during vegetation removal include:

- Appropriate boundary sediment controls (sediment fencing, excavated sediment traps, check dams, straw bale filters, etc) shall be installed around all areas of remnant vegetation to be retained;
- Where vegetation removal is limited to isolated trees and shrubs, the tree/shrub removed shall have the root base backfilled and compacted as required; and
- Vegetation in proximity to the Reedy Creek riparian zone shall be cut at the base with the root structure to remain in place until the earthworks stage.

4.3 Clearance process

4.3.1 Single staged clearing

Where no areas of habitat have been identified in vegetation to be cleared, clearing can be undertaken in a single-stage process, and includes the under-scrubbing of non-habitat trees, shrubs and other vegetation using a combination of forestry harvester and excavator. Vegetation cleared during single-stage clearance shall not be stockpiled on-site as it may provide temporary habitat for displaced fauna.

4.3.2 Two-staged clearing

A two-stage clearing process is designed to enable fauna to feel secure whilst clearing occurs around their tree, and to allow them a chance to self-relocate at night to coincide with typical foraging behaviours of arboreal animals.

During clearing, an experienced ecologist must be present for the clearing of any habitat features.

Before the commencement of clearing works, local vets and or wildlife carers are to be notified.

Stage 1

Firstly, vegetation not identified during pre-clearance surveys as fauna habitat will be cleared. All vegetation around the habitat item will be cleared so that the fauna habitat item is isolated.

Stage 2

Secondly, identified habitat trees are left to stand overnight to allow resident fauna to voluntarily move from the area. Habitat trees are then cleared using the following protocols:

- Trees will be gently agitated by machinery prior to clearing to encourage any animals remaining to leave the hollows;
- An excavator will be used to start pushing the tree over. The excavator should have a grab mechanism that allows for the habitat tree to be lowered to the ground slowly, thus minimising the risk of injury or mortality to fauna. If salvageable, branches with hollows and sections of trunk will be marked and set aside for transfer to a storage area for eventual placement within rehabilitation areas;
- The ecologist onsite will inspect all visible hollows for the presence of fauna following felling of the tree; and
- The felled habitat tree will then be left over night to allow further opportunity for resident fauna to relocate. Following this, the tree is to be mulched to prevent any additional fauna returning to the tree or transported to the rehabilitation area to be used to provide fauna habitat.

In the event that arboreal animals do not move or they cannot be captured because the tree hollow is too large, high or its recovery would breach WH&S requirements then the tree will be felled (in the direction of other tree debris if possible) and animals recovered post-felling.

4.3.3 Post-clearance

Following clearing, a post-clearing assessment will be prepared and must include at minimum the following results:

- Details of native fauna captured and relocated, injured or deceased;
- Photos of rescued fauna;
- Number of habitat features felled; and
- Analysis of the effectiveness of clearing and fauna rescue methods.

4.4 Fauna rescue and release procedure

All fauna handling and relocation shall be undertaken in accordance with this procedure to ensure that impacts upon native fauna are minimised for the duration of clearing works.

Employment of the procedure will assist in natural relocation of fauna that occupy the habitat features identified within the subject site and where required handling and relocation.

4.4.1 Fauna handling protocol

Ecologists are responsible for capturing vertebrate fauna during the habitat clearing process. Fauna handling is to be only undertaken by the experienced ecologist on site or licenced wildlife carer.

All fauna that are encountered during clearance works are to be identified and assessed by an ecologist with records of their health status detailed (e.g., released, self-relocated, transported to vet or as per Wires).

The acting ecologists must operate under the following:

- Scientific Licence under Part 2 of the BC Act; and
- Compliance with the PCA Act.

The following procedure is relevant to the rescue/relocation and transport of fauna, instances where fauna is shocked, trapped, injured, or if eggs or juvenile fauna are discovered.

1. Stop work if encountering any fauna within work area
2. If fauna is not injured allow it to move out of work area
3. If fauna does not move out of work area due to injury or other reasons, the health of the animal must be determined and the decision based on the welfare of the animal and whether it is likely to survive on release. Stress would be minimised through:
 - The use of soft containment and placement in a pet carrier or similar,
 - Animal retained in a quiet, warm location that is well ventilated, and
 - Relevant vet/rescue agency contacted.
4. Once the vet/rescue agency arrives at the site, they are responsible for the animal. Any decisions regarding the care of the animal will be made by the vet/rescue agency.
5. In the event the local veterinary service and/or rescue service cannot attend the site, the injured/captured animal will be transported to their location.

4.4.2 Fauna release locations

A suitable release location must be identified and when needed, injured animals will be assessed by a licensed ecologist and taken to a vet for further treatment if required. The vets nearest to the subject site are:

- St Clair Animal Hospital: 1 Olliver Crescent, St Clair. Tel: 02 9670 4955 (Mon-Fri 9am-7pm)
- Colyton Veterinary Hospital: 81 Great Western Hwy, Oxley Park. Tel: 02 9673 1106 (Mon-Fri 8am-7pm) (emergency/after-hours: 0409 291 189)

The location of where each fauna species that is released must also be recorded.

5. Dam Decommissioning Procedures

5.1 Overview

Two artificial basins (dams) require decommissioning with the Site's work areas (see Table 5-1 and Figure 5-1).

Table 5-1. Dams to be decommissioned

Location	Area	
	(m ²)	(ha)
SSDA_south	1,026	0.103
SSDA north	2,217	0.222
	3,243	0.325

5.2 Pre-decommissioning procedures

Pre-decommissioning procedures include the identification of suitable relocation sites, sediment and water quality sampling and analysis and identification of dewatering and fauna capture method.

A pre-decommissioning site meeting shall be attended by the civil contractor and ecologist to determine and agree on the most practical method for dewatering and fauna capture. The agreed method must consider, but may not be limited to the following:

- Timing with regards to:
 - Anticipated volume of water to be dewatered,
 - Completion date required for dam to decommissioned, and
 - Contingencies in the event of inclement weather.
- Safety of ecologists and hazards associated with, but not limited to:
 - Working near and within water,
 - Access constraints due to mud/sediments,
 - Provision of safe work zones, and
 - Communication protocols with plant operators.
- Supply of water, which will be required for regular washing of equipment and filling of fauna holding tanks (see Section 5.3).

5.2.1 Water and sediment sampling

A surface water and sediment sampling program shall be undertaken to assess the suitability of dam sediments for reuse and the suitability of dam water for discharge to Reedy Creek. Surface water samples shall also be undertaken from indicative release locations in Reedy Creek to determine the suitability of the watercourse for aquatic fauna relocation.

Samples shall be analysed by laboratories using NATA certified methods to evaluate concentrations of contaminants of potential concern.

5.2.2 Release locations

Figure 5-1 shows indicative release locations within Reedy Creek, have been selected on the following basis:

- Accessibility and relatively short distance and subsequent limited time period in which transport of aquatic fauna would be required from the dam to the release site;
- The geomorphology of the creek at the release site, which provides more refuge pools in times of drier periods, should the creek cease to flow;
- Diversity of habitat including refuge pools, emergent and submerged macrophytes.
- It is an open system, which will enable released aquatic fauna to migrate freely from the point of release to reduce competition and predatory impacts at the release site.

5.2.3 Temporary sediment placement

Temporary bunded or silt fenced areas are to be provided alongside the dam for the placement of any sediments removed by excavators for immediate sorting by ecologist(s) to retrieve any fauna present.

The exact dimensions of temporary holding areas will be dependent on the extent of excavation required for decommissioning and the size of each dam (refer Section 5.3.2).

5.3 Decommissioning procedures

5.3.1 Requirements

- A qualified ecologist with relevant permit under Section 37 of the FM Act must be present on-site during, and following, the dewatering to ensure that appropriate action can be taken about care and relocation of fauna residing in the dam.
- Sufficient support personnel must also attend to ensure that the handling, storage and relocation of is achieved with minimal stress to aquatic fauna.
- Dewatering works are to cease when ecologist(s) leave to release fauna. Fauna are not to be handled or removed in the absence of an ecologist.
- Fauna are not to be handled or removed in the absence of an ecologist.

5.3.2 Decommissioning approach

Water levels in the dam are to be lowered to as far as practical to provide a refuge pool for fauna. This process may take some time and on-site supervision is not required by the ecologist during this period.

The extent that water levels should be lowered to will be dependent on the bathymetry (shape, slope and depth) of each dam and methods agreed on.

The civil contractor shall consult with the ecologist during this process and an inspection may be necessary to ensure that conditions are suitable for fauna capture.

Once water levels have been sufficiently lowered, gravity drainage assisted by pumping is usually the most efficient approach, as follows:

- Typically, a trench will be excavated in isolation from the dam's standing water retaining a berm, or where a dam wall exists the trench should be excavated on the landside of the dam wall.
- The berm or dam wall will be breached enabling water to flow from the dam, which attracts fauna to leave the dam with the exiting flow.

- Fin fish, including eels will naturally migrate towards the flowing water and be captured in nets (fyke nets or hand-held nets)¹
- The abundance of fauna can be highly unpredictable and as such the dewatering process and fauna capture must necessarily be adaptive.
- An excavator should be at the ready to reinstate the section of berm of dam wall should the quantity of existing fauna become too high for efficient capture. Alternatively
 - A temporary drop weir can be used to cease existing flow, and/or
 - A secondary bunded area below the dam be provided to allow any fauna bypassing capture to be collected from.
- An excavator should be used to gradually build a berm into the dam from which access is made possible to breach pools and enable flow to continue.
- Additional trench excavation may be required depending on the size of the dam and nature of the dam bed.
- Sediments removed should be carefully scooped up by the excavator and placed in temporary bunded or silt fenced areas for immediate sorting by ecologist(s) to retrieve any fauna present.

5.3.3 Post dewatering

An escape ramp should be graded to allow any remaining trapped fauna to escape overnight (noting that both eels and turtles may retreat into sediments). Sediment should be left overnight to allow hidden fauna to emerge unless the ecologist confirms there are no fauna remaining (site-specific assessment).

Civil contractors should notify the ecologist if stranded fish or turtles are observed post-dewatering.

5.3.4 Reporting

The ecologist shall prepare a summary report for submission to the consent authority within seven days of completing the aquatic fauna relocation works. The report shall detail that the works have been completed and include information relating to the location of the dam dewatering works, the number and type of native species relocated, location of release point/s for native fauna and the number and type of exotic species dispatched.

5.4 Aquatic fauna handling procedures

- Captured aquatic fauna would be temporarily stored in vehicle-based holding tanks for transportation to the release site. A 4WD mine spec. vehicle will be required (i.e., beacon, identifying number and UHF radio).
- Holding tanks would vary in size and water depth and duration of temporary storage would be dependent on species captured.
- Suitable aerators shall be used in each holding tank to ensure water is appropriately oxygenated. This is especially important when water levels in the dam are reaching the lowest point and are typically highly turbid.

A description of the specific requirements for handling different types of fauna is detailed below.

¹ Hand held nets are more easily operated and negate the time in which fyke nets need to be emptied and reinstalled.

5.4.1 Amphibians

Hygiene precautions as detailed in the NSW Department of Environment and Climate Change (2008) must be observed when handling frogs.

- Frogs should only be handled when necessary.
- Gloved hands would be made wet in the local water or in wet grass/vegetation so that loss of skin secretions is minimised when frogs are first picked up.
- Frogs will be captured in aerated plastic bags (can be used as a glove) and kept as one per bag for release.
- Frogs should be released at night to disadvantage predators, however if this is not feasible they should be released into dense pool/pond side vegetation.

5.4.2 Turtles

Scoop nets may be utilised to capture turtles from the water. However, from experience turtles respond quickly to water draw down and voluntary start to leave the dam and are relatively easy to capture by hand.

- If direct handling is required, captured individuals should be gripped from the side, with a firm grip on both their shell (carapace) and belly (plastron).
- Captured individuals are to be transferred into containers with water from the dam for relocation.
- If necessary, turtle shells will be wiped down with a sponge to remove any carp eggs that may be attached.
- Any injured turtles are to be taken to a local veterinary service for treatment.
- Turtles will be placed immediately adjacent to release site and monitored until they enter the watercourse of their own accord. This enables visual surveillance of the release site prior to entering the waterbody.

5.4.3 Fin Fish

- Generally, all native fish would be handled as little as possible. Handling of fish would be in accordance with the NSW Department of Primary Industries (2017) guide to acceptable procedures and practices for aquaculture and fisheries research (4th Edition).
- The removal of the fish's protective mucous covering and reducing temperature shock would be minimised by wetting hands first with dam water.
- Fish would be placed into holding tanks which: allow fish to rest comfortably, minimise the risk of escape or injury, be adequately aerate, maintain constant temperature, and minimise the risk of disease transmission
- The time for which the fish is held should be minimal.
- Wherever possible, fish must be captured whilst still in the water.
- Holding areas must be safe, quiet and hygienic.
- Fish must be assessed regularly if prolonged restraint or confinement is required.
- Fish should be transported in a dark environment, with very low light intensity to reduce stress.
- When releasing fish from holding tanks, fish must be supported by both hands and gently lowered into the water.

- Any captured pest species are to be humanely euthanased and the carcasses disposed in an appropriate manner to prevent any potential contamination of soil or waterbodies.

5.4.4 Dealing with injured native aquatic fauna

Injured fauna will be taken to an appropriate trained animal carer. The trained animal carer will be contacted prior to the start of dewatering to ensure they are able and willing to accept any injured fauna.

5.4.5 Euthanasia

Aquatic fauna would only be euthanased if severely injured and suffering, or if they are exotic pest species.

Pest fish will be euthanased in the manner most appropriate to the fish species encountered and disposed of, if required, at a landfill site. Pest fish may be euthanized using an overdose of Aqui-S, which anaesthetises the fish with the overdose continuing to take the individual through to medullary collapse and subsequently death.

Small bodied fish species that may be captured in high abundances, such as Eastern Gambusia, may be euthanized via hypothermal euthanasia. Hypothermal euthanasia involves the depression of the fish in an ice slurry at a temperature of 2–4 Celsius. The fish is to come into contact with the chilled water as quickly as possible and not come into direct contact with the ice. This may lead to the development of internal ice crystals.

Large specimens of Carp or Goldfish may be required to be euthanized using blunt force trauma or percussive stunning. Percussive stunning involves a sharp blow to the head in the area just above the eyes (the area adjacent to the brain) using a special tool such as a heavy wooden handle or a priest.

When applied correctly the fish's gill covers should stop rhythmically moving and the eye should remain still. Percussive stunning is considered a good approach provided it is done swiftly and delivered to the correct area.

If the exotic Red-eared Slider Turtle *Trachemys scripta elegans* is identified, individuals are to be captured and humanely contained. The DPI Biosecurity Line (1800 680 244) is to be contacted to report the sighting and advise whether DPI will collect the specimens.

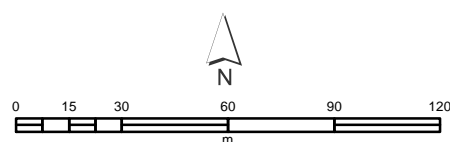


Oakdale East Estate Flora & Fauna Management Plan

Figure 5.1. Dam decommissioning

Legend

-  Site boundary
-  Artificial waterbodies
-  Reedy Creek
-  Turtle relocation site
-  Fin fish relocation site
-  Frog relocation site



Coordinate System: MGA Zone 56 (GDA 2020)

Image sources: Nearmap 02 March 2023

Date prepared: 16 July 2023

6. Contingency Plan

Table 6-1 provides a summary contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduced as quickly as possible.

Table 6-1. Contingency Management Plan

Key Element	Trigger/ Response	Condition Green	Condition Amber	Condition Red
Native vegetation clearance	Trigger	Clearing limits are clearly marked and disturbance is restricted to the delineated clearance areas. No stockpiling of equipment, soils, or machinery occurs beyond the clearance boundary. No encroachment of vehicles, equipment or works occurs beyond the clearance boundary.	Monitoring verifies that demarcation of clearing limits is not functioning in accordance with their design intent, OR Works activities / vehicle or plant movements have encroached beyond clearing limits.	Monitoring verifies clearing of native vegetation has occurred beyond clearing limits, OR Works activities / vehicle or plant movements that have encroached beyond clearing limits have caused damage to protected areas of vegetation.
	Response	No response required. Continue monitoring program.	Remediate immediately, OR Review work practices of contractors / personnel responsible and provide further site induction to ensure responsibilities are understood.	Reporting to government agencies. Implement relevant responses and undertake immediate review to determine source of issues and implement remediation measures identified as soon as practicable.
Fauna protection	Trigger	Clearing of native vegetation and habitat features is completed in accordance with Clearance protocols All fauna species encountered during construction are handled humanely in accordance with industry standards	Monitoring/review of reporting procedures verifies that Clearing of habitat features is undertaken in the absence of Clearance protocols, but no fauna species encountered	Monitoring/review of reporting procedures verifies that clearing of habitat features is undertaken in the absence of Clearance protocols, and results in death or injury of fauna species encountered

Key Element	Trigger/ Response	Condition Green	Condition Amber	Condition Red
	Response	No response required	Review work practices of contractors / personnel responsible. Further clearance of native vegetation is to cease until further site induction undertaken to ensure responsibilities are understood.	Reporting to government agencies. Implement relevant responses and undertake immediate review to determine source of issues and implement remediation measures identified as soon as practicable.
Native vegetation protection	Trigger	Exclusion fencing and protection measures are installed and are functioning in accordance with their design intent.	Monitoring verifies that exclusion fencing and protection measures are not functioning in accordance with their design intent.	Monitoring verifies that works activities / vehicle or plant movements have impacted on areas of native vegetation to be protected.
	Response	No response required	Remediate immediately	Reporting to government agencies. Implement relevant responses and undertake immediate review to determine source of issues and implement remediation measures identified as soon as practicable.
Dam decommissioning	Trigger	<ul style="list-style-type: none"> All aquatic fauna species encountered during construction are handled humanely in accordance with industry standards No introduction or spread of biosecurity risks within the Project area No pollution or siltation enters biodiversity conservation areas 	Monitoring verifies that dewatering of dams commences or continues in the absence of project ecologist, OR Biosecurity risk identified OR Sediment and erosion controls are not installed correctly	Monitoring verifies that dewatering of dams commences or continues in the absence of project ecologist, and aquatic fauna are harmed or killed OR Sediment and erosion controls failed and pollution or siltation discharge occurs.
	Response	No response required. Continue monitoring program.	Stop work immediately and implement remediation actions OR Review work practices of contractors / personnel responsible and provide further site induction to ensure responsibilities are understood.	Reporting to government agencies. Implement relevant responses and undertake immediate review to determine source of issues and implement remediation measures identified as soon as practicable.

7. Unexpected finds procedure

All personnel working on the Project will need to be inducted on the potential for unexpected finds to occur. The stop work procedure in the event any unexpectedly occurs is shown in the following flow diagram.

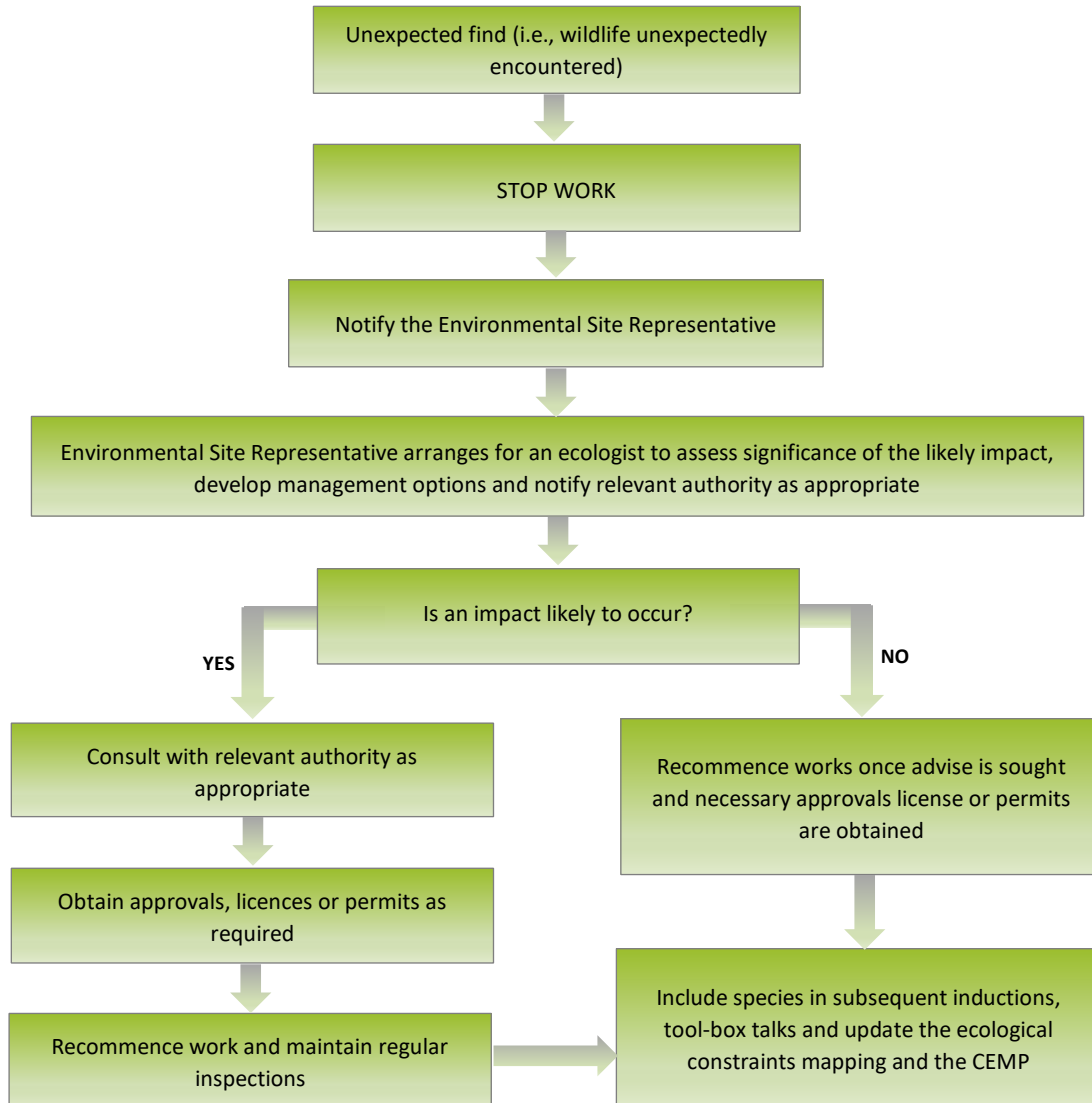


Figure 7-1. Stop work procedure

8. References

écologique (2022a) Austral Bricks Plant 3 Rehabilitation Biodiversity Development Assessment Report. v.2. Prepared for Austral Bricks. Dated 6 April 2022.

écologique (2022b) Proposed Earthworks and Rehabilitation Works Biosecurity Management Plan. Prepared for Goodman Property Services on behalf of Brickworks. Dated 29 May 2022.

écologique (2023a) Oakdale East Estate SSD-37486043 Biodiversity Development Assessment Report. V5 (RTS amended). Prepared for Goodman Property Services on behalf of Brickworks. Dated 26 June 2023.

écologique (2023b) Oakdale East Estate SSD-37486043 Vegetation Management Plan. V2 (amended Concept Plan and Stage 2 Works). Prepared for Goodman Property Services. Dated 27 June 2023.

écologique (2023c) Oakdale East Estate SSD-37486043 Biosecurity Management Plan. V2. Prepared for Goodman Property Services. Dated 27 June 2023.

Appendix A. Nest box guidelines

Appendix A. Nestbox guidelines

Tree hollows will be identified during pre-clearance surveys and suitable nest box replacements are to be modelled on the following guidelines.

Target species

Common fauna species that have been recorded in the locality and that are likely to shelter and nest in vegetation at the site are listed below.

Common hollow dwelling native fauna species likely to occur in the subject area

Species name	Common name
Cockatoos	
<i>Cacatua galerita</i>	Sulphur-crested Cockatoo
<i>Cacatua sanguinea</i>	Little Corella
<i>Cacatua tenuirostris</i>	Long-billed Corella
Parrots	
<i>Alisterus scapularis</i>	Australian King-Parrot
<i>Psephotus haematonotus</i>	Red-rumped Parrot
Rosellas	
<i>Platycercus elegans</i>	Crimson Rosella
<i>Platycercus eximius</i>	Eastern Rosella
Mammals	
<i>Petaurus breviceps</i>	Sugar Glider
<i>Pseudocheirus peregrinus</i>	Common Ringtail Possum
<i>Trichosurus vulpecula</i>	Common Brushtail Possum
Various microbat species	

Design considerations

Entrance size

As already indicated in Section 2.3.2, the entrance size to a nest box plays an important role in preventing non-target species occupancy.

Le-Roux *et al.* (2016) monitored 144 nest boxes with six different entrance sizes and found that six common native and exotic species accounted for 89% of nest box occupancies with the entrance size having a significant overall occupancy. Nest boxes with larger entrance sizes (115, 95, 75 and 55 mm) were occupied more (≥77% of nest boxes occupied) than nest boxes with smaller entrance sizes (35 and 20 mm; ≤45% of nest boxes occupied).

While smaller nest boxes were less occupied, this could be due to the fact that the majority of occupancies were by larger more common species that prey on smaller species or force them out of an area.

Appendix A. Nestbox guidelines

The exception to this was occupation by *Apis mellifera* (European honey bee), which was found to predominantly occupy smaller nest boxes. However, there is a design consideration that will assist in preventing occupation by bees (see Section 3.2).

Table 3 in Section 3.1.3 provides a summary of nest box entrance diameters for the target species recommended for the subject area.

Materials

The type of materials used is an important consideration to ensure that materials used are not toxic to fauna but also will determine the longevity of the nest box.

It is recommended that hardwood, preferably boxes that have been made from previously felled timber of similar species to those being cleared at the site.

Ultimately hardwood will last the longest, but will be more expensive and heavier, which may make installation at various heights more challenging.

Other materials include plantation timber, untreated pine, polyvinyl chloride (PVC) piping or marine ply.

Nest Box Tales (<https://nestboxtales.com>) advise that the choice of wood materials used to construct a nest box will affect the insulating properties (thermal mass) of a nest box, with wood a good insulator for nest box occupants:

- During cold winter months, a nest box made from thick wood panels will retain the body heat of an occupant and protect against the outside cold temperatures.
- During hot summer days, a thick-walled nest box will provide some protection against the hottest periods of the day, if installed out of direct sunlight.

A well-constructed hardwood or thick marine ply (of at least 17mm thickness) if painted will potentially provide animals with a home for 20-30 years or more. By comparison, a pine, or thin plywood nest box may only last a few years (Nest Box Tales).

Galvanised or stainless steel screws are recommended over nails or staples as they will not rust over time.

Paint

At least two coats (preferably more) of a good quality exterior grade and water-based paint should be applied to the outer surface of the nest box to increase its longevity.

Paint must only be applied to the external faces and lid of the nest box and not within the internal nest box space. The colour of paint used is also an important consideration.

Thermal properties of tree hollows play a major role in survival and reproduction of hollow-dependent fauna. Nest boxes that are painted darker in colour maintain the highest average and maximum daytime temperatures and have the greatest magnitude of variation in daytime temperatures within the box and ambient air temperatures (Griffiths *et al.* 2017).

Griffiths *et al.* (2017) investigated biophysical model simulations, which demonstrated that variation in temperatures generated by painting boxes could have significant ecophysiological consequences for animals occupying boxes. Animals in dark-green boxes were found to be at high risk of acute heat-stress and dehydration during extreme heat events.

Conversely in cold weather, modelling indicated that there are higher cumulative energy costs for mammals, particularly smaller animals, occupying light-green boxes.

The above coarse summary of findings by Griffiths *et al.* (2017) is provided to identify the importance of the nest box design, particularly where the materials used will need to be painted. The positioning of the nest box will also have a degree of temperature effect on a nest box, as will the provision of nest box bedding (see below).

Appendix A. Nestbox guidelines

Nest Box Bedding

Unlike birds making nests, not all native fauna add their own bedding to their nest sites. Instead relying on decomposing wood that naturally occur in tree hollows.

The addition of sawdust, wood shavings, untreated fine wood or bark chip with a depth of up to 5cm (depending on the target species) recommended by NESTTALES (2020).

Entrance size

Studies done by Le-Roux *et al.* (2016) indicate that establishing nest boxes with different entrance sizes could maximise occupancy by a variety of common hollow-nesting species. With tree size that nest boxes are affixed to less important.

Le-Roux *et al.* (2016) secured nest boxes to individual trees of three sizes (small 20–50 cm DBH, medium 51–80 cm and large >80 cm) situated in four different landscape contexts with varying degrees of modification (reserves, pasture, urban parklands and urban built-up areas). In summary the following was found:

- Six common native and exotic species were found to account for 89% of nest box occupancies with entrance size having a significant effect on overall occupancy.
- Tree size and landscape context had no significant effect on overall occupancy. However, multinomial analysis revealed that entrance size and landscape context affected occupancy by common fauna (i.e. species that occupied ≥5% of nest boxes).
- Nest boxes with small (20 and 35 mm), intermediate (55 and 75 mm) and large (95 and 115 mm) entrance sizes were predominately occupied by the *Apis mellifera* (European honey bee), common exotic e.g. *Acridotheres tristis* (common myna) and native birds e.g. *Platycercus eximius* (eastern rosella), and *Trichosurus vulpecula* (common brushtail possum), respectively.
- Nest boxes in reserves and pasture had near equal occupancy by common fauna while nest boxes in urban parklands and urban built-up areas were predominately occupied by the common brushtail possum and the European honeybee.
- *Petaurus breviceps* (sugar glider) and *Aegotheles cristatus* (Australian owlet-nightjar) rarely occupied nest boxes and only in reserves.

The issue of exploitation of nest boxes by non-target fauna is raised by NSW Local Land Services (LLS) who suggest that not all wildlife needs a helping hand. Installation of nest boxes should avoid helping larger and more abundant species like brushtail possums and cockatoos, which push out smaller/rarer wildlife (LLS 2015).

A summary of recommended nest box entrance and other dimensions for a wider range of species than those recommended as target species is provided below.

Nest box entrance sizes and other dimensions

Target group-species / reference	Entrance diameter (mm)	Approximate dimensions (mm)	Approximate depth (mm)	Height above ground (m)
Microbats				
LLS	10-30	200x 200	400	min. 3
RTA	20 (slot), 30 (hole)	n/a	400	3-5
Gliders				
LLS – small gliders	40-50	200 x 200	300	min. 3
RTA – squirrel	45	150 x 250	300	3-6
RTA – yellow-bellied	40-50	200 x 200	300	6-8

Appendix A. Nestbox guidelines

Target group-species / reference	Entrance diameter (mm)	Approximate dimensions (mm)	Approximate depth (mm)	Height above ground (m)
Lorrikeets/rosellas				
LLS	50-70	200x 200	400	400
Other				
Smaller birds, pardolotes	25-30	400 x 600	300-400	5
<i>Psephotus haematonotus</i> , red rumped parrot	25-120	100 x 240 (internal)	400-600	5

Feral pest exclusion methods

European bee exclusion

Urban and peri urban locations are at a greater risk of nest boxes being invaded by feral bees than within areas of native habitat. Preventing occupation by feral bees is best achieved by attaching a piece of carpet to the inside of the nest box lid – so that the lid still closes completely. The carpet needs to have unlooped pile, and not be marine grade. Bees can't attach their wax to the carpet, and so won't bother to invade the nest box.

Anti-myna baffle

Indian mynas are a pest bird species that lives in urban and peri urban environments. An anti-myna baffle will prevent them from using the nest box. Alternatively, you could monitor the nest box, and install the anti-myna baffle if the nest box is invaded by mynas.

The distance that the baffle is placed in front of the nest box should be the same as the diameter of the entrance hole. The anti-myna baffle designed by BirdLife Australia is provided in Appendix A.

Installation

While there is a range of installation methods described in the various guidelines available, the most commonly recommended method of installation is the Habisure system. This system does no harm to the tree, is durable and allows or growth of the tree. The Habisure system is registered by Hollow Log Homes Pty Ltd. However, its construction and installation are publicly available for use assumedly so that the technique can be replicated but not manufactured and sold commercially.

Location

The table below provides a recommended density for specific species, which suggests that small entrance diameter nest boxes (10-30mm) be provided every 50 metres for microbats, but could be reduced in density to provide opportunities for smaller birds.

For smaller gliders, the antechinus and other smaller arboreal mammals (i.e. eastern pygmy possum with entrance diameters 40-50mm) could be placed between 30 to 60 metres.

Indicative locations

Nest box type	Recommended density
Microbat sp.	One every 50 metres
Eastern Pygmy Possum	One every 20 – 40 metres
Smaller gliders	One every 60 – 100 metres

Appendix A. Nestbox guidelines

Ultimately the guidelines are just that. Our native wildlife do not read guidelines, they take opportunity where they find suitable habitat.

The location and density of nest boxes installed will be very much dependent on the resources available and should be treated as experimental (i.e., monitoring will determine whether the nest box installations are effective or not over time).

References

Goldingay R.L, Thomas K.J, and Shanty D (2013) Outcomes of decades long installation of nest boxes for arboreal mammals in southern Australia. *Ecological Management and Restoration*. Vol. 19 No. 3. July 2018.

Griffiths S.R, Rowland J.A, Briscoe N.J, Lentini P.E, Handasyde K.A, Lumsden L.F, Robert K.A (2017) Surface reflectance drives nest box temperature profiles and thermal suitability for target wildlife. Published: May 4, 2017. <https://doi.org/10.1371/journal.pone.0176951>

Le Roux D.S, Ikin K, Lindenmayer D.B, Bistricher G, Manning A.D, and Gibbons P (2016) Effects of entrance size, tree size and landscape context on nest box occupancy: Considerations for management and biodiversity offsets. *Forest Ecology and Management* 366, pp:135–142

LLS (2015) Build your own Wildlife Nest Box: A guide for Western Sydney Published by Greater Sydney Local Land Services First published August 2015

OEH (2013) Remnant Vegetation of the western Cumberland subregion, 2013 Update. VIS_ID 4207

RTA 2011. Biodiversity Guidelines – Protecting and managing biodiversity on RTA projects. Guide 8: Nest boxes. NSW Roads and Traffic Authority.

Appendix B. Author CV

Qualifications

- BSc Environmental Science
- EIANZ – Certified Environmental Practitioner (CEnvP) no. 691
- NSW Biodiversity Assessor Accreditation No.BAAS17054

Key Skills and Competencies

- Due Diligence Assessments
- Biodiversity impact assessments
- Flora and fauna surveys
- Monitoring design and reporting
- Vegetation management plans and implementation

Career summary

- écologique, Principal 2015-current
- MWH, Principal Environmental Consultant 2013-2015
- AECOM, Senior Professional Scientist 2006-2012
- Pittendrigh Shinkfield Bruce (PSB), Senior Environmental Scientist 2003-2005
- Sainty & Associates Pty Ltd, Associate Consultant 1994-2003

Professional Overview

Kat has over 25 years’ experience in the assessment, planning and management of the natural environment. Her formative years were cultured under the guidance of Australian wetland authority and technical publisher, Geoff Sainty (Sainty & Associates Pty Ltd). During this time Kat was exposed to, and worked alongside, an enviable range of Australian specialists in the fields of biodiversity, land management and water resources.

Her understanding of development approvals was thereafter refined through her employment over ten years with global engineering and environmental companies (AECOM and MWH Global). Since forming écologique, Kat continues to work to the very high standards she has set herself and is well respected in her field.

Kat is an accredited biodiversity assessor under section 6.10 of the *Biodiversity Conservation Act 2016* (NSW) (BC Act) and previously accredited as a Biobanking assessor under the repealed *Threatened Species Conservation Act 1995* (TSC Act).

Her day-to-day work experience with multi-disciplinary project design teams and on-ground civil contractors brings an unique insight and practical solution based approach that benefits the Client’s project, design and construction teams.

Relevantly, Kat has prepared and implemented a diverse range of post-consent specialist management plans as subplans to project CEMPs.

Relevant Experience

Oakdale Industrial Estate, Goodman Property Services - ongoing

The “Oakdale” Estate covers an area of some 421 ha within the strategically significant Western Sydney Employment Area. Kat was engaged as a consultant by Goodman prior to forming écologique between 2010 and 2014. As a testament to Kat’s value as a consultant to Goodman, they engaged écologique from 2015 to current day.

Over this time Kat has continued to strengthen a working relationship with Goodman and has gained valuable insight into the constraints and costs of biodiversity offsetting, dam decommissions, on-site restoration projects and associated commercial risks. Relevant projects include:

- Oakdale Central - Vegetation Management Plan Stages I and II: Facilitation of over 7 ha of offsetting obligations under the former Part 3a Major Projects requirements, include VMP preparation, tendering and superintendence.
- Oakdale South - Facilitation of over 4 ha of riparian corridor restoration, including VMP preparation, tendering, tender assessment, and superintendence.
- Oakdale West - Preparation of the Ropes Creek VMP, tendering and superintendence of 4.4ha riparian corridor offsetting; preparation and implementation of CEMP flora and fauna management plans (FFMP) and dam decommissioning.
- Oakdale East - Preparation of the Reedy Creek VMP and FFMP (in progress)

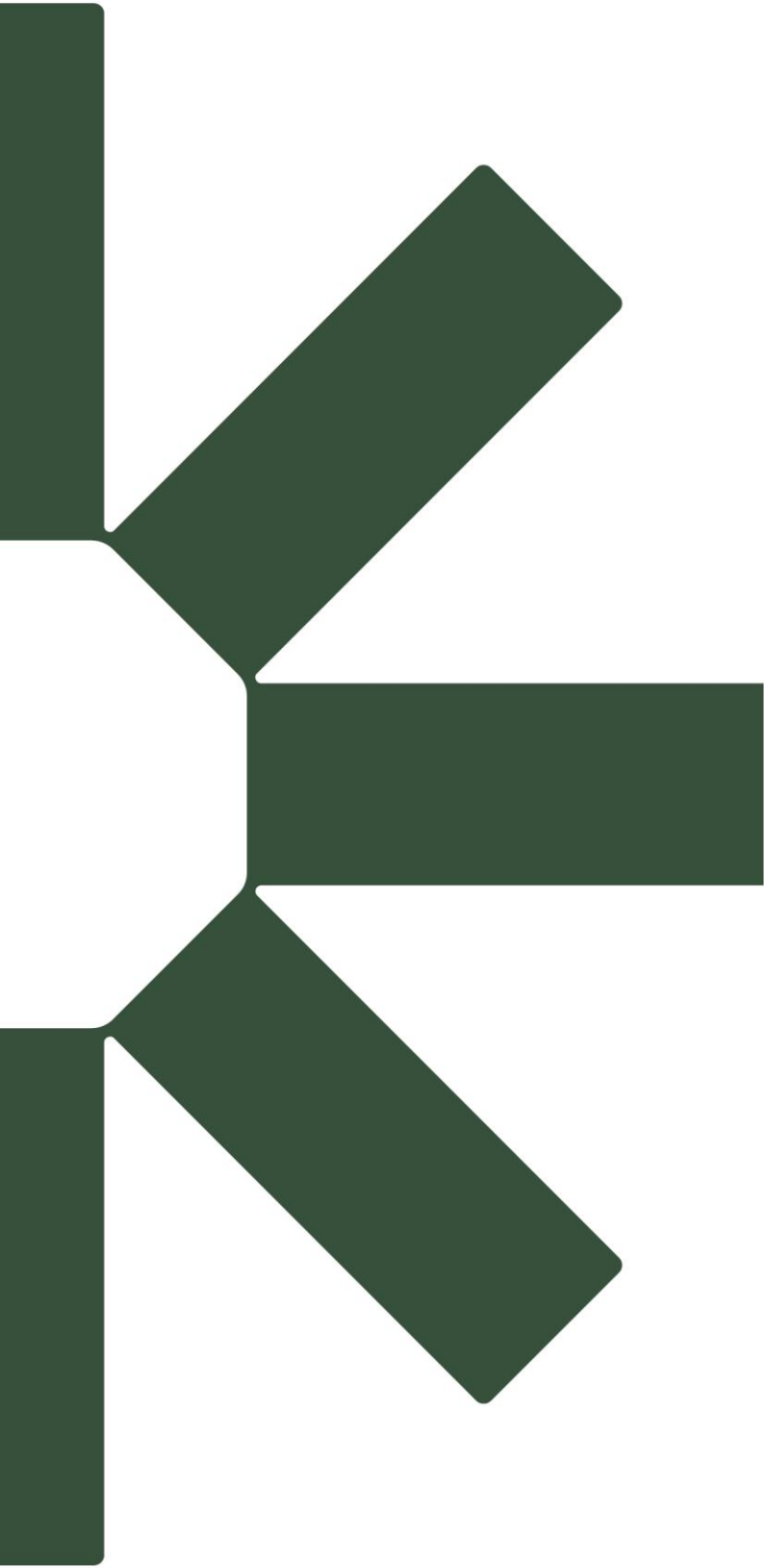
Austral Brick / Brickworks Ltd (2020-2023)

- Various SSDA and DA biodiversity assessments and approvals, including VMP, FFMP, Dam Decommissioning and Biosecurity Management Plans for sites in Horsley Park and Eastern Creek and a Nest Box strategy for the Eastern Creek riparian zones.

Mamre Road Precinct (2020-current)

- Kat has prepared VMPs, FFMPs, DDMPs and Biosecurity Management Plans for a range of sites in the Precinct on behalf of Frasers Property, Gibb Group, Dexu.





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