Construction Environmental Management Plan

Prepared for:
Richard Crookes Constructions

Document Number:
AU125102-001-R-RevD-CEMP RCC Bradfield

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Geosyntec consultants

Quality Management

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List of Abbreviations

ACM	Asbestos Containing Material
AHIMS	Aboriginal Heritage Information Management System
ACHMP	Aboriginal Cultural Heritage Management Plan
AQMP	Air Quality Management Plan
ARA	Appropriate Regulatory Authority
ASS	Acid Sulfate Soils
BC Act	Biodiversity Conservation Act (2016)
CEMP	Construction Environmental Management Plan
CHL	Commonwealth Heritage List
CNVMP	Construction Noise and Vibration Management Plan
DITRDC	Department of Infrastructure, Transport, Regional Development and Communications
DoEE	Department of the Environment and Energy
DPE	NSW Department of Planning and Environment
ECM	Environmental Control Map
EPA	Environmental Protection Authority
EPBC	Environment Protection and Biodiversity Conservation (EPBC) Act (1999)
EPO	Environmental Protection Order
ESMP	Erosion and Sediment Management Plan
HSE	Health Safety and Environmental
IN	Infringement Notice
KPI	Key Performance Indicator
LGA	Local Government Area
NCRs	Non-conformance Reports
NEPM	National Environmental Protection Measure (1999 as amended in 2013)
NVMP	Noise and Vibration Management Plan
MDP	Major Development Plan
OEH	Office of Environment and Heritage
OLS	Obstacle Limitation Surface
OSD	Onsite Detention
PASS	Potential Acid Sulfate Soil
PASS	Potential Acid Sulfate Soil
PFAS	Per-and Poly-Fluoroalkyl Substances
PFHxS	Perfluorohexane Sulfonic Acid
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctane Sulfonate

1. Introduction

Geosyntec Consultants Pty Ltd (Geosyntec) was commissioned by Richard Crookes Constructions (RCC, the client) to prepare a Construction Environmental Management Plan (CEMP) for the ALDI-SYD Project, at 475 Badgerys Creek, Bradfield, NSW (the site). The property is located within the Western Sydney Aerotropolis precinct and has recently been rezoned under the State Environmental Planning Policy (Western Parkland City) 2021. The current zoning includes ENT – Enterprise – the majority of the site; ENZ - Environment and Recreation – small areas of the site surrounding creek lines, mainly in the east; and SP2 – Infrastructure.

The site is located within Part Lot 101 DP1316278 and is proposed for future subdivision. The site location and layout are shown in Figures 1 and 2 of Appendix A, respectively.

This CEMP is required in accordance with Part C of the Conditions of Consent dated 26 February 2026 of the State Significant Development Application (SSDA), Referenced SSD-76913969, issued under Section 4.38 of the Environmental Planning and Assessment Act 1979, for the development (herein referred to as the Development Consent).

The proposed development comprises the construction of an automated distribution centre (ADC) that consists of a warehouse facility with high bay warehousing, medium bay warehousing, ancillary office space, heavy duty truck loading pavements and light duty car parking for ALDI Foods Pty Ltd (ALDI) in the care of RP Infrastructure (RPI) and Ingham Property Group Pty Ltd (IPG).

The purpose of this CEMP is to detail how RCC and their subcontractors will manage environmental aspects associated with the proposed works. The CEMP will:

- Identify the environmental obligations and hazards/risks associated with the proposed works.
- Help minimise unauthorised environmental harm.
- Assist RCC and its subcontractors comply with environmental management requirements.
- Assist RCC and its subcontractors obtain and comply with relevant licences and approvals.
- Assist RCC and its subcontractors to comply with relevant environmental legislation.
- Minimise negative impacts on the community related to the works and development undertaken by RCC and its subcontractors.

RCC and subcontractors should ensure that the requirements of this plan are communicated and implemented by the relevant personnel involved with the development. This plan may be updated as required throughout the project.

Development Consent conditions require the CEMP to be reviewed by the Planning Secretary.

Table 1.1 presents selected main Development Consent conditions identified as relevant to the CEMP and indicates where the requirements are addressed.

Table 1.1: Development Consent Conditions and the CEMP References

SSD - 76913969 Condition	Location in the CEMP
C1. Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:	Section 1.11 of the CEMP.

SSD - 76913969 Condition			Location in the CEMP
a)	A condition compliance table for that plan		This Table 1.1 of the CEMP. In the subplans in the various Appendices
b)	Detailed baseline data, where required		
c)	Details of:		Section 1.9 of the CEMP.
	i)	the relevant statutory requirements (including any relevant approval, licence or lease conditions);	Section 6 and 7 of the Construction Noise and Vibration Management Plan (CNVMP) (Appendix D)
	ii)	Any relevant limits or performance measures and criteria; and	Section 1.8 of the CEMP
	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.	
d)	A description of the measures to be implemented to comply with the relevant statutory requirements, limits or performance measures and criteria		Section 1.9 of the CEMP
e)	A program to monitor and report on the:		Section 4 of the CEMP and Appendix G and H of the CEMP
	i)	Impacts and environmental performance of the development; and	
	ii)	Effectiveness of the management measures set out pursuant to paragraph (d) above	
f)	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 8 of the CEMP
g)	A program to investigate and implement ways to improve the environmental performance of the development over time		Section 4 of the CEMP Appendix G and H of the CEMP
h)	A protocol for managing and reporting any		Section 5.1 to 5.3 and Section 6.1 of the CEMP Appendix J of the CEMP
	i)	Incident and any non-compliance (specifically including any exceedance of the impact assessment criteria and performance criteria)	Section 4.2, 5 and 6.1 of the CEMP and Section 9 of Appendix O of the CEMP
	ii)	Complaint	
	iii)	Failure to comply with statutory requirements; and	Section 5.4 of the CEMP
i)	A protocol for periodic review of the plan		Section 4.3 of the CEMP
C2. The Applicant must prepare a Construction Environmental Management Plan (CEMP) in			The entire CEMP document

SSD - 76913969 Condition	Location in the CEMP
accordance with the requirements of Condition C1 and to the satisfaction of the Planning Secretary.	
C3. As part of the CEMP required under Condition C2 of this consent, the Applicant must include the following:	
a) Construction Traffic Management Plan (condition B1);	Pending
b) Erosion and Sediment Control Plan (condition B10);	Appendix I of the CEMP
c) Construction Noise Management Plan (condition B20);	Appendix D of the CEMP
d) Air Quality Management Plan (condition B32);	Appendix N of the CEMP
e) Community Consultation and Complaints Handling	Section 9 of Appendix O of the CEMP Section 5 of the CEMP
C4. The applicant must: a) not commence construction of the development until the CEMP is approved by the Planning Secretary 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	Entire CEMP

1.1 Project Description

This CEMP applies to the RCC works for the development at ALDI-SYD Project, Bradfield, which generally comprises:

- Detailed earthworks, retaining walls and grading to meet design levels.
- Installation of in-ground services.
- Excavation and construction of building foundations.
- Construction of building structures.
- Internal warehouse fitout.
- Construction of external pavements.
- Landscaping works.
- Fencing works.

1.2 Principal Contractor

RCC is the Principal Contractor and is responsible for site management during the construction works including the implementation and review of the CEMP. RCC is required to assess the site for environmental risks, identify mitigation/control measures and coordinate the control measures implemented to mitigate identified risks, confirm control measures are fit for purpose, monitor control measures effectiveness and overall site conditions via site inspections on a daily and weekly basis, and make sure documentation and reporting procedures are followed. The inspections must be recorded into the site log.

RCC is also responsible for implementing the Site Inductions for new workers. Induction is conducted utilising the Hammertech System for this project as follows:

1.2.1 PROJECT INDUCTIONS

The project team will ensure that RCC staff and subcontractors working on the project, are inducted into the RCC Safety induction on HammerTech and informed of project-specific requirements upon commencement to work onsite.

Details of persons inducted and visitors will be recorded on HammerTech.

The apprentices will be identified at project induction by their supervisor, through HammerTech and will be managed under the RCC Safety Standard for Young & Inexperienced Workers 003.

If a worker has not completed General Construction Induction training more than 2 years previously and/or has carried out construction work in the preceding 2 years, they will not be permitted to commence on the work site. (If you have had an absence of 2 years in construction, you must re-sit your white card).

Visitors including consultants, clients, client representatives and others will sign into HammerTech upon entry and be given project-specific information and be escorted onsite.

1.2.2 PROJECT SPECIFIC INDUCTION STICKER

Persons inducted will be issued with an RCC site specific induction sticker to wear on their safety helmet.

The stickers on this project will be a bright colour, to distinguish those inducted on this project from other projects.

1.2.3 DELIVERY DRIVERS

Where delivery drivers are required to leave the security of the cab of their vehicle (Agi drivers, delivery drivers that must operate a Hiab), they will give a visitor induction and sign in via HammerTech. Construction site Personal Protective Equipment (PPE) is required for delivery drivers who exit.

Alternatively, the site induction form, included in Appendix B, can be used if Hammertech was not operational for a period or if it was inaccessible.

1.3 Site Setting

The site is located at the northern portion of Bradfield, within the Western Sydney Aerotropolis precinct, approximately 1.6 km southeast of the new airport. The site is currently vacant, grassed, with sporadic trees. An enclosed area is located in the northeastern section of the site. Former structure

footprints and internal roadways are present on site, with roadways present at the northern and southern site boundaries (source: Nearmap Imagery 14 December 2025).

The local topography is relatively flat with a gentle fall towards the northwest.

1.4 Sensitive Areas

The site is located within a new airport and associated industrial precinct development. The Eco Logical Australia Biodiversity Assessment Report (Ref: 24SYD9260, dated 2023), presented in Appendix C, did not identify sensitive vegetation, habitat and fauna existing on the site and within 500m surrounds of the site. The report stated that the site is predominately pasture improved exotic grassland, with some isolated paddock trees that are found in Cumberland Plain Woodland. No hollow bearing trees and threatened species were recorded on the site. Tributaries of Badgerys Creek are located approximately 45 m west of the site. Badgerys Creek is located approximately 430 m north of the site, flows generally north to northeast before reaching its confluence with South Creek approximately 6 km to the northeast.

1.5 Indicative Project Schedule

This CEMP details the environmental management measures, controls and appropriate reporting procedures for construction of the warehouse and distribution centre, and associated facilities.

The construction duration is anticipated to be between 22 – 24 months from inception of the project.

1.6 Site Facilities and Compound

The following is to be considered when establishing the site compound, which is to be indicated on site Environmental Control Plans (see Section 3.1):

- Minimise cleared areas and disturbance to natural ground and vegetation.
- Minimise nuisance to neighbours or fauna (e.g. minimise the generation of dust and noise. If noisy equipment is required, locate work area as far from sensitive receptors as practicable).
- Location of site office, amenities and dry storage to be above flood level if relevant and away from surface drainage lines.
- Temporary buildings to be securely anchored to the hardstand or ground surface.
- Vehicles to access the site compound without impeding through traffic.
- Establishment of separate storage for chemicals and hazardous goods, inside bunded area.
- No bulk fuels are to be stored on site.
- Minimise potential for work near dry vegetation which could cause unplanned fire (e.g. welding).
- The fenced compound must be secure, including locks installed on compound gates by RCC.
- Notice boards to be easily visible on outside of gates with relevant site and emergency contact numbers.
- Set out sheds and other facilities in an ordered fashion.
- Establishment of a waste storage area, with covered rubbish bins readily available.
- Plan service and park-up area to be clearly delineated, near compound.

- The placement of safety-warning signs as needed.

1.7 Operating Hours & Toolbox Talk

Construction works will be carried out during the standard hours

- Monday to Friday 7:00am to 6:00pm.
- Saturdays 8:00am to 1:00pm.
- No work will be carried out on Sundays or public holidays.

Activities may be undertaken outside the hours above if required, including for the following scenarios:

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

These and other scenarios should be assessed in accordance with the Construction Noise and Vibration Management Plan (Appendix D). For other proposed out of hours works, relevant approvals must be obtained (potentially requiring community notifications and similar).

Toolbox talks will be conducted once per week and pre-start meetings are to be conducted prior to work starting each day. Additional toolbox talks will also be conducted if site conditions, or processes change on site.

Daily start-up inspections/shutdown procedures of plant and machinery will be conducted by operators. The site foreman will undertake (at a minimum) twice weekly inspections of plant on site.

1.8 Environmental Objectives, Targets and Indicators

The environmental objectives and targets for the project are outlined in Table 1.2.

Table 1.2: Environmental Objectives, Targets and Indicators

Objective	Target/Indicator
Set in place an Environmental Management System for the Project which will address relevant environmental planning requirements	Key environmental targets for the Project are: • Compliance with applicable legislation. • Compliance with permits and licences. • Continual improvement through collaboration with RPI and ALDI, NSW Department of Planning, Housing and Infrastructure (DPHI) and other key stakeholders.
Predictive measures for assessing environmental compliance	Environmental and planning lead key performance indicators: • Provision of comprehensive environmental training based on environmental risks and the qualifications and experience of RCC workforce. • 100% of scheduled inspections of environmental controls occur. • Regular toolbox talks with an environmental focus to be conducted throughout construction of the project.

Objective	Target/Indicator
Output measures for assessing environmental compliance & performance	Environmental and planning key performance indicators for the project: • Establish an incident classification and reporting plan and adhere to the timeframes and actions within the plan. • No major incidents (e.g. pollution incidents, (environmental) emergencies caused (directly or indirectly) by construction activities). • No DPHI stop work orders. • No major non-compliance identified in audits. • Environmental observations and actions raised in inspections and audits are closed out within agreed timeframes. • Zero major environmental incidents and no breaches of approvals, permits or licences. • Other incidents managed within the incident classification and reporting plan. • No DPHI, EPA or Council issued infringement notices. • Major environmental spills (if occurred) to be reported to RCC Project Manager immediately. • Environmental inspection completed each week and documented using Health Safety and Environmental (HSE) Weekly Inspection Checklist (frequency of documented inspections can increase if required).
Effective site environmental controls	Achieve alignment with RCC and their subcontractors' expectations with regards to best practice control measures, including fulfilling environmental obligations.
Maximise the amount of waste being recycled, & reduce waste cost	Recycled waste target for the project is 80%.
Reduce the level of environmental impact RCC and their subcontractors' operations have on the environment	Environmental issues identified and controlled prior to causing negative impacts on the Project or on the environment.
Effective implementation of the environmental system	• 80% or better internal audit results • Full compliance with Planning Approval requirements • No major non-compliances identified in audits undertaken by DPHI • Environmental observations and actions raised in inspections and audits are closed out within agreed timeframes
Community issues managed appropriately	• Zero valid complaints • Complaints reported to RPI and ALDI Project Manager

Targets will be met through the implementation and compliance with this CEMP and sub-plans including applicable legislation, site inductions, daily and weekly site inspections, an incident classification and reporting system, specific environmental controls and auditing of the CEMP.

1.9 Approval, Legal, Compliance and Licensing Requirements

In general, activities carried out onsite must comply with the provisions of legislation relating to the construction and operation of the project. Key planning legislation, licencing and approval requirements are listed in Table 1.3.

Table 1.3: List of Legal and Legislative Requirements

Legislation / Policy (Administering Authority)	Summary of Legislation Requirements	Approvals/Permits or Licences Required
Environment Protection and Biodiversity Conservation (EPBC) Act (1999) (Commonwealth Department of Environment and Energy (DoEE))	The EPBC Act 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). In addition, the EPBC Act confers jurisdiction over actions that have significant impact on the environment where the actions affect, or are taken on, Commonwealth land, or are carried out by a Commonwealth agency (even if that significant impact is not on one of the nine matters of 'national environmental significance').	No permits are required under the EPBC Act (1999).
Airport (Environment Protection) Regulations (AEPR) (1997)	These regulations (AEPR) concern the protection of the environment on and around airports. The regulations aim at prevention of water, soil, and noise pollution generated by activities at airports and promote improving environmental management practices for activities carried out at airport sites.	Compliance with the regulations.
Biodiversity Conservation Act (2016) (BC Act)	The purpose of the BC Act is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development (described in Section 6 (2) of the *Protection of the Environment Administration Act 1991)*.	Geosyntec is unaware of any Threatened Species Licences currently applicable to the project area.
Environmentally Hazardous Chemicals Act 1985 (OEH)	Regulates the disposal of wastes issued with a "chemical control order" and designated chemical and chemical wastes (including asbestos). Disposal requirements for asbestos are identified under the Protection of the Environment Operations Act 1997 (POEO) Other chemical wastes designated under this act are: Polychlorinated Biphenyls (PCB) Pesticide wastes including used pesticide containers Copper/chrome/arsenic (CCA) wastes.	Clearance, transport and disposal of designated chemical wastes must be completed under appropriate licences. Chemical wastes designated under this Act to be removed from this site must be transported and disposed of by appropriately licensed waste transport contractors to a facility lawfully able to accept that type of waste.
National Parks and Wildlife Act 1974	Provides protection for most fauna species and protected flora. It is an offence: to harm animal which is part of a threatened species, population or ecological community; and to pick plant which is part of a threatened species, population or ecological community.	No approvals required.

Legislation / Policy (Administering Authority)	Summary of Legislation Requirements	Approvals/Permits or Licences Required
	It is also an offence if a person knows that an area of land is the habitat of a threatened species, population or ecological community, to do something or fail to do something that causes damage to that habitat.	
Aboriginal and Torres Strait Islander Heritage Protection Act (1984)	Provides protection for indigenous heritage in NSW.	The Eco Logical Australia Historical Heritage Assessment 2025 (Ref: 23SYD 5455, dated 7 February 2025, attached in Appendix E, did not identify local or state heritage significance for the project. Section 7 of the report indicates the management procedures in the event unanticipated archaeological discovery, that has not been previously assessed or is not covered by an existing approval under a relevant Act. The Eco Logical Australia Aboriginal Cultural Heritage Assessment 2025 (Ref: 21SYD-19853, dated 7 February 2025, attached in Appendix E, identified Aboriginal sites of isolated Aboriginal Objects of low density artefacts scatters that were recorded in disturbed and eroded landforms with low cultural significance at the southern site boundary and immediate adjacent northeast of the site. The report stated that the impact to these sites will not affect the overall significance of the Aboriginal cultural values of the study area and surrounding region. Potential archaeological deposit (PAD) was also found to the immediate northeast of the site. An Aboriginal Heritage Impact Permit (AHIP) will be required prior to future development of the site to cover impacts to the Aboriginal Heritage Information Management Systems (AHIMS) sites located within the development footprint.
Biosecurity Act (2015)	This Act relates to the management of diseases and pests that may cause harm to human, animal or plant health or the environment.	No approvals required.
Protection of the Environment Operations Act 1997 (OEH)	Provides for the control of polluting activities in NSW to prevent pollution to the environment.	Waste classification assessment and waste classification certificates (produced by a qualified environmental assessor) are

Legislation / Policy (Administering Authority)	Summary of Legislation Requirements	Approvals/Permits or Licences Required
Protection of the Environment Operations (Noise Control) Regulation 2017 Protection of the Environment Operations (Clean Air) Regulation 2021 Protection of the Environment Operations (Waste) Regulation 2014	Provides a duty to notify OEH of offsite environmental harm caused from site activities. Waste Classification is required prior to the removal of waste (including fill/soil) from a site to establish the appropriate means of disposal.	required prior to disposal and are required to accompany waste soils materials being transported to waste facilities that are licenced by the NSW EPA to accept the respective class of waste. Transport contractors must be appropriately licensed to transport the class of waste they are carrying. Construction and the operational noise limits and air quality are to be compliant in accordance with the applicable management plan and limits or requirements specified in the Development Consent.
Liverpool Local Environmental Plan (2008)	Provides detailed implementation of development requirements, including where particular types of development are permitted with or without consent. Identifies items of local heritage and archaeological value, aquaculture requirements and trees which require preservation.	No approvals or permits required.
Waste Avoidance and Resource Recovery Act 2001 (OEH)	Promotes the waste management hierarchy (avoidance, resource recovery, and disposal).	No requirement for permit or approval or licence identified. Where possible, excavated material is to be reused onsite.
Contaminated Land Management (CLM) Act 1997	Establishes a process for investigating and, where appropriate, remediating land where contamination presents a risk of harm to human health and/or the environment.	No further approvals required, however, management of contaminated soils is to occur in accordance with the waste management plan, soil and stockpile management and Contamination and Unexpected finds procedures outlined in this CEMP.
Sydney Water Act 1994	Responsible for water supply, sewerage, stormwater management, and wastewater disposal in Sydney and the surrounding regions.	Prior to the commencement of operation of the development, a Compliance Certificate for water, stormwater and sewerage infrastructure servicing of the site must be obtained. The stormwater management system design, including the water and stormwater management plans must be prepared in consultation with Sydney Water and other stakeholders/relevant parties.

1.10 Approach to Approval Requirements

The staging of approvals for the project, if required, will be in line with the project early works construction schedule (to de determined - TBD). If needed, the CEMP will be amended, reviewed and re-submitted in line with the staged construction schedule if applicable.

1.11 Relevant Guidelines, Measures and Australian Standards

Relevant guidelines and measures applicable to the proposed works include:

- AS/NZS ISO 14001: EMS – Specifications with Guidance for Use.
- AS 1940-2017: The Storage and Handling of Flammable and Combustible Liquids.
- AS 2021:2015 Acoustics - Aircraft noise intrusion - Building siting and construction.
- IECA Best Practice Erosion and Sediment Control Guidelines (2008).
- Landcom's Managing Urban Stormwater, Soils and Construction, Volume 1, 4th Edition (2004).
- National Environment Protection (Assessment of Site Contamination) Measure (NEPM (1999 as amended in 2013).
- NSW EPA Waste Classification Guidelines (2014) and relevant addendums.
- Per- and poly-fluoralkyl substances (PFAS) National Environmental Management Plan 3.0 (PFAS NEMP) (2025).
- Technical Guidance for Achieving Wianamatta-South Creek Stormwater Management Targets (Department of Planning and Environment (DPE), September 2022).

Environmental licenses, permits, and approval pertaining to the works should be listed in the Project's Licenses, Permits, and Approvals Register which is to be retained onsite and always available for review.

Requirements and conditions of these licenses, permits and approvals are incorporated into the relevant Environmental Management Plans within this CEMP.

1.12 Environmental Policy

The appropriate management of environmental issues is integral to the success of the project. RCC must commit to the protection of the environment and ecologically sustainable practices in the aspects of their operations and their environmental policy, which is included in Appendix F of this CEMP.

1.13 Consultation

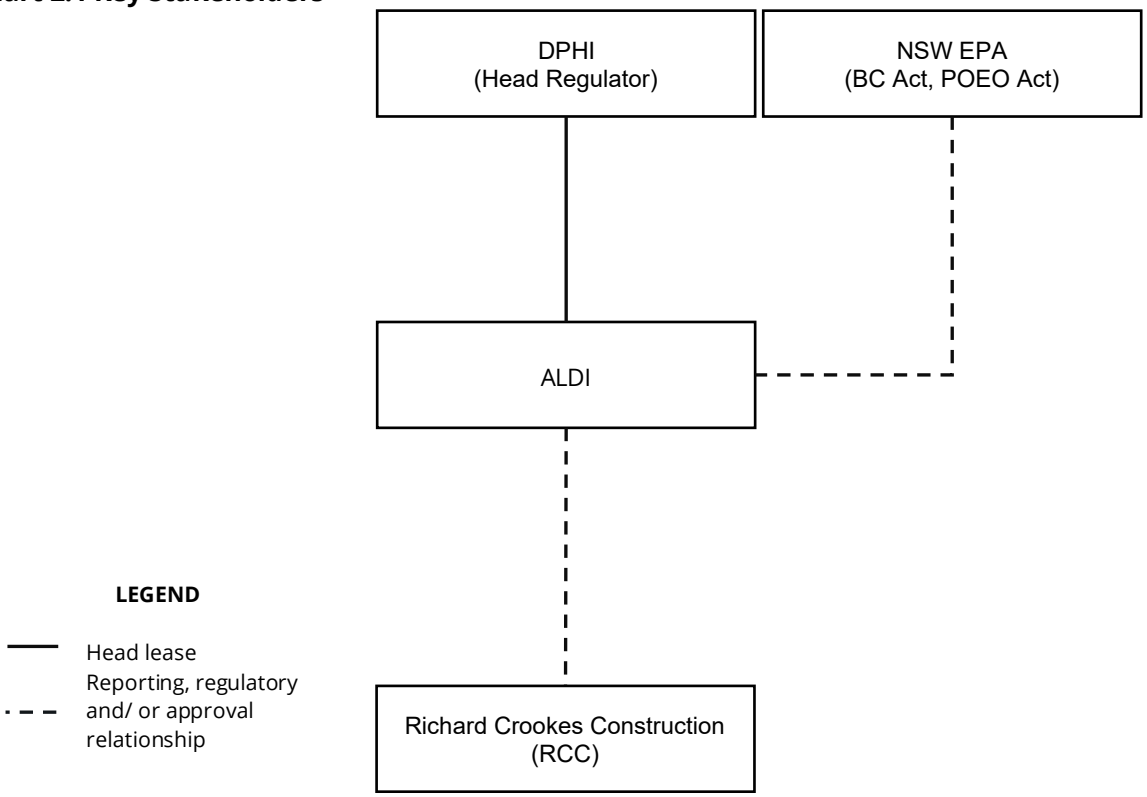
Consultation with RCC will be sought throughout the development of the CEMP and when amendments are required. Amended versions of the CEMP must be provided to RPI and ALDI for review and endorsement prior to implementation.

2. Construction Management

2.1 Collaboration with Key Stakeholders

RCC's relationship with ALDI, and key stakeholders are shown in Chart 2.1.

Chart 2.1 Key Stakeholders



2.2 Environmental Management Structure and Responsibilities

The organisation chart for the delivery of the works is to be confirmed by RCC. A tentative breakdown of project roles and responsibilities is presented in Table 2.1.

Table 2.1: Project Roles, Responsible Persons and Responsibilities under the CEMP

Role	Responsible Person	Responsibility under the CEMP
ALDI - Project Manager	Tina Zheng	• Client Representative - A single point of contact acting as Superintendent representative and assisting the Contractor with liaison with authorities as required for securing Development and Building approvals and Occupation Certificate. • Oversees the completion of the works. • Responsible for ensuring the Client complies with statutory and approval requirements.

Role	Responsible Person	Responsibility under the CEMP
		• Maintain an active monitoring role to ensure that requirements of the CEMP are satisfactorily implemented. • Authorised to require reasonable steps be taken to achieve environmental compliance.
Richard Crookes Constructions – Principal Contractor/Construction Manager	Claude Concha	• Facilitate a systematic approach to manage Health Safety and Environment (HSE) including the identification, assessment, control and monitoring of related risks that may arise through both normal and adverse operating conditions. • Check that personnel are adequately skilled and trained for the tasks they are required to undertake. • Encourage and promote safety within the Company by participating and openly consulting with employees in respect to their health and safety. • Support the HSE manager in ensuring Project / Site Managers develop and implement systems, which will ensure subcontractors and or suppliers engaged by the Company comply with the health and safety management systems and the relevant Work Place Health and Safety legislation. • Respond to non-conformance by a member of the Company who fails to discharge their duties as set by the responsibility statement and actively participate in dispute resolution where required.
Richard Crookes Constructions - Project Manager	Mitchell Kay/Andre Kisso	• Monitor construction activities against the conditions of approval to evaluate compliance. • Establish or oversee the preparation of the Project Environmental Management Plan prior to commencing work on a project. This includes preparation of an Environmental Risk Assessment, reviewing and incorporating legal requirements, and other relevant plans such as Environmental Impact Assessments prepared for the development. • Identifying, planning and ensuring environmental training required for personnel is undertaken. This task may be done in liaison with the Corporate HSE Manager. • Support the Site Manager in the management of employees, subcontractors and suppliers' performance in complying with the requirements of this CEMP. • Selecting appropriate subcontractors, giving due regard to their ability to comply with legislative and Contractor's environmental requirements. • Ensure environmental emergencies are incorporated in the site Emergency Response Procedures. • Ensuring incidents are investigated and appropriate action taken as required by the Contractor's site

Role	Responsible Person	Responsibility under the CEMP
		environmental plan requirements in consultation with the Corporate HSE Manager. • Ensuring compliance with environmental legislation and Contractor's environmental procedures. • The Project Manager is required to carry out at least one formal site inspection per month on every site under their control. • Ensuring compliance with environmental legislation, regulations and licensing conditions and authorities' requirements relevant to the construction work. • Reporting to RCC's Directors on the environmental performance of the Project.
Richard Crookes Constructions - Site Manager	Michael French	• Unless otherwise nominated, undertaking the role of Site HSE Officer for environmental issues and control of the site. This role is supported by the Project Manager and the Corporate HSE Manager. • Ensuring site security and site-specific signage is fixed to key access, internal and perimeter areas including 24 hour project contact details, attendance details for visitors, Personal Protective Equipment (PPE) requirements and construction zone signage. • Monitor environmental controls for effectiveness and suitability. • Implementing through consultation with the Project Manager, the Construction Environmental Management Plan in accordance with Legislation and Regulations, Codes of Practice (COP), Australian Standards and/or other statutory requirements. • Implementing and undertaking formal and proactive consultation measures between the project team, subcontractors and industrial representatives such as subcontractor meetings, toolbox talks, site HSE committee meetings and inspections. • Monitoring subcontractors compliance with the CEMP in particular to the environmental components of their safe work method statements. • Identifying hazards and assessing risks onsite and implementing risk control measures. • Liaising with civil or statutory authorities should an onsite emergency occur. • Investigating, recording and reporting incidents and initiating corrective and action plans by relevant personnel. Reporting a serious incident immediately to the Project Manager and Corporate HSE Manager. • Ensuring that plant and equipment used on Contractor sites is safe, correctly maintained and that the operator is correctly licensed or qualified for that equipment.

Role	Responsible Person	Responsibility under the CEMP
		• Ensure that environmental incidents (including spills, failure of sediment controls, water pollution etc.) are reported in accordance with the Incident Reporting and Investigation Procedure. • Assessing subcontractors Safe Work Method Statements prior to work commencing, to ensure environmental requirements are met.
Richard Crookes Constructions - Corporate HSE Manager	Simon Dayball	• Overseeing the implementation of the integrated HSE management system and the Environmental Management Plans throughout Contractor activities. • Ensuring a CEMP is prepared for each project. • Advise Management and Site teams to new or revised Act's, Standards, COP or legal requirements associated or required in conducting the works. • Setting and reviewing overall environmental targets and allocating priorities within the framework of the HSE management system. • Planning and facilitating training in environmental management, including arranging for the appropriate internal or external trainers/facilitators to conduct the training. • Manage collection and reporting of environmental performance data from monthly site reporting. • Conducting or delegating internal HSE management system and site audits. • Reviewing internal and external (independent) audit reports and in consultation with the Directors and the Project Manager - develop appropriate action plans if necessary. • Assist Project Managers in preparation of Environmental Risk Assessment and determining appropriate controls. • Communicating relevant environmental information to management, staff and contractors.
Richard Crookes Constructions - Site HSE Officer	Marcello Di Paolo	• Carry out erosion and sediment control inspections. • Monitor and review Erosion and Sediment Management Plans (ESMP), which must be prepared by a suitably qualified consultant for inclusion in this CEMP. • Maintenance of the project environmental management plans including preparing CEMP minor revisions. • Ensure training/induction of personnel is carried out and that staff operate in an environmentally responsible manner. • Ensure compliance with Environmental Approvals. • Operate as 24-hour contact person for environmental matters.

Role	Responsible Person	Responsibility under the CEMP
		• Report on environmental incidents, liaise with RCC site managers on corrective actions and verify environmental measures. • Manage the register of environmental complaints and the subsequent corrective measures. • Undertake and report on monitoring and inspections completed, including after flash flooding events and unexpected finds where applicable. • Monitor construction activities against the conditions of approval to evaluate compliance with the Environmental Management Systems (EMS), including at a minimum weekly site inspections. • Maintain a register of environmental management documents for the Contract. • Ensure that the CEMP is established, implemented and maintained in compliance with the sub-plans, supplementary method statements and SSDA conditions. • Overall responsibility for on-site establishment, management, monitoring and maintenance of erosion and sediment controls. • Carry out regular inspections and auditing of the works to ensure that environmental safeguards are being followed. • Identifying where environmental measures are not meeting the targets set and where improvement can be achieved. • Facilitating environmental induction and toolbox talks for site personnel. • Specific authority to stop work on an activity where it is considered necessary to prevent environmental non-conformances.
Richard Crookes Constructions /Site Engineer	Mahnoor Shahzad	• Liaise closely with the Site HSE Officer to ensure environmental considerations contained within this CEMP are incorporated into construction activities. • Produce SWMS which address environmental requirements. • Conduct regular checks of the site to ensure environmental controls such as sediment controls and dust suppression are functioning effectively. • Where engineers are responsible for managing subcontractors and/or utilities authorities, ensure that work performed by these external parties meets with the requirements of this CEMP and Sub Plans, including identifying and documenting the environmental risks of the proposed works. • Report non-compliance with Erosion and Sediment Management Plans (ESMP) and/or the CEMP to the Site HSE Officer.

Role	Responsible Person	Responsibility under the CEMP
		• Responsible for engaging and managing environmental specialists (i.e. ecologists, contamination specialists).
Richard Crookes Constructions Contracts Administrator	Gary Kenny	• Support the Project and Site Management in the management of employees, Subcontractor, and suppliers' performance in complying with RCC's Construction WHS and the site-specific rules for the Project. • Assist the Project / Site Manager to ensure the Site Environmental Plan/s and associated documentation, including standard forms, procedures and templates; remain current and up to date. • Include in subcontract agreement the requirement for subcontractors to carry out their works in accordance with the companies or subcontractors approved Environmental Plans. • At the tender interview stage discuss with the subcontractor's their obligation for managing Environmental requirements by issuing to them relevant section of the tender interview form and ensuring this is completed by the Subcontractor prior to commencing on site. • Request and obtain from the subcontractor copies of their Environmental Plans. • Where required, assist the Project / Site Manager in collecting required Environmental documentation from engaged subcontractors and for conducting initial review ensuring required documents have been submitted prior to forwarding documentation provided by subcontractors to the Project / Site Manager for review. • Ensure that the latest copies of Project Plans and HSE Risk Assessments are uploaded onto the data control system used and engaged subcontractors have access to these. • Assist the Project / Site Manager in conducting project audits, to report on safety compliance and in the maintenance of environmental records. • Ensure external complaint/incidents are recorded and filed in an 'External Complaints' register. • Assist Project / Site Management in the general administration of HSE where requested.
Employees and Subcontractors	TBD	• Must comply with the site HSE rules and environmental requirements and abide by the procedures and work practices identified in the CEMP and / or as directed or informed by the Site Manager / Foreman. • Attending environmental training / inductions as directed by the Site Manager / Foreman. • Complying with relevant environmental legislation.

Role	Responsible Person	Responsibility under the CEMP
		• Reporting promptly to a Site Manager / Foreman of spills, leaks, potential pollution and / or poor environmental practices.
DPHI Environment Officer	TBA	• Review CEMP submitted to DPHI. • Responsible for regulatory oversight, to ensure that the requirements of the CEMP are satisfactorily implemented.
Environmental Consultant, Contamination Specialist	Geosyntec Consultants	Responsible for preparation of the CEMP and subsequent auditing of the CEMP if required.

2.3 CEMP Requirements

The CEMP must clearly articulate the Environmental Management System to be implemented during the works. The Principal Contractor is to provide details on the following and store relevant documents in the site office for the duration of works:

- Policy Statement.
- This CEMP – This document details processes and procedures to be implemented during the day-to-day operations of the Project including documentation development, review and approval, environmental monitoring and inspections and auditing and review and continual improvement.
- Environment Controls, which apply during the day-to-day operations and documents roles and responsibilities and relevant checklists and forms including internal hold points and required environmental permits. These procedures are a key site management tool.
- Richard Crookes Constructions Specific Controls, which apply across the Project and document management requirements specific to environmental aspects.
- Richard Crookes Constructions Specific Controls, which apply across the Project and document processes, roles and responsibilities and relevant checklists and forms, including internal hold points and required environmental permits.
- Site Control Maps, which are site specific illustrating key environmental controls and tables documenting key requirements and will inform and fully integrate with detailed planning for implantation.
- Erosion and Sediment Controls, which are specific drawings illustrating key erosion and sediment controls for each key stage of the project.

2.3.1 Resourcing

The contractor must provide adequate resources to ensure environmental management requirements are fulfilled during construction of the Project.

2.3.2 Subcontractors

Subcontractors must agree to undertake works in accordance with this CEMP and staff must be inducted by RCC prior to commencing work on site.

2.4 Training and Site Induction

Employees and subcontractors will undergo environmental awareness training as part of the Project orientation, site induction, toolbox talks and pre-start meetings to ensure they understand their obligations and responsibilities under this CEMP. Timing and content of such meetings will be aligned with the Project works programme.

Records of site inductions will be kept and maintained by the Site Manager. The site induction will include:

- Purpose and objectives of the CEMP.
- General environmental duty.
- Environmental emergency/response and incident reporting procedures.
- Familiarisation with site environmental controls, including restricted, sensitive or protected areas and legislation/permit/approval/licence conditions applicable to the project.
- Site specific issues such as:
  - Community issues
  - Hours of operation
  - An overview of the site environmental guidelines, emphasising that environmental protection is everyone's business, and an encouragement of a proactive attitude to environmental control measures
  - Noise and vibration avoidance and management
  - Air quality management
  - Traffic access, including parking arrangements
  - Washing requirements for construction plant and equipment
  - Storage and handling of fuels, oils and other chemicals
  - Waste management – recycling, disposal and litter
  - Soil and water issues, including erosion issues – controls, tracking of mud offsite
  - Concrete washout requirements
  - Management of fauna
  - Emergency response
  - Spills
  - Incidence procedures and reporting

2.4.1 Project Organisation

New site workers must be made aware of key site contacts and the project team organisation.

2.4.2 Environmental Awareness

Where there are significant environmental issues identified for the Project, these must be incorporated into the site-specific induction, which is included in Appendix B or on HammerTech in accordance with Section 1.2. They may include, but shall not be limited to:

- Contaminated soils.
- Environmental controls and management (including for flora and fauna).
- Sensitive environmental receptors.
- Noise emissions.
- Plant emissions.

3. Environmental Management Activities and Controls

This section details environmental management activities and controls required for the duration of the Project. Specific requirements for environmental control maps, impact identification procedures, control measures, and unexpected finds protocol are detailed in the following sections.

3.1 Environmental Control Maps

Environmental Control Maps (ECMs), such as the Erosion and Sediment Control Plan (ESCP) provided by RCC, are included in Appendix I. The ECMs/ESCPs must be updated progressively to provide clear and practical mitigation and management measures for each phase of the construction worksite. The following detail must be included on the ECMs/ESCPs, as relevant:

- Site features.
- Stormwater drains, including outfall point.
- Contours.
- Flora and fauna areas, if applicable.
- Site facilities.
- Buildings (existing and proposed).
- Drains.
- Services.
- Access.
- Work compounds.
- Environmental control measures.
- Sediment and erosion controls.
- Plant and equipment wash down areas.
- Concrete wash outs.
- Hazardous substances & chemical storage areas.
- Waste storage.
- Stockpile locations.
- Spill kits.

The ECMs/ESCPs must also reference relevant procedures that provide the comprehensive details into certain management controls/measures in a clear step-by-step process.

3.2 Impact Identification

The General Environmental Issues and Impacts List is presented in Appendix G, while more site-specific measures to improve impact identification are included within the plans discussed in Section 3.3 below.

Environmental site inspections can also be undertaken using Form 18.3 located on Hammertech, in accordance with it's Site Task Checklist.

3.3 Environmental Control Measures

Control measures to be implemented to address identified potential effects must be included in the Project's Environmental Issues and Impacts list and Environmental Weekly Checklist, if available. Relevant procedures will be followed by implementing the required control measures, with RCC's Environmental Actions and Monitoring Table included in Appendix H and Hammertech Form 18.3 Environmental Inspection in Appendix G.

Specific requirements and reasonable practical steps to reduce impacts regarding erosion and sediment, stockpiles, contamination, waste, traffic, noise and vibration, flora and fauna, air quality, asbestos and Aboriginal and non-Aboriginal heritage items are addressed in the following sections.

3.3.1 General

General housekeeping measures are required on site to keep working conditions clean, safe, and reputable. Basic housekeeping practices to be implemented include:

- Construction hoarding and/or shade cloth to be erected around the site as necessary and be both well-presented and maintained to minimise visual impacts during construction.
- Graffiti and posters are to be removed within 24 hours.
- The site and its immediate surrounds are to be kept free from rubbish. This will require the provision of easily accessible, frequently maintained bins around the site, including for different types of waste (e.g. recyclable). Storage of construction waste should be in designated areas.
- Fence lines are to be included as part of daily checks to ensure the site is secure and safe.
- General visual amenity is to be maintained on site, including the appropriate temporary storage of both "household" and construction waste on site.
- Hoardings and site fencing are to be removed upon construction completion.

Housekeeping checks are to be undertaken at the start and end of the week and immediately prior to and after shutdown periods.

3.3.2 Erosion and Sediment Control

RCC and subcontractors shall plan and carry out works to avoid erosion and prevent sediment leaving the site to the surrounding land, watercourses, water bodies and stormwater drainage systems. This includes the installation of erosion and sedimentation controls prior to commencing works. Where possible, works must be staged to reduce the areas when cleared to minimise soil disturbance.

Erosion and sediment controls must be carried out in line with Landcom's "Blue Book and the Technical Guidance" (2004). Erosion and sediment controls (ESC) are to be implemented at the site and detailed on the Erosion and Sediment Control Plan (ESCP) provided in Appendix I. The ESCP must be always available at the site and will be communicated to Project staff during the induction processes. Changes to the ESCP should be communicated as required during weekly toolbox talks. The Project Manager must also note the sediment controls detailed in Appendix G (Weekly Environmental Control Checklist) and implement them on site.

The objective of the ESCP is to identify control measures to manage surface water and reduce the potential for soil erosion, land degradation, and impacts on water quality. Thereby the plans focus is to prevent surface water from leaving the site during the works. Necessary maintenance of associated control measures must be completed during the weekly site inspections (Appendix G) and Hammertech Form 18.3 Environmental Inspection (Appendix G).

The ESCP provides or should provide detail regarding the construction/implementation of typical controls including kerb inlet controls, grated inlet pit filter, silt fence open drain and silt fence, stabilised construction entrance 'truck shaker', stockpiles, diversion drains, sediment storage marker, silt fence with straw bale, sediment control pond and sediment control basin.

The controls must be inspected and approved by the Site HSE Officer prior to the commencement of works. The controls must be maintained in good working order and inspected regularly to ensure they are effective in controlling erosion and sedimentation. Accumulated sediment shall be removed and disposed of regularly (i.e. weekly and after rain events). Erosion and sediment control checks are to be undertaken daily, and inspections registered weekly, immediately prior to and after shutdown periods, and after wet weather and when wet weather is forecasted.

If surface water requires offsite disposal, this water must undergo assessment by an Environmental Consultant to identify appropriate management options.

3.3.3 Soil/Groundwater Contamination and Asbestos

Based on a Site Environmental Report (Ref: Senversa, Badgerys Creek Environmental Report, 475 Badgerys Creek Road, Badgerys Creek, dated 17 June 2024) provided, it is understood that soil and groundwater investigations and soil remediation and validation works were completed for the site within a larger property area, and the site/larger property area is deemed suitable for the proposed land use. The site/larger property area was previously operated under Environment Protection Licence (EPL 1254) for bird accommodation (breeder farm) and the licence is still in force.

The contaminants or areas of environmental concern (AEC) remediated within the larger property area were friable and non-friable (bonded) asbestos containing material (ACM) on Farm 1, Farm 2, Farm 5 and former factory (rendering plant), and heavy metals and benzo(a)pyrene for ecological risk. Farm 1 and part of the rendering plant is within the current site area. Heavy metals exceeding ecological or drinking water criteria in groundwater were considered to be indicative of naturally occurring background concentrations and extraction of groundwater for drinking purposes was considered unlikely at the site. Formaldehyde detected above the drinking water guideline was considered a low risk to human health and the environment given the low (and reducing) concentrations detected in the groundwater wells, and the relatively short half-life of formaldehyde. Based on these considerations, groundwater remediation was not required at the site.

Unexpected potential contamination issues encountered during development works, can be addressed if/when encountered in accordance with the Unexpected Find process as presented in Section 3.4.

3.3.4 Soil Management

General soil management procedures are to be in place during site works as discussed in the various sub plans relevant to the site, including but not limited to:

- Responsibilities, awareness and training requirements.
- Hazard identification.

- Personal Protective Equipment (PPE).
- Management controls for asbestos finds.
- Stockpile management and temporary storage of asbestos containing material (ACM).
- Decontamination.
- Offsite disposal requirements.
- Dust monitoring.
- Unexpected Finds Protocol.
- Approvals and licensing.
- Communication and records.

Management of unexpected finds is further discussed in Section 3.4 of this CEMP.

Material to be disposed of offsite must be classified and managed in accordance with the NSW EPA (2014) Waste Classification Guidelines. Soil disposed off-site must be classified prior to being removed from site.

Waste disposed of offsite should be disposed of at a licenced waste facility capable of accepting the waste.

3.3.5 Stockpile Management

Should stockpiling of soil be required for excavation works, stockpiles must be kept to a maximum of 2 m in height and be situated in areas of the site of relatively level ground with no intercepting surface water flow paths.

Stockpiles area/s should be constructed with silt fencing and diversion bunds to prevent run on/run off of sediment laden water.

Site boundaries in proximity to stockpiles must have silt fencing in place to prevent runoff during rainfall.

When not in use, stockpiles will be covered with a shade cloth or tarpaulin to retain the materials on the stockpile and stop the generation of dust. Soil and stockpile management is to be completed in accordance with Landcom's Blue Book (2004).

Other dust minimisation techniques must be employed, including:

- Planning work to minimise the amount of disturbed ground at a point.
- Water sprayed over areas to prevent wind-generated dust.
- Minimise truck movements wherever possible.
- Halt construction that generates dust in high winds (>10 m/second).

Should stockpiling of potentially contaminated material be required, soil management procedures detailed in this CEMP are to be implemented.

A material tracking register should be maintained. Material moved around the site is to be tracked, with the register noting the location (including the lot) of the material's source and destination. Material

imported or exported from the site (to be completed in accordance with relevant legislation) should also be tracked and validated (where possible) by the Environmental Consultant.

3.3.6 Contamination Management & Emergency Response to Spills

RCC's contamination management and emergency response to spills will be in line with the Environmental Checklist and Environmental Controls provided in Appendix G and Appendix H, respectively. To prevent the possible contamination of the site with hydrocarbons during construction, several measures are to be implemented to reduce the risk of an oil / fuel spill:

- Dangerous goods (such as petrol, diesel, oxy-acetylene, oils, etc.) will be stored in a lockable compound with a containment bund and sufficient ventilation in accordance with the relevant codes of practice and standards. The bund must be of sufficient volume to capture 110% of the largest container within the bunded area.
- Safety Data Sheets on flammable and potentially harmful liquids will be provided by RCC.
- A register is to be kept of chemicals stored onsite.
- A Spill Response Procedure is included in RCC's Incident and Accident Reporting protocol (refer to Appendix J).

Bulk storage of fuels will not be conducted onsite. Plant and machinery will be filled offsite wherever possible, or from a mobile tanker. Each tanker will carry emergency spill kits and the driver to be inducted on how to respond to environmental incidences. Mobile plant servicing will be carried out in the designated areas of the site compounds.

The following actions will be included in the site-specific induction for workers on site:

- Location of spill response kits will be explained.
- Stop flow of the spillage/discharge from the source, if possible and safe to do so.
- Set up traffic controls and direct passers-by around spillage, if needed.
- Construct bunds of spill kit pillows to stop fuel, oil or chemical spreading out. Especially, prevent discharge into stormwater drainage, natural watercourses or onto private property.
- For a large spill, use a grader to construct earth bunds around the spill and use sandbags. Spread sand on the ground to soak up fuel, oil or chemicals. For a small spill, spread absorbent material from the spill kit to absorb fuel, oil or chemicals.
- Report incident to the Superintendent as soon as possible (ASAP).
- To clean up after small spills, load the used material into a watertight container for disposal at an appropriate waste site.
- To clean up large spills, load sand/earth/sandbags into a watertight container on a utility van (small quantities) or a truck lined with plastic (large quantities) for disposal at an appropriate waste site. Sweep the site with a broom to collect the sand or earth for disposal, as appropriate.
- If an emergency is declared, site personnel will report to designated Emergency Evacuation Points as indicated in the site safety induction.

3.3.7 Water Quality and Storm Water Control

The following control measures will be in place to manage surface water:

- Potentially hazardous activities, including washing out of concrete delivery vehicles, and washing down of construction plant are not permitted on site except in specially constructed bays that retain high pH water.
- Washing out of concrete delivery vehicles offsite is only permitted at specified locations approved for that purpose by the appropriate authority, to be indicated on the site ECP. New onsite drains are to be labelled to reduce likelihood of misuse. The location of the washouts will vary depending on works to be done. Regardless of location, the concrete washout locations will be installed in areas away from the stormwater system.
- Liquids and materials that could cause water pollution must be stored in areas with secondary containment such as bunding sufficient to contain 110% of the largest stored container (NB: no fuel is to be stored on site). Drainage lines are to be protected with a bund, in the event of spills or leaks from moving plant or machinery.

In general, stormwater will be managed onsite via the RCC approved ERSCP in Appendix I and in accordance with the Landcom (2004) Managing Urban Stormwater, Soils & Construction and Technical Guidance, referred to as the 'Blue Book'. In the event of stormwater collecting in erosion and sediment controls and the stormwater is required to be pumped out, the pump intake is to be located no more than one metre below the surface of the collected water to reduce the amount of settled silt being pumped out for further treatment. Surface water requiring offsite discharge is to be assessed by the Environmental Consultant to identify management options.

The discharge water quality limits are to be considered in accordance with the NSW EPA assessment requirements and guidelines for water. The development must comply with section 120 of the POEO Act, which prohibits the pollution of waters. If required, an Environment Protection Licence (EPL) can be obtained for discharge of water.

Water collected in onsite detention (OSD) will also be recycled onsite and used as dust suppression during the project. Use of collected water shall be in accordance with the approved ESC plan and Landcom (2004) 'Blue Book'.

Pre-treatment of the site stormwater to reduce suspended sediments may be required prior to discharge. For site stormwater treatment there are two options, flocculation and / or filtration. For each option the applicable procedures in their entirety are to be followed. If stormwater cannot be treated suitable to regulations (as mentioned above), chemical and water quality testing must be completed, an appropriately licenced liquid waste contractor must be engaged and the stormwater collected and disposed of at a location lawfully able to receive that type of waste. The receipt documentation must be recorded.

It is not anticipated that groundwater will be encountered during the site works. As a result, no groundwater dewatering practices are expected to be necessary as part of the works. If groundwater is encountered, appropriate groundwater management procedures, approvals, and potential licenses will be required.

Water quality and stormwater control measures should be checked as part of the shut-down, site closure for three or more days, process (Appendix K). The shutdown checks should be completed both immediately before the shut-down begins (i.e. at close of business (COB) on the final day of works), and immediately after the shut-down period ends.

3.3.8 Air Quality

Asbestos Management

If asbestos is encountered on site, site works with potential to disturb asbestos impacted soils must be completed under an Asbestos Management Plan (AMP). The objective of the AMP is to provide guidance and strategies for the handling, management and treatment of asbestos for the removal, transport and disposal of asbestos-impacted soils from the site, to protect the health of onsite workers, visitors and potential offsite receptors and prevent the potential spread of asbestos contamination offsite.

The AMP must include a site asbestos register (i.e. the site soils), relevant roles and responsibilities, the task specific management plans for asbestos in soil and air monitoring requirements.

Site works with potential to disturb site soils must be completed under the supervision of a Class A or Class B asbestos contractor depending on the type of identified asbestos within the site soils.

An AMP is prepared by Senversa in 2023 (Ref: S20891_002_RPT_AMP_Rev2, dated 9 November 2023) for a wider property area, encompassing and applicable to the site. The Senversa 2023AMP is presented in Appendix L.

Dust Management

A construction air quality management plan (Ref: 610.033791.0000, Revision V0.1, dated 13 March 2026) for the project has been included as Appendix N, prepared by SLR Consulting Australia.

The following activities exhibit potential for dust generation:

- Loading/unloading of soil and other raw materials.
- Stockpiling.
- Movement of soils and stockpiles.
- Trucking.

RCC and its subcontractors must employ construction methods that will keep the air pollution to a minimum and apply measures as those listed below and in the SLR 2026 air quality management plan in Appendix N, to ensure that airborne pollutants do not cause air pollution and nuisance in the vicinity of the works:

- The spraying of disturbed soil and roads with water whilst under construction as required.
- Minimising exposed and disturbed soil areas, including stockpiles.
- The removal of mud from the wheels and bodies of plant and vehicles before it enters public roads or other sealed pavements. This could be rumble grids, dry brushing, wheel wash etc., depending on the nature and conditions of the site.
- The removal of mud or dirt spilt by construction equipment on to public roads or other sealed pavements is to be completed immediately after becoming aware of the incident, or in the case of rain events, at the end of the shift.
- The provision of coverings or stabilisation of soil stockpiles and the minimising of their height.
- Covering loads leaving the site.
- Stabilisation of ground likely to be exposed for significant periods (e.g. – using sterile seed).

- Fitting power tools with dust collection devices where practical.
- Keeping plant and equipment well maintained and not leaving them idling while not being used.
- Reporting excess air emissions from plant and arranging for a service to fix the problem.
- Use of water trucks for dust suppression as required.

Exhaust emissions from vehicles must also be monitored visually and where required should be recorded on the daily site diary and vehicles on site must be scheduled for regular maintenance. Site workers are to be aware of dust minimisation requirements. Where an issue is raised, solutions must be proposed as soon as possible, and incidents must be recorded in the incidents register.

3.3.9 Noise and Vibration Management

The Construction Noise and Vibration Management Plan (Ref: 260014 - 475 Badgery's Creek Road Bradfield - ALDI SYD ADC - CNVMP - R0, dated 15 January 2026) for the project has been included as Appendix D, prepared by Pulse White Noise Acoustics. From an environmental viewpoint, noise can create a nuisance to neighbours, members of the public and fauna and is subject to legal requirements.

Section 5 of the sub plan recommends monitoring of noise and vibration during the site works in response to ongoing complaints received from neighbours.

Section 9 of the sub plan details the specific management plan and associated mitigation measures relating to equipment and processes, acoustic enclosures/screening, general/universal mitigation measures, plant and equipment, work scheduling and source noise control strategies.

3.3.10 Construction Traffic Management

A site specific Construction Traffic Management Plan (CTMP) for the site by ason group is included in Appendix P.

The CTMP presents a number of mitigation measures for managing construction traffic impacts, the cumulative impacts of which are considered to be limited relative to the amount of traffic around the site. This includes and are not limited to:

- Providing route options for both approaching and departing traffic.
- Construction site access strategy.
- Construction traffic generation.
- Cumulative traffic impact assessment.
- Vehicle management.
- Specific areas designated as site parking for contractors and heavy vehicles.
- Pedestrian and cyclist management.
- Minimising traffic impacts to neighbouring properties and the surrounding network.
- Fencing requirement.
- Driver awareness and code of conduct.
- Worker induction.

3.3.11 Waste Management Plan

RCC and subcontractors shall adopt the hierarchy of waste - avoid, reduce, recycle/reprocess and dispose, to maximise resource recovery and minimise disposal wherever possible and practical. The Project's target recyclable percentage is 80%. The importance of appropriate waste management practices is to be included in the site induction.

A Waste Management Plan (WMP) for the management of construction waste and general site office and worker waste has been prepared for the site by RCC and a construction and operational waste management plan by SLR Consulting Australia (presented in Appendix M).

Adequate waste and recycling storage facilities will be positioned within the proposed extent of hardstand on the project. The waste and recycling collection vessels will be provided and located according to the required specific waste categories and types. The storage areas will be to contain and prevent the risk of pollution to soil, groundwater and air on site.

Waste removed from the site must be classified in accordance with NSW EPA (2014) *Waste Classification Guidelines, Part 1: Classifying Waste*. Once classified, waste designated for offsite disposal must be taken to an appropriately licenced facility lawfully able to receive that type of waste. Waste receipts must be kept for legal requirements and details of waste separated and disposed is to be documented in a Waste and Recycling Register.

3.3.12 Flora and Fauna Management

Controls must be in place to prevent potential harm to ecological communities proximate and downgradient to the site if present. Such controls include:

- Establishing site access routes in locations that will minimise loss of vegetation, erosion, etc.
- Prevent impacts to vegetation surrounding the site.
- Prevent surface water and sediment runoff from the site.
- Work methods that minimise the spread of weeds must be used, and noxious weeds if present within the work area must be managed appropriately.
- Revegetation of proposed landscaped areas must be encouraged, where present.

3.3.13 Importation & Management of Engineering Fill

RCC must undertake appropriate management for the importation of engineering fill. Actions to this end must include:

- Retain records of engineering fill brought onto the project site.
- Retain on record statements from suppliers of engineering fill that the material is free from contamination.
- Imported soil must be either Virgin Excavated Natural Material (VENM) or Excavated Natural Material (ENM) as defined under the NSW EPA (2014) *Waste Classification Guidelines* and NSW EPA Excavated Natural Material Order (2014) respectively. The material must be validated by an environmental consultant prior to acceptance on site. The related dockets detailing the source, type and quantity of material imported to the site are to be provided for CEMP auditing purposes.

- No recycled materials are to be imported to the site, unless approved by the RCC Environmental Consultant. Examples of recycled materials that may be considered include road base, sands and aggregates for engineering purposes if they meet the requirements of the relevant NSW EPA resource recovery orders and exemptions. Such material imported to site must have written proof that resource recovery order conditions have been met, and the proposed material use is consistent with the corresponding exemption. Documentation associated with importation of material must be maintained by the contractor and RCC.
- Engineering fill imported to the site will be accompanied by certification ensuring only suitably tested material compliant with commercial / industrial land use criteria in NEPM (2013) is imported to the site. If documentation is not provided, sampling and analysis to demonstrate the material is suitable may be required.

3.3.14 Aboriginal Heritage

Should any relic, artefact or material (including skeletal remains) be suspected of being of Aboriginal origin be encountered, RCC and its subcontractors must cease the construction work that might affect the relic, artefact or material and protect the relic, artefact or material from damage or disturbance. Potential heritage items must be fenced off, and the Project Manager will consult the superintendent if required.

The Eco Logical Australia Aboriginal Cultural Heritage Assessment 2025, attached in Appendix E, found Aboriginal archaeological or cultural sites such as isolated Aboriginal Objects within the proposed development area for the ALDI-SYD project and to the immediate northeast.

3.4 Unexpected Finds

Residual hazards may remain on the site, potentially including:

- unexpected materials/liquids/substances.
- objects of possible cultural significance, including aboriginal and non-aboriginal heritage.
- unexpected active or redundant services (i.e. power, water, gas).

RCC is to maintain communication with Geosyntec to ensure the appropriate procedures are implemented. Awareness training must be conducted with site personnel at the time of site induction. An appropriate heritage consultant is to be contacted in the case of an unexpected find relating to items of possible cultural significance (Section 3.3.14). and as specified below.

The procedure to be followed in the event of an unexpected find in relation to contamination is as follows:

- In the event of an unexpected find, work in the immediate vicinity must cease and the RCC Site Foreman/Manager and Site Safety Coordinator notified.
- Project Manager is to inspect the area of the find and determine actions to be taken to address WHS or Environmental issues.
- Temporary barricades must be erected to isolate the area from access to the workers and machinery. This will include the establishment of a 10 m exclusion zone with the placement of bollards with hazard tape.

- Assess whether the unexpected find presents a hazard to work in the surrounding area.
- Contact the Project Manager, who will contact offsite resources to properly identify the nature and risk of the unexpected find.
- The project manager will check whether the exclusion perimeter has been established and appropriate resources have been implemented to mitigate risks posed by the unexpected find.
- If potential asbestos is encountered, an occupational hygienist or asbestos assessor must be contacted immediately.
- An environmental consultant must be contacted and attend the site to assess the extent of additional remediation that may be required and/or adequately characterise the contamination.
- A validation report must be prepared, documenting remediation and validation works and make comment on the suitability of the land to the proposed use of the basis of the validation results.
- The Project Manager will determine whether a requirement exists to notify relevant government agencies and the OHS Manager for the project.

A material identified as contaminated must be disposed offsite in accordance with the POEO Act and associated relevant regulations, with the details of the final disposal location and results of testing documented and made available to the RPI and ALDI Project Manager, and the Environmental Consultant for CEMP auditing purposes, prior to removal of the contaminated material from the site. Sampling and results undertaken must be documented in accordance with the reporting procedures.

The procedure to be followed in the event of an unexpected find in relation to Aboriginal items and non-Aboriginal archaeological relics is as follows:

- Aboriginal Heritage.

If an item or object of Aboriginal heritage significance is identified on site:

  - Work in the immediate vicinity of the suspected Aboriginal item or object must cease immediately.
  - A 10m wide buffer area around the suspected item or object must be cordoned off.
  - Heritage NSW must be contacted immediately.

- 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.
- Non-Aboriginal archaeological relics and Historic Heritage.

If non-Aboriginal archaeological relics are uncovered during works being carried out for the development:

- Work in the immediate vicinity of the suspected relic(s) must cease immediately.
- Heritage NSW must be contacted immediately.
- The suspected relic(s) must be evaluated, recorded and, if necessary, excavated by a suitably qualified and experienced expert in accordance with the requirements of Heritage NSW.
- Work in the immediate vicinity of suspected non-Aboriginal archaeological relic(s) must not recommence until this has been authorised by Heritage NSW.

The details of the Unexpected Find will be recorded initially in the site project diary.

4. Monitoring and Review

4.1 Environmental Monitoring Program

An Environmental Monitoring Program is required to ensure compliance with relevant legislation and development approvals. Requirements for environmental monitoring for the project are included in the sub-plans provided in this CEMP. The monitoring program consists of:

- Daily site observations added to the site diary by the person responsible for day-to-day environmental management on site.
- Weekly inspections by the Site Supervisor/HSE Officer, which are formally documented each week by using the Weekly Environmental Checklist (Appendix G).
- Fortnightly inspections or as agreed to be completed by the RPI and ALDI Project Manager.
- Specific monitoring carried out at monthly intervals and following major events, such as outlined in the sub-plans found in the Appendices, carried out by the HSE Officer.

The environmental monitoring program will be the responsibility of RCC's Site HSE Officer (or RCC's Project Manager Nominee), and will include monthly review and management of the following:

- Appropriate training of personnel.
- Arranging specialist consultants when required.
- Coordination of monitoring equipment and materials.
- Coordination of sample collection, documentation and delivery.
- Ensuring frequency and methodology is in accordance with licences, permits, approvals, Australian Standards and other industry standards.
- Data management and representation of results.
- Reporting non-compliances and implementing corrective actions.
- Providing a summary of monitoring records to the RPI and ALDI Project Manager monthly.

Field data such as weather, air quality, wind direction, noise (including noise verification monitoring) and water quality will be recorded electronically where possible and transferred into monitoring results spreadsheets. In addition to measured parameter readings, the following information will be recorded on Field Data sheets:

- Date
- Time
- Sampling point/location
- Name of sampler

Site observations and inspection notes are to be recorded in the daily checklist and have been developed by RCC. Laboratory analysis results will be filed electronically onsite.

Complaints are also to be noted and recorded.

4.1.1 Site Inspections

Site Environmental Inspections are to be undertaken by RCC weekly using the Hammertech Form 18.3 Environmental Inspection (Appendix G) and in reference to the Environmental Actions and Monitoring Table (Appendix H), to ensure that environmental hazards are recognised and can be promptly rectified. Additional environmental issues may be added to the Site HSE Inspection form as required.

Site inspections will be conducted by the elected principal contractor's CEMP auditor:

- At the beginning of and once per 3 months during the site works.
- At the completion of the site works.

Geosyntec site inspections will assess the adequacy and effectiveness of environmental controls. These inspections will address the following as a minimum:

- High risk activities and processes.
- Work in environmentally sensitive areas.
- Site preparation for adverse weather conditions.

Responsibilities for environmental inspections on the project are summarised below:

- Designated site staff, in accordance with Section 4.1, will conduct daily observations of areas under their supervision, including assessment of environmental controls and issues. Identified issue(s) or non-conformance(s) are to be recorded into the site diary.
- RCC's Senior Site Manager / Site HSE Officer (or nominated person) will conduct weekly inspections completing the Weekly Environmental Checklist and/or on the Hammertech using form 18.3 Environmental Inspection. Environmental issues arising will be immediately reported to the Site HSE Officer and Site Manager for rectification. Where required, issues may be entered into the Corrective Action Database.
- Site personnel and / or visitors may raise an environmental issue through toolbox talks or to managing personnel.
- Safety, Environment and Quality Audits will be performed by RCC's HSE staff on a 3 monthly basis.
- RCC will engage a CEMP auditor to complete necessary audits with monthly reports provided detailing the outcomes of the audit. The audit will be provided to RCC and should be made available to RPI and ALDI within one week of the CEMP audit.
- Non-conformance and actions taken to rectify the non-conformance will also be provided to RPI and ALDI in the monthly report.

4.1.2 Auditing of CEMP

Daily and weekly CEMP compliance checks are required by the person responsible for day-to-day environmental management on site, as presented in Appendix G and in accordance with Section 3.2. Alternatively daily site diary entry and weekly environmental inspection records can be conducted. The environmental consultant will review the collated data monthly. The audit reports will also be submitted to the project manager for forwarding to RPI and ALDI monthly.

Projects with high-risk activities or that performed poorly at the initial audit may be audited at a higher frequency. The RCC HSE Manager is responsible for coordinating project audits. The RCC Senior Project Manager is responsible for distribution of the audit reports and implementation of required feedback/management measures to address the issues identified.

A concluding environmental compliance audit will be undertaken at completion of the work under this project. It shall include the following:

- Site surveillance/inspection.
- Full review of environmental records.
- Identification of environmental protection measures and operational controls that have not yet been implemented to the levels identified in the associated plans.
- Recording of the condition of existing environmental protection controls.
- Identification of environmental protection measures which require rectification and ongoing management.

4.2 Monitoring of Project Environmental Activities

Objectives and Targets for the project are specified in Section 1.8. Data relating to these targets are to be documented daily using site diaries which are to be reviewed by RCC's Senior Site Manager monthly, to ensure that the diaries are uploaded to RCC's online management platform which can be viewed by RCC's Corporate HSE Manager for reporting to senior management.

The Key Performance Indicator (KPI) Monthly Report captures information on lag and lead indicators. The current lag indicators are:

- Number of environmental incidents.
- Number of Penalty Infringement Notices (PINs) or clean-up notices.
- Number of community complaints.

The current lead indicators are:

- Number of toolbox talks (combined with WHS & include environmental issues)
- Number of environmental inspections undertaken.
- Waste and recycling volumes (initially to set benchmark then track improvement).

4.3 Review of CEMP and Related Issue

This CEMP must be reviewed by RCC's Project Manager in consultation with the Site HSE Officer and the Corporate HSE Manager whenever changes occur on the site that may have an impact on the environment, or have the potential to migrate offsite, or at least once a month during construction. Changes made to the plan are to be documented and approved by RCC, RPI and ALDI. These changes are also to be communicated to the construction personnel via toolbox talks.

The strategies, plans and programs required under the Development Consent conditions for the project must be reviewed when required.

5. Environmental Incidents, Non-Conformance and Complaints

5.1 Environmental Incidents

An environmental incident may, amongst other things, include a fuel spillage, a major leak, failure of a pollution control device such as sediment controls, undertaking works out of hours without approval, and major noise and/or vibration affecting neighbours.

For fuel, oil or chemical spills, the Incident and Accident Reporting procedure (Appendix J) is to be followed.

An incident classification and reporting mechanism must be established to inform responses to incidents. RCC must maintain the incident classification and reporting system (as per Appendix J) which details the classification of site incidents as well as the reporting, immediate action procedures, and investigations to take place following an incident as well as the responsible persons.

The environmental incidents and emergencies that meet the criteria listed below must be verbally reported to the RCC HSE Manager immediately and written notification provided within 24 hours, with RPI and ALDI informed immediately after. RPI and ALDI will direct the emergency response and / or assist as required and will investigate the environmental incidents and emergencies to confirm they have been appropriately resolved. RPI and ALDI will notify the relevant regulatory authorities (DPHI) in accordance with the State requirements.

An incident will be reported if the following scenarios occur or have the potential to occur:

- Serious environmental harm.
- Material environmental harm.
- Prosecution by a regulatory authority.
- Environmental approval condition breach.
- Environmental monitoring parameter breach.

Incidents shall be reported both verbally and in writing within 24hrs of occurrence. Additionally, this information shall be forwarded to the RPI and ALDI Project Manager. Incidents and accidents shall be recorded in an appropriate Incident and Accident Database.

The environmental incidents that cause, or could potentially cause, environmental harm are to be investigated and corrective actions implemented following the investigation. Depending on the seriousness of the incident, key site personnel, RCC's Site HSE Officer / Project Manager, witnesses etc. shall be consulted on the investigation and in determining appropriate corrective or preventive actions.

Where there is a risk of material harm to the environment, incidents must be reported/notified to the appropriate regulatory authority (ARA) without delay, under section 147 of the POEO Act.

Where there is a risk of harm to the protection of the environment and biodiversity and conservation thereof, incidents must be reported/notified to the ARA without delay.

5.2 Preparedness

The key to effective prevention of incidents is risk assessment, procedure development, monitoring and training. During construction activities, RCC's inspections and preventive actions will include:

- Activity specific and daily risk assessments.
- Development of work procedures and safe work method statements in consultation with relevant RCC staff such as work teams, environment team members and senior management.
- Daily inspections of active work sites.
- Completion of routine environmental checklists.
- Issue and quick close-out of non-compliance notices.
- On-going environmental training.
- Environmental audits of work sites, subcontractors and compliance issues.

Environmental and safety information on hazardous substances (eg. Safety Data Sheets (SDS)) will be available at the main site office and where such substances are stored. Environmental response procedures may be tested in areas where a pollution risk is present, such as those adjacent to waterways.

Personnel should be familiar with the Emergency Procedures detailed in Appendix J. Personnel involved in emergency response activities will be provided with specific training. An up-to-date list of emergency response personnel and organisations will be maintained at the site office and compounds.

5.3 Reporting

Site environmental incidents must be reported on an Incident/Injury Record Sheet (Appendix J). The priority is to ensure safety precautions are observed and then the situation is controlled as soon as possible, and to avoid further pollution or other adverse environmental consequences. Reporting of the incident must not delay immediate responses to the incident.

Environmental incidents that cause or threaten to cause material environmental harm must be reported to the Appropriate Regulatory Authority (ARA – EPA, Council) as soon as practicable following the incident. This would include spillage or leak of substances that cause water or land pollution. Material environmental harm generally means harm that is not trivial and / or costs more than $10,000 to clean up.

If the RCC Site Manager believes the incident may be reportable to the ARA, contact the WHS Manager for further advice prior to making an Investigation Report.

Incident reports must be completed and forwarded to the RCC's HSE Manager within 24 hours and must be kept for a minimum of 5 years.

In the event of an environmental emergency, the following persons can be contacted 24 hours per day, seven days per week:

Name(s): **Michael French**

Position/Responsibility: **Richard Crookes Site Manager**

Contact Number: **0437 637 649**

Emergency services contact details are as follows:

- Emergency Hotline: 000
- Ambulance: 000
- NSW Fire Service: 000
- NSW Police (Camden): (02) 4632 4499
- State Emergency Service (SES): 13 2500
- WIRES (injured wildlife): 1300 094 737
- JEMENA (Gas Pipeline): 1300 137 078

For offsite pollution events due to site activities, the HSE officer is to be notified who will notify Office of Environment and Heritage (OEH). The HSE officer contact details are provided in Section 9 below.

Onsite information relating to hazardous materials, including Safety Data Sheets and spill containment materials will be kept at the site office.

5.4 Non-Conformance Reports (NCRs)

RCC is required to implement a non-conformance and corrective action process to address environmental non-conformities regardless of the source. Typically, environmental non-conformances will be identified in audits and inspections, from observations by the Site Manager of poor environmental practices including incorrect waste disposal/recycling including liquid waste, poor storage of hazardous substances, oils, chemicals and damage to existing environmental controls such as sediments fencing. Non-conformances may be issued for serious breaches or repeated minor breaches.

Should a non-conformance be identified in site procedures/controls, a notice is raised. Notices shall be registered in the document management system. Non-conforming product or materials will be quarantined and either returned to the supplier or disposed of. Significant non-conformances will be brought to the attention of the Senior Project Manager who will ensure that the issue is investigated and corrective action taken. Records of action taken must be maintained including emails, meeting minutes, memos, etc.

At a project level, the Project Manager is responsible for identifying potential improvements to the Management System including improvements to procedures, forms, processes, etc. Significant non-conformances will be reported by the Senior Project Manager to enable preventive action to be taken.

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

The Project Manager must prepare a compliance report for each 12 month period following the date of commencement of the action, or otherwise in accordance with an annual date that has been agreed to in writing by the Minister. The Project Manager must:

- Publish each compliance report on the website within 60 business days following the relevant 12-month period.
- Notify the Department by email that a compliance report has been published on the website and provide the weblink for the compliance report within five business days of the date of publication.
- Keep compliance reports publicly available on the website until the approval expires.
- Exclude or redact sensitive ecological data from compliance reports published on the website.
- Where sensitive ecological data has been excluded from the version published, submit the full compliance report to the Department (DPHI) within five business days of publication.

5.5 Complaints Management

Community engagement and notification will be managed by RCC.

A dedicated RCC community engagement person must be appointed and will be responsible for fielding stakeholder feedback and coordinating appropriate responses from the project team, exercising the same mechanisms during construction as used through planning.

Community concerns will be captured, documented and escalated to a nominated RCC representative, for a response and to be resolved within 72 hours.

RCC is responsible for undertaking complaints and feedback handling. RCC personnel will be equipped to respond promptly to concerns about construction impacts, including but not limited to noise, dust and vehicle movements – notwithstanding proper conduct on the part of RCC to mitigate foreseeable impacts. Where required, enquiries and / or disputes about compensation and rectification will be escalated.

A complaints register will be maintained by the RCC Site HSE Officer with the following records for complaints and enquiries, including noise complaints:

- Date and time of complaint.
- The method by which the complaint was made (telephone, letter, meeting, etc.).
- Name, address and contact telephone number of complainant (if no such details were provided, a note to that effect).
- Nature of complaint.
- Action taken in response, including follow up of contact with the complainant.
- Monitoring to confirm that the complaint has been satisfactorily resolved. In the event a noise complaint is made, an acoustic consultant should come to site to conduct noise measurements.
- If no action was taken, the reason(s) why no action was taken.

This process enables the management of receipt and response to issues and reports.

Project staff should be advised of the procedures to be followed on receipt of a complaint during the project induction. RCC will notify the Client (e.g. relevant Local Government Authorities and so on) within 24 hours upon the receipt of a complaint and provide a final report within 5 working days detailing the action taken to remedy the situation and proposed measures to prevent recurrence.

6. Environmental Control Documentation

6.1 Records

Where applicable, RCC will maintain the following records for the project, in legible format, to demonstrate compliance with the CEMP:

- The CEMP (every version), supplementary plans and procedures.
- Internal and external Construction Environmental Management Systems and CEMP audit reports approvals, regulatory licences and permits.
- Regulatory authority inspection reports.
- Correspondence with regulatory authorities and other key stakeholders.
- Employee induction and training records.
- Environmental monitoring records.
- Monthly KPI reports
- Sediment control works checklist and release records.
- Environmental accidents/incidents/emergency reports.
- Non-conformance reports.
- Reports to regulatory bodies.
- Complaint records (see Section 7.1).
- Community involvement information.
- Waste records.
- Checklists and field sheets.
- Relevant reports submitted to regulatory bodies.
- Management review minutes and action taken.

Records will be held for at least five years after the date of completion of the Project. Incident reports, should they occur, will also be issued as part of the RCC handover procedures.

6.2 Inspections and Checklists

Weekly Environmental Inspections are to be completed and documented in line with the Weekly Environmental Checklist provided in Appendix G. The Environmental Weekly Checklist will be updated from time to time to include additional identified environmental considerations that require inspection to ensure effectiveness.

7. Communication

Community engagement and consultation must be conducted in accordance with the Community Consultation and Engagement Plan provided in Appendix O.

7.1 Access to Information

At least 48 hours prior to the commencement of construction until the completion of works under the Development Consent, the following must be undertaken:

- The following information and documents (as they are obtained or approved) are to be publicly made available on the developer's website:
  - The consent conditions, the Development Layout where available and the management and mitigation measures where available.
  - Current statutory approvals for the development.
  - Approved strategies, plans and programs required under the conditions of the consent.
  - The proposed staging plans for the development if the construction, operation or decommissioning of the development is to be staged.
  - Regular reporting on the environmental performance of the development in accordance with the reporting requirements in plans or programs approved under the conditions of consent.
  - A comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in conditions of the consent, or plans and programs.
  - A summary of the current stage and progress of the development.
  - Contact details to enquire about the development or to make a complaint.
  - A complaint register, updated monthly.
  - The Compliance Report of the development.
  - Audit reports prepared as part of Independent Audit of the development and the Developer's response to the recommendations in an audit report.

8. Emergency Plan and Response

Emergency planning and response will be implemented in accordance with RCC's Emergency Response Plan and Safety Response Plan which have been developed for emergency situations that may impact upon the environment. The Incident and Accident Reporting Procedure is presented in Appendix J. A Safety Response Plan will be developed for the following table of potential major incidents/emergencies:

Incident / Emergency	Potential Impact	Contingency Response Measures
Major Oil or Fuel or Chemical Spill Major spills defined as a spill that is likely to have direct environmental consequences.	Contamination of land or stormwater system. Contamination of soil. Prosecution.	• Immediately call the fire brigade and notify superintendent. • Work to stop immediately in the vicinity. • Identify the source of the spill. • Refer to the Material / Safety Data Sheet, MSDS / SDS and evaluate the hazards of the material. • Spill response kits and equipment deployed if it is safe to do so. • Use available resources to contain and clean up the spill. • Contact additional consultants or Subcontractors if required. • Notify relevant authorities and persons ((RCC HSE Manager, Site Manager & Project Manager, EPA). • Implement incident reporting procedures.
Minor Site Spills Minor spills defined as spills which can be contained and rectified correctly without the need of external services.	Contamination of land or stormwater system. Contamination of soil. Prosecution.	• Stop work in the vicinity. • If the material is dangerous, evacuate the site immediately and notify neighbours. • If it is safe, halt the source of the spill immediately. • Contain the spill with spill kits and control the flow. • Block stormwater drains downstream of the spill. • EPA and local Council must be notified about spills that are likely to threaten the environment. • Minor spills shall be contained and rectified with the site spill kit and disposed of correctly. Superintendent to be notified via incident report. • Reported to the Site Manager.
Major Sediment Discharge This could result from heavy rainstorm and flooding beyond the capacity of the	Contamination of stormwater system. Risk to aquatic flora/fauna. Prosecution.	• Work to stop immediately in the vicinity. • Reinstate controls if required. • Install new controls if required. • Apply flocculants if required. • Commence clean-up activities.

Incident / Emergency	Potential Impact	Contingency Response Measures
sediment and erosion controls or a failure in the sedimentation control measures.		• Contact additional consultants or Subcontractors if required. • Notify relevant authorities (i.e. Council) • Implement incident reporting procedures.
Major dust migration event	Catastrophic impact on aviation activities with the potential to cause loss of life Significant financial loss Prosecution	• Stop works immediately • Reinstate controls if required • Install new controls if required • Immediately call the relevant emergency contact line.

At practical completion, RCC will ensure the site and surrounds, or an area which may have been used or impacted upon due to project-related works, will be rehabilitated to a state equivalent or better in comparison to the pre-construction state.

9. Contacts

Relevant contact details are as follows.

Table 9.1: Internal Contact Details

Internal Contacts Position	Name	Contact Number
General Manager – Industrial	Claude Concha	-
Project Manager	Mitchell Kay	0413 611 842
Corporate HSE Manager	Craig Richmond	0414 233 854
Site Manager	Michael French	0437 637 649
Site HSE Officer	Marcello Di Paolo	0418 272 205
Contract Administrator	Gary Kenny	0468 631 807

Table 9.2: External Contact Details

External Contacts Position	Name	Contact Number
Emergency Services	Police/Fire/Ambulance	000
NSW Police (Camden)		(02) 4632 4499
Liverpool Council		(02) 8711 7000
Poisons Info Line		13 11 26
EPA Hotline		131 555

10. References

AS/NZS ISO 14001: Environmental Management Systems – Specifications with Guidance for Use

AS 3480.4: Methods for Sampling and Analysis of Ambient Air

AS 1940-2017 The Storage and Handling of Flammable and Combustible Liquids

AS 4482 (2005) Guide to the Sampling and Investigation of Potentially Contaminated Soil.

Contaminated Land Management Act 1997

Environmental Planning and Assessment Act 1979

Environmental Protection and Biodiversity Conservation Act 1999

Environmentally Hazardous Chemicals Act 1985 (OEH)

Heritage Act 1977 (OEH)

IECA Best Practice Erosion and Sediment Control Guidelines 2008.

Landcom, 2008, The Blue Book – Managing Urban Stormwater: Soils and Construction.

Local Government Act 1993.

NEPM (2013) National Environment Protection (Assessment of Site Contamination) Measure, Schedule A and Schedules B(1)-B(9). National Environment Protection Council, Adelaide.

NSW EPA (2017) Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme (3rd edition). NSW EPA, Sydney.

NSW EPA (1995) Contaminated Sites: Sampling Design Guidelines. NSW EPA, Sydney.

NSW EPA (2014) Waste Classification Guidelines, Part 1: Classifying Waste

NSW EPA (2014) Waste Classification Guidelines, Part 4: Acid Sulfate Soils

Acid Sulfate Soil Management Advisory Committee (ASSMAC) (1998), Acid Sulfate Soil Manual.

NSW EPA (2015) Contaminated Sites: Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997. NSW DECC, Sydney.

NSW EPA (2020) Guidelines for Consultants Reporting on Contaminated Land. NSW EPA, Sydney.

Per- and Poly-Fluoroalky Substances National Environmental Management Plan 3.0 (PFAS NEMP 2025)

Protection of the Environment Operations Act 1997 (OEH).

Soil Conservation Act 1938 (OEH).

Waste Avoidance and Resource Recovery Act 2001 (OEH).

Waste Management Act 2000 (NSW Office of Water).

11. Limitations

This Report has been prepared by Geosyntec Consultants Pty Ltd (**Geosyntec**) pursuant to the CEMP executed by Geosyntec and Richard Crookes Constructions (**Client**). This Report is for the exclusive use of the Client and any entity who receives authorisation by way of written approval by Geosyntec (**Authorised Party**). This Report is subject to the terms, conditions and limitations contained in the CEMP, as well as the disclaimers, limitations, assumptions, qualifications and exclusions contained in this Report.

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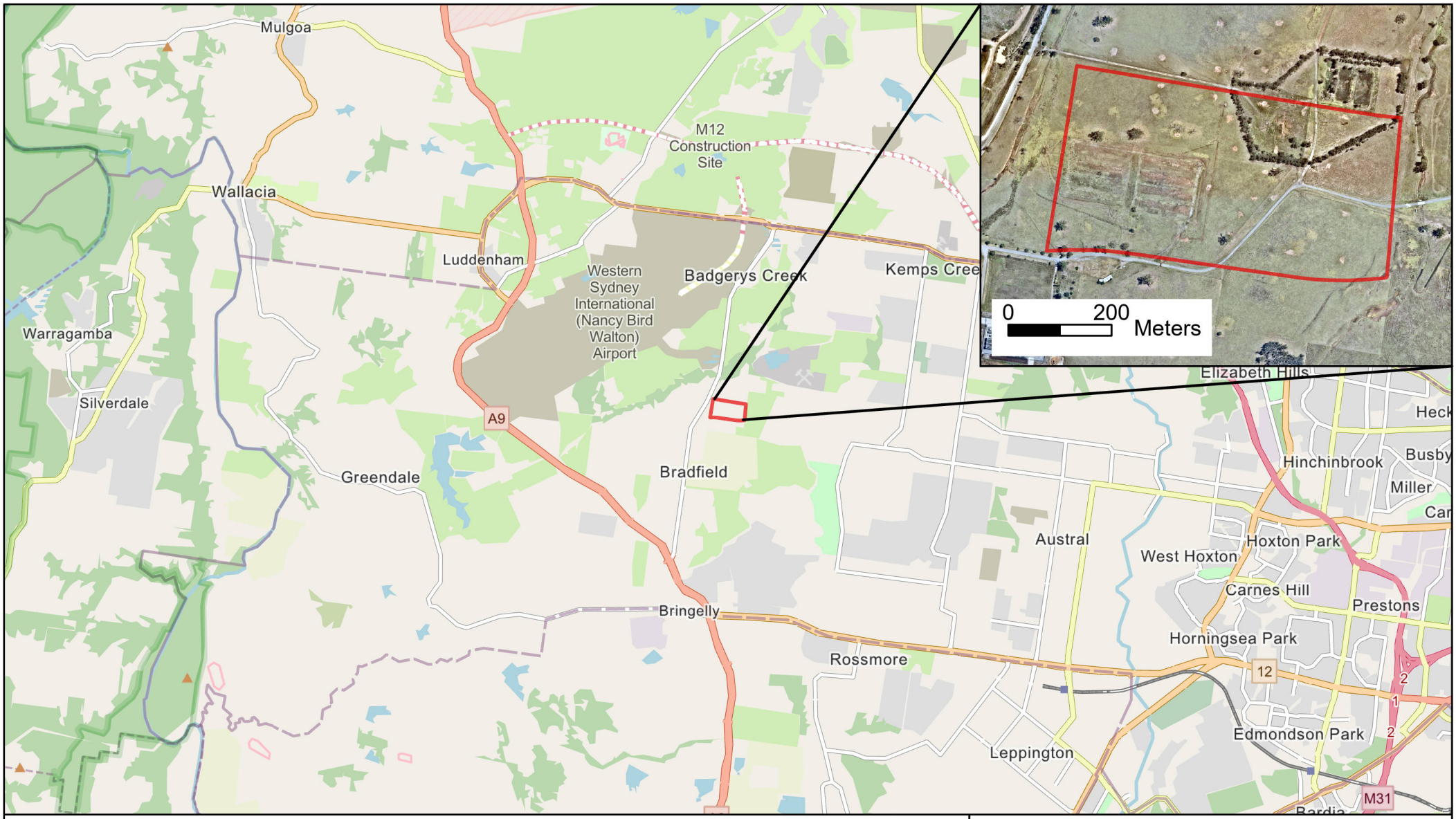
Appendix A
Figures

Geosyntec consultants



Legend

Approximate Site Boundary

N

Meters

0 2,000

Site Location Map

475 Badgerys Creek Road, Bradfield

Geosyntec consultants

AU125102	February 2026

Figure 1

Notes:
Source Image (Nearmap 14/12/2025)

Spatial Reference
Name: GDA2020 MGA Zone 56
PCS: GDA2020 MGA Zone 56

Legend

Approximate Site Boundary

N

Meters

0 100

Site Layout Map

475 Badgerys Creek Road, Bradfield

Geosyntec consultants

AU125102 | February 2026

Figure 2

Notes:
Source Image (Nearmap 14/12/2025)

Spatial Reference
Name: GDA2020 MGA Zone 56
PCS: GDA2020 MGA Zone 56

Appendix B
Site Induction

Geosyntec consultants

Nic
DASHBOARD
EMPLOYERS
PERSONNEL
PERMITS
BOOKINGS
SWMS
SDS
SAFETY PLAN
MEETINGS
INJURY
INCIDENTS
EQUIPMENT
BULLETINS
INSPECTIONS
OBSERVATIONS
PROGRESS
REGISTERS
SITE DIARY
INSIGHTS
REPORTS
PROJECT SETTINGS
DOCUMENTS
MY ACCOUNT
SUPPORT
LOG OUT

Personnel / Create

Import a worker from the company database

Region

Employer

Worker — search by name or unique code — Import

- Aaron Walker - 882221
- Abdalah Hussein - 727747
- Abdul Yassine - 979072
- Adam Bloom - 786135

Or Create a new Worker

Project Specific Details

Employer

Comments on Induction (Project Specific)

RCC Induction (sticker) Number

Personal Details

First Name *

Last Name *

Job Title * — [Select Job Title]

Date of Birth * — [Day] / [Month] / [Year]

Preferred Communication Language *

English (Australia / New Zealand)

Internal Information

Turnstile Identifier (if applicable)

New Profile Picture — Choose file — No file chosen

New Profile Picture Preview

Comments (Shared Across Projects)

Induction Acknowledgement

New Induction Acknowledgement — Choose file — No file chosen

Additional Project Details

Reason for Worker's rejected Induction (if applicable)

VEVO Search Visa entitlement verification online (if applicable) — Yes / No / N/A

Sighted personal docs: passport — Yes / No / N/A

Certificate of citizenship + photo ID — Yes / No / N/A

RCC Induction Sticker Issued — Yes / No

Risk Assessment and Training:

I will only work with correctly tagged electrical equipment. * — Yes / No

Have you received safety training in the duties you are required to undertake? * — Yes / No

Have you received safety equipment & tools to carry out your work in a safe manner? * — Yes / No

Have you completed the General Construction Induction Training (white card or have interim ticket) or more than 2 years previously? Or, carried out construction work in the preceding 2 years? *

◯ Yes ◯ No

If no, please provide more details

Have you been issued with ALL protective clothing & equipment to undertake the task and site requirements? Including safety glasses *

◯ Yes ◯ No

I understand that I may be tested for Drug and Alcohol on this project on a random basis. *

◯ Yes ◯ No

NOTE to RCC Staff

We will no longer be requesting or collecting digital copies of subcontractors' ID cards or drivers' licenses in Hammertech. We do not require copies of these for entrance to site. RCC Team Member should sight & verify the license belongs to the applicant on the induction and select the below confirmation box as evidence of the data being checked.

Note for subcontractor's workers

RCC does not require copies of your ID cards or drivers' license to enter site. We do however require details of any valid tickets and licenses for operating plant and machinery onsite. Please ensure your profile has all such details included before presenting to RCC Team member for approval of your induction.

RCC Team Member should verify the license belongs to the applicant on the induction and select the below confirmation box as evidence of the data being checked.

My signature below verifies that I have sighted the workers identification to confirm the attached licenses and tickets are belong to the worker profile attached *

◯ Yes ◯ No

Name and Signature *

Sign on the line below

Clear

Please print your name

Address Details

Street Address

Suburb

Postcode

State [Select State]

Country Australia

Contact Details

Mobile +61

Email

Phone

Emergency Contact

Name

Phone

Relationship

Richard Crookes Induction Information

Richard Crookes requires you to provide the following information. Please note, information is treated with the strictest confidence and is referred to for reporting purposes only.

Are you an Australian citizen? * ◯ Yes ◯ No

If not an Australian citizen, do you have a current work visa? If yes, please upload into the licences section below

◯ Yes ◯ No

Are you of Aboriginal or Torres Strait Islander origin? (Please select) *

Which gender do you identify with? (Please select) *

Is your preferred language English? ◯ Yes ◯ No

Home Postcode - Required for Reporting purpose only *

Are you an apprentice? * ◯ Yes ◯ No

If Yes, select Year

Do you have less than 2 years full time experience in the Australian construction industry? * ◯ Yes ◯ No

Defense Access Card Type

Current Licences

Please confirm with the person which of the following licences they have and check the expiry dates.

CIC Construction Induction Card (Required)

Add another on same card

Issue Date * [Day] / [Month] / [Year]

State / Issuer * Issued By

Card / Licence No * Licence Number

Scanned Copy - Front: Choose file — No file chosen

Scanned Copy - Back: Choose file — No file chosen

Additional Licences

Select Licence — Add Licence

Medical Checklist

To help ensure your safety onsite, please inform us if you are affected by any of the following medical conditions

Do you have any allergies? * ◯ Yes ◯ No

Do you suffer from any conditions, including Asthma, Heart Disease, Blood Pressure, Epilepsy, Diabetes, Strokes, Ailments or other? * ◯ Yes ◯ No

Do you wear any of the following: Contact Lenses, Hearing Aid, Prescription Glasses or other? * ◯ Yes ◯ No

Associated SWMS

Please confirm with the person which of the following SWMS submitted by their employer they will be employing as part of their work onsite.

Induction Details

Company

Induction Section(s)

Section	Questions	Status
Richard crookes constructions HammerTech online induction - Part 1	NA	Incomplete
Richard crookes constructions HammerTech online - Jamie Intro induction -	NA	Incomplete
Richard crookes constructions HammerTech online induction - Part 2	NA	Incomplete
RCC Company Induction Part 3	NA	Incomplete
Jamie Conclusion	NA	Incomplete

Richard crookes constructions HammerTech online induction - Part 4	NA	Incomplete
Overall Company Induction		Incomplete

Induction Sign off

Sign off Action

- (●) Capture Signature Now
- ( ) Send SMS / Email to Capture Signature

I have been inducted into Richard Crookes Construction's Project. I have witnessed the RCC Company and Site Specific Induction and have been made aware and have access to the RCC WHS Management Plan and RCC Standards for this project.

The request for information is made in the course of Richard Crookes Constructions Pty Ltd. everyday business. Under the Privacy Act is it important that you understand that the information you provide will be utilised by Richard Crookes staff for analysis purposes, and is likely to be held on a database.

By signing this, I acknowledge and understand the project requirements.

Sign on the line below

Clear

Actions

CANCEL | CREATE & APPROVE

Appendix C

Biodiversity Assessment Report

Geosyntec consultants

Automated Distribution Centre

Biodiversity Assessment

ALDI Foods Pty Ltd

ecological AUSTRALIA
A TETRA TECH COMPANY

Document Tracking

Project Name:	Automated Distribution Centre
Project Number:	24SYD9260
Project Manager:	Hugh Shouldice

This report should be cited as 'Eco Logical Australia 2024, Automated Distribution Centre, Prepared for ALDI Foods Pty Ltd.'

Acknowledgements

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Disclaimer

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1. Introduction

1.1. Purpose of the report

Eco Logical Australia (ELA) were engaged to undertake a biodiversity assessment of a proposed Automated Distribution Centre at 475 Badgerys Creek Road, Bradfield. The Automated Distribution Centre (ADC) is to be assessed as State Significant Development (SSD).

This report has been prepared in response to the requirements contained within the Secretary's Environmental Assessment Requirements dated 8 November 2024 and issued for the SSD-76913969. Specifically, this report has been prepared to respond to the SEARs requirement issued below.

The subject land is located on land that is biodiversity certified under section 8.2 of the Biodiversity Conservation Act 2016 (BC Act). Biodiversity certification removes the need for biodiversity assessment under BC Act. The preparation of Biodiversity Development Assessment Report (BDAR) is not required under the BC Act, as the ADC site is on certified land.

Table 1 Biodiversity-related SEARs

Item	Description of requirement
Biodiversity	An assessment of the proposal's biodiversity impacts in accordance with the Biodiversity Conservation Act 2016 (BC Act), including: - identification of certified and non-certified land and demonstration of consistency with the State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Biodiversity Certification Order) - the preparation of a Biodiversity Development Assessment Report (BDAR) where required under the BC Act for development on non-certified land, except where a waiver for preparation of a BDAR has been granted.

1.2. Site description.

The land to which this Report relates is referred to as 475 Badgerys Creek Road, Bradfield, which has direct interface with the Western Sydney International Airport (WSI). The ADC will be located on future lots within the 475 Badgerys Creek Road landholding which is currently the subject of the Ingham Property Group (IPG) draft Master Plan. The ADC site is approximately 220,827sqm and was formerly used for intensive poultry farming.

1.3. Project description

It is ALDI's intention to construct and operate a new ADC within a portion of the IPG site. The ADC will supply over 200 ALDI stores in NSW with daily goods and have capacity to service future expansion of the store network. The proposed ADC will comprise of a combination of temperature zones (including ambient, chilled & freezer zones) for the safe storage and distribution of goods. The facility will be highly automated with approx. 80% of the internal processes being performed unmanned. The facility will have a footprint of approx. 90,827 sqm and at the highest point will have a height of approximately 42m. Further project specifics are provided in the table below.

Table 2: Table Caption

Key element	Proposal
Defined Use	Warehouse or distribution facility
Site Area (approx.)	220,827sqm
Building Height	24m with two 42m 'high bay' components
Warehouse GLA	106,706 sqm
Site Coverage	41.1%
Landscaped Area	15.0%
Car Parking	408
Staff	Warehouse: 510 people (split across 3 shifts). Main Office: 75 Office plus ancillary spaces. 350 - maximum on-site at one time.
Truck Movements	Total vehicle movements p/day: 3,980 movements Light vehicle movements p/day: 1,844 movements Heavy Vehicle movement p/day: 2,136 movements
Hours of Operation	24 hours a day, 7 days a week

Figure 1: ADC site in relation to the draft IPG Master Plan area

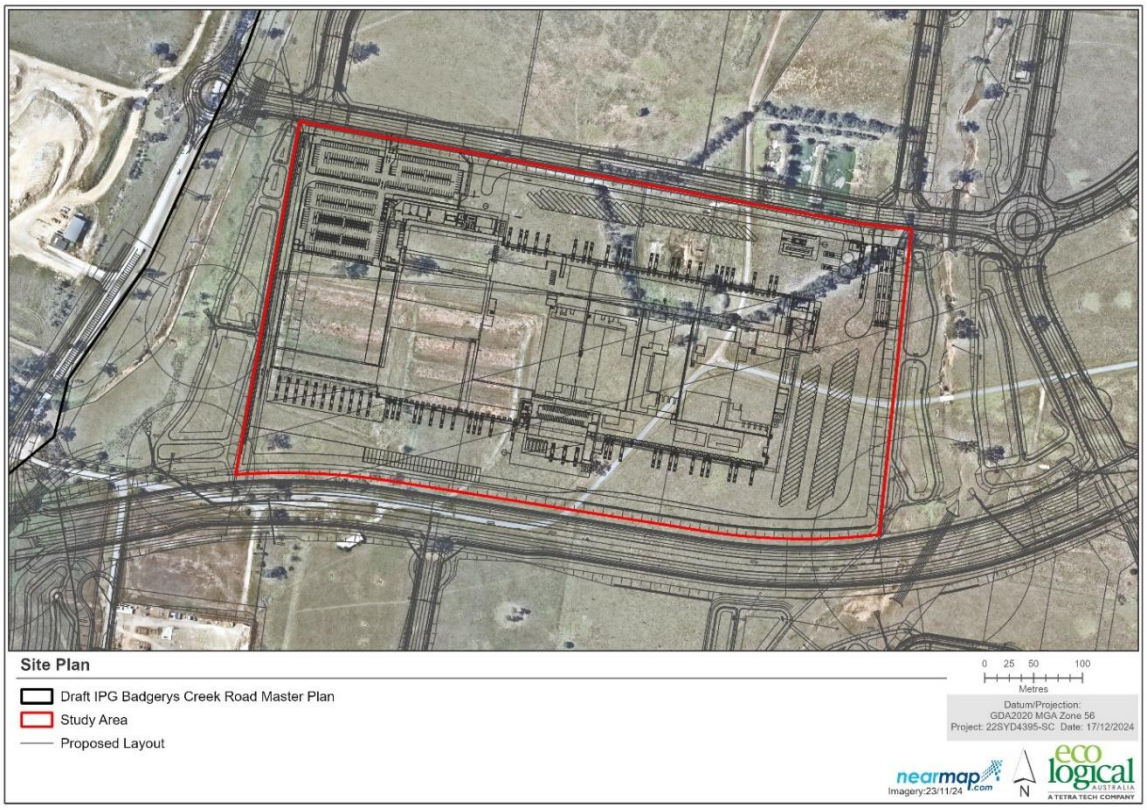

Figure 2: Site Plan

2. Statutory context

This section describes the biodiversity-related legislation and planning instruments that are relevant to the proposed development.

Table 3 Statutory context

Commonwealth Legislation	Relevance to Project
Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act)	The EPBC Act establishes a regime for assessing and regulating the environmental impact of activities (including development) where a Matters of National Environmental Significance (MNES) may be affected. Under the EPBC Act, any action which has, will have, or is likely to have a significant impact on a matter of MNES is defined as a 'controlled action', and requires approval from the Minister. On 28th February 2012, the Commonwealth Minister for the Environment announced that the program of development activities within the Growth Centres was approved under the EPBC Act Strategic Assessment process. Specifically, all actions associated with the development of the Western Sydney Growth Centres as described in the Sydney Growth Centres Strategic Assessment Program Report (November 2010) have been assessed at the strategic level and approved in regard to their impact on the following MNES: - World Heritage Properties - National Heritage Places - Wetlands of International Importance - Listed threatened species and communities - Listed migratory species These decisions indicate that the Commonwealth is satisfied that the conservation and development outcomes that will be achieved through the Western Sydney Growth Centres Program will satisfy their requirements for environmental protection under the EPBC Act. Provided that development activity proceeds in accordance with the Growth Centres requirements (such as the Biodiversity Certification Order, *State Environmental Planning Policy (Precincts – Western Parkland City) 2021*, Western Sydney Aerotropolis Development Control Plan (DCP) Phase 2, Growth Centres Development Code etc.) there is no requirement to assess the impact of development activities on MNES within the Growth Centres and no requirement for referral of activities to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW).
NSW Legislation	
Environmental Planning and Assessment Act 1979 (EP&A Act)	The EP&A Act is the principal planning legislation for NSW. It provides a framework for the overall environmental planning and assessment of development proposals. The proposed development is State Significant Development, for which SEARs have been issued.
Biodiversity Conservation Act 2016 (BC Act)	The subject land is located on land that is biodiversity certified under section 8.2 of the BC Act. Biodiversity certification removes the need for biodiversity assessment under BC Act.
Local Land Services Amendment Act 2016 (LLS Amendment Act)	The LLS Amendment Act does not apply to the subject land. In accordance with Section 60O, the clearing of any native vegetation has been authorised by biodiversity certification enacted under the BC Act.
Planning Instruments	
State Environmental Planning Policy	**Strategic Conservation Planning**

(Biodiversity and Conservation) 2021 Biodiversity and Conservation SEPP	The subject land is within the Cumberland Plain Conservation (CPCP) Area, for which controls are provided under Chapter 13 of the Biodiversity and Conservation SEPP. However, the subject land is not identified as any of the CPCP land categories and is not classified as 'Excluded' or 'Avoided' under the CPCP. As such, consideration of Chapter 13 is not required. Koala Habitat Protection In accordance with Schedule 2 of the Biodiversity and Conservation SEPP, Chapter 4 Koala Habitat Protection 2021 applies to the local government area (LGA) of Liverpool. The City of Liverpool corresponds to the Central Coast Koala Management Area (KMA).
State Environmental Planning Policy (Precincts – Western Parkland City) 2021 Western Parkland City SEPP	Chapter 4 – Western Sydney Aerotropolis Part 4.2 Land use Zones The subject site is zoned ENT – Enterprise. The objectives of this zone are: ● *To encourage employment and businesses related to professional services, high technology, aviation, logistics, food production and processing, health, education and creative industries.* ● *To provide a range of employment uses (including aerospace and defence industries) that are compatible with future technology and work arrangements.* ● *To encourage development that promotes the efficient use of resources, through waste minimisation, recycling and re-use.* ● *To ensure an appropriate transition from non-urban land uses and environmental conservation areas in surrounding areas to employment uses in the zone.* ● *To prevent development that is not compatible with or that may detract from the future commercial uses of the land.* ● *To provide facilities and services to meet the needs of businesses and workers.* Part 4.4 Development Controls – general Section 4.25 of Part 4.4 provides development controls for the ENZ zone and areas mapped as High Biodiversity Value. As these provisions do not apply to the ADC site, no further consideration is required. Part 4.7, Division 1: Precinct Plans This part of the SEPP provides for the adoption of Precinct Plans. The Aerotropolis Precinct Plan was adopted and then amended in May 2023. The Aerotropolis Precinct Plan will have to be addressed, once the IPG Master Plan has been adopted. Part 4.7 Division 2: Master Plans This part provides for Master Plans. A draft IPG Master Plan has been publicly exhibited, but has not yet been adopted. The proposed ADC does not alter the draft IPG Master Plan.
Aerotropolis Precinct Plan (September 2024)	The Precinct Plan contains two objectives that specifically reference biodiversity: *O12: Manage water in the landscape to facilitate urban cooling, improve waterway health and biodiversity and promote sustainable water use* *O14: Reinstate and rehabilitate natural landscape connections and systems to sustain biodiversity and allow natural systems to function sustainably.*

Aerotropolis Development Control Plan – phase 2 (version 2 dated 26 September 2024)	This DCP contains controls which supplement those in Chapter 4 of the Western Parkland City SEPP. And the Aerotropolis Precinct plan. The DCP contains the following objectives in relation to protection of biodiversity: - *Ensure consistency with the requirements of the relevant biodiversity certification for the subject land where applicable.* - *Ensure construction and operational works avoid and minimise impacts to native vegetation and ecological communities.* - *Retain and protect native vegetation areas, particularly those with Aboriginal cultural value, and provide for areas with a size and configuration that will allow for the survival and improvement of the native vegetation communities.* - *Implement the Sydney Region Growth Centres Biodiversity Certification Order where applicable.* - *Implement the Cumberland Plain Conservation Plan (CPCP) where applicable.* - *Manage fire risk by regimes that protect biodiversity and habitats in the long term.* Specific performance outcomes and benchmark solutions are also provided in the DCP.

3. Biodiversity values

Eco Logical Australia undertook a biodiversity survey of the site in 2022 and 2023, the site is predominately pasture improved exotic grassland, with some isolated paddock trees that are found in Cumberland Plain Woodland. No hollow bearing trees were recorded on the site during the 2022/23 surveys and no threatened species were recorded.

The planted native trees includes rows of *Callistemon citrinus* (Crimson Bottlebrush), *Corymbia citriodora* (Lemon-scented Gum), *Casuarina glauca* (Swamp Oak), *Eucalyptus robusta* (Swamp Mahogany). These areas had an exotic groundcover layering including *Cenchrus clandestinus* (Kikuyu), *Chloris gayana* (Rhodes Grass), *Paspalum dilatatum* (Paspalum), *Plantago lanceolata* (Lamb's Tongues), *Sida rhombifolia* (Paddy's Lucerne) and *Echinochloa* spp.

Note that the farm dams shown in the image below have since been de-watered.

As shown on Figure 4, none of the biodiversity values on site were mapped as High Biodiversity Value (ENV) under the SEPP (Western Parkland City) 2021.

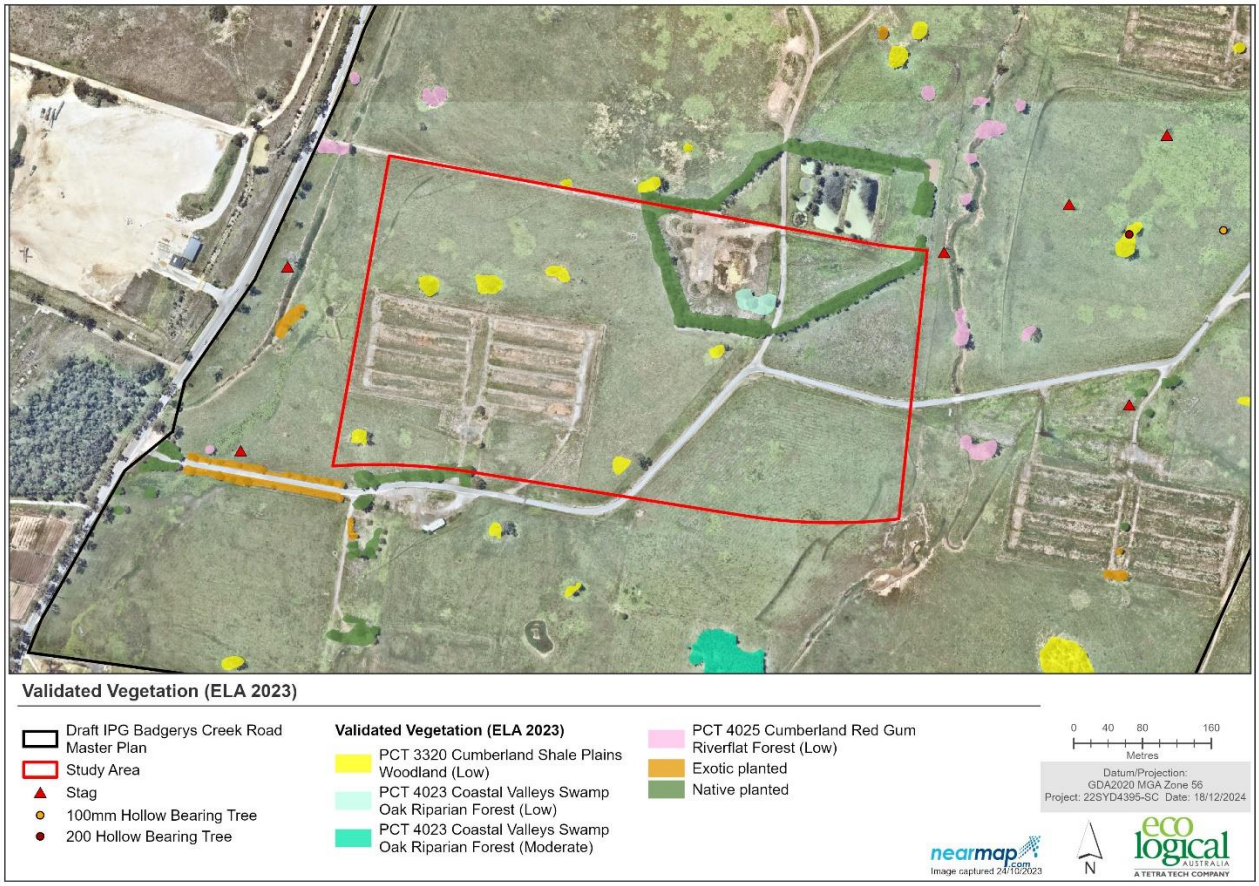

Figure 3: Plant Community Types

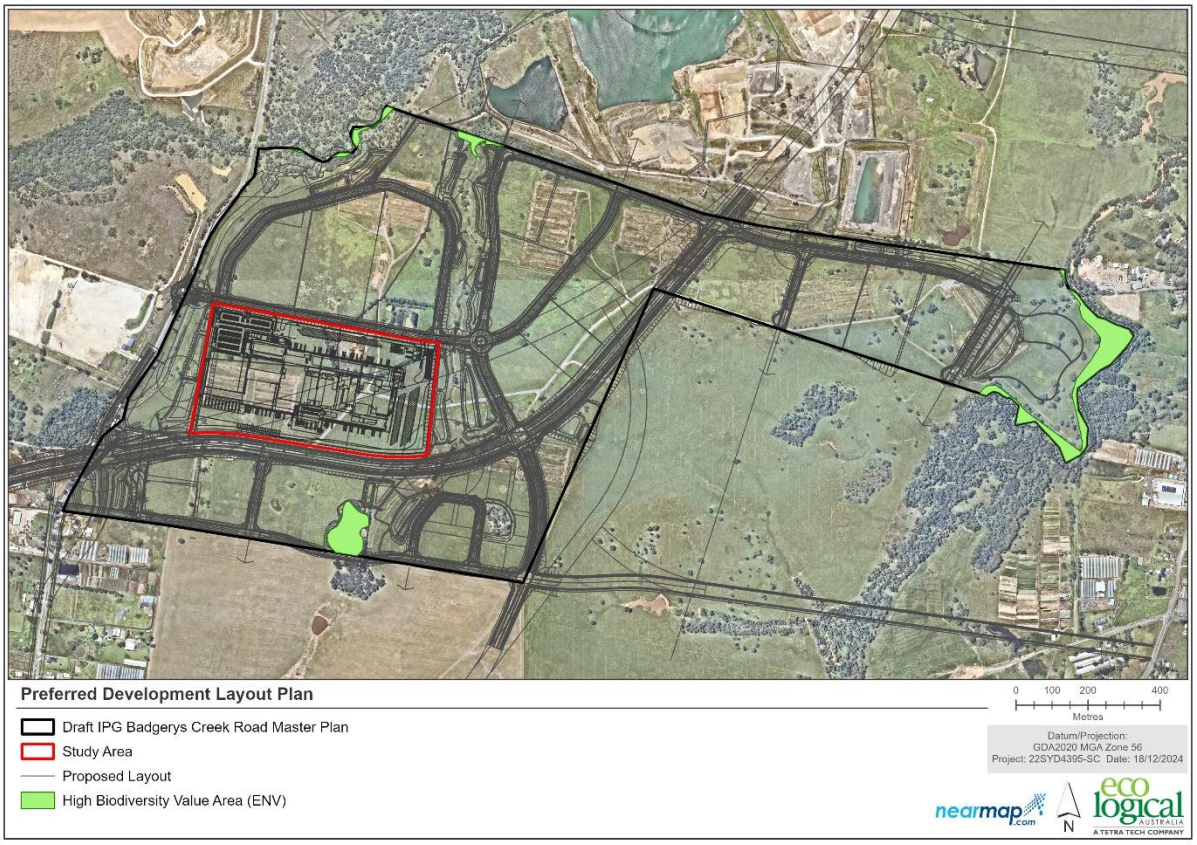

Figure 4: High Biodiversity Value (ENV) in relation to the ADC site

4. Assessment of proposed development

This chapter assesses the proposed development against the legislation and planning instruments that apply to the development.

4.1. NSW Biodiversity Conservation Act 2016

The ADC is located entirely on Biodiversity Certified land in accordance with the *Biodiversity Conservation Act 2016 (BC Act).* See Figure 3.

Section 8.4(2) of the BC Act describes the effect of biodiversity certification in relation to development under Part 4 of the *Environmental Planning and Assessment Act 1979 (EP&A Act*). This section states *'an assessment of the likely impact on biodiversity of development on biodiversity certified land is not required for the purposes of Part 4 of the EP&A Act 1979'.*

As the study area proposed for development is entirely biodiversity certified, no further assessment of impacts to biodiversity values is required under this legislation.

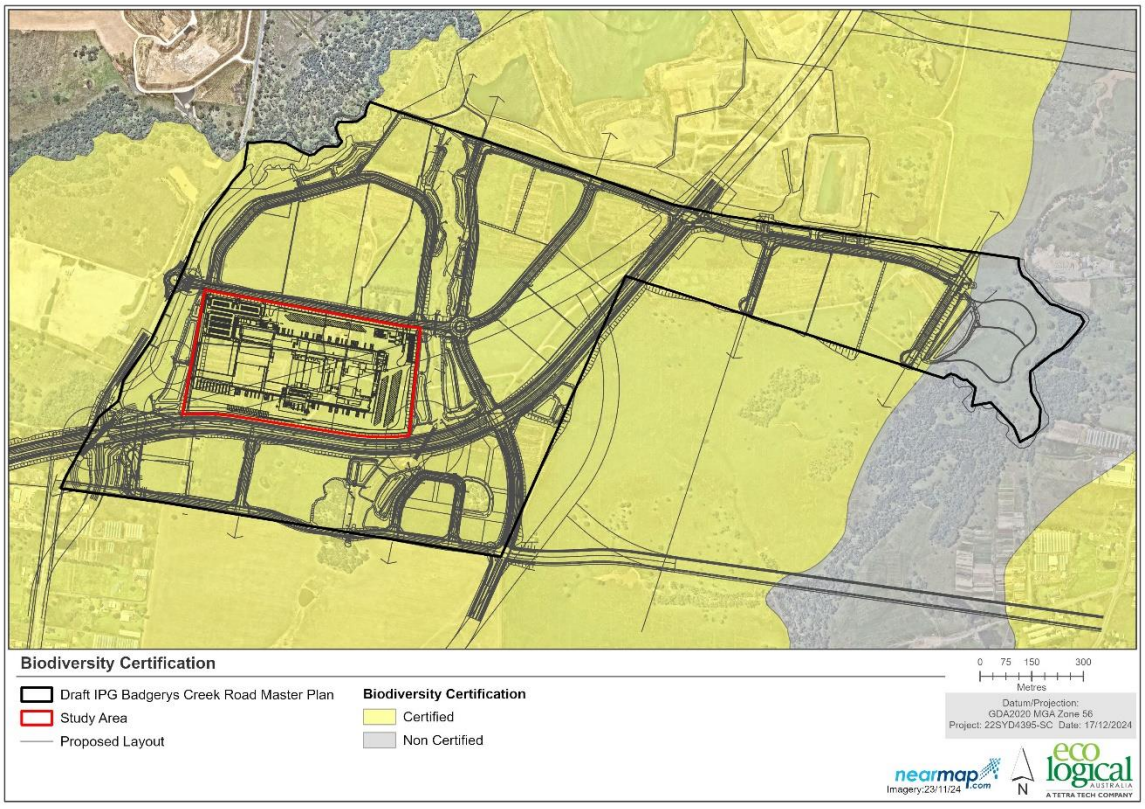

Figure 5: Study Area in relation to biodiversity certified land

4.2. Aerotropolis Precinct Plan

Objectives (*BGO*) and Requirements (BG)	ADC compliance
4.5 Blue-Green Infrastructure Framework	
BG1 Development is to contribute to the establishment of the blue-green infrastructure framework for the Aerotropolis in accordance with Figure 5.	The site does not contain areas of High Biodiversity Value (ENV) or Strategic Conservation Areas identified in Figure 5 of the Precinct Plan.
4.5.2 Riparian Corridors	There are no riparian corridors within the ADC site.
4.5.4 Biodiversity and vegetation corridors	
BG1 Existing Native Vegetation and other vegetation under the Cumberland Plain Conservation Plan (refer to Figure 7) is to be protected as required by the Aerotropolis SEPP. Development applications are to demonstrate, to the satisfaction of the consent authority, that measures are in place to protect and provide for the long term management of the vegetation to achieve biodiversity conservation outcomes under the Growth Centres Biodiversity Certification Order or the Cumberland Plain Conservation Plan as relevant.	The ADC site will not impact any areas mapped as Existing Native Vegetation in Figure 7 of the Precinct plan.
BG2 Recreation facilities, pathways and other infrastructure are not to be located on land referred to in Requirement BG1.	The ADC does not propose any facilities or pathways in these areas.
BG3 Revegetation and landscaping are designed and managed to account for future climatic conditions and include climate ready species. Resources relating to climate-ready species are available at https://www.mq.edu.au/__data/assets/pdf_file/0006/807666/Climate-Reveg-Guide-v2-2018.pdf	No revegetation of the site is proposed. Refer to Landscape Plans for detail on landscape planting.
BG4 Development applications are to demonstrate: a) reuse of native plants (including but not limited to seed collection) and top soil from development sites that contain known or potential native seed bank. Appropriate uses may include, but are not limited to, application in re-vegetation or restoration works and landscaping in the precincts, b) the relocation of native animals from development sites, prior to development commencing.	a. No restoration is proposed on site b. Prior to construction, preclearance survey will be undertaken to ensure any native fauna using habitat features across the site (stags and hollows) are identified and relocated in accordance with the FFMP (ELA 2024a) prepared for the Master Plan.

4.3. Draft IPG Badgerys Creek Road Master Plan

The draft IPG Badgerys Creek Road Master Plan prepared by Ingham Property Group (IPG) was on public exhibition from 15 November to 13 December 2024. The draft Master Plan has been publicly exhibited, but not yet approved.

The draft master plan for the 184-hectare IPG site includes an enterprise estate with warehouse and distribution centres, light industry, and a small-scale local centre including commercial and retail uses, as well as the provision of open space

4.4. Western Sydney Aerotropolis DCP Phase 2

Chapter 2.4.2 – Protection of Biodiversity			
	Performance Outcome	**Benchmark Solution**	**Response**
PO2	Populations of threatened species are retained, and the condition of suitable habitat improves within areas of the Cumberland subregion most likely to support long-term viability.	1. Mitigation to be undertaken in accordance with the following best practice guidelines for threatened ecological communities (TEC): a. *Best Practice Guidelines: Cooks River/Castlereagh Ironbark Forest* (NSW Department of Environment and Climate Change, 2008) within and adjacent to the TEC; and b. *Recovering Bushland on the Cumberland Plain: Best Practice Guidelines for the Management and Restoration of Bushland* (NSW Department of Environment and Climate Change, 2005). 2. Fencing is to be constructed where required to protect threatened species habitat. Site design allows access to fencing for ongoing maintenance. 3. Temporary protective fencing to be erected around areas identified for conservation on or immediately adjoining the site prior to construction commencing. 4. Allow public access to temporary fencing to ensure ongoing maintenance throughout construction. 5. Protect integrity of temporary fencing during construction. 6. Implement open structure design for roads adjacent to known populations of Cumberland Plain Land Snail in accordance with actions under the *Save our Species Program* (EES, 2020). 7. Locate Asset Protection Zones (APZs) for bushfire protection wholly within certified land. The appropriate APZ distance is determined by *Planning for Bush Fire Protection 2019* and Rural Fire Service *Standards for Asset Protection* based on vegetation type, slope and development type.	1. The site does not contain vegetation to be rehabilitated 2. There is no threatened species habitat on site that requires fencing. 3. There are no conservation areas requiring fencing. 4. Access to construction fencing will be provided 5. Fencing will be provided for construction 6. The site does not contain habitat for Cumberland lain Land Snail. 7. The entire site is biodiversity certified and any temporary APZs will be on biodiversity certified land. 8. The control of domestic animals is not relevant as the DA does not include residential development 9. The site does not contain native vegetation that would provide for seed or topsoil suitable for use in restoration. Weeds and associated topsoil should be disposed of appropriately to limit the potential spread of propagules.

Chapter 2.4.2 – Protection of Biodiversity			
		8. Contain domestic cats and dogs within certified-urban capable land, consistent with relevant council guidelines as permitted and appropriate. 9. Provide for the reuse of native plants (including but not limited to seed collection) and topsoil from development sites that contain known or potential native seed bank.	
PO3	Development facilitates the connected movement of native animals through the landscape.	1. Avoid impacts to habitat features which provide essential habitat for native fauna including ground cover and shrub layers, emerging trees, mature trees, dead trees capable of providing habitat, natural drainage lines and rock outcrops and avoid impacts to soil within the Tree Protection Zone (TPZ) of the retained trees and the subject and neighbouring sites. 2. Movement of fauna is facilitated within and through wildlife corridors by: a. Ensuring that development, services and landscaping associated activities do not create barriers to the movement of fauna along and within wildlife corridors. b. Protect fauna from potential construction hazards during pre-construction and construction. c. Prepare a pre-clearance native fauna survey immediately prior to clearing of native vegetation to ensure that arboreal mammals, roosting and hollow-using birds, bats and reptiles are stopped from accessing any vegetation to be cleared and are translocated prior to clearing. Translocation may require a licence from NSW Environment, Energy and Science under the Translocation Operational Policy. d. Adopt and implement open structure design for roads adjacent to known populations of the Cumberland Plain Land Snail in accordance with actions under the NSW Government's *Saving Our Species* program.	N/A – wildlife corridors are not present within the subject land.
PO4	Within land subject to the Cumberland Plain Conservation Plan only, development	1. The following threatened species require setbacks: Grey-headed flying fox:	N/A - The study area is not located within 100 m of a Grey-headed Flying-fox camp (DCCEEW 2024). No

Chapter 2.4.2 – Protection of Biodiversity			
	adjoining conservation areas provides ecological setbacks to threatened species.	i Grey-headed flying fox camp requires 100m setback to any buildings and development; ii The setback area should be maintained free of flying fox roosting habitat; and iii A flying fox management plan should be provided to demonstrate management and mitigation measures. Raptors: i Raptor nests require a 500m circular setback from where nests are in extensive undisturbed bushland; and ii Where nests are located closer to existing developments, a minimum circular setback distance of 250m should be maintained along with an undisturbed corridor at least 100m wide extending from the nest to the nearest foraging grounds.	raptor species were assessed as potentially or likely to be using the study area; no large hollows were observed.
PO5	Noise and light adjacent, and near, conservation areas does not result in any disturbance to wildlife.	1. High intensity lighting including industrial or commercial lighting, sports field lighting, lighting within carparking areas and associated with any industrial or commercial-scale retail development shall be designed to avoid light spill into adjoining parks and biodiversity areas (AS 4282 Control of the Obtrusive Effects of Outdoor Lighting, or updates to that standard, are to be considered as a minimum). 2. Install warm coloured LED street lighting where a development footprint contains or is within 100m of known microbat colonies or habitat likely to support microbat colonies to deter insects. 3. Manage light spill and noise producing activities where wildlife impacts are likely to arise from the proposed development and where development is adjacent to avoided land. Measures shall include appropriate noise treatment barriers along major roads and other light and noise attenuation mitigation measures.	Lighting is recommended to be in accordance with *ASNZS 4282:2019 Control of the obtrusive effects of outdoor lighting*. Measures such as shielding and use of warm-toned lights are recommended. Suitable timing of construction activities will be implemented, in accordance with the standard daytime hours, to avoid noise impacts to wildlife during the evening and night.

Chapter 2.4.2 – Protection of Biodiversity			
		4. Ensure that any residual noise impacts on wildlife arising from development are appropriately mitigated.	
PO7	Retain and protect koala populations and their habitats through mitigating indirect and ongoing impacts from development.	1. For all certified-urban capable land adjacent to koala habitat, the following controls apply: a. Design subdivision layout, including perimeter roads and asset protection zones to reduce impacts to, and protect areas of, adjacent koala habitat. b. Signpost areas adjoining koala habitat to identify koalas in the area and associated penalties for non-compliance. c. Exclude planting tree species in open space, recreation areas and urban streets that are koala feed tree species set out below by Schedule 2 – Central and Southern Tablelands and Central Coast Koala Use Tree Species of the State Environmental Planning Policy (Koala Habitat Protection) 2021. d. An ecologist shall be present through the duration of any pre-clearance koala surveys and vegetation clearing works to maintain oversight and responsibility of the activities and koala translocation. 2. Where a koala exclusion fence is not installed between koala habitat and certified-urban capable land, the following development controls apply: a. Prepare a pre-clearance koala survey immediately prior to the removal of native vegetation to ensure minimal disturbance to koala habitat. Implement a translocation plan if koalas are found. Translocation may require a licence from NSW Environment, Energy and Science (EES) under the Translocation Operational Policy. b. Implement a tree-felling protocol to avoid impacts to koalas in trees to be cleared.	N/A - Koala have not been recorded within the study area. The study area is not within a koala management area under Chapter 3 or 4 of the Biodiversity and Conservation SEPP. The study area is not considered to contain or be adjacent to koala habitat.

Chapter 2.4.2 – Protection of Biodiversity

c. Enforce vehicle wash-down points for machinery, equipment and tyres prior to entering and leaving the construction site to control the spread of vegetation pathogens known to affect koala feed trees.

Pre-construction Temporary Fencing

d. Erect temporary protective fencing designed for koala protection to protect adjacent koala habitat on or immediately adjoining the site prior to construction to ensure koala protection.

Dog Containment Fencing

e. Design and construct public dog recreation areas with secure containment fencing.

f. Design residential lots with dog containment fencing in accordance with Council requirements.

Development Operation

g. Manage roadside vegetation to increase the visibility of koalas.

Vehicle Strike

h. Implement traffic calming measures for all development

i Implement 40km/hr speed limit restrictions on local roads adjacent to koala habitat.

ii Install koala information signposts on perimeter roads and roads adjacent to wildlife habitat areas in accordance with Austroads, Roads and Maritime Services (RMS) technical guidelines, Council Guidelines and relevant Australian Standards.

iii Install traffic calming devices such as speed humps and audible surfacing along perimeter roads adjacent to koala habitat.

iv Install koala-friendly road design structures, such as underpasses, fauna bridges and overpasses as required. Reference to the RMS Biodiversity Guidelines is to be made.

Chapter 2.4.2 – Protection of Biodiversity			
Chapter 2.4.3 – Protection of Trees and Vegetation			
PO1	Existing trees and vegetation are retained, protected, enhanced, and incorporated into the development, wherever possible.	1. Development is designed to minimise impacts on trees, except for invasive species and/or noxious weeds. 2. Development is designed to minimise removal of trees (includes vehicular access, utility installations and ancillary development).	Due to the large format of buildings and the need for bulk earthworks to create suitable levels, retention of trees within the study which is on certified land is not feasible.
PO2	Minimise threats to the long-term survival of existing trees through tree preservation zones and pruning techniques.	1. Works and construction activities are excluded within the Tree Protection Zone (TPZ) of trees unless a qualified arborist has assessed the tree and provided guidelines as to how the work can be carried out with minimal risk to the long-term survival of the tree and this has been included in an approved Tree Protection Plan (Drawing and Specification) 2. Any pruning or tree removal works that may impact threatened ecological communities are to adhere to the following best practice guidelines: a. Best Practice Guidelines: Cooks River/Castlereagh Ironbark Forest (Department of Environment and Climate Change NSW, 2008) within and adjacent to the threatened ecological community; and b. Recovering Bushland on the Cumberland Plain: Best Practice Guidelines for the Management and Restoration of Bushland (Department of Environment and Climate Change NSW, 2005). 3. Development is designed to avoid impacts on trees, except for priority weeds in accordance with the Council's weed policy. 4. Existing trees have appropriate soil volumes and setbacks from buildings, footpath, road/kerb and gutter and services to provide sufficient space for root and canopy development to ensure the tree reaches its identified mature height and spread.	N/A - Existing trees across the subject land will not be retained.

		Chapter 2.4.2 – Protection of Biodiversity	
PO3	Where hollow-bearing tree cannot be retained and are removed, they shall be replaced with nesting boxes, as close as possible to where the removed tree was located.	1. The removal of the hollow bearing trees shall be offset by the installation of nesting boxes. The size of the nest box is to reflect the size and dimensions of the hollow removed. Alternatively, the tree hollow could be appropriately mounted on one of the retained trees in a manner where it will not pose a risk to life or property. 2. All nesting boxes and hollows shall be mounted at least 5m above the ground. 3. Requirement for 60% of nest boxes (replacement habitat) to be in place prior to clearing of hollow-bearing trees.	N/A – HBTs were not identified in the study area. No HBTs will be removed as a result of the proposed development.

5. Mitigation Measures

The IPG draft Master Plan has a Biodiversity Management Plan to mitigate environmental effects. The following table identifies the aspects of the management plans that will be relevant to the ALDI Foods development.

Table 4 Mitigation Measures

Management Plan	Measures to be implemented
Flora and fauna management Plan (FFMP)	Measures relating to construction noise and light will be adopted. All other measures such as pre-clearing surveys, relocation of hollow trees etc will have already been implemented. ● Works will only occur during the following times: Monday to Friday 7:00 am to 5:00 pm, Saturday 8:00 am to 1:00 pm. Works will not operate after sunset to minimise indirect impacts to threatened fauna species in proximity. ● If practical, avoid simultaneous operation of noisy plant within discernible range of vegetation outside of the development site. ● Maximise the distance between noisy plant items and nearby residential receivers and potential fauna habitat. ● Orient equipment such as offensive noise carriers away from residential receivers and potential fauna habitat. ● Plant used intermittently is to be throttled or shut down when not required.
Vegetation Management Plan (VMP)	Nil. The VMP does not have any provisions that apply to the ALDI Foods site.
Weed eradication and management plan (WEMP)	Nil. The WEMP contains measures to be implemented prior to and during civil works and bulk earthworks.
Dam Dewatering Plan (DDP)	Nil. The DDP has been implemented and no further works are required under this plan.
Wildlife Management Plan	Section B3 of the Wildlife Management Plan states that site or building managers are responsible for : • Implementing training and inducting all staff. • Ensuring passive management actions are undertaken within their lot/building. • Notifying the proponent, DPE, Western Sydney Airport and/or the Ecologist of hazards and risks as they arise. Section B4 identifies monitoring requirements for on-lot landscaping and warehouses and offices. Monitoring is required for landscaping and warehouse/office development. The monitoring is to include twice-annual diurnal bird survey, flying fox ground counts (if deemed present) and deployment of anabats at targeted buildings.

Appendix D
Construction Noise and Vibration Management Plan

Geosyntec consultants

ALDI Sydney
475 Badgery's Creek Road, Bradfield

Construction Noise and Vibration Management Plan (CNVMP)

Richard Crookes Constructions Pty Ltd

Report Reference: 260014 - 475 Badgery's Creek Road Bradfield - ALDI SYD ADC - CNVMP - R2

Date: 13 April 2026

Revision: R2

Project Number: 260014

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DOCUMENT CONTROL

Project Name:	ALDI Sydney 475 Badgery's Creek Road, Bradfield
Project Number:	260014
Report Reference:	260014 - 475 Badgery's Creek Road Bradfield - ALDI SYD ADC - CNVMP - R2
Client:	Richard Crookes Constructions Pty Ltd

Revision	Description	Reference	Date	Prepared	Checked	Authorised
0	For information	260014 - 475 Badgery's Creek Road Bradfield - ALDI SYD ADC - CNVMP - R0	15/01/26	JL	BW	BW
1	For information	260014 - 475 Badgery's Creek Road Bradfield - ALDI SYD ADC - CNVMP - R1	02/04/26	BW	BW	BW
2	For information	260014 - 475 Badgery's Creek Road Bradfield - ALDI SYD ADC - CNVMP - R2	13/04/26	BW	BW	BW

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This report has been prepared by Pulse White Noise Acoustics Pty Ltd
with all reasonable skill, care and diligence, and taking account of the
timescale and resources allocated to it by agreement with Richard Crookes Constructions Pty Ltd.

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 Richard Crookes Constructions Pty Ltd
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 Pulse White Noise Acoustics.

This report remains the property of Pulse White Noise Acoustics Pty Ltd
until paid for in full by the client, Richard Crookes Constructions Pty Ltd.

Pulse White Noise Acoustics 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 COMPLIANCE MATRIX

This report has been undertaken such that the construction noise and vibration requirements of the projects SSD-76913969, including Items B1, B21, B22, B23 and B24 are satisfied. The requirements of projects *Conditions of Consent* have been satisfied in this report, and details are included in the compliance table below.

Based on the projects acoustic reporting including the Renzo Tonin Associates *TN980-01F02 SYD ADC NVIA (r3), dated 17th December 2024* which includes comments that the construction noise and vibration impacts resulting from the project site has been undertaken with the specified requirements of the SSD-76913969. Details of the requirements of the SSD-76913969 are included in the table below.

Table 1 COMPLIANCE TABLE

<table>
<tr><th colspan="2">CONSTRUCTION NOISE & VIBRATION MANAGEMENT PLAN COMPLIANCE TABLE</th></tr>
<tr><th>PROJECT CONDITION OF CONSENT</th><th>REFERENCE IN THE PLAN</th></tr>
<tr><td><u>Item B1 (i)</u>
(i) include a Driver Code of Conduct to:
(i) minimise the impacts of earthworks and 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;</td><td>Section 9.2.2</td></tr>
<tr><td><u>Item B21</u>
Hours of Work
B21. The Applicant must comply with the hours detailed in Table 1.
Table 1 Hours of Work
<table>
<tr><th>Activity</th><th>Day</th><th>Time</th></tr>
<tr><td>Construction</td><td>Monday – Friday
Saturday</td><td>7 am to 6 pm
8 am to 1 pm</td></tr>
<tr><td>Operation</td><td>Monday – Sunday</td><td>24 hours</td></tr>
</table></td><td>Section 8.1.1</td></tr>
<tr><td><u>Item B22</u>
B22. Works outside of the hours identified in condition B21 may be undertaken in the following circumstances:
(a) works that are inaudible at the nearest sensitive receivers;
(b) works agreed to in writing by the Planning Secretary;
(c) for the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or
(d) where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm.</td><td>Section 8.1.1</td></tr>
<tr><td><u>Item B23</u>
Construction Noise Limits
B23. The development must be constructed to achieve the construction noise management levels detailed in the Interim Construction Noise Guideline (DECC, 2009) (as may be updated or replaced from time to time). All feasible and reasonable noise mitigation measures must be implemented and any activities that could exceed the construction noise management levels must be identified and managed in accordance with the Construction Noise Management Plan required under condition B24 and the management and mitigation measures in the Appendix 2 .</td><td>Section 8</td></tr>
<tr><td>Requirements of the NSW EPA Interim Construction Noise Guideline.</td><td>Section 6.1</td></tr>
</table>

Construction Noise Management Plan B24. The Applicant must prepare a Construction Noise Management Plan for the development to the satisfaction of the Planning Secretary. The Plan must form part of a CEMP in accordance with condition C2 and must:	
(a) be prepared by a suitably qualified and experienced noise expert;	**AAS Member and AAAC Member company, See details in Appendix B**
(b) describe procedures for achieving the noise management levels in EPA's *Interim Construction Noise Guideline* (DECC, 2009) (as may be updated or replaced from time to time);	**Section 6**
(c) describe the measures to be implemented to manage high noise generating works such as piling, in close proximity to sensitive receivers;	**Section 9.2.1**
(d) include strategies that have been developed with the community for managing high noise generating works;	**Section 9.2.1 and 9.4**
(e) describe the community consultation undertaken to develop the strategies in condition B24(d); and	**Section 9.4**
(f) include a complaints management system that would be implemented for the duration of construction of the development.	**Section 0**

2 INTRODUCTION

Pulse White Noise Acoustics has been engaged to undertake the acoustic assessment of the noise and vibration impacts during the construction of the ALDI warehouse located at 475 Badgery's Creek Road, Bradfield.

This report has been undertaken such that the construction noise and vibration requirements of the project SSD-76913969 including Items B1, B21, B22, 23 and B24 are satisfied as well as the requirements of the NSW EPA *Interim Construction Noise Guideline*.

The requirements of projects *Conditions of Consent* have been satisfied in this report, and details are included in the compliance table in Section 1 above.

This report includes the noise and vibration mitigations and management controls for the operation of construction activities on the site to ensure impacts to surrounding receivers are minimised in accordance with the relevant requirements.

3 DEVELOPMENT DESCRIPTION

The development includes the construction of a new industrial warehouse development to be located on at 475 Badgerys Creek Road, Bradfield (legally described as Lots 99 and 100 in DP1287207). The site is under the ownership of Ingham Property Group (IPG). The required construction of the proposed warehouse for ALDI will include construction of the new warehouse building and include ground works and standard construction process for warehouse construction. As part of the excavation stage of the project, there is no requirements for the removal of heavy structures from the site or bulk removal of rock.

The surrounding receivers to the site include industrial receivers to the south and east of the site.

The site location, in relation to surrounding buildings, is shown in Figure 1 below.

Figure 1 Site Location and Surrounding Receivers (IPG Badgerys creek road master plant – Figure 1 IPG Structure Plan

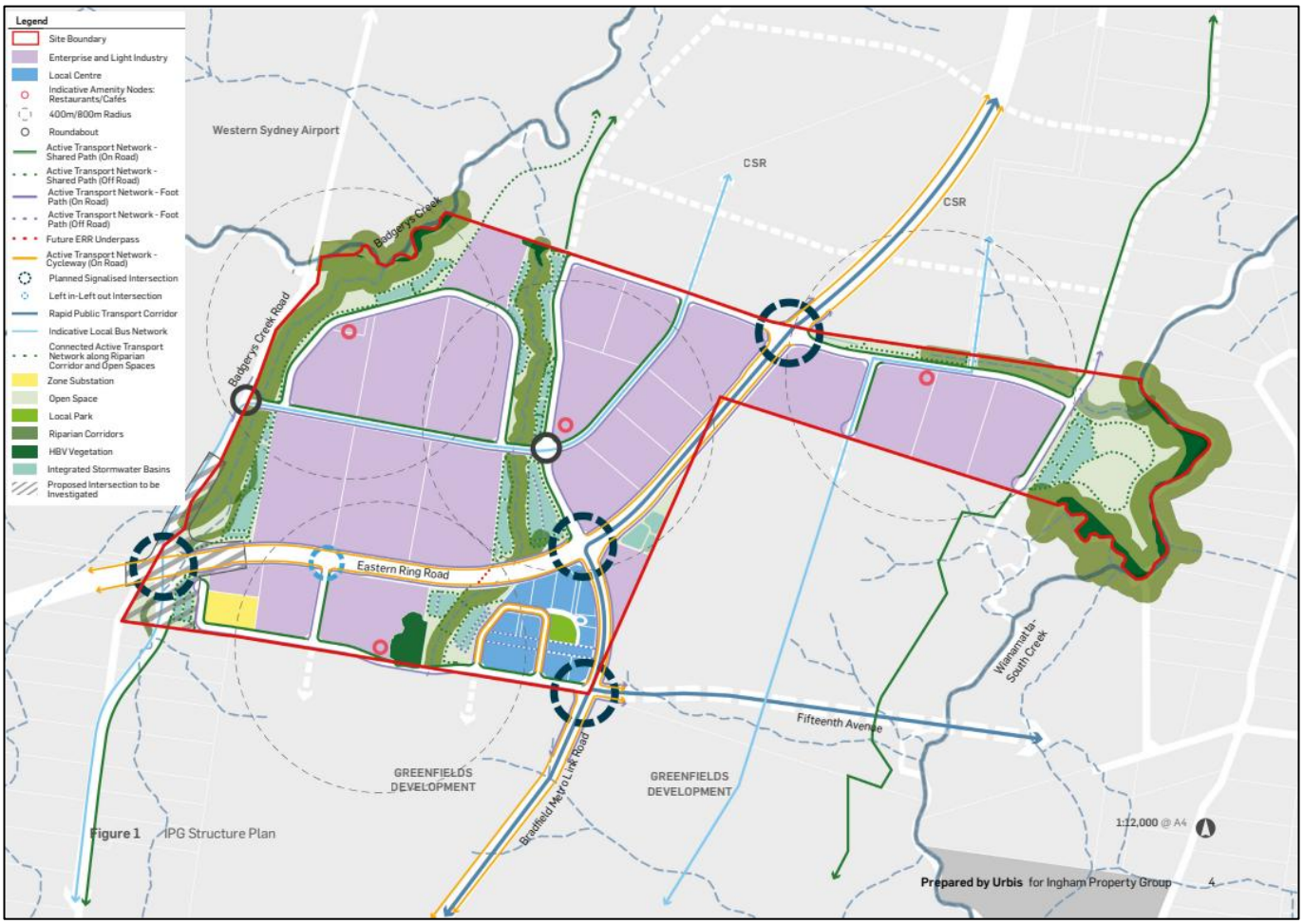
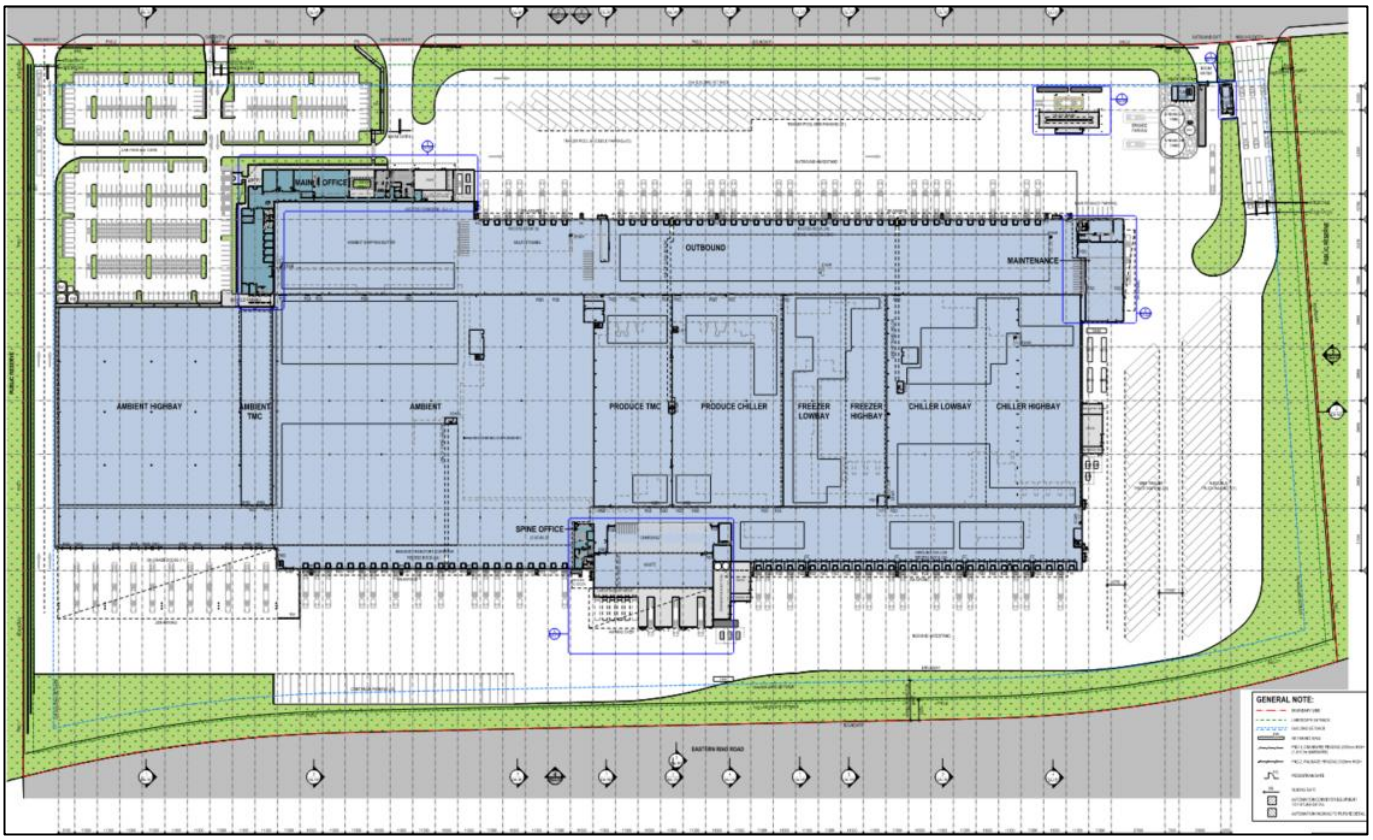


Figure 2 Proposed Site Layout



4 CONDITIONS OF CONSENT

The management of noise and vibration assassinated with the required construction works to be undertaken as part of the project will be undertaken in conjunction with the requirements of the SSD Conditions of Consent, including Item B23 and B24 of the SSD-76913969 that requires the construction of the project to comply with NSW Dept of Env & Climate Change *"Interim Construction Noise Guideline"* 2009 and includes the following:

This report has been undertaken in compliance with the items above and details the required management controls to comply with the Conditions of Consent, which includes the following:

Construction Noise Limits

B23. The development must be constructed to achieve the construction noise management levels detailed in *the Interim Construction Noise Guideline* (DECC, 2009) (as may be updated or replaced from time to time). All feasible and reasonable noise mitigation measures must be implemented and any activities that could exceed the construction noise management levels must be identified and managed in accordance with the Construction Noise Management Plan required under condition B24 and the management and mitigation measures in the Appendix 2 .

Construction Noise Management Plan

B24. The Applicant must prepare a Construction Noise Management Plan for the development to the satisfaction of the Planning Secretary. The Plan must form part of a CEMP in accordance with condition C2 and must:

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

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

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

(d) include strategies that have been developed with the community for managing high noise generating works;

(e) describe the community consultation undertaken to develop the strategies in condition B24(d); and

(f) include a complaints management system that would be implemented for the duration of construction of the development.

5 EXISTING ACOUSTIC ENVIRONMENT

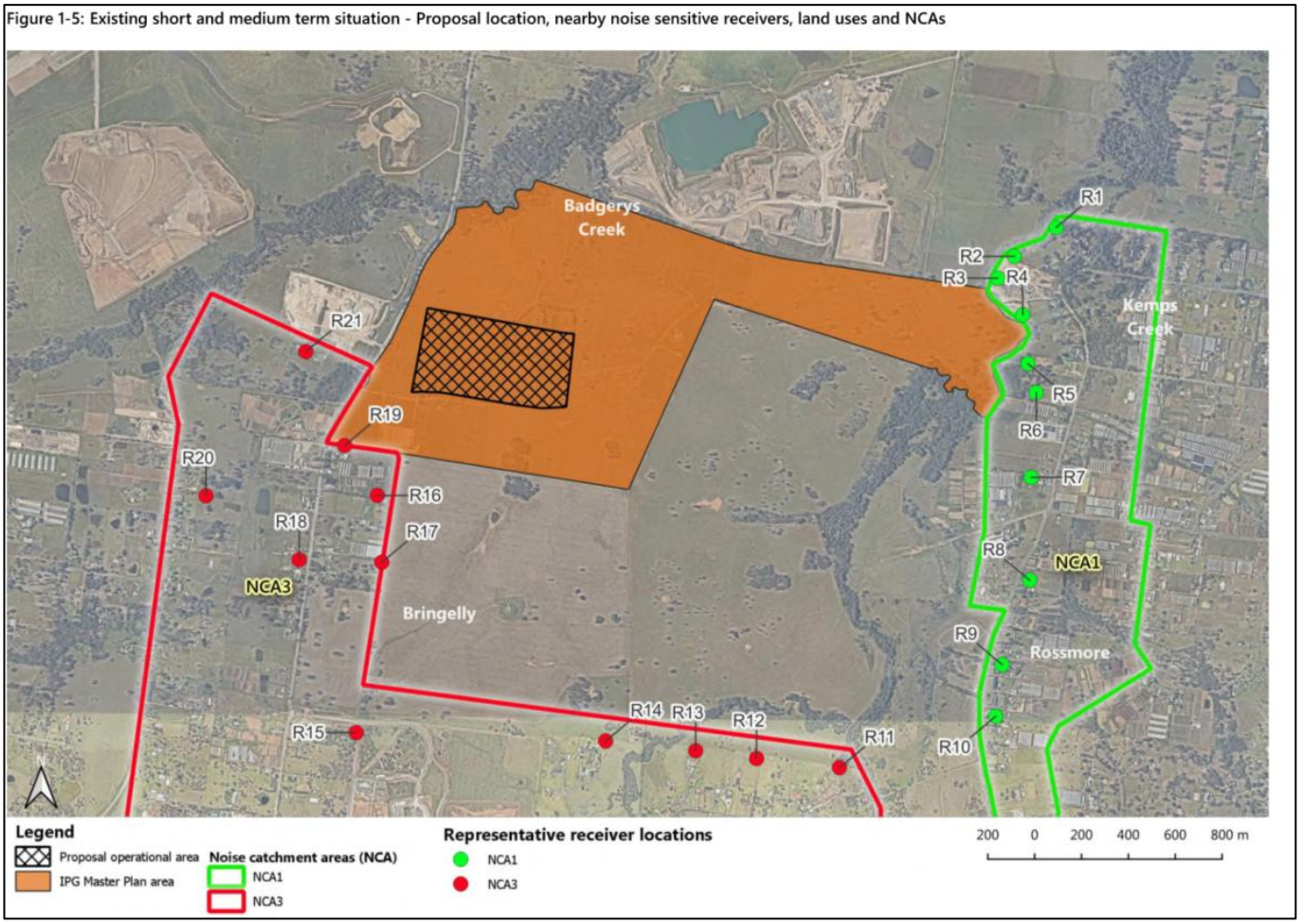
The existing noise environment was investigated for the IPG site during master planning stage. The existing background noise level adopted in this CNVMP are consistent with the IPG Site Master Plan document to establish the noise management levels. The master planning document reference: *IPG Badgerys Creek Road Master Plan (WSA_MP01) – 475 Badgerys Creek Road, Bradfield, dated 9th May 2025.*

5.1 Sensitive Receiver Identification

The proposed development includes the excavation and construction of the proposed warehouse building to be. The site location, in relation to surrounding sensitive receivers is shown in Figure 3.

Based on the receiver identification stated within the approved NVIA, the following Noise Catchment Area (NCA) have been identified.

Figure 3 Identified sensitive receiver – Noise Catchment Area NCA1 and NCA 3



Receivers most likely to be affected by noise generated from construction works onsite have been identified and have been listed below:

NCA 01: The surrounding area comprises rural primary production land identified for future medium-density residential development at Rossmore and Kemps Creek, separated from the enterprise area by a

riparian corridor. To the east, the RU4-zoned area is planned for residential intensification in accordance with the Western Sydney Aerotropolis Plan (DPE, 2020), with the suburb boundary proposed to shift north of Fifteenth Avenue beyond the eastern boundary of the IPG site.

Identified sensitive receivers within the master plan document for the proposed warehouse are presented in Figure 4.

Figure 4 Receiver Id and noise catchment area

Assessment location	NCA	Zone	Coordinates	
			Eastings	Northings
R1	NCA1 – East – Residential	MGA Grid 56	293420	6246666
R2	NCA1 – East – Residential	MGA Grid 56	293242	6246549
R3	NCA1 – East – Residential	MGA Grid 56	293173	6246451
R4	NCA1 – East – Residential	MGA Grid 56	293273	6246295
R5	NCA1 – East – Residential	MGA Grid 56	293291	6246093
R6	NCA1 – East – Residential	MGA Grid 56	293328	6245970
R7	NCA1 – East – Residential	MGA Grid 56	293302	6245605
R8	NCA1 – East – Residential	MGA Grid 56	293288	6245158
R9	NCA1 – East – Residential	MGA Grid 56	293169	6244798
R10	NCA1 – East – Residential	MGA Grid 56	293140	6244577
M1	NCA2 – South East – Mixed Use – Future Development	MGA Grid 56	291465	6245224
M2	NCA2 – South East – Mixed Use – Future Development	MGA Grid 56	291581	6245378
M3	NCA2 – South East – Mixed Use – Future Development	MGA Grid 56	291689	6245519
M4	NCA2 – South East – Mixed Use – Future Development	MGA Grid 56	291805	6245669
M5	NCA2 – South East – Mixed Use – Future Development	MGA Grid 56	291955	6245552
M6	NCA2 – South East – Mixed Use – Future Development	MGA Grid 56	292124	6245500
M7	NCA2 – South East – Mixed Use – Future Development	MGA Grid 56	292323	6245475
R11	NCA3 – South / Southwest / West – Residential / Enterprise	MGA Grid 56	292470	6244363
R12	NCA3 – South / Southwest / West – Residential / Enterprise	MGA Grid 56	292123	6244402
R13	NCA3 – South / Southwest / West – Residential / Enterprise	MGA Grid 56	291863	6244426
R14	NCA3 – South / Southwest / West – Residential / Enterprise	MGA Grid 56	291484	6244473
R15	NCA3 – South / Southwest / West – Residential / Enterprise	MGA Grid 56	290430	6244497

Assessment location	NCA	Zone	Coordinates	
			Eastings	Northings
R16	NCA3 – South / Southwest / West – Residential / Enterprise	MGA Grid 56	290540	6245513
R17	NCA3 – South / Southwest / West – Residential / Enterprise	MGA Grid 56	290546	6245233
R18	NCA3 – South / Southwest / West – Residential / Enterprise	MGA Grid 56	290201	6245242
R19	NCA3 – South / Southwest / West – Residential / Enterprise	MGA Grid 56	290400	6245727
R20	NCA3 – South / Southwest / West – Residential / Enterprise	MGA Grid 56	289816	6245503
R21	NCA3 – South / Southwest / West – Residential / Enterprise	MGA Grid 56	290243	6246129

6 CONSTRUCTION NOISE CRITERIA

This section of the report details the relevant construction noise criteria which is applicable to the site including the EPA's *Interim Construction Noise Guideline* (ICNG).

6.1 Interim Construction Noise Guideline

Noise criteria for construction activities are discussed in the *Interim Construction Noise Guideline* (ICNG). The ICNG also recommends procedures to address potential impacts of construction noise on residences and other sensitive land uses. The main objectives of the ICNG are summarised as follows:

- Promote a clear understanding of ways to identify and minimise noise from construction works;
- Focus on applying all "feasible" and "reasonable" work practices to minimise construction noise impacts;
- Encourage construction to be undertaken only during the recommended standard hours unless approval is given for works that cannot be undertaken during these hours;
- Streamline the assessment and approval stages and reduce time spent dealing with complaints at the project implementation stage; and
- Provide flexibility in selecting site-specific feasible and reasonable work practices in order to minimise noise impacts.

The ICNG contains a quantitative assessment method which is applicable to this project. Guidance levels are given for airborne noise at residences and other sensitive land uses.

The quantitative assessment method involves predicting noise levels at sensitive receivers and comparing them with the Noise Management Levels (NMLs). The NML affectation categories for receivers have been reproduced from the guideline and are listed in the table below.

Table 2 Noise Management Levels from Construction

Receiver Type	Time of Day	Noise Management Level $L_{Aeq(15minute)}$ [1,2]	How to Apply
Residential	During approved working hours detained with the conditions of consent	Noise affected RBL + 10 dB	The noise affected level represents the point above which there may be some community reaction to noise. Where the predicted or measured $L_{Aeq(15minute)}$ 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	The highly noise affected 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 restricting the hours that the very noisy activities can occur, taking into account: 1. 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.

Receiver Type	Time of Day	Noise Management Level $L_{Aeq(15minute)}$[1,2]	How to Apply
			2. If the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.
	Outside recommended standard hours	Noise affected RBL + 5 dB	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 practices have been applied and noise is more than 5 dB above the noise affected level, the proponent should negotiate with the community.
Retail/ Commercial receivers	When is use	$L_{Aeq\ (15\ min)}$ 70 dB(A)	During construction, the proponent should regularly update the occupants of the commercial and industrial premises regarding noise levels and hours of work.

Note 1 Noise levels apply at the property boundary that is most exposed to construction noise, and at a height of 1.5 m above ground level. If the property boundary is more than 30 m from the residence, the location for measuring or predicting noise levels is at the most noise-affected point within 30 m of the residence. Noise levels may be higher at upper floors of the noise affected residence.

Note 2 The RBL is the overall single-figure background noise level measured in each relevant assessment period (during or outside the recommended standard hours). The term RBL is described in detail in the NSW Industrial Noise Policy (EPA 2000).

Predicted construction noise levels are presented below for each of the surrounding receivers in accordance with the NSW EPA ICNG.

Note:

- Predicted noise levels presented below are given in a range, this includes the expected minimums as well as the maximums.

With regards to the maximum noise levels in the range, these are typically experienced when plant/works are within close proximity to a boundary. In our experience whilst these levels above NML's and considered intrusive they will only occur for a short time and is not a representation of noise levels during the entire construction period.

Based on the table above the suitable construction noise management levels for works undertaken on the site is detailed in Figure 5 below and is based on the construction noise requirements included in the Renzo Tonin Associates has undertaken, including the *ALDI Sydney Automated Distribution Centre – Noise and vibration impact assessment, dated 19 December 2024* (which is included in documents included in the NSW Major Project Portal submission) included in the SSD approvals.

Figure 5 Site Construction Noise Management Levels – Approved Project NVIA

3.1.5 Summary of construction noise management levels

Table 3-3 presents the construction noise management levels established for both the nearest noise sensitive residential receivers based upon the noise monitoring outlined in Section 2 and nearby non-residential receivers. The assessment locations and nearby sensitive receivers for the construction assessment are identified in Figure 1-5.

Table 3-3: Project Specific Construction Noise Management Levels

Receiver type / NCA	Noise management level $L_{Aeq(15min)}$[1]					Sleep disturbance screening level, L_{Amax}[3]
	Standard construction hours[1,4]	Highly noise affected (HNA)	Out of hours[2,5]			
	Daytime	Daytime	Daytime	Evening	Night-time	Night-time
Residential (NCA01)	45	75	40	35	35	52
Residential (NCA03)	45	75	40	35	35	52

Notes:
1. Standard construction hours = Monday to Fridays (7:00am to 6:00pm), Saturdays (8:00am to 1:00pm)
2. Out of hours time periods are:
   a. Day (Out of hours) = 7:00am to 8:00am and 1:00pm to 6:00pm Saturday and 8:00am to 6:00pm Sundays & Public Holidays
   b. Evening: 6.00pm to 10.00pm Monday to Sunday & Public Holidays
   c. Night: 10.00pm to 7.00am Monday to Saturday and 10.00pm to 8.00am Sunday and Public holidays
3. Noise management level applies at the facade of the dwelling
4. Based upon RBL + 10 dB(A)
5. Based upon RBL + 5 dB(A)

7 VIBRATION CRITERIA

Effects of ground borne vibration on building may be segregated into the following three categories:

- Human comfort – Vibration in which the occupants or users of the building are inconvenienced or possibly disturbed.
- Effects on building contents – where vibration can cause damage to fixtures, fittings and other non-building related objects.
- Effects on building structures – where vibration can compromise the integrity of the building or structure itself.

7.1 Vibration Criteria - Human Comfort

Vibration effects relating specifically to the human comfort aspects of the project are provided by the EPAs Assessing vibration: a technical guideline. This type of impact can be further categorised and assessed using the appropriate criterion as follows:

- Continuous vibration – from uninterrupted sources.
- Impulsive vibration – up to three instances of sudden impact e.g., dropping heavy items, per monitoring period.
- Intermittent vibration – such as from drilling, compacting or activities that would result in continuous vibration if operated continuously.

Table 3 Continuous vibration acceleration criteria (m/s2) 1 Hz-80 Hz

Location	Assessment period	Preferred Values		Maximum Values	
		z-axis	x- and y-axis	z-axis	x- and y-axis
Critical working areas (e.g. hospital operating theatres, precision laboratories)	Day or night-time	0.0050	0.010	0.10	0.20
Offices, schools, educational institutions and places of worship	Day or night-time	0.020	0.014	0.040	0.028
		0.04	0.029	0.080	0.058
Workshops	Day or night-time	0.04	0.029	0.080	0.058

Table 4 Impulsive vibration acceleration criteria (m/s2) 1 Hz-80 Hz

Location	Assessment period	Preferred Values		Maximum Values	
		z-axis	x- and y-axis	z-axis	x- and y-axis
Critical working areas (e.g. hospital operating	Day or night-time	0.0050	0.010	0.10	0.20

Location	Assessment period	Preferred Values		Maximum Values	
		z-axis	x- and y-axis	z-axis	x- and y-axis
theatres, precision laboratories)					
Offices, schools, educational institutions and places of worship	Day or night-time	0.64	0.46	1.28	0.92
Workshops	Day or night-time	0.64	0.46	1.28	0.92

Table 5 Intermittent vibration impacts criteria (m/s1.75) 1 Hz-80 Hz

Location	Daytime		Night-time	
	Preferred Values	Maximum Values	Preferred Values	Maximum Values
Critical working areas (e.g. hospital operating theatres, precision laboratories)	0.10	0.20	0.10	0.20
Offices, schools, educational institutions and places of worship	0.40	0.80	0.40	0.80
Workshops	0.80	1.60	0.80	1.60

7.2 Vibration Criteria – Building Contents and Structure

The vibration effects on the building itself are assessed against British Standard BS 7385: Part 2-1993 "Evaluation and measurement for vibration in buildings Part 2: Guide to damage levels from ground borne vibration" (BSI 1993)

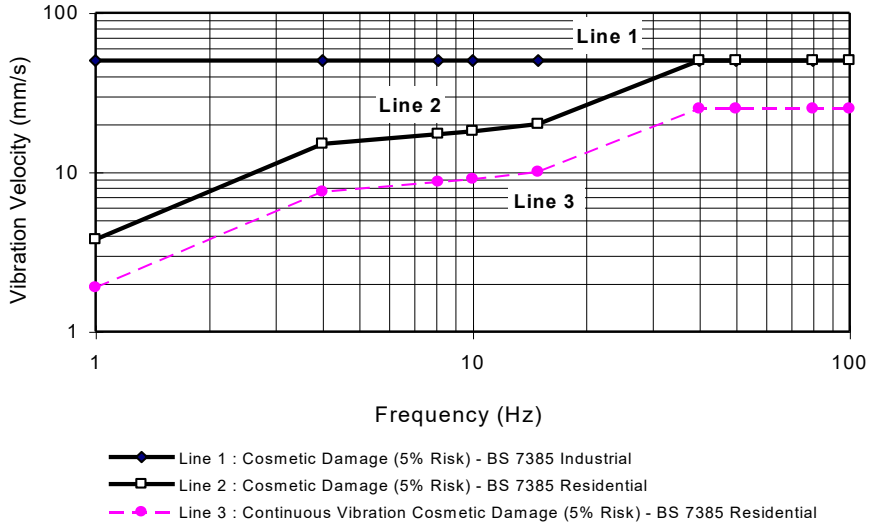
Table 6 Transient vibration criteria as per standard BS 7385 Part 2 - 1993

Line in Figure 6	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

Standard BS 7385 Part 2 – 1993 states that the values in Table 6 relate to transient vibration which does not cause resonant responses in buildings.

Where the dynamic loading caused by continuous vibration events is such that it results in dynamic magnification due to resonance (especially at the lower frequencies where lower guide values apply), then the values in Table 6 may need to be reduced by up to 50%.

Figure 6 BS 7385 Part 2 – 1993, graph of transient vibration values for cosmetic damage



In the lower frequency region where strains associated with a given vibration velocity magnitude are higher, the recommended values corresponding to Line 2 are reduced. Below a frequency of 4 Hz, where a high displacement is associated with the relatively low peak component particle velocity value, a maximum displacement of 0.6 mm (zero to peak) is recommended. This displacement is equivalent to a vibration velocity of 3.7 mm/s at 1 Hz.

The standard also states that minor damage is possible at vibration magnitudes which are greater than twice those given in Table 6, and major damage to a building structure may occur at values greater than four times the tabulated values.

Fatigue considerations are also addressed in the standard and it is concluded that unless the calculation indicates that the magnitude and number of load reversals is significant (in respect of the fatigue life of building materials) then the values in Table 6 should not be reduced for fatigue considerations.

7.3 Project Construction Vibration Criteria

Based on the review of the above relevant construction vibration standards, following vibration criteria have been established for the project construction vibration to adjacent receivers by adopting BS7385 part 2.

Project vibration criteria – 7.5 mm/s PPV for residential receivers

7.4 Construction Traffic Noise Criteria

For existing other sensitive land uses affected by additional traffic on existing roads, the NSW Road Noise Policy (RNP) states that for noise associated with increased road traffic generated by land use developments, any increase in the total traffic noise level should be limited to 2 dB during both day and night-time periods. An increase of 2 dB represents a minor impact that is considered barely perceptible to the average person.

7.5 Vibration Assessment

In order to maintain compliance with the human comfort vibration criteria discussed in Section 7 it is recommended that the indicative safe distances listed in Table 7 should be maintained. These indicative safe distances should be validated at the start of construction works by undertaking measurements of vibration levels generated by construction and demolition equipment to be used on site.

Additionally, any vibration levels should be assessed in accordance with the criteria discussed in Section 7.3.

Table 7 Recommended indicative safe working distances for vibration intensive plant

Plant	Rating / Description	Safe Working Distances (m)	
		Cosmetic Damage (BS 7385: Part 2 DIN 4150: Part 3)	Human Comfort (AVTG)
Vibratory roller	< 50 kN (Typically 1 – 2 tonnes)	5	15 – 20
	< 100 kN (Typically 2 – 4 tonnes)	6	20
	< 200 kN (Typically 4 – 6 tonnes)	12	40
	< 300 kN (Typically 7 – 13 tonnes)	15	100
	> 300 kN (Typically more than 13 tonnes)	20	100
Small hydraulic hammer	300 kg, typically 5 – 12 tonnes excavator	2	7
Medium hydraulic hammer	900 kg, typically 12 – 18 tonnes excavator	7	23
Large hydraulic hammer	1600 kg, typically 18 – 34 tonnes excavator	22	73
Vibratory pile driver	Sheet piles	2 – 20	20
Jackhammer	Hand held	1	Avoid contact with structure and steel reinforcements

Given the substantial separation distance between the proposed site and the nearest sensitive receivers, vibration impacts at the identified sensitive receivers are expected to comply with the vibration criteria set out in Section 7 of this report.

8 CONSTRUCTION NOISE ASSESSMENT

This section of the report details the assessment of noise associated with the construction activities associated with the development. The assessment has been undertaken to assess the potential noise impacts from construction on surrounding receivers to the site.

The construction activities to be undertaken on the site include the ground works and construction of the site. The construction of the project does not include major demolition on the site.

8.1 Construction Noise

The assessment of construction noise impacts generated from the site has been undertaken in accordance with the requirements of the EAP Interim Construction Noise Guideline.

The EPA's Interim Construction Noise Guideline defines normal day time hours as the following:

2.2 Recommended standard hours

The recommended standard hours for construction work are shown in Table 1; however, they are not mandatory. There are some situations, as described below, where construction work may need to be undertaken outside of these hours. The likely noise impacts and the ability to undertake works during the recommended standard hours should be considered when scheduling work.

Table 1: Recommended standard hours for construction work

Work type	Recommended standard hours of work*
Normal construction	Monday to Friday 7 am to 6 pm Saturday 8 am to 1 pm No work on Sundays or public holidays
Blasting	Monday to Friday 9 am to 5 pm Saturday 9 am to 1 pm No blasting on Sundays or public holidays

* The relevant authority (consent, determining or regulatory) may impose more or less stringent construction hours.

8.1.1 Approved Hours of Work

Works on the site will be undertaken in accordance with the requirements of Items B21 and B22 of the Consent which includes the following.

NOISE

Hours of Work

B21. The Applicant must comply with the hours detailed in Table 1.

Table 1 *Hours of Work*

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

B22. Works outside of the hours identified in condition B21 may be undertaken in the following circumstances:

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

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

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

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

8.2 Construction Appliances

The construction appliances which will be used as part of the construction of the project are detailed in the table below. Due to substantial distance between the proposed construction site to residential receivers in NCA 01 and NCA 03. Construction noise impact has been assessed to the nearest residential receivers within NCA 01. The predicted noise level from the proposed construction appliances is shown in Table 9 and Table 10.

Table 8 Noise Level from Expected Demotion Appliances

Tasks	Equipment	Sound Power Levels (dBA re 1pW)	Aggregate Sound Power Level per Task (dBA re 1pW)
Site Establishment Works	Mobile crane	110	113
	Power hand tools	109	
	Semi Rigid Vehicle [1]	105	
Ground Works	Excavator	112	118
	Hand held jack hammer [1]	111	
	Dump truck [1]	104	
	Concrete saw [1]	114	
	Skid steer	110	
	Power hand tools	109	
Structure	Hand held jack hammer [1]	106	115
	Concrete saw [1]	114	
	Power hand tools	109	
	Welder	101	
	Concrete pump truck	110	
	Concrete agitator truck	108	
Internal Works	Power hand tools	109	109
Common and External Works	Concrete agitator truck	108	114
	Saw cutter [1]	104	
	Dump truck [1]	104	
	Concrete saw [1]	114	
	Power hand tools	109	

Note 1 An assumed time correction has been applied, this being 5 minutes of operation in any 15-minute interval.

Table 9 NCA 01 – Summary of predicted construction noise levels – R19

Phase	Activity	Aggregate Sound Power Level (dBA re 1pW)	Predicted Individual Noise Level at Receiver dBA $L_{Aeq\ 15\ minutes}$	Predicted Combined Noise Level at Receiver dBA $L_{Aeq\ 15\ minutes}$	Criteria dBA $L_{Aeq\ 15\ minutes}$	Summary of Result
Site Establishment Works	Mobile crane	113	45 to 49	48 to 52	Monday to Friday 07.00-18.00 45 + 10 = **55 dB(A)** Saturday 08.00-13.00 45 + 10 = **55 dB(A)** Highly Noise Affected Level Standard Construction Hours **75 dB(A)**	Works indicatively predicted to have the potential to below the noise management level. General management measure applies. See details of the required managements and notifications included in Section 9 below.
	Power hand tools		44 to 48			
	Semi Rigid Vehicle 1		35 to 39			
Ground Works	Excavator	119	47 to 51	52 to 56		
	Hand held jack hammer 1		53 to 57			
	Dump truck 1		45 to 49			
	Concrete saw 1		41 to 45			
	Skid steer		34 to 38			
	Power hand tools		44 to 48			
Structure	Hand held jack hammer 1	117	45 to 49	50 to 55		
	Concrete saw 1		44 to 48			
	Power hand tools		36 to 40			
	Welder		44 to 48			
	Concrete pump truck		44 to 48			
	Concrete agitator truck		36 to 40			
Internal Works	Power hand tools	109	45 to 49	39 to 43		
Common and External Works	Concrete agitator truck	117	43 to 47	49 to 53		
	Saw cutter 1		39 to 43			
	Dump truck 1		43 to 47			
	Concrete saw 1		34 to 38			
	Power hand tools		34 to 38			

Table 10 NCA 01 – Summary of predicted construction noise levels – R21

Phase	Activity	Aggregate Sound Power Level (dBA re 1pW)	Predicted Individual Noise Level at Receiver dBA $L_{Aeq\ 15\ minutes}$	Predicted Combined Noise Level at Receiver dBA $L_{Aeq\ 15\ minutes}$	Criteria dBA $L_{Aeq\ 15\ minutes}$	Summary of Result
Site Establishment Works	Mobile crane	113	42 to 44	45 to 47	Monday to Friday 07.00-18.00 45 + 10 = **55 dB(A)** Saturday 08.00-13.00 45 + 10 = **55 dB(A)** Highly Noise Affected Level Standard Construction Hours **75 dB(A)**	Works indicatively predicted to have the potential to below the noise management level. General management measure applies. See details of the required managements and notifications included in Section 9 below.
	Power hand tools		41 to 43			
	Semi Rigid Vehicle 1		32 to 34			
Ground Works	Excavator	119	44 to 46	49 to 51		
	Hand held jack hammer 1		50 to 52			
	Dump truck 1		42 to 44			
	Concrete saw 1		38 to 40			
	Skid steer		31 to 33			
	Power hand tools		41 to 43			
Structure	Hand held jack hammer 1	117	42 to 44	47 to 50		
	Concrete saw 1		41 to 43			
	Power hand tools		33 to 35			
	Welder		41 to 43			
	Concrete pump truck		41 to 43			
	Concrete agitator truck		33 to 35			
Internal Works	Power hand tools	109	42 to 44	36 to 38		
Common and External Works	Concrete agitator truck	117	40 to 42	46 to 48		
	Saw cutter 1		36 to 38			
	Dump truck 1		40 to 42			
	Concrete saw 1		31 to 33			
	Power hand tools		31 to 33			

8.3 Construction Traffic Noise Assessment

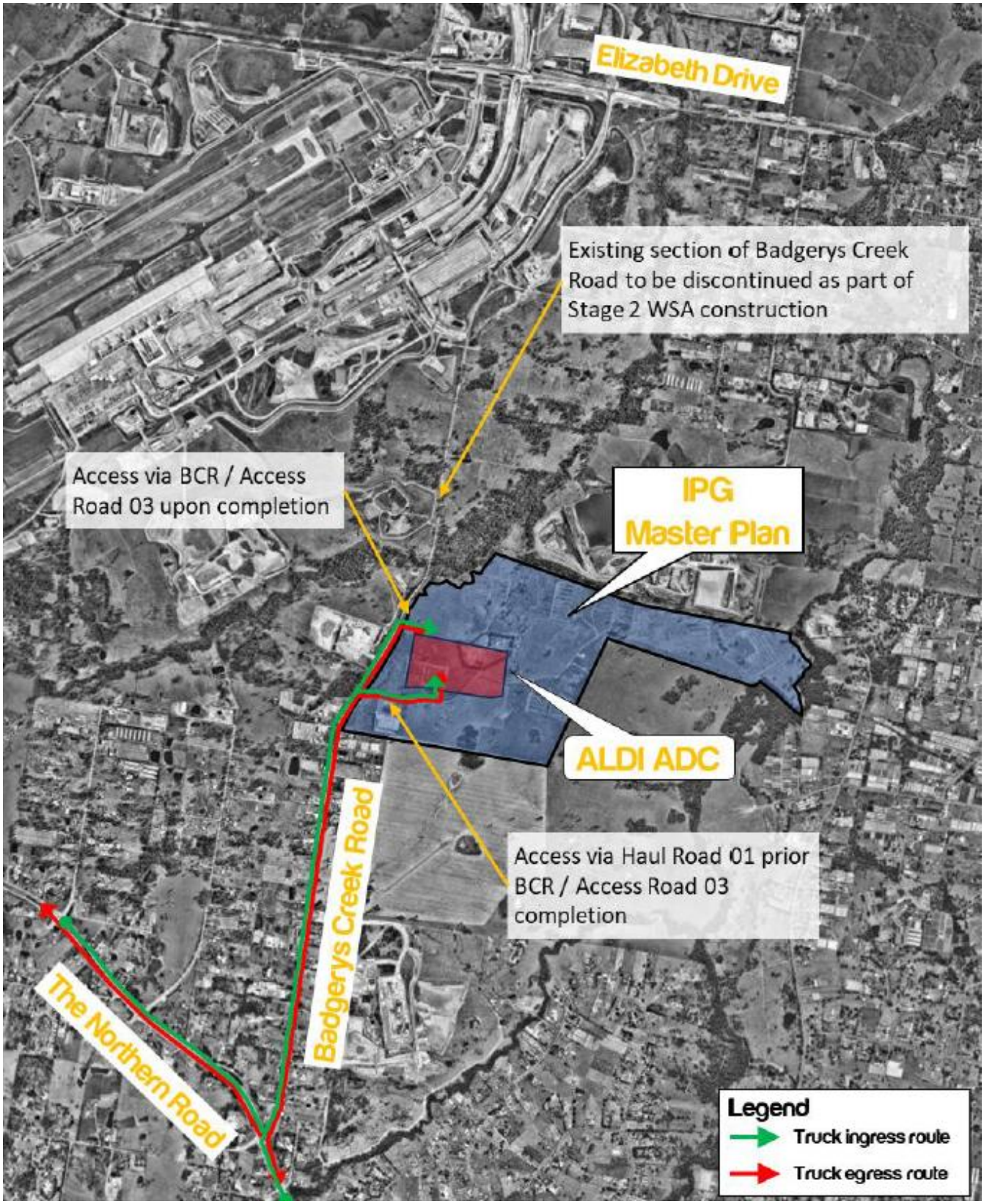
The construction traffic generation have been assessed during the state significant development stage. Based on the review of the traffic engineering's Transport Assessment report, document reference: P1492Ar01v05 SSDA TA_Sydney Automated Distribution Centre, dated 24th April 2025. Light vehicle traffic generation will be associated with contractor movements to and from the project site. The workforce arrival and leaving period is mostly to between 6:00 am to 7:00 am and 5:00pm to 5:30pm as the peak construction traffic generation time.

The majority of deliveries are anticipated to occur outside peak road network traffic periods and are therefore expected to have limited, if any, impact on the surrounding road network. Badgerys Creek Road and The Northern Road already accommodate a high proportion of heavy vehicle movements. Accordingly, given that key intersections are predicted to operate satisfactorily following completion of the Proposal, it is reasonable to assume that these intersections would also satisfactorily accommodate the comparatively lower volumes of construction traffic.

At this stage of project, peak construction traffic is typically in the order of 50 to 100 vehicle movements per day, equating to an average of approximately four vehicle movements per hour over a standard working day. It is noted that no major earthworks are associated with the project, as these works will be undertaken as part of the IPG Master Plan. Therefore, construction traffic noise associated with the project is expected to have a negligible impact relative to existing traffic noise levels on Badgerys Creek Road.

The proposed access rout for the project is presented in Figure 7.

Figure 7 Proposed construction access routes – asongroup (P1492Ar01v05 SSDA TA_Sydney Automated Distribution Centre)



9 NOISE AND VIBRATION MANAGEMENT PLAN

9.1 Acoustic Management Procedures

9.1.1 Summary of procedures

Table 11 below summarises the management procedures recommended for airborne noise and vibration impact. These procedures are also further discussed in the report. Hence, where applicable, links to further references are provided in Table 11.

Table 11 Summary of mitigation procedures

Procedure	Abbreviation	Description	Further Reference
General Management Measures	GMM	Introduce best-practice general mitigation measures in the workplace which are aimed at reducing the acoustic impact onto the nearest affected receivers.	Refer to Section 9.4, 0 For noise impact, also refer to Section 9.1 For vibration impact, also refer to Section 9.3, 9.4, 0
Project Notification	PN	Issue project updates to stakeholders, discussing overviews of current and upcoming works. Advanced warning of potential disruptions can be included. Content and length to be determined on a project-by-project basis.	Refer to Section 9.4, 0
Verification Monitoring	V	Monitoring to comprise attended or unattended acoustic surveys. The purpose of the monitoring is to confirm measured levels are consistent with the predictions in the acoustic assessment, and to verify that the mitigation procedures are appropriate for the affected receivers. If the measured levels are higher than those predicted, then the measures will need to be reviewed and the management plan will need to be amended.	For noise impact, refer to Section 9.3.2 For 9.3.2 vibration impact, refer to Section 9.1.3
Complaints Management System	CMS	Implement a management system which includes procedures for receiving and addressing complaints from affected stakeholders	Refer to Section 9.4, 0
Specific Notification	SN	Individual letters or phone calls to notify stakeholders that noise levels are likely to exceed noise objectives. Alternatively, contractor could visit stakeholders individually in order to brief them in regards to the noise impact and the mitigation measures that will be implemented.	Refer to Section 9.4, 0
Respite Offer	RO	Offer provided to stakeholders subjected to an ongoing impact.	Refer to section 9.2.3
Alternative Construction Methodology	AC	Contractor to consider alternative construction options that achieve compliance with relevant criteria. Alternative option to be determined on a case-by-case basis. It is recommended that the selection of the alternative option should also be determined by considering the assessment of on-site measurements (refer to Verification Monitoring above).	Refer to section 9.7

The application of these procedures is in relation to the exceedances over the relevant criteria. For airborne noise, the criteria are based on NMLs. The allocation of these procedures is discussed in Section 9.1.2.

For vibration, the criteria either correspond to human comfort, building damage or scientific and medical equipment. The application of these procedures is discussed in Section 9.1.3.

9.1.2 Allocation of Noise Management Procedures

Management procedures have been allocated based on noise level exceedances at the affected properties, which occur over the designated NMLs. The allocation of these procedures is summarised in Table 12 below.

Table 12 Allocation of noise management procedures – residential receivers

Construction Hours	Exceedance over NML (dB)	Management Procedures (see definition above)
Standard Hours During approved working hours	0 - 3	GMM
	4 - 10	GMM, PN, V [1], CMS, AC
	> 10	GMM, PN, V, CMS, SN, AC
	> 75dBA	GMM, PN, V, CMS, SN, AC, RO
Note 1 Verification monitoring to be undertaken upon complaints received from affected receivers		

9.1.3 Allocation of Vibration Management Procedures

Table 13 below summarises the vibration management procedures to be adopted based on exceedance scenarios (i.e., whether the exceedance occurs over human comfort criteria, building damage criteria, or criteria for scientific and medical equipment). Please note these management procedures apply for any type of affected receiver (i.e., for residences as well as non-residential receivers).

Table 13 Allocation of vibration management procedures

Construction Hours	Exceedance Scenario	Management Procedures
Standard Hours During approved working hours	Over human comfort criteria (refer to section 7.1)	GMM, PN, V, CMS
	Over building damage criteria (refer to section 7.2)	GMM, V, AC, CMS

9.2 Site Specific Noise Mitigation Measures

9.2.1 Respite Periods including High Noise Affected Levels

Predicted noise levels outlined above indicate exceedances above the Noise Management Levels (NMLs) as well as the Highly Affected Level (HNAL) when in proximity to a boundary.

To militate against any exceedances, the site will need to introduce periods of respite for activities which are creating noise levels above the HNAL only (i.e., greater than 75dBA).

Table 14 Recommended Respite Periods

Monday to Friday	Saturday
7:00am to 8:00am – No noisy works (Respite Periods)	8:00am to 9:00am – No noisy works (Respite Period)
8:00am to 11:30am – Works	9:00am to 1:00pm – Works
11:30am to 12:30pm – No Noisy Works (Respite Periods)	
12:30pm to 3:30pm – Works	
3:30pm to 4:30pm – No noisy works (Respite Period)	
4:30pm to 6:00pm – Works	

9.2.2 Vehicle Driver Conduct

All drivers of trucks and construction vehicles are required to be trained in the sites requirements for the operation of equipment and routes to be used to access the site. The driver code is required to be developed in accordance with the project SSD Conditions including Item B1(i) which includes the following.

Delivery drivers are to be instructed to mitigate noise impacts including the following:

1. Mitigate engine braking from truck when possible, including deactivating breaks within the vicinity of residential receivers.
2. Reduce aggressive acceleration from the site.
3. Ensure all trucks and equipment are well maintained.
4. Other relevant noise reducing operations where possible.
5. Details of the required driver codes are include in the projects *Construction Management Plan.*

9.2.3 General Comments

The contractor will, where reasonable and feasible, apply best practice noise mitigation measures. These measures shall include the following:

- Maximising the offset distance between plant items and nearby noise sensitive receivers.
- Preventing noisy plant working simultaneously and adjacent to sensitive receivers.
- Minimising consecutive works in the same site area.
- Orienting equipment away from noise sensitive areas.

- Carrying out loading and unloading away from noise sensitive areas.

In order to minimise noise impacts during the works, the contractor will take all reasonable and feasible measures to mitigate noise effects.

The contractor will also take reasonable steps to control noise from all plant and equipment. Examples of appropriate noise control include efficient silencers and low noise mufflers.

The contractor should apply all feasible and reasonable work practices to meet the NMLs and inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels, duration of noise generating construction works, and the contact details for the proposal.

9.2.4 Noise Monitoring

Noise monitoring, if required, will be performed by an acoustical consultant directly engaged by the contractor.

Noise monitoring is recommended to be undertaken by attended noise measurements at the start of any new phase of works (i.e. demolition or remediation works etc.). The statistical parameters to be measured should include the following noise descriptors: LAmin, LA90, LA10, LA1, LAmax and LAeq.

This monitoring should also be complemented by undertaking attended noise measurements in order to:

- Differentiate between construction noise sources and other extraneous noise events (such as road traffic and aircraft noise)
- Note and identify any excessive noise emitting machinery or operation.

In addition to the above detailed measurements, should any complaints be received which have not been determined previously, it should be confirmed by conducting additional attended noise measurements.

The survey methodology and any equipment should comply with the requirements discussed in Standard AS 1055.1-1997.

Based on the proposed works to be undertaken as part of the project the following noise monitoring is recommended:

- Attended noise monitoring of construction activities is to be undertaken during the following periods:
    - Commencement of any rock breaking or sawing on the site.
    - In response to any ongoing complaints received from neighbours.

9.2.5 Alternate Equipment or Process

Exceedance of the site's NMLs should result in an investigation as to whether alternate equipment could be used, or a difference process could be undertaken.

In some cases, the investigation may conclude that no possible other equipment can be used, however, a different process could be undertaken.

9.2.6 Acoustic Enclosures/Screening (If required)

Typically, on a construction site there are three different types of plant that will be used: mobile plant (i.e., excavators, skid steers, etc.), semi mobile plant (i.e., hand tools generally) or static plant i.e. (diesel generators).

For plant items which are static it is recommended that if required, in the event exceedances are being measured due to operation of the plant item, an acoustic enclosure/screen is constructed to reduce impacts. These systems can be constructed from Fibre Cement (FC) sheeting or, if airflow is required, acoustic attenuators or louvres.

For semi mobile plant, relocation of plant should be investigated to either be operated in an enclosed space or at locations away from a receiver.

With mobile plant it is generally not possible to treat these sources. However, investigations into the machine itself may result in a reduction of noise (i.e., mufflers/attenuators etc).

9.3 Vibration Mitigation Measures

9.3.1 General Comments

As part of the CNVMP, the following vibration mitigation measures should be implemented:

- Any vibration generating plant and equipment is to be in areas within the site in order to lower the vibration impacts.
- Investigate the feasibility of rescheduling the hours of operation of major vibration generating plant and equipment.
- Use lower vibration generating items of construction plant and equipment; that is, smaller capacity plant.
- Minimise conducting vibration generating works consecutively in the same area (if applicable).
- Use only dampened rock breakers and/or "city" rock breakers to minimise the impacts associated with rock breaking works.
- Conduct attended measurements of vibration generating plant at commencement of works in order to validate the indicative safe working distances advised in Table above and, consequently, to establish safe working distances suitable to the project. Measurements should be conducted at the nearest affected property boundary. These safe working distances should be defined by considering the vibration criteria discussed above. (i.e., criteria for structural damage, human comfort and impact to scientific or medical equipment).

9.3.2 Vibration Monitoring

Vibration monitoring, if required, should be undertaken continuously at the nearest most affected structures.

The monitoring location would be on a stiff part of the structure (at the foundation) on the side of the structure adjacent to the subject demolition and construction works.

The vibration monitoring system will be configured to record the peak vibration levels and to trigger an alarm when predetermined vibration thresholds are exceeded. The thresholds correspond to an "Operator Warning Level" and

an "Operator Halt Level", where the Warning Level is 75% of the Halt Level. The Halt Level should be determined based on the vibration criteria for building contents and structure.

Exceedance of the "Operator Warning Level" would not require demolition work to cease, but rather, alerts the site manager to proceed with caution at a reduced force or load. An exceedance of the "Operator Halt Level" would require the contractor to implement an alternative technique pending further analysis of the vibration frequency content in order to determine any potential exceedance of the criteria.

The vibration monitoring equipment would be downloaded and analysed by the acoustical consultant.

Reports of the measured vibration levels and their likely impacts would be prepared by the acoustical consultant and issued to the contractor.

- Attended vibration monitoring of construction activities is to be undertaken during the following periods
    - In response to any ongoing complaints received from neighbours.

9.4 Community Consultation

Active community consultation and the maintenance of positive relations with local residents and businesses would assist in alleviating concerns and thereby minimising complaint. It is common for construction projects to provide community consultation if an exceedance of noise goals has been predicted. This communication is commonly conducted in the form of a letter box drop or more active engagement with more highly impacted receivers.

This form of notification should provide specific notification of the duration and timing of the construction activities so that residents are informed about the proposed works ahead of time. The letter should also provide the community with a hotline number for a community liaison officer available to adequately respond to all project related enquiries.

Ideally the hotline number should provide concerned locals an opportunity to raise any concerns with the project proponent and provide an opportunity to determine the best method to satisfy all requirements.

Prior to the works onsite being undertaken, it is recommended that community consultation with the neighbouring affected parties be undertaken.

The communication however should not be limited to the beginning of the onsite works but throughout providing the community with constant updates to the progress and upcoming works. In our experience these could include:

- Site noticeboard.
- Email notifications; and
- Letterbox drops.

Details of the project community consultation plan is included in Appendix C.

9.5 Complaints Management System

Should complaints arise they must be dealt with in a responsible and uniform manner, therefore, a management system to deal with complaints required for the project including that detailed within the CEMP.

Should complaints arise they must be dealt with in a responsible and uniform manner, therefore, a management system to deal with complaints is detailed below:

Local residents and land owners should be informed by direct mail of a direct 24-hour telephone line where any noise complaints related to the construction will be recorded. The 24-hour telephone line number will be made available on the construction site signage.

All complaints should be investigated by the Contractor in accordance with the procedures outlined in Australia Standard 2436-2010. Consequently, a complaint response procedure should be implemented. Information to be gathered as part of this process should include:

- location of complainant
- time/s of occurrence of alleged noise or vibration impacts
- nature of impact particularly with respect to vibration
- Perceived source
- Prevailing weather conditions and similar details that could be utilised to assist in the investigation of the complaint.

All resident complaints will be responded to in the required timeframe and action taken recorded.

Post receiving a noise and or vibration complaint, the process including possible mitigations will be assessed and included in proposed construction of the project.

9.6 Contingency Plans

Contingency plans are required to address noise or vibration problems if excessive levels are measured at surrounding sensitive receivers and/or if justified complaints occur. Such plans include:

- Stop the onsite works.
- Identify the source of the main equipment within specific areas of the site which is producing the most construction noise and vibration at the sensitive receivers; and
- Review the identified equipment and determine if an alternate piece of equipment can be used or the process can be altered.
- In the event an alternate piece of equipment or process can be used, works can re-commence.
- In the event an alternate piece of equipment or process cannot be determined implement a construction assessment to be performed by a suitably qualified acoustic consultant.

The Superintendent shall have access to view the Contractor's noise measurement records on request. The Superintendent may undertake noise monitoring if and when required.

9.7 General Mitigation Measures (Australian Standard 2436-2010)

As well as the above project specific noise mitigation controls, AS 2436-2010 "Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites" sets out numerous practical recommendations to assist in mitigating construction noise emissions. Examples of strategies that could be implemented on the subject project are listed below, including the typical noise reduction achieved, where applicable.

9.7.1 Adoption of Universal Work Practices

- Regular reinforcement (such as at toolbox talks) of the need to minimise noise and vibration.
- Regular identification of noisy activities and adoption of improvement techniques.
- Avoiding the use of portable radios, public address systems or other methods of site communication that may unnecessarily impact upon nearby sensitive receivers.
- Where possible, avoiding the use of equipment that generates impulsive noise.
- Minimising the need for vehicle reversing for example (particularly at night), by arranging for one-way site traffic routes. Use of broadband audible alarms on vehicles and elevating work platforms used on site.
- Minimising the movement of materials and plant and unnecessary metal-on-metal contact.
- Minimising truck movements.

9.7.2 Plant and Equipment

- Choosing quieter plant and equipment based on the optimal power and size to most efficiently perform the required tasks.
- Selecting plant and equipment with low vibration generation characteristics.

- Operating plant and equipment in the quietest and most efficient manner.

9.7.3 On Site Noise Mitigation

- Maximising the distance between noise activities and noise sensitive land uses.
- Installing purpose-built noise barriers, acoustic sheds and enclosures.

9.7.4 Work Scheduling

- Scheduling work to coincide with non-sensitive periods.
- Planning deliveries and access to the site to occur quietly and efficiently and organising parking only within designated areas located away from the sensitive receivers.
- Optimising the number of deliveries to the site by amalgamating loads where possible and scheduling arrivals within designated hours.
- Including contract conditions that include penalties for non-compliance with reasonable instructions by the principal to minimise noise or arrange suitable scheduling.

9.7.5 Source Noise Control Strategies

Some ways of controlling noise at the source are:

- Where reasonably practical, noisy plant or processes should be replaced by less noisy alternatives.
- Modify existing equipment: Engines and exhausts are typically the dominant noise sources on mobile plant such as cranes, graders, excavators, trucks, etc. In order to minimise noise emissions, residential grade mufflers should be fitted on all mobile plant utilised on site.
- Siting of equipment: locating noisy equipment behind structures that act as barriers, or at the greatest distance from the noise-sensitive area; or orienting the equipment so that noise emissions are directed away from any sensitive areas, to achieve the maximum attenuation of noise.
- Regular and effective maintenance.

9.7.6 Miscellaneous Comments

- Deliveries should be undertaken, where possible, during standard construction hours.
- Maximise hammer penetration (and reduce blows) by using sharp hammer tips. Keep stocks of sharp profiles at site and monitor the profiles in use.
- It is advised that mobile plant and trucks operating on site for a significant portion of the project are to have reversing alarm noise emissions minimised. This is to be implemented subject to recognising the need to maintain occupational safety standards.
- No public address system should be used on site (except for emergency purposes).

10 CONCLUSION

This report has been undertaken such that the construction noise and vibration requirements of the projects SSD-76913969, including Items B1, B21, B22, B23 and B24 are satisfied.

An assessment of noise and vibration impacts from the required processes to be undertaken during the excavation and construction periods of the project has been undertaken. Suitable treatments, management controls, periodic measurements and community engagement have been detailed in this report.

Provided that the recommendations in this report are incorporated into the project site's construction methodology, compliance with the requirements of the EPA's Interim Construction Noise Guideline will be achieved.

For any additional information please do not hesitate to contact the person below.

Regards

Ben White
Director

Pulse White Noise Acoustics

APPENDIX A- TERMINOLOGY

Sound power level	The total sound emitted by a source
Sound pressure level	The amount of sound at a specified point
Decibel [dB]	The measurement unit of sound
A Weighted decibels [dB(A])	The A weighting is a frequency filter applied to measured noise levels to represent how humans hear sounds. The A-weighting filter emphasises frequencies in the speech range (between 1kHz and 4 kHz) which the human ear is most sensitive to, and places less emphasis on low frequencies at which the human ear is not so sensitive. When an overall sound level is A-weighted it is expressed in units of dB(A).
Decibel scale	The decibel scale is logarithmic in order to produce a better representation of the response of the human ear. A 3 dB increase in the sound pressure level corresponds to a doubling in the sound energy. A 10 dB increase in the sound pressure level corresponds to a perceived doubling in volume. Examples of decibel levels of common sounds are as follows:
	0dB(A) Threshold of human hearing 30dB(A) A quiet country park 40dB(A) Whisper in a library 50dB(A) Open office space 70dB(A) Inside a car on a freeway 80dB(A) Outboard motor 90dB(A) Heavy truck pass-by 100dB(A) Jackhammer/Subway train 110 dB(A) Rock Concert 115dB(A) Limit of sound permitted in industry 120dB(A) 747 take off at 250 metres
Frequency [f]	The repetition rate of the cycle measured in Hertz (Hz). The frequency corresponds to the pitch of the sound. A high frequency corresponds to a high pitched sound and a low frequency to a low pitched sound.
Ambient sound	The all-encompassing sound at a point composed of sound from all sources near and far.
Equivalent continuous sound level [L_{eq}]	The constant sound level which, when occurring over the same period of time, would result in the receiver experiencing the same amount of sound energy.
Reverberation	The persistence of sound in a space after the source of that sound has been stopped (the reverberation time is the time taken for a reverberant sound field to decrease by 60 dB)
Air-borne sound	The sound emitted directly from a source into the surrounding air, such as speech, television or music
Impact sound	The sound emitted from force of one object hitting another such as footfalls and slamming cupboards.
Air-borne sound isolation	The reduction of airborne sound between two rooms.
Sound Reduction Index [R] *(Sound Transmission Loss)*	The ratio the sound incident on a partition to the sound transmitted by the partition.
Weighted sound reduction index [R_w]	A single figure representation of the air-borne sound insulation of a partition based upon the R values for each frequency measured in a laboratory environment.
Level difference [D]	The difference in sound pressure level between two rooms.
Normalised level difference [D_n]	The difference in sound pressure level between two rooms normalised for the absorption area of the receiving room.
Standardised level difference [D_{nT}]	The difference in sound pressure level between two rooms normalised for the reverberation time of the receiving room.
Weighted standardised level difference [$D_{nT,w}$]	A single figure representation of the air-borne sound insulation of a partition based upon the level difference. Generally used to present the performance of a partition when measured in situ on site.
C_{tr}	A value added to an R_w or $D_{nT,w}$ value to account for variations in the spectrum.

Impact sound isolation	The resistance of a floor or wall to transmit impact sound.
Impact sound pressure level [L_i]	The sound pressure level in the receiving room produced by impacts subjected to the adjacent floor or wall by a tapping machine.
Normalised impact sound pressure level [L_n]	The impact sound pressure level normalised for the absorption area of the receiving room.
Weighted normalised impact sound pressure level [$L_{n,w}$]	A single figure representation of the impact sound insulation of a floor or wall based upon the impact sound pressure level measured in a laboratory.
Weighted standardised impact sound pressure level [$L'_{nT,w}$]	A single figure representation of the impact sound insulation of a floor or wall based upon the impact sound pressure level measured in situ on site.
C_I	A value added to an L_{nW} or $L'_{nT,w}$ value to account for variations in the spectrum.
Energy Equivalent Sound Pressure Level [$L_{A,eq,T}$]	'A' weighted, energy averaged sound pressure level over the measurement period T.
Percentile Sound Pressure Level [$L_{Ax,T}$]	'A' weighted, sound pressure that is exceeded for percentile x of the measurement period T.
Speech Privacy	A non-technical term but one of common usage. Speech privacy and speech intelligibility are opposites and a high level of speech privacy means a low level of speech intelligibility. It should be recognised that acceptable levels of speech privacy do not require that speech from an adjacent room is inaudible.
Sound Pressure Level, LP dB	A measurement obtained directly using a microphone and sound level meter. Sound pressure level varies with distance from a source and with changes to the measuring environment. Sound pressure level equals 20 times the logarithm to the base 10 of the ratio of the rms sound pressure to the reference sound pressure of 20 micro Pascals.
Sound Power Level, Lw dB	Sound power level is a measure of the sound energy emitted by a source, does not change with distance, and cannot be directly measured. Sound power level of a machine may vary depending on the actual operating load and is calculated from sound pressure level measurements with appropriate corrections for distance and/or environmental conditions. Sound power levels is equal to 10 times the logarithm to the base 10 of the ratio of the sound power of the source to the reference sound power of 1 picoWatt
Noise Reduction	The difference in sound pressure level between any two areas. The term "noise reduction" does not specify any grade or performance quality unless accompanied by a specification of the units and conditions under which the units shall apply
Audible Range	The limits of frequency which are audible or heard as sound. The normal ear in young adults detects sound having frequencies in the region 20 Hz to 20 kHz, although it is possible for some people to detect frequencies outside these limits.
Background Sound Low	The average of the lowest levels of the sound levels measured in an affected area in the absence of noise from occupants and from unwanted, external ambient noise sources. Usually taken to mean the LA90 value
Character, acoustic	The total of the qualities making up the individuality of the noise. The pitch or shape of a sound's frequency content (spectrum) dictate a sound's character.
Loudness	A rise of 10 dB in sound level corresponds approximately to a doubling of subjective loudness. That is, a sound of 85 dB is twice as loud as a sound of 75 dB which is twice as loud as a sound of 65 dB and so on
LMax	The maximum sound pressure level measured over a given period.
LMin	The minimum sound pressure level measured over a given period.
L1	The sound pressure level that is exceeded for 1% of the time for which the given sound is measured.
L10	The sound pressure level that is exceeded for 10% of the time for which the given sound is measured.
L90	The level of noise exceeded for 90% of the time. The bottom 10% of the sample is the L90 noise level expressed in units of dB(A).
Leq	The "equivalent noise level" is the summation of noise events and integrated over a selected period of time.

APPENDIX B- BEN WHITE CV AND AAS MEMBERSHIP DETAILS

AUSTRALIAN ACOUSTICAL SOCIETY

This is to certify that

BENJAMIN WHITE

was admitted to the grade of

MEMBER

of the Australian Acoustical Society

on 27th October 2020

and is entitled to use the letters

M.A.A.S.

issued on 26th November 2020

S. Moore

President

General Secretary

AUSTRALIAN ACOUSTICAL SOCIETY A.C.N. 000 712 658 The Common Seal Of

This certificate remains the property of the Australian Acoustical Society

Curriculum Vitae – Benjamin White

Employment Experience:

Director – Pulse White Noise Acoustics November 2020 – Present

Director - White Noise Acoustics: March 2019 – Present

Director/Engineer - Acoustic Logic Consultancy: March 2001 – July 2018

Ben is a Member of the Australian Acoustic Society (AAS)

Experience:

Ben White the Director of White Noise has over 17 years of experience in acoustic.

Ben has significant experience in providing acoustic services and expert advice in the following areas:

- Residential acoustic reports including aircraft noise (AS2021) assessments, traffic noise, train noise and vibration assessments.
- Noise emission assessments for various projects including assessments with planning requirements using EPA, Department of Planning, Council DCP's and similar regulatory requirements.
- Planning approvals including Development Applications for multi dwelling residential developments, commercial developments, hotels and boarding houses, places of entertainment, carparks, mixed use developments, shopping centres and the like.
- Expert court witness including Land and Environment Court and other expert witness work.
- Project planning and specifications for types of projects including residential, commercial, retail, hotel accommodation, warehouses and industrial developments and mixed-use projects.
- Project delivery for all types of projects including, design advice and project delivery requirements at all stages of projects during design and construction.
- Certification works including on site testing for the provision of certification of all types of projects including items required to comply with Part F5 of the BCA as well as project specific acoustic requirements.
- Mechanical design and advice for the treatments of mechanical services with project requirements.
- External façade design and specification.
- Specialised acoustic design advice including areas of projects.
- Issues with existing building include site surveys and audits as well as advice regarding rectification if required.

APPENDIX C - COMMUNITY CONSULTATION PLAN

COMMUNITY CONSULTATION AND ENGAGEMENT PLAN

ALDI SYD ADC
1351

8 APRIL 2026

RICHARD CROOKES
CONSTRUCTIONS

THIS PLAN HAS BEEN APPROVED FOR USE BY:

APPROVED BY / DATE

Mitchell Kay, **SENIOR PROJECT MANAGER**

APPROVED BY / DATE

Craig Richmond**, BUSINESS SYSTEM, QA / ENV. MANAGER**

APPROVED BY / DATE

Simon Dayball**, GROUP SAFETY MANAGER**

APPROVED BY / DATE

Claude Concha, **GENERAL MANAGER (INDUSTRIAL)**

AUTHORITY POSITION	COMPANY NAME	NO. OF COPIES
Tina Zhang	RPI	One copy
Mitchell Kay	Richard Crookes Constructions	One copy

REVISION REGISTER

REVISION DATE	REVISION DESCRIPTION	PMS INITIALS (ACCEPTANCE OF CHANGES)
09/01/2026	Initial Issue	PM
08/04/2026	General Amendments – for internal use	PM

PROJECT POSITION	NAME	SIGNATURE	REVISIONS	
			09.01.2026	08.04.2026
GENERAL MANAGER	Claude Concha		CC	CC
SENIOR PROJECT MANAGER	Mitchell Kay		MK	MK
SENIOR SITE MANAGER	Michael French		MF	MF
CONTRACTS MANAGER	Gary Kenny		GK	GK
CONTRACTS MANAGER	Carl Musolino		CM	CM
SENIOR CONTRACTS ADMINISTRATOR	Tommy Nguyen		TN	TN
SENIOR PROJECT ENGINEER	Andre Kisso		AK	AK
DESIGN DIRECTOR	Alex Hovy		AH	AH
SENIOR DESIGN MANAGER	Maruthi Dhurjati		MD	MD
SENIOR DESIGN MANAGER	Paul Cassistatis		PC	PC
SENIOR PROJECT ENGINEER	Shek Yuen		SY	SY
PROJECT ENGINEER	Mei Tang		MT	MT

SITE ENGINEER	David Li	DL	DL
SITE ENGINEER	Mahnoor Shahzad	MS	MS
WHS MANAGER	Marcello Di Paolo	MDP	MDP

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INTRODUCTION

This Community Consultation and Engagement Plan forms part to the Project Management Plan for ALDI Sydney ADC.

1.1 PURPOSE OF THE PLAN

Richard Crookes Constructions (RCC) recognises the importance of trust in relationship building with stakeholders involved with the project. Consequently, being accountable is paramount and we seek to be transparent with our communications and documentation.

Further, in line with our company commitment to continual improvement, we constantly aim for a greater level of engagement and interaction with stakeholders, particularly when our project activities may impact on the communities in which we operate.

The purpose of this plan is to outline processes for:

- Achieving our Objectives and Targets;
- Consultation Strategies;
- Identification of Stakeholders;
- Responsibilities for Implementing the Plan; and
- Stakeholder Grievances and Concerns. Richard Crookes Constructions (RCC) recognises the importance of promoting building design and construction techniques which minimise waste and provides an efficient recycle procedure for all waste material.

2 RCC OBJECTIVES AND TARGETS

RCC's overall objective is to promote an open communications environment that will minimise disruptions and issues for both the project team and the community.

To support this, and in line with commitments made in RCC's Environmental Policy, project level objectives and targets include:

- Community complaints are to be actioned within 24 hours;
- No repeat complaints for the same issue.

3 DESCRIPTION OF PROJECT

3.1 GENERAL

The Project consists of an 85,000m^2 Distribution Centre, of which RCC is the principal contractor. The project is located at 475 Badgerys Creek Road, Bradfield - access to site is off the Eastern Ring Road. The works are the Design and Construction of a High-bay and Low-bay warehouse, incorporating a range of temperature-controlled environments to support the safe storage and distribution of goods.

The facility is divided into multiple chambers including Ambient zones, Chilled zones of approximately 22,300m^2, and Freezer zones of around 5,500m^2. The development also includes a Main Office, Spine Office, Plant Rooms, HV Rooms and a Maintenance Workshop area. It also features Inbound and Outbound loading docks, carparks, landscaping works, concrete hardstand, and site facilities compromising a Gate house, Weighbridge, Truck wash bay and Truck refuelling station.

3.2 HOURS OF OPERATION

The Development Consent hours of operation for the construction project are:

Monday – Friday 7am to 6pm

Saturday – 8am to 1pm

3.3 PROPOSED TIMEFRAMES

The table below provides an overview of the construction activities and the timeframe for the works.

CONSTRUCTION ACTIVITIES		
ACTIVITY	**METHODOLOGY**	**TIMEFRAME**
Site set up including environmental controls	Hiab trucks and Mobile cranes.	04/05/26 – 28/05/26
Bulk earthworks & spoil removal	Earthmoving plants and equipment – Excavators, Bulldozers, Graders, Scrapers, Roller Compactors, Water Trucks, Body Trucks (heavy rigid and truck and dog).	13/05/26 – 23/09/26
In ground services	Excavators	01/06/26 - 07/06/27
Footings, foundations & anchors	Excavators, Concrete pump trucks, Concrete Trucks, CFA rigs, Water trucks, Skid Steers, body trucks.	19/06/26 – 27/11/27
BDR Building Delivery and Installation	Excavators, compactors, Skid Steers, Telehandlers, Boom lifts, Scissor Lifts, Mobile cranes, Telehandlers, body trucks.	30/06/26 – 18/11/27
Fit-out of final finishes & furniture	Boom lifts, Scissor Lifts, body trucks.	23/03/27 - 18/11/27

External works incl. pavements, landscaping	Asphalt Plants, Skid Steers, Excavators, Concrete pump trucks, Concrete Trucks, body trucks, concrete saw cutter.	06/05/26 – 17/09/27

4 SITE MANAGEMENT PROJECT DETAILS

POSITION	NAME	PHONE (W)	PHONE (M)
Senior Project Manager	Mitch Kay	02 9902 4700	0413 611 842
Senior Project Engineer	Andre Kisso	02 9902 4700	0418 175 668
Site Manager	Mike French	02 9902 4700	0437 637 649
WHS Manager	Marcello Di Paolo	02 9902 4700	0418 272 205
	LOCATION	**PHONE**	
Site Management Project Office	475 Badgerys Creek Road, Bradfield	0413 611 842	

5 BALANCING COMMUNITY EXPECTATION AND RCC OBLIGATIONS

Balanced community engagement involves both a commitment from RCC and an expectation from the community, as summarised below.

	INFORM	CONSULT	INVOLVE	COLLABORATE
Community Expectation	To get balanced and objective information about aspects of the project that impact on us	To be asked our opinions and allow us to provide feedback to the company on the matters that concern us	To be involved in the decision making process and the exploration of alternatives regarding those issues that are of concern to us	To create a partnership with us whereby we have faith that our concerns and ideas are integrated into the decision making process
RCC Obligation	We will keep the community well informed	We will listen and acknowledge community concerns and provide evidence that concerns are considered in decision making	We will work with the community to make sure concerns and issues are reflected in any alternatives developed. Provide feedback to the community on how their inputs has influenced outcomes	We will look to the community for advice and innovation in solving issues and concerns and incorporate their advice into the decision making process to the maximum extent possible.

6 CONSULTATION AND STRATEGY/OUR APPROACH TO DIALOGUE

6.1 GENERAL

Community consultation can be involving, meaningful, useful and effective if the following principles are used as a starting point for making consultation work:

- Making it timely: participation should not be so late in the process of an issue that it is tokenistic or merely confirms decisions already made. Give people enough time to express their views.
- Making it inclusive: Participation should be selected in a way that is not open to manipulation, and should include a cross section of the participation.
- Making it community focused: Ask participants not what they personally want but what is appropriate in their role as a citizen.
- Making it interactive: avoid reducing questions to a simplistic response. Allow consideration of the big picture so people can readily become engaged.
- Making it effective: Although decision making can strive for consensus, complete agreement may not be the outcome. Be clear on how the decisions will be made so participants understand the impact of their involvement. Allow enough time for participants to become familiar with the project issues.
- Making it Matter: it is important that a strong likelihood that any recommendations that emerge from the consultative process will be accepted. If they are not, it is important that a public explanation is provided.

6.2 WAYS TO CONSULT

Different community stakeholder groups need different consultation methods at different stages of the project. Some of the processes that may be used are listed below.

CONSULTATION METHOD	INFORM	CONSULT	INVOLVE	COLLABORATE
Tools Meetings	Fact Sheet / flyers Website Project Open days Briefings 24 hrs. contact points Media Direct personal visits Project inductions	Public submissions Focus groups Public meetings Surveys	Community liaison groups Workshops Submissions Community projects / sponsorship Local suppliers preference policy	Advisory groups Decision making Consensus building

Appendix 1 identities how these methods will be employed specifically to this project.

6.3 LETTER BOX DROPS AND PUBLIC NOTICES

Letter box drops or public notices will include at least the following (refer to example within section 12):

- Why the works are required;
- When they will occur;
- What mitigation measures are in place to minimise any community or environmental impacts;
- Who will be doing the work and a contact phone number for further information; and
- Emergency Contact number / community complaints line.

6.4 COMMUNICATION PROTOCOLS

The protocols for establishing and continuing community consultation for this project include:

- Communicating clearly;
- Including 3 or 4 main messages, and repeat them in different ways;
- Ensuring information is structured around the same messages i.e. Consistency;
- Ensuring project staff are clear about main messages, so stakeholders receive consistent messages;
- Providing information promptly;
- Establishing timelines and lines of communication: for this project a 2-day response time to deal with community concerns has been determined;
- Making the information accessible to all interested parties; and
- Being open to changes that may result from listening and incorporating innovations or concerns from the community into the project activities and methodologies.

7 IDENTIFICATION OF STAKEHOLDERS FOR THIS PROJECT

7.1 GENERAL

Key stakeholders are generally identified as people who are adversely or positively impacted by our operations, those who have an interest in / influence on what we do.

Our project sites are required to identify their key stakeholders and consider their expectations and concerns during design (where achievable) and operational activities.

These projects key stakeholders are many and varied and may include:

RCC's Employees Client and end users, subcontractors, and suppliers;

- Local and Indigenous communities;
- Customers;
- Surrounding property occupiers or owners;
- Community organisations that represent local and indigenous communities near our projects, particularly in regional areas;
- Unions who are concerned about upholding workers' rights and interests; and
- Governments – local & state;
- The media; and
- Industry associations.

Within these groups, there are stakeholders that may be interested in specific issues or affected by a range of issues.

7.2 COMMUNITY CONSULTATION PLANNING

Section 7.3 summarises the Community and Stakeholders Mapping Guide and overall consultation strategy planned for this project.

7.3 STAKEHOLDERS INDENTIFIED FOR THIS PROJECT & CONSULTATION STRATEGIES

For this project, business, residential and other stakeholders that may be specifically impacted by project works and the corresponding consultation strategy have been listed in the table below:

STAKEHOLDERS AND CONSULTATION STRATEGIES		
PRECINCT	**IMPACTS**	**CONSULTATION STRATEGY**
Businesses	During Construction: extra traffic (concrete trucks)	A construction update advising of progress of current works and advice of commencement of soft ground works will be issue in advance of works commencing. Personal consultation – a visit will be made to update progress on works and inform businesses of upcoming works.

STAKEHOLDERS AND CONSULTATION STRATEGIES		
PRECINCT	**IMPACTS**	**CONSULTATION STRATEGY**
		Community Liaison Group (CLG) – monthly meetings (If required). Ongoing communication with the Client, Property managers and business tenants via regular email flyers and project updates. The agreed complaint handling procedures will be implemented.
Residents	During Construction: Noise, Traffic, Dust	Prior to works starting, notification and consultation will be undertaken with the identified key sensitive receivers. Personal consultation will be undertaken with identified sensitive receivers to make them aware of works. Personal consultation will be undertaken with the residents potentially impacted by regenerated noise and vibration. The agreed complaint handling procedures will be implemented.
Employees & Subcontractors	WHS/Environmental concerns Career progression & learning opportunities For those who live in regional communities where our projects are based – interactions out of work hours, business creation during the life of the project, supporting social infrastructure	Both the Head Office and Project sites, employees and contractors are expected to participate in company improvements, via: Safety committees Performance appraisals Direct communications between employees & management Newsletters & alerts Intranet Monthly reporting & corporate reports IT helpdesk
Local & Indigenous Communities	Disengagement of local & indigenous communities with the project Non – fulfilment of GC21 Contract obligations contained in Aboriginal Participation Plans Miss-alignment of RCC's policies and the NSW Government's commitment to creating outcomes (training, employment, enterprise development) for Aboriginal people, as referred to in the Making It Our Business	Development of Aboriginal Participation Plans to involve the indigenous community Community consultation groups Newsletters and other targeted communications Monthly reporting & corporate reports Community perception surveys

STAKEHOLDERS AND CONSULTATION STRATEGIES		
PRECINCT	**IMPACTS**	**CONSULTATION STRATEGY**
	Strategy and procurement in construction policy. Potential to affirm and respect indigenous and other heritage & cultural values	
Suppliers	Suppliers and subcontractors not aware of RCCs expectations Impacts of RCC's payment terms and conditions on suppliers and subcontractors	Technology exchanges Identification of risks associated with their activities and implementation of controls Seek to utilise local suppliers and support these suppliers
Community Organisations	Assurance that potential impacts (social, environmental, safety etc.) have been considered during RCC's projects and mitigated RCC's community interactions and support are mutually beneficial and sustainable	Community consultation and engagement groups Support local sporting and other groups Corporate programs
Unions	Freedom of our employees to choose to join labour unions	Communicate with unions on specific issues, RCC's EBA etc.
Regulators	Government has mechanisms of regulation that cover a range of aspects within RCC including industrial, safety, environment	RCC's activities required to work within legislative frameworks and local and state levels Meetings with Council, BCA consultant with respect to planning and design issues Onsite meetings with Local Council, DECC, Safework, CCU to ensure RCC works complying with legislation, minimising impacts to stakeholders, minimising industrial relations conflicts etc.

7.4 INDIGENOUS STAKEHOLDERS

RCC recognises and respects the importance of Indigenous peoples' culture, heritage and traditional rights and supports the identification, recording, management and protection of indigenous cultural heritage sites.

Indigenous cultural heritage is broadly defined to include matters that are significant to either Indigenous peoples or under legislation, such as dreaming, ceremonial, sacred and burial sites; archaeological sites where evidence of the past occupation and use by Indigenous peoples can be found; more contemporary historic sites; and traditional knowledge.

We recognise that Indigenous people have a vital role to play in identifying and properly managing cultural heritage, especially where it could be affected by our activities.

Where identified by the planning process, projects will undertake early consultations and assessments with Indigenous peoples to ascertain whether our proposed activities are likely to impact cultural heritage values

and, in conjunction with Indigenous peoples and relevant authorities, determine how best to plan and undertake those activities to avoid or minimise such impacts.

7.5 ABORIGINAL PARTICIPATION PLAN

Aboriginal Participation Plans will be developed for a project in accordance with the Contract requirements or where there is a significant potential to benefit the local community in line with the NSW Government's policies.

8 RESPONSIBILITY FOR IMPLEMENTING THE PLAN

The Senior Project Manager, Mitchell Kay, is responsible for developing and implementing the Community Consultation and Engagement Plan for this project. Where required, specialist consultants will be engaged.

9 STAKEHOLDER GRIEVANCES AND CONCERNS

Project sites are required to maintain a register of concerns, complaints and relevant external communications.

Concerns and complaints are to be investigated as incidents, using RCC's standard investigation processes (Form 01.1), and outcomes and actions are reported back to relevant stakeholders. Example of Form 01.1 is shown below:

1351
ALDI SYD
Dated: 8/04/2026

COMPLAINTS REGISTER

RICHARD CROOKES CONSTRUCTIONS

No.	DATE	TIME	NAME OF COMPLAINANT	ADDRESS	DESCRIPTION OF COMPLAINT	COMMUNICATION METHOD (PHONE, EMAIL, ETC.)	RESPONSE / ACTION PROVIDED	DATE CLOSED	COMMENTS

10 IS THE PLAN EFFECTIVE?

Monitoring public opinion and complaints will identify how successful the project Community Consultation and Engagement Plan is:

- If issues can be resolved by consultation and collaboration, then the program is successful.
- If issues are escalating and resolution is improbable, the program is to working.

A regular review process during the project is also a central requirement of Stakeholder identification, to ensure that all appropriate groups and individuals are effectively identified and suitably engaged.

11 RESOURCES

http://www.vlgaconsultation.org.au/

http://www.communitysolutions.com.au/index.html

Landcom Booklet Stakeholder Consultation Workbook (available on internet).

12 LETTER BOX DROP EXAMPLE

RICHARD CROOKES CONSTRUCTIONS

8 April 2026

ATTENTION: Neighbouring Properties
Badgerys Creek Road,
Bradfield NSW

RE: **475 BADGERYS CREEK ROAD, BRADFIELD – CONSTRUCTION WORKS**

Dear Neighbour,

As part of our approved SSDA Construction works (SSD-76913969), we will be commencing construction works from **Friday 17th of April 2026** at 475 Badgerys Creek Road, Bradfield. Works are scheduled to commence at approximately 7:00am, weather permitting.

During this time, there may be some intermittent noise associated with machinery operation and truck movements to and from the property. These activities will take place during approved working hours and will be managed to reduce impact where possible. All works will be carried out by fully qualified and licensed contractors, in strict accordance with relevant safety, environmental, and local council regulations.

We sincerely appreciate your patience and understanding throughout this period. Every effort will be made to minimise inconvenience to surrounding properties, including limiting noise where possible, maintaining a clean and tidy site, and ensuring that access to neighbouring homes is not affected.

Richard Crookes Constructions Pty Limited

MITCHELL KAY –
Senior Project Manager
kaym@richardcrookes.com.au
0413 611 842

LETTER BOX DROPS AND PUBLIC NOTICES

PROUDLY BUILDING TOMORROW
Richard Crookes Constructions Pty Ltd
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richardcrookes.com.au
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1

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St Leonards NSW 2065

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The Junction NSW 2291

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+61 2 9902 4700

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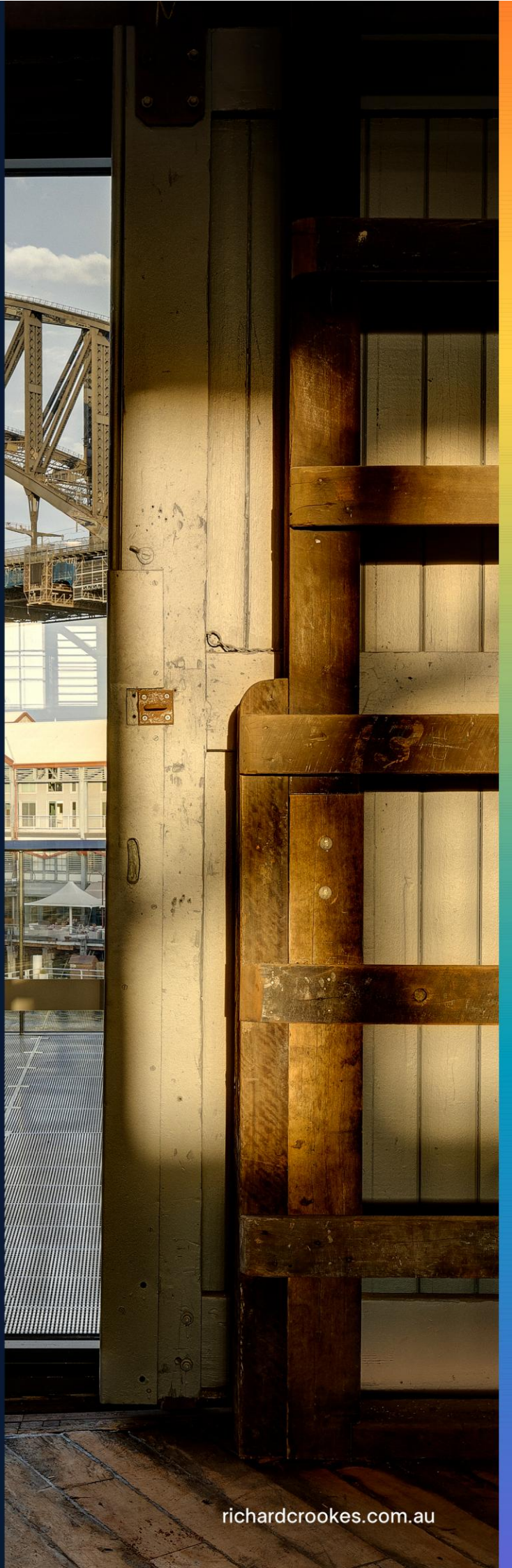
RICHARD CROOKES
CONSTRUCTIONS



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Appendix E

Historical Heritage Assessment and Aboriginal Cultural Heritage Assessment

Geosyntec consultants

475 Badgerys Creek Road, Bradfield NSW
Aboriginal Cultural Heritage Assessment

Ingham Rural Property Group Pty Limited

ecological AUSTRALIA
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Template 2.8.1

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Abbreviations

Abbreviation	Description
ACHA	Aboriginal Cultural Heritage Assessment
AHIP	Aboriginal Heritage Impact Permit
AHIMS	Aboriginal Heritage Information Management System
ARD	Archaeological Research Design
ATR	Archaeological Technical Report
DECCW	(Former) Department of Environment Climate Change and Water
ELA	Eco Logical Australia Pty Ltd
Heritage NSW	Heritage NSW, Department of Premier and Cabinet
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan
LGA	Local Government Area
NSW	New South Wales
OEH	NSW Office of Environment and Heritage
PAD	Potential Archaeological Deposit
RAP	Registered Aboriginal Party
SHI	State Heritage Inventory
SHR	State Heritage Register

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Executive Summary

Ingham Property Group (the proponent) are proposing to develop a masterplan to facilitate development of an industrial estate for employment and enterprise purposes at 475 Badgerys Creek Road, Bradfield, NSW. ELA was engaged to undertake an Aboriginal Cultural Heritage Assessment (ACHA) to inform the master planning stage and support the master planning proposal to amend the Aerotropolis Precinct Plan, State Environmental Planning Policy (Precinct - Western Parkland City) 2021 and the DCP.

GML 2020 prepared a baseline Aboriginal Heritage Report to inform a master planning proposal for the property. Thirteen sites had previously been recorded on the property comprising stone artefacts and Potential Archaeological Deposits (PAD). GML recorded one additional artefact site and 12 locations with potential cultural heritage values. Two zones for potential future conservation were identified as well as several locations that were considered as archaeologically sensitive.

Ingham Property Group engaged Eco Logical Australia (ELA) to conduct an Archaeological Assessment to document the archaeological values within the study area and to identify any known or unrecorded Aboriginal sites. The assessment was undertaken to inform two stages, Stage 1 was to inform any Heritage constraints for the proposed substation works in the south west corner of the property, Stage 2 assessment included the remaining area of 475 Badgerys Creek Road. The Archaeological Assessment identified the study area has been heavily disturbed from past land use, many of the registered Aboriginal sites could not be reidentified and have likely been impacted by the previous land use. Test excavations of several areas of PAD to be impacted by the proposed future development resulted in a low density artefact scatter along Badgerys Creek. The remaining areas of subsurface investigation resulted in the no Aboriginal objects and the soil profiles were disturbed evidence of past land clearance, landform modifications (drainage) and pastural/ agricultural activities.

The ACHA complies with the *Guide to investigating, assessing, and reporting on Aboriginal cultural heritage in NSW* (OEH 2011).

Summary of assessment findings:

- Aerotropolis Precinct is to be the focus of Aboriginal Cultural Values for the Sydney region. The Aerotropolis Precinct is to be distinct and is to be designed around connection to country.
- Twelve Aboriginal sites have been identified within the study area, as the Aerotropolis precinct has been the subject of many heritage assessments. The majority of sites are isolated or low density Aboriginal objects located in disturbed erosional contexts with low scientific value but high cultural value.
- The planning proposal for the study area has been informed by the previous assessments, the DCP and the SEPP and has considered the value of connecting to country. The creeklines and major drainage lines have been identified as being of high significance to the Aboriginal community and will be kept as open space.
- There will be direct impacts to ten AHIMS sites, eight AHIMS sites could not be reidentified through this assessment and their location within the existing road corridors and in the actively eroding creeklines means they are likely destroyed.

- Direct impact to AHIMS ID 45-5-5371 is likely for drainage mitigations works and connecting to country interpretation. This PAD was subject to archaeological investigations and the remaining PAD adjacent to in AHIMS ID 45-5-2780 likely contains a low density artefact scatter due to the limited area intact and the existing high erosion disturbance from current drainage line. Further investigations or mitigation measures would not contribute to the understanding of the Aboriginal cultural values of the study area.
- AHIMS ID 45-5-5370 and 45-5-5372 are not proposed to be impacted by the current Badgerys Creek Masterplan. If future works are proposed, then further assessment would be required for these sites.

Based on the findings of this Aboriginal Cultural Heritage Assessment (ACHA) and the archaeological investigation the following is recommended:

Recommendation 1 - Conservation/ management areas

AHIMS sites have been identified within areas of the planning proposal designated as open space. It is recommended that these areas be conserved and managed to ensure the cultural values of the Aboriginal sites and potential deposits be protected. It is recommended that prior to future developments a Construction Management Plan be developed to implement protection and awareness prior to any works.

AHIMS ID 45-5-5370 (adjacent to Badgerys Creek) and AHIMS ID 45-5-5372 (adjacent to South Creek) are located within open space and are not proposed to be impacted by the current Badgerys Creek Masterplan. If any impacts area proposed for the open spaces adjacent to Badgerys Creek and South Creek, then further archaeological investigations will be required an Addendum Aboriginal Cultural Heritage Assessment (Table 12, Figure 5).

Recommendation 2 –Aboriginal Heritage Impact Permit

- An AHIP will be required prior to future development of the study area to cover impacts to AHIMS sites located within the proposed development footprint.
- The current masterplan will impact on the following AHIMS sites, AHIMS ID 45-5-2660, AHIMS ID 45-5-2661, AHIMS ID 45-5-2662, AHIMS ID 45-5-2669, AHIMS ID 45-5-2672, AHIMS ID 45-5-2674, AHIMS ID 45-5-2780/ AHIMS ID 45-5-5371, AHIMS ID 45-5-2786, AHIMS ID 45-5-2787 and AHIMS ID 45-5-5373. They are all of low significance and of low potential, the majority could not be reidentified through archaeological investigations. No further mitigations will be required for these sites (Table 12, Figure 5).
- If the impact footprint changes from the current design in this reporting, then an updated impact assessment will be required.

Recommendation 3 – Management of Aboriginal objects

All Aboriginal objects collected during the course of the archaeological investigations will be temporarily stored at ELA office (Sydney). Suitable long-term management of the retrieved artefact assemblage will be a condition of the AHIP and following completion of works a suitable place for reburial will be determined through consultation with the proponent and the Aboriginal community. Previous

assessments have recommended a keeping place or centralised burial location be identified for the entire Aerotropolis Precinct.

Recommendation 4 – Interpretation of Aboriginal Cultural Values

Expressions of Aboriginal culture across the landscape should be integral to the design process of future development to provide a clear distinction and be representative of the importance of Aboriginal cultural values in the Aerotropolis Precinct. Heritage interpretation would connect the public with the Aboriginal cultural values associated with the Cumberland Plain and Badgerys Creek area. Heritage interpretation elements at the site may include:

- Engaging Aboriginal artists to develop designs/artworks that depict both tangible and intangible aspects of traditional Aboriginal culture across a diverse range of traditional and modern media should be considered for the future development.
- Incorporating local Aboriginal naming conventions within the precinct design
- Incorporating native plant species into any landscape plantings in open spaces and street plantings.
- Providing interpretive information regarding the Aboriginal history of the site within common areas, developed in consultation with RAPs as part of connecting to country.

Recommendation 5 – Submit ACHA to AHIMS

In accordance with Chapter 3 of the *Guide to investigating, assessing, and reporting on Aboriginal cultural heritage in NSW* (OEH 2011) the ACHA should be submitted for registration on the AHIMS register within three months of completion.

1. Introduction

1.1 Background

Ingham Property Group (the proponent) are proposing to develop a Master Plan to facilitate development of at 475 Badgerys Creek Road, Bradfield NSW. ELA was engaged to undertake an Aboriginal Cultural Heritage Assessment (ACHA) to inform the master planning stage and support the master planning proposal to amend the Aerotropolis Precinct Plan, State Environmental Planning Policy (Precinct - Western Parkland City) 2021 and the DCP.

GML 2020 prepared a baseline Aboriginal Heritage Report to inform a master planning proposal for the property. Thirteen sites had previously been recorded on the property comprising stone artefacts and Potential Archaeological Deposits (PAD). GML recorded one additional artefact site and 12 locations with potential cultural heritage values. Two zones for potential future conservation were identified as well as several locations that were considered as archaeologically sensitive.

Ingham Property Group engaged Eco Logical Australia (ELA) to conduct an Archaeological Assessment to document the archaeological values within the study area and to identify any known or unrecorded Aboriginal sites. The assessment was undertaken to inform two stages, Stage 1 was to inform any Heritage constraints for the proposed substation works in the south west corner of the property, Stage 2 assessment included the remaining area of 475 Badgerys Creek Road. The archaeological Assessment identified the study area has been heavily disturbed from past land use, many of the registered Aboriginal sites could not be reidentified and have likely been impacted by the previous land use. Test excavations of several areas of PAD to be impacted by the proposed future development resulted in a small low density artefact scatter along Badgerys Creek. The remaining areas of subsurface investigation resulted in the no Aboriginal objects and the soil profiles were mixed from past land clearance, landform modifications (drainage) and pastural/ agricultural activities.

1.2 Location of the assessment

The study area comprises 475 Badgerys Creek Road, Bradfield NSW (Lots 99 and 100 in DP1287207) (Figure 1). Lot 99 comprises the zone substation and Lot 100 comprises the remainder of the site. The study area comprises a total area of approximately 184 ha along Badgerys Creek Road, centrally located within Western Parkland City. The study area is situated on a gently undulating landform that lies between two major water ways, Badgerys Creek and South Creek.

The study area is located in the Parish of Bringelly in the County of Cumberland, within the Liverpool Local Government Area (LGA). The study area falls within the Gandangara Local Aboriginal Land Council boundaries.

The proposed layout of the site is shown in Figure 2.

The majority of the site is under the ownership of IPG, with a small portion of land earmarked for the North Bradfield Zone Substation owned by Endeavour Energy. The site is largely grassland and is largely clear of vegetation as it is currently used for agricultural purposes. There is an internal road network within the site which had previously connected the now demolished sheds and ancillary structures dispersed across the site.

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The subject land is situated within the Western Sydney Aerotropolis, with a direct interface with the Western Sydney International Airport (WSI). It is bound by two significant riparian corridors which define Western Sydney, with South Creek to the east and Badgerys Creek to the north-west. The immediate surroundings of the site are characterised by large rural landholdings used predominately for agricultural and light manufacturing purposes, all of which will redeveloped in accordance with the Aerotropolis Precinct Plan vision.

The IPG Master Plan was informed by a detailed assessment of the site-specific considerations through preliminary site investigations. The Master Plan breaks down the general application of the Enterprise zone across the site and provides a more granular approach to land use planning with considerations made to the opportunities and constraints of the site. The structure plan is made up of four key land uses which include enterprise and light industry, business and enterprise, and employment zone centres.

1.3 Purpose and aims

According to Heritage NSW, Department of Premier and Cabinet (Heritage NSW), an ACHA is undertaken to investigate the potential harm of a proposed activity on Aboriginal objects and cultural values. Harm to significant Aboriginal objects and cultural heritage should always be avoided wherever possible. Where such harm cannot be avoided, measures that reduce the extent and severity of this harm should be developed.

This ACHA has been carried out in accordance with the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH 2011). This ACHA presents the results of the assessment and recommendations for actions to be taken before, during and after an activity to manage and protect Aboriginal objects and cultural heritage values identified by the investigation and assessment. This ACHA will support an application to Heritage NSW for an AHIP.

The aims of the ACHA are to:

- Identify any previously unknown Aboriginal sites or objects within the study area through archaeological assessment and test excavation.
- Determine the scientific, historic, aesthetic, and cultural significance of the study area through archaeological investigations and through Aboriginal consultation.
- Identify any constraints and propose any potential management and mitigation measures.

1.4 Authorship

This ACHA has been prepared by ELA Senior Archaeologist Jennifer Norfolk, with review by ELA Principal Heritage Consultant Karyn McLeod.

Jennifer Norfolk has an MSc. (Marine Archaeology) from Southampton University. Karyn McLeod has BA (Hons Archaeology) from University of Sydney and a MA (Cultural Heritage) from Deakin University.

1.5 Statutory control and development context

1.5.1 National Parks and Wildlife Act 1974 (NSW)

Aboriginal cultural heritage in NSW is afforded protection under the provisions of the *National Parks and Wildlife Act 1974* (NSW) [NPW Act]. The Act is administered by Heritage NSW which has responsibilities under the legislation for the proper care, preservation and protection of 'Aboriginal objects' and 'Aboriginal places'.

Under the provisions of the NPW Act, all Aboriginal objects are protected irrespective of their level of significance or issues of land tenure. Aboriginal objects are defined by the Act as, *any deposit, object or material evidence (that is not a handicraft made for sale) relating to Aboriginal habitation of NSW, before or during the occupation of that area by persons of non-Aboriginal extraction (and includes Aboriginal remains)*. Aboriginal objects are limited to physical evidence and may be referred to as 'Aboriginal sites', 'relics' or 'cultural material'. Aboriginal objects can include scarred trees, artefact scatters, middens, rock art and engravings, as well as post-contact sites and activities such as fringe camps and stockyards. Heritage NSW must be notified on the discovery of Aboriginal objects under section 89A of the NPW Act.

Part 5 of the NPW Act provides specific protection for Aboriginal objects and places by making it an offence to destroy, deface, damage, or move them from the land. *The Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (DECCW 2010c), as adopted by the *National Parks and Wildlife Regulation 2019* (NPW Regulation) made under the NPW Act, provides guidance to individuals and organisations to exercise due diligence when carrying out activities that may harm Aboriginal objects. This Code also determines whether proponents should apply for consent in the form of an AHIP under section 90 of the Act. This code of practice can be used for all activities across all environments. The NPW Act provides that a person who exercises due diligence in determining that their actions will not harm Aboriginal objects has a defence against prosecution for the strict liability offence if they later unknowingly harm an object without an AHIP. However, if an Aboriginal object is encountered in the course of an activity work must cease and an application should be made for an AHIP.

The *Guide to investigating, assessing, and reporting on Aboriginal cultural heritage in NSW* (OEH 2011) sets out the requirements for investigation and assessment of Aboriginal cultural heritage. The assessment is undertaken to explore the harm of a proposed activity on Aboriginal objects and declared Aboriginal places and to clearly set out which impacts are avoidable, and which are not. Harm to significant Aboriginal objects and declared Aboriginal places should always be avoided wherever possible. Where harm to Aboriginal objects and declared Aboriginal places cannot be avoided, proposals that reduce the extent and severity of harm to significant Aboriginal objects and declared Aboriginal places should be developed. The Aboriginal cultural heritage assessment will support any application that you may make to Heritage NSW for and AHIP where harm cannot be avoided.

AHIMS DATABASE

The Aboriginal Heritage Information Management System (AHIMS) is a statutory register managed by Heritage NSW under section 90Q of the NPW Act. The AHIMS manages information on known Aboriginal sites, including objects as defined under the Act (Section 3.2.2).

1.5.2 Heritage Act 1977 (NSW)

The *Heritage Act 1977* (NSW) is a statutory tool designed to conserve the environmental heritage of NSW and is used to regulate development impacts on the state's heritage places, buildings, works, relics, moveable objects or precincts that are important to the people of NSW. These include items of Aboriginal and non-Aboriginal heritage significance. Where these items have particular importance to the state of NSW, they are listed on the State Heritage Register (SHR).

Identified heritage items may be protected by means of either Interim Heritage Orders (IHO) or by listing on the SHR. Proposals to alter, damage, move or destroy places, buildings, works, relics; moveable objects or precincts protected by an IHO or listed on the SHR require an approval under section 60.

Archaeological features and deposits are afforded statutory protection by the 'relics provision section 139 of the Act (as amended in 1999). Under this section it is illegal to disturb or excavate any land knowing or suspecting that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed. In such cases, an excavation permit under section 140 is required. Note that no formal listing is required for archaeological relics; they are automatically protected if they are of local significance or higher.

HERITAGE REGISTERS

Heritage NSW maintains registers of heritage sites that are of State or local significance to NSW. The NSW SHR is the statutory register under Part 3A of the *Heritage Act 1977* (NSW). The State Heritage Inventory (SHI) is an amalgamated register of items on the SHR, items listed on LEPs and/or on a State Government Agency's Section 170 register and may include items that have been identified as having state or local level significance. If a particular site does not appear on either the SHR or SHI this does not mean that the site does not have heritage significance as many sites within NSW have not been assessed to determine their heritage significance. Sites that appear on either the SHR or SHI have a defined level of statutory protection.

Key Aboriginal sites, including post contact sites, can be protected by inclusion on the SHR. The Heritage Council nominates sites for consideration by the Minister for Environment and Heritage.

A search of the State Heritage Inventory on 30 June 2022 by ELA did not identify any State or local listed places in the study area.

1.5.3 Aboriginal Land Rights Acts 1983

The *Aboriginal Land Rights Act 1983* (ALR Act) established Aboriginal Land Councils (at State and Local levels). Division 1A outlines the functions of Local Aboriginal Land Councils and their statutory obligation under the ALR Act to:

1. (a) take action to protect the culture and heritage of Aboriginal persons in the council's area, subject to any other law, and
2. (b) promote awareness in the community of the culture and heritage of Aboriginal persons in the council's area.

The study area is within the boundary of the Gandangara Local Aboriginal Land Council (LALC).

1.5.4 Environmental Planning and Assessment Act 1979 (NSW)

The *Environmental Planning and Assessment Act 1979* (NSW) [EP&A Act] requires that consideration is given to environmental impacts as part of the land use planning process. In NSW, environmental impacts are interpreted as including cultural heritage impact. Proposed activities and development are considered under different parts of the EP&A Act, including:

- Major projects (State Significant Development under Part 4.1 and State Significant Infrastructure under Part 5.1), requiring the approval of the Minister for Planning.
- Minor or routine developments, requiring local council consent, are usually undertaken under Part 4. In limited circumstances, projects may require the Minister's consent.
- Part 5 activities which do not require development consent. These are often infrastructure projects approved by local councils or the State agency undertaking the project.

The EP&A Act also controls the making of environmental planning instruments (EPIs) such as Local Environmental Plans (LEPs) and State Environmental Planning Policies (SEPPs). LEPs commonly identify and have provisions for the protection of local heritage items and heritage conservation areas.

The EP&A Act also controls the making of environmental planning instruments (EPIs) such as Local Environment Plans (LEPs) and State Environmental Planning Policies (SEPPs). The study area is within the Liverpool LGA and activities undertaken on this land are controlled by *the State Environmental Planning Policy (Precincts - Western Parkland City) 2021*. SEPPs commonly identify and have provisions for the conservation archaeological sites, Aboriginal objects and Aboriginal places of heritage significance. SEPPs are prepared by the state government to guide planning and management decisions in the LGAs and establish the requirements for the use and development of land. Master Plan requirements for the Western Sydney Aerotropolis Clause 4.41 (12) WPC SEPP *State Environmental Planning Policy* states.

The draft master plan must be accompanied by an Aboriginal Cultural Heritage Assessment Report (ACHAR) in accordance with the relevant guidelines the requirements provided by Heritage NSW.

1.5.5 Environment Protection and Biodiversity Conservation Act 1999 (Cth)

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (Cth) [EPBC Act] establishes a process for assessing the environmental impact of activities and developments where 'matters of national environmental significance' (MNES) may be affected. The EPBC Act defines 'environment' as both natural and cultural environments and therefore includes Aboriginal cultural heritage.

Under Part 9 of the EPBC Act, any action that is likely to have a significant impact on a matter of National Environmental Significance (known as a controlled action under the Act), may only progress with approval of the Commonwealth Minister for the Department of Sustainability, Environment, Water, Population and Communities (SEWPaC), now the Department of Environment.

The EPBC Act defines 'environment' as both natural and cultural environments and therefore includes Aboriginal and non-Aboriginal historic cultural heritage items. Under the Act protected heritage items are listed on the National Heritage List (items of significance to the nation) or the Commonwealth Heritage List (items belonging to the Commonwealth or its agencies). These two lists replaced the

Register of the National Estate (RNE). The RNE has been suspended and is no longer a statutory list however, it remains as an archive.

The Australian Heritage Database is a register that includes places on the World Heritage List, National Heritage List, Commonwealth Heritage List and RNE. A search of the Australian Heritage Database on 30 June 2022 by ELA did not identify any World or Nationally significant heritage listed places in the study area.

1.5.6 Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cth)

The purpose of the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (Cth) [Heritage Protection Act] is the preservation and protection from injury or desecration of areas and objects in Australia and in Australian waters that are of particular significance to Aboriginal people in accordance with Aboriginal tradition.

Under the Heritage Protection Act the responsible Minister can make temporary or long-term declarations to protect areas and objects of significance under threat of injury or desecration. In certain circumstances the Act can override state and territory provisions, or it can be implemented in circumstances where state or territory provisions are lacking or are not enforced. The Act must be invoked by or on behalf of an Aboriginal or Torres Strait Islander or organisation.

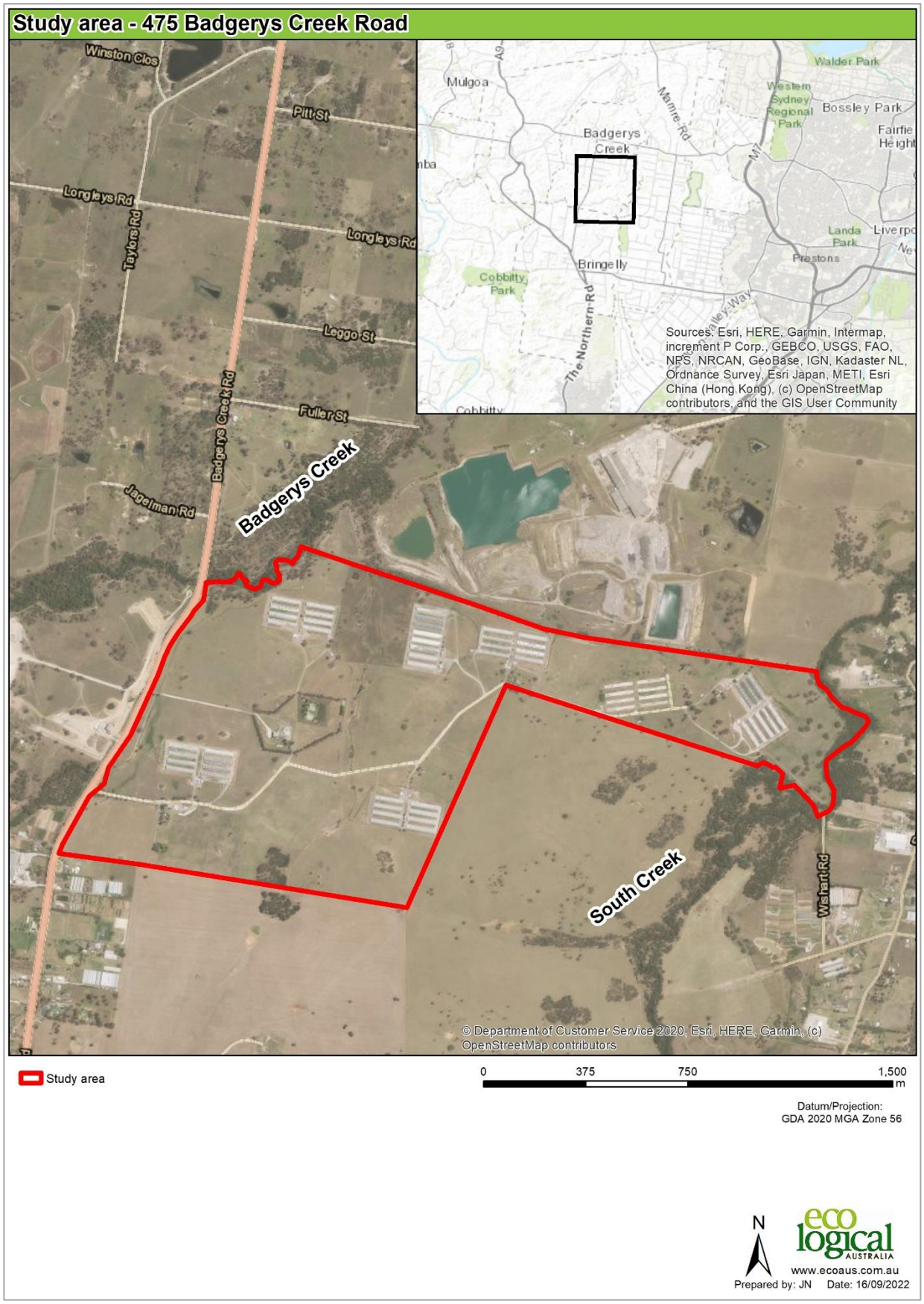

Figure 1: The study area

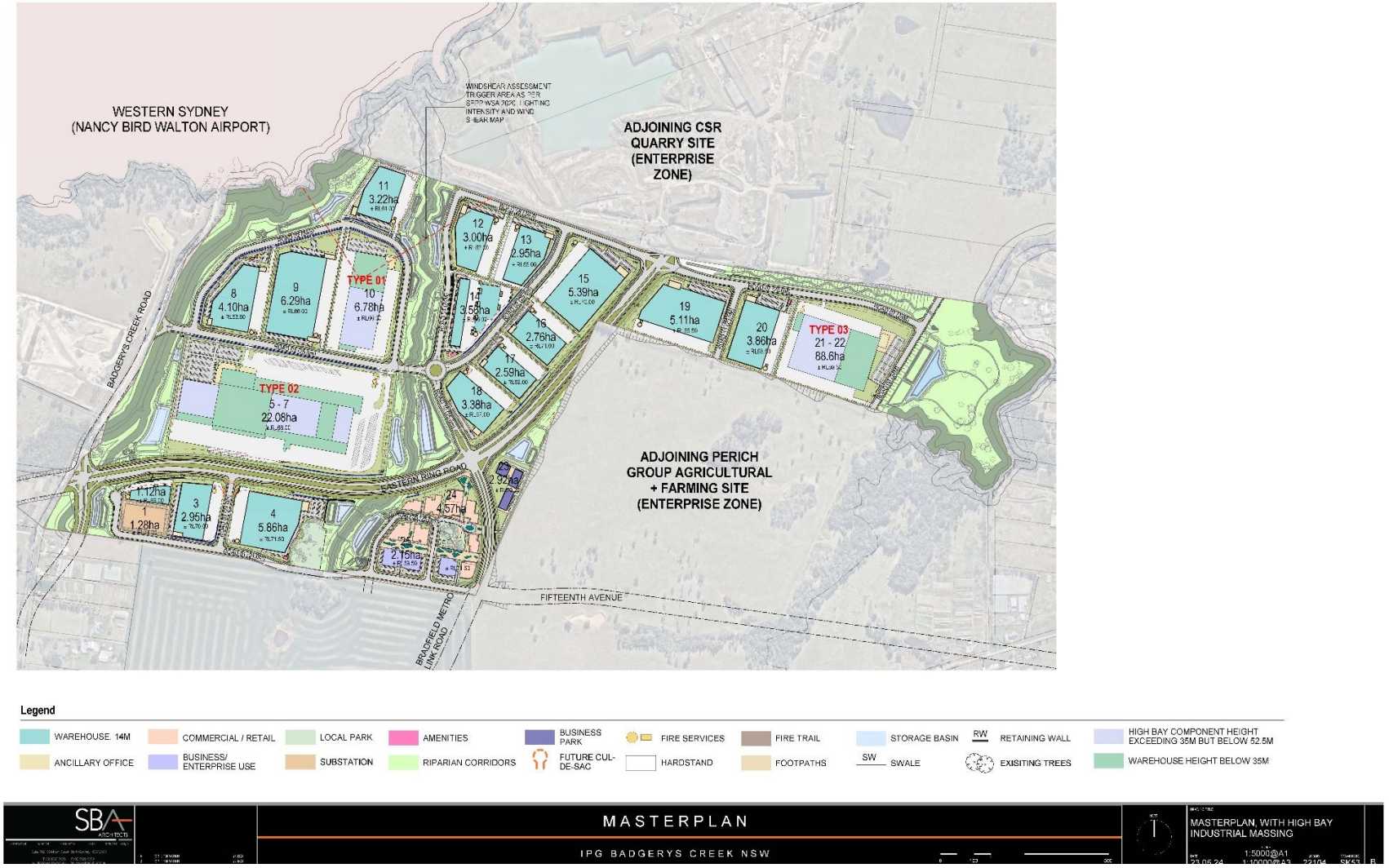

Figure 2: Structure Plan (Site Image, 2024)

2. Consultation

As part of the ACHA process for the proposed works, Aboriginal consultation has been undertaken and is ongoing. Consultation with registered Aboriginal parties for this ACHA has been conducted in line with Heritage NSW *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW 2010b). This has ensured that Aboriginal stakeholders have been able to register and therefore be fully engaged on all aspects relating to cultural heritage for this project. Heritage NSW consultation requirements follow four clear consultation stages. The following chapter outlines the process ELA used to fully consult with Aboriginal people on this planning proposal.

2.1 Stage 1 – Notification of project proposal and registration of interest

2.1.1 Written request for information about Aboriginal organisations

On behalf of the proponent, ELA undertook a registration process for Aboriginal people with knowledge of the area. ELA wrote to the following organisations as per *4.1.2 Consultation Requirements* DECCW 2010b on 17 August 2021, in order to identify Aboriginal people who may hold cultural knowledge relevant to determining the significance of Aboriginal objects:

- Heritage NSW
- South East Local Land Services
- The Registrar, Aboriginal Land Rights Act 1983
- The National Native Title Tribunal
- Native Title Services Corporation Limited (NTSCORP Limited)
- Liverpool City Council
- Gandangara Local Aboriginal Land Council.

Details of the letters and organisational responses are included in Appendix B.

2.1.2 Placement of advertisement in local newspaper

An advertisement was placed in the Liverpool City Champion on 15 September 2021 inviting interested Aboriginal stakeholders to register to be consulted in relation to the proposed works (Appendix B).

2.1.3 Letters to Aboriginal organisations

As per 4.1.3 of the *Consultation Requirements* (DECCW 2010b), ELA wrote to the Aboriginal organisations identified through the above process on 9 September 2021 inviting them to register an interest in the project. The registration closing date was 23 September 2021. Details of the letters, advertisement, and responses are included in Appendix B. Registrants became the Registered Aboriginal Parties (RAPs) for the project. Table 1 below details the RAPs for the project.

Table 1: Registered Aboriginal Parties

Organisation	Contact Name
Didgengunnawal Clan	Paul Boyd and Lillie Carroll
Corroboree Aboriginal Corporation	Marilyn Carroll-Johnson
Woka Aboriginal Corporation	Steve Johnson

Organisation	Contact Name
Cubbitch Barta Native Title Claimants	Glenda Chalker
Kamilaroi Yankuntjatjara Working Group	Phil Khan
Gilay Consultants	Carolyn Slater
A1 Indigenous Services	Carolyn Hickey
Barraby Cultural Services	Lee Field
Yurrandaali	Bo Field
Tocomwall	Scott Franks
Darug Custodian Aboriginal Corporation	Justine Coplin
Ngambaa Cultural Connections	Kaarina Slater
Ngunawal Heritage Aboriginal Corporation	Dean Delponte
Gandangara LALC	Darren Duncan
Guntawang	Wendy Morgan
Yulay	Arika Jalomaki
Clive Freeman	
Butucarbin	Lowanna Gibson
Wurrumay	Vicky Slater

Section 4.1.4 of the DECCW's *consultation requirements* requires a minimum of 14 days for Aboriginal stakeholders to register their interest to be consulted for an ACHA.

2.1.4 Archaeological Survey

Site survey was undertaken by ELA Archaeologists Jennifer Norfolk and Declan Coman with field officer Kristy Lee Chalker from Cubbitch Barta Native Title Claimants Aboriginal Corporation on 18 November 2021.

2.2 Stage 2 and Stage 3 - Presentation of information about the proposed project and gathering information about cultural significance

2.2.1 Project information and methodology

Following the registration of Aboriginal parties and site survey, ELA presented the proposed project information, archaeological survey results and test excavation methodology to the RAPs for review. This information was sent on 11 February 2022, with a close of review period on 11 March 2022.

The following responses to the methodology were received (Table 2 and Appendix B).

Table 2: ACHA and test excavation methodology responses

Aboriginal Organisation	Response
Ngunawal Heritage Aboriginal Corporation	*Thank you for your providing us with the project and sampling methodology. We agree with the methodology outlined for this project and we would like to inform you that our preference would be for any cultural material that is identified to be reburied on site in a suitable location which would not be impacted by future development.*

Aboriginal Organisation	Response
DNC	*DNC out here late last year along the creeklines, near the old facility and tower and would love to work with you on this project to assist you and is happy for this project to proceed*
Yulay	*On behalf of Yulay Cultural Services I have read and agree with the methodology for this project*
DCAC	*Darug Custodian Aboriginal Corporation have received and reviewed the report for 475 Badgerys Creek Road* *We support the recommendations set out in this report.*
Yurrandaali	*Yurrandaali has read and agrees with the proposed test excavation methodology for this project*
A1 Indigenous Services	*I have reviewed the document and support the information and methodology*
Phil Khan Kadi Khan	*Thank you for your ACH methodology for 475 Badgerys Creek Road. The whole study area is highly significant to us Aboriginal people due to the water ways that run close by. We have walked this land for thousands of years and continue to do so today, we live off mother earth and we care for her. Hunting and gathering would have taken place, suggesting camping would have taken place. We hold a deep connection to the land and the skies and the water ways.* *The areas that look good to us today were valued back then to the Aboriginal people. It is important that we grab hold of what we have left from our old people and honour them. We can do this through interpretation within the development through artwork, 3D replicas of artefacts on display, native gardens and digital display or app. It is just as important to recognise the Aboriginal people and to educate the wider community.* *We would like to agree to you recommendations and support your report, we look forward to working alongside you on this project.*
Gari	*Gari agrees with the methodology as to stage 2 of this project for the test excavation based on this assessment.*
Corroboree Aboriginal Corporation	*We agree with the review*

2.2.2 Archaeological test excavation

Test excavations were conducted by ELA Archaeologists and RAPs over a two week period from 21 March 2022 to 31 March 2022. Two RAP groups participated each day in all aspects of the field program and undertook activities such as excavation, sieving and recording.

2.3 Stage 4 – Review of draft cultural heritage report

A copy of the ACHA was provided to Aboriginal stakeholders on 16 September 2022 for a 28-day review and comment period. Amendments to the Badgerys Creek Masterplan to include impacts from proposed drainage works and connecting to country interpretation required additional consultation with the Aboriginal representatives. A second review was sent out 12 December 2022 for a 28-day review and comment period.

Table 3: ACHA responses

Aboriginal Organisation	Response
Guntawang	*Thank you for sending through the draft ACHA. Guntawang would like to support all artefacts should be reburied in a safe and protected area of the site, with access for the broader community*

Aboriginal Organisation	Response
	and articles saying what some of the artefacts were used for. This process is respectful to the Aboriginal community and could be an education tool for non-Aboriginal people.
Waawaar Awaa Aboriginal Corporation	*Supports the draft ACHA and its recommendations as follows for 475 Badgerys Creek Road, Badgerys Creek.* *Waawaar Awaa support the 5 recommendations*
DCAC	*Darug Custodian Aboriginal Corporation have received and reviewed the report for 475 Badgerys Creek Road* *We support the recommendations set out in this report.*
A1 Indigenous Services	*I have reviewed the document and support the information and Draft ACHA for 475 Badgerys Creek Road, I am also happy with the Artefacts to be reburied in a safe location.*
Phil Khan	*Thank you for draft ACHA report regarding 475 Badgerys Creek Rd, Badgerys Creek We agree and support your recommendations.*
December Update	
Phil Khan Kadi Khan	*Thank you for Draft ACHA, we would like to agree & support your recommendations regarding 475 Badgerys Creek. We look forward to working on this project with you* *and the team. It's been a pleasure working with you guys this year & we would like to Wish you all a Merry Christmas and a Happy New Year.*
Guntawang	*Guntawangs' cultural and heritage officer worked with Gandangara Local Aboriginal land council during the implementation phrase of the Western Sydney Airport. He has extensive knowledge of the area and we have lived in the local area for over 40yrs. Our Cultural and Heritage Officer has would be of great benefit to your project, he is aware of the land and how our people used it. He has been on numerous archaeological dig in and around this location.* *Guntawang members would like to wish you a very merry Christmas and a happy festive season* *We look forward to working with you.*
DCAC	*Darug Custodian Aboriginal Corporation have received and reviewed the report for 475 Badgerys Creek Road* *We support the recommendations set out in this report.*
Waawaar Awaa Aboriginal Corporation	*Supports the draft ACHAR for the proposed development at 475 Badgerys Creek Road, Badgerys Creek.*

PROJECT UPDATES

Projects update have been sent to the registered Aboriginal groups to keep consultation active in case further fieldwork is required across the areas of PAD or if the Final Masterplan design requires changes to the recommendations and AHIP requirements. Updates have been sent June 2023, December 2023, June 2024 and December 2024.

3. Description of Area

3.1 Environmental context

Landscape, geomorphic history, and extent of disturbance within a given area all play a role in the presence and/or preservation of Aboriginal objects. As outlined in the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010a), this section aims to assist in the prediction of:

- The potential of the landscape to contain Aboriginal objects; and
- The ways Aboriginal people have used the landscape in the past, with reference to the presence of resource areas, surfaces for art and other focal points which may have been used for particular activities and settlement; and
- Disturbance, including historical land-use, which may have removed earlier archaeological evidence; and
- The likely distribution of the material traces of Aboriginal land use based on the above.

To investigate these elements, this section focusses on the environmental context of the current study area, including geomorphology and soils, vegetation, hydrology, and previous land use to identify potential disturbance.

The study area is situated within the Cumberland subregion of the NSW Sydney Basin bioregion of NSW. A summary of the geology, landforms, soils, and vegetation typical within this subregion is provided in Table 4 below:

Table 4: Cumberland Plain subregion summary (source: NSW Department of Planning, Industry and Environment)

Cumberland Subregion	
Geology	Triassic Wianamatta groups shales and sandstones. A down warped block on the coastal side of the Lapstone monocline. Intruded by a small number of volcanic vents and partly covered by Tertiary river gravels and sands. Quaternary alluvium along the mains streams.
Characteristic Landforms	Low rolling hills and wide valleys in a rain shadow area below the Blue Mountains. At least three terrace levels evident in the gravel splays. Volcanics from low hills in the shale landscapes. Swamps and lagoons on the floodplain of the Nepean River.
Typical Soils	Red and yellow texture contrast soils on slopes, becoming harsher and sometimes affected by salt in tributary valley floors. Pedal uniform red to brown clays on volcanics. Poor uniform stony soils, often with texture contrast profiles on older gravels, high quality loams on modern floodplain alluvium.
Vegetation	Grey box, forest red gum, narrow-leaved ironbark woodland with some spotted gum on the shale hills. Hard-leaved scribbly gum, rough-barked apple and old man banksia on alluvial sands and gravels. Broad-leaved apple, cabbage gum and forest red gum with abundant swamp oak on river flats. Tall spike rush, and juncus with Parramatta red gum in lagoons and swamps.

The study area is situated between South Creek and Badgerys Creek, both high order systems that run south to north and feed into the Hawkesbury River. Minor tributaries of these two high order streams carve through the study area.

These minor drainage lines are unnamed, have been heavily modified from past land use and have likely been silted due to erosion of the surrounding landscape caused by widescale vegetation clearance. These minor drainage lines are not reliable water sources and are likely seasonal. Across the entire study area large scale drains have been carved into the landform due to the poor drainage characteristics of the study area.

Across a majority of the study area, native vegetation has been cleared like the rest of the Cumberland Plain since early occupation initially for agricultural and pastoral practices and more recently for residential subdivisions and commercial, and industrial land uses. Few stands of remnant native vegetation remain, and the majority of native vegetation left is from regrowth. Currently the study area is covered in various grass species and non-native shrub and ornamental tree species. The elevated landscape would have been open woodland with dry sclerophyll forest, the native vegetation would have been dominated by tree species including Grey box (*E. moluccana*) and Forest red gum (*E. tereticornis*) Broad-leaved ironbark, narrow-leaved ironbark, Woollybutt and forest oak would have been less common. The understorey would have hosted various shrub and grass species. On the floodplains and low lying poorly draining landscape common species would have included Broad-leaved Apple (*Angophora subvelutina*), Cabbage Gum (*E. amplifolia*) and Swamp Oak (*Casuarina glauca*), while tall shrublands of paperbarks and tea trees may occur on more elevated streambanks.

Blacktown (residual) Soil Landscape, dominant soil types include friable greyish brown loam and hard setting brown clay loam overlying strongly pedal mottled brown light clay. Topsoils reach a depth of up to 300mm and contain significant sand and silt content overlying hard-setting clay subsoils. Shallow to moderately deep (<1.5m) soils occur on crests, upper slopes, and well-drained areas. These types of soils are often shallow and can be significantly disturbed by historical and modern activities. This has significant implications for the survivability of historical and Aboriginal deposits, and it is rare for these types of soils to contain significantly deep, stratified, or old archaeological deposits.

South Creek Alluvial Soil Landscape typically occurs along creek lines associated with large drainage lines within the Cumberland Plain. Soils in this landscape consist of deep, loamy soils atop orange-brown clay. The landscape comprises flat to gently sloping floodplains and valley flats, drainage depressions with occasional terraces or levees. The soil landscape is an active floodplain that is presently reworked by fluvial processes, resulting in streambank and gully erosion periods. Due to consistent exposure to flooding and waterflow soils in this landscape are highly erodible, compromising the stratigraphic integrity of any artefact deposits within these soils.

The study area was historically used for the grazing of livestock and has undergone localised disturbances. The earliest available aerial imagery from 1955 shows that the area was cleared of the majority of native vegetation and possibly used for pastoral activities. By 1965 the property has been extensively cleared and heavily modified with the construction of vehicle access track, large scale earth movement to form flat stands for chicken sheds. These large stands were raised flat areas to avoid flooding issues and to assist in drainage of the farm, large scale drains were carved across the study area. By 1989 the chicken farm had been established, permanent vehicle tracks and residential structures built. To further help with the poor drainage of the study area the minor tributary along Badgerys Creek Road has been channelised, requiring significant earth movement. The central minor

tributary that runs the length through the middle of the study area has drastically changed due to landscape modification, vegetation clearance and siltation from erosion. The vehicle track crossing the central minor tributary has caused the southern area to become waterlogged/ swampy, whereas the northern portion has narrowed and infilled from erosion and destabilisation. There has been significant disturbance from historical and recent land use.

3.2 Aboriginal context

3.2.1 Ethnohistoric context

Our knowledge of past Aboriginal communities in the region is hindered by limitations of ethnographic records and the impacts of European colonisation. Early ethnographers were primarily interested in documenting unusual events, with a focus on the religious and social life of men (Boot, 2002). As a result of this, the documentation of everyday events as they relate to women and children is limited. Ethnographic sources only record the events that were observed at the time of recording and those of the recent past and should not be used to infer predictive models for earlier periods (Boot, 2002:58).

An accurate reconstruction of past lifeways, technologies and land-use patterns of the Aboriginal people who inhabited the Badgerys Creek region is often hindered by a lack of written records and an ethnocentric bias of European settlers. Oral histories by Aboriginal people provide valuable insights into the past, though these are not always available.

Aboriginal people have continuously occupied Australia for at least 65,000 years (Clarkson et al 2017), utilising the land and available resources. Dates of the earliest occupation of the continent by Aboriginal people are subject to continued revision as more research is undertaken. The earliest undisputed radiocarbon date from the Sydney region comes from a rock shelter site north of Penrith, Shaw's Creek, dated to around 14,700 BP (Attenbrow 2010). Alternate artefactual evidence found on the Nepean River suggests Aboriginal people have occupied the Sydney region for at least 40,000 years (Nanson *et al*. 1987; Stockton & Holland 1974).

Badgerys Creek lies within a transitional area between the tribal boundaries of the Dharug, Dharawal and Gundungurra language groups (Attenbrow, 2002). The precise geographical boundaries between these three groups cannot be clearly defined due to the limitations of historical records (Kohen and Lampert 1987), however the study area (present-day Penrith and Liverpool LGAs) is now generally considered to have been occupied by Darug-speaking clans (Attenbrow 2010). Anthropologist R.H. Matthews writes:

> *"The Dharukk speaking people adjoined the Thurrawal on the north, extending along the coast to the Hawkesbury River, and inland to what are now Windsor, Penrith, Campbelltown, and intervening towns."* (Matthew, 1901d: 55 in Attenbrow, 2010: 32)

The Darug people were semi-nomadic hunter gatherers who utilised available resources, including the various animals and plants in the region. Aboriginal people hunted wallabies, kangaroos, possums, flying foxes, birds and fish and collected wild honey and yams, which also served as important food sources. Family groups belonged to clans who were united by languages and cultural affinities and had ties to specific areas of land.

The arrival of European settlers severely impacted the lives of the local Aboriginal populations as it led to a smallpox epidemic which spread to neighbouring regions and killed over half of the Aboriginal population in the Sydney Basin region (Organ, 1990) and led to significant social restructuring. In the Cumberland Plains region, European graziers slowly took over the traditional Aboriginal land, creating a competition for resources, widespread social disruption to traditional ways of life and ultimately led to a disconnection of local Aboriginal people from their traditional lands. Some Aboriginal people remained and continued to live a semi-traditional life on the peripheries of European settlements until at least the mid-1800s, despite the impacts to their traditional ways of being (Attenbrow, 2002).

A wide variety of materials were also employed for medicinal purposes, social conventions, the manufacture of tools and ceremonial events. These materials were usually sourced locally but rarer items were also traded between groups, items that may have included tools made from organic materials such as paddles and spears, tools made from stone such as hammerstones, personal decorative items and shelters (Boot, 2002).

3.2.2 AHIMS search

A search of the AHIMS database was conducted on 23 August 2021 (Search ID 615973), update 25 January 2023 and update 28 January 2025 (Search ID 968994) to identify if any registered Aboriginal sites were present within the study area (Appendix A). The search covered 2 km surrounding the study area to understand the known archaeological resource and provide an understanding of the types of features that might be present in the current landscape.

Table 5: Parameters for the AHIMS database search and results

Search Parameters		Search Result	
GDA Zone	56	**Aboriginal sites recorded**	85
Eastings	289875 - 293875	**Aboriginal places declared**	0
Northings	6244469 - 6248469		

The extensive search identified a total of 85 Aboriginal sites within the 2km search parameters. Five AHIMS sites have a status as ‘Not a site’, (AHIMS ID 45-5-5374, AHIMS ID 45-5-2695, AHIMS ID 45-5-2694, AHIMS ID 45-5-5375, and AHIMS ID 45-5-5376) these have been removed from the analysis as they are not Aboriginal sites.

The vast majority of Aboriginal sites within the search parameters are artefact scatters or isolated finds (88%). The distribution of recorded Aboriginal sites is shown in Figure 3. The frequencies of site types recorded within the AHIMS database search area are listed below.

Table 6: Frequencies of site types

Site Features	Number	%
Artefact	71	88.8
Artefact, PAD	2	2.5
Modified Tree (Carved or Scarred)	2	2.5
Potential Archaeological Deposit (PAD)	4	5.0
Grinding Groove	1	1.2
Total	**80**	**100**

Thirteen (13) AHIMS sites identified by the search are located within the study area (Table 7).

Table 7: AHIMS sites within the study area

AHIMS ID	Site name	Description
45-5-2660	B64	This site is an isolated artefact recorded by Navin Officer Heritage Consultants (1997) as part of an EIS for a second Sydney airport. The location of the isolated find is described as being embedded 50cm down in the soil profile of a creek bank of the drainage channel that runs north to south through the study area. The isolated find is described as a white chert core.
45-5-2661	B63	This site is an artefact scatter recorded by Navin Officer Heritage Consultants (1997) as part of an EIS for a second Sydney airport. The artefact scatter includes three (3) quartz flakes.
45-5-2662	B61	This site is an isolated artefact recorded by Navin Officer Heritage Consultants (1997) as part of an EIS for a second Sydney airport. The location of the isolated find is described as approximately 300 m south of chicken sheds, within area of disturbance (burial pit for dead cow) east of a creek line.
45-5-2669	B96	This site is an artefact scatter recorded by Navin Officer Heritage Consultants (1997) as part of an EIS for a second Sydney airport. The location of the artefact scatter is described as within a watering place for stock adjacent to a creek line. The artefact scatter consists of two artefacts – one yellow/orange tuff flaked piece and one grey course granite flake. The scatter is located 2-5 cm below uneroded grassed creek bank.
45-5-2672	B97	This site is an artefact scatter recorded by Navin Officer Heritage Consultants (1997) as part of an EIS for a second Sydney airport. The site card contains little information pertaining to the location of the scatter other than the coordinates. The scatter is comprised of two artefacts – one silcrete and one tuff. The artefact types are not specified; however, it is specified that one flake and one flaked piece represented in the scatter.
45-5-2674	B100	This site is an artefact scatter recorded by Navin Officer Heritage Consultants (1997) as part of an EIS for a second Sydney airport. The location of the scatter is described as being on a road verge within a gravelled road. The scatter is comprised of two artefacts – one cream chert fragment and one yellow mudstone fragment.
45-5-2780	B65	This site is an isolated artefact recorded by Navin Officer Heritage Consultants (1997) as part of an EIS for a second Sydney airport. The site card identifies the site as being located within an exposed vehicle track north of a fence line and south of chicken sheds. The artefact is described as a light grey volcanic flake found approximately 30cm into the soil profile.
45-5-2786	B 109	This site is an artefact scatter recorded by Navin Officer Heritage Consultants (1997) as part of an EIS for a second Sydney airport. The location of the scatter is described as being immediately west of a gravel road. The scatter consists of two red silcrete flakes.
45-5-2787	B 110	This site is an isolated artefact recorded by Navin Officer Heritage Consultants (1997) as part of an EIS for a second Sydney airport. The location is described as being in close proximity to a blue gum tree and south-east of the house located within the property. The isolated artefact was described as a red silcrete flaked piece.
45-5-5370	BCLL AS1	Originally recorded by GML (2020) as part of the Badgerys Creek Aboriginal Heritage Report. The PAD was described as being on a flat within an undulating plain within 5 m of water and located across two raised terraces noted as potential locations for past Aboriginal activity with possible concentrations of Aboriginal objects. The PAD was subjected to archaeological excavations by ELA in 2022 to inform the Masterplan design and to support early approvals for the substation. No Aboriginal objects were identified across the majority of PAD, a low density scatter was identified along the northern boundary adjacent to Badgerys Creek. The site card was updated and an ASIRF submitted to show the location of the artefact scatter and the residual PAD.

AHIMS ID	Site name	Description
45-5-5371	BCLL PAD02	Originally recorded by GML (2020) as part of the Badgerys Creek Aboriginal Heritage Report. The PAD is located across two sides of an unnamed creek line than runs through the centre of the study area. The site card notes one raised terrace as being a possible focus for past Aboriginal activities. The PAD was subjected to archaeological excavations by ELA in 2022 to inform the Masterplan design. No Aboriginal objects were identified through test excavations across the majority of PAD. The PAD was reduced to visible insitu soils between two AHIMS sites (AHIMS ID 45-5-2780 and AHIMS ID 45-5-2660), this area of PAD was not subject to test excavations as it was not proposed for impact. The site card was updated and an ASIRF submitted to show the location of residual PAD between low density scatters.
45-5-5372	BCLL PAD01	Recorded by GML (2020) as part of the Badgerys Creek Aboriginal Heritage Report. The PAD is located on western side of South Creek within the study area with two raised terraces with old growth trees. This PAD was not subjected to test excavations as it was proposed for environmental zone and no impacts were proposed.
45-5-5373	BCLL IF01	This site is an isolated artefact recorded by GML (2020) as part of the Badgerys Creek Aboriginal Heritage Report. The isolated find is described as being located on a slope next to disturbed land, approximately 5 m from west of track leading into former poultry shed. The site card does not include a description of the artefact.

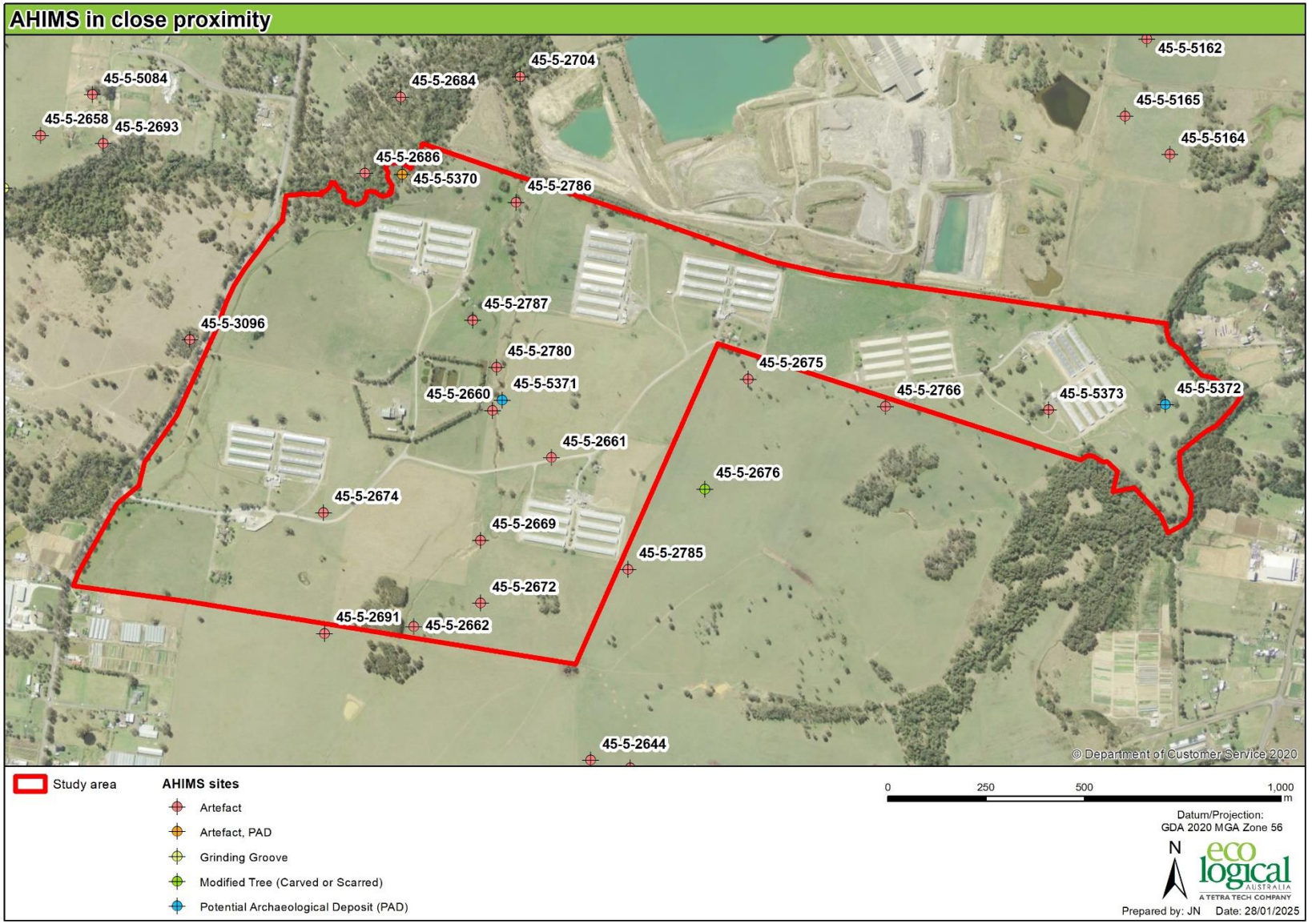

Figure 3: AHIMS sites within the vicinity of the study area

3.3 Previous archaeological assessments

3.3.1 Regional

Previous archaeological assessments across the region provide important data on Aboriginal archaeological site distribution and typology from which an understanding of the archaeological landscape within the study area can be developed.

Aboriginal occupation in the Sydney region encompasses at least 20,000 years with dates of 13,000 Before Present (BP) at Shaws Creek in the Blue Mountain foothills; 11,000 BP for Mangrove Creek and Loggers Shelter and c. 20,000 BP at Burrill Lake on the South Coast (Attenbrow 2002). The majority of sites in the Sydney region have been dated to within the last 3,000 to 5,000 years, with many researchers proposing that occupation intensity increased from this period. This apparent intensity of occupation may have been influenced by rising sea levels which by about 6,500 years ago had risen to their present levels.

Open artefact sites and artefact scatters are the most common site types identified within the Cumberland Plain (Artefact 2012). These sites are most commonly found in landforms associated with permanent water sources, such as river banks and alluvial flats (White and McDonald 2010).

Large, concentrated assemblages are more likely to be located within resource rich areas (AMC 2014). Complex sites, containing multiple artefact types and archaeological features, are often located in close proximity (~150m) to permanent water sources (Niche 2019). The confluence of creek lines could provide focal points for occupation and the size of the stream's Strahler order could influence the size of the assemblages present (Niche 2020). The crests of hills and ridge tops also have the potential to contain larger sites (AMBS 2012).

Low density assemblages of artefacts are also located in close proximity to reliable water sources. Whilst these sites can represent smaller or less frequent instances of occupation, disturbances from historic land use and erosion can also affect artefact count (Niche 2019).

The majority of artefact assemblages are comprised primarily of unretouched flakes and debitage, with a smaller percentage of formal tool types being present (AMBS 2012). The most common raw material used to manufacture tools is silcrete (Niche, 2019, Artefact 2012), followed by tuff/chert (AMC 2014). Silcrete sources are generally located in the north western Cumberland Plain.

Areas with few or no sites identified on the surface have often been shown to contain subsurface archaeological deposits and the distribution of surface artefacts is not a reliable indicator of an area's archaeological potential (Niche 2019). PADs are most likely to be located along valley floors and low slopes and ridgelines between flat landforms (GML 2020) and possess low-to-moderate density archaeological deposits (AMC 2014). Sites situated in the alluvial soils of the South Creek Soil Profile have the potential for stratified deposits (GML 2020), however; low-lying, flood prone areas are unlikely to have been used extensively for camping (Steele 2001 in AMC 2014).

Instances of old growth vegetation are present in the region and have the potential to contain culturally modified trees (Artefact 2010). However, such instances are rare as large-scale land clearance has removed the majority of old growth vegetation from the Cumberland plain (AMC 2014).

3.3.2 Local

Several archaeological assessments have been carried out in the wider Greater Western Sydney region in recent years as there has been an increasing number of residential developments in the area. The most relevant investigations to this project will be summarised below.

AMBS, 2012. *INDIGENOUS HERITAGE ASSESSMENT PROJECT: AUSTRAL AND LEPPINGTON NORTH PRECINCTS, SOUTH WEST GROWTH CENTRES*. PREPARED FOR THE NSW DEPARTMENT OF PLANNING AND INFRASTRUCTURE.

Australian Museum Business Services (AMBS) was commissioned by the NSW Department of Planning and Infrastructure to prepare an Aboriginal heritage assessment for the Austral and Leppington North Precincts of the South West Growth Centres located 3 km to the west of the study area.

The AMBS study was important for the establishment of areas of archaeological potential in the Austral and Leppington North Precinct and its contribution to predictive modelling for artefact distribution and density within the area. This model is based primarily on proximity to water courses and the level of ground disturbance within an area. AMBS defined disturbance areas in Austral and North Leppington as:

- High disturbance – “road corridors, underground gas pipelines, dams, and properties classified as childcare centres, churches, commercial, community halls, industrial, market gardens, poultry, Rebels club, residential/retirement village and schools, as well as the SWRL corridor which will be constructed in the near future”.
- Moderate disturbance – “Transmission lines and properties classified as dual occupancy/large residential”.
- Low disturbance - “Properties classified as parks, significant vegetation / bushland, and vacant / grazing/ developable.”

The AMBS report recommended that conservation zones be established for areas of moderate and high archaeological potential. Where this is not possible, detailed Aboriginal heritage impact assessments of site-specific development areas was recommended to be undertaken including, if necessary, archaeological test excavation.

ARTEFACT HERITAGE, 2012*. THE NORTHERN ROAD UPGRADE FROM THE OLD NORTHERN ROAD, NARELLAN TO MERSEY RD, BRINGELLY – ABORIGINAL ASR*. PREPARED FOR ROADS AND MARITIME SERVICES.

Artefact Heritage were previously engaged by Sinclair Knight Merz, on behalf of the NSW Roads and Maritime Services (RMS), to conduct an Aboriginal archaeological survey and assessment report for the proposed upgrade of the Northern Road. The proposed upgrade included 15km of the Northern Road between the Old Northern Road, Narellan and Mersey Road, Bringelly located 2.5km south of the study area.

An initial desktop assessment, including an extensive search of the AHIMS database, identified eighteen Aboriginal sites within the area of investigation. Fourteen previously unrecorded Aboriginal sites were identified during the site survey, with two of the sites being re-recordings of previous sites. Five of the sites were artefact scatters and nine were isolated finds. Four previously recorded sites

and PADs within the study area were found to be either destroyed or disturbed and five were found to be subject to existing AHIPS.

The survey resulted in the identification of twenty four Aboriginal sites within the study area, with seven sites located more than 20m outside of the study area and two new sites more than 50m outside. Fifteen sites were identified as being directly impacted by the proposal. Ten sites were assessed as having a low archaeological significance and five were assessed as having a moderate archaeological significance.

Recommendations included that salvage excavations be conducted for the five sites with moderate archaeological significance that could not be avoided by the proposed works and that an Aboriginal Heritage Impact Permit (AHIP) be sought prior to any impacts.

AUSTRALIAN MUSEUM CONSULTING 2014, *ENVIRONMENTAL SURVEY OF COMMONWEALTH LAND AT BADGERYS CREEK: ABORIGINAL HERITAGE*. CONSULTANCY REPORT TO SMEC AUSTRALIA.

Australian Museum Consulting (AMC) prepared an environmental survey of Commonwealth owned land at Badgerys Creek for SMEC Australia Pty Ltd, on behalf of the Western Sydney Unit of the Department of Infrastructure and Regional Development. The report assessed the condition of specific environmental aspects with a particular focus on Aboriginal cultural heritage over a large area located immediately to the study areas southwest.

The report detailed the findings of previous environmental investigations undertaken during the 1980s and 1990s. These assessments had previously identified 60 Aboriginal heritage sites, comprising open artefact scatters, scarred trees, and isolated artefacts. Of these, 23 Aboriginal heritage sites were identified within areas of moderate and high archaeological potential, associated primarily with minor and secondary creek corridors. AMC 2014 conducted a targeted survey of these moderate and high potential sites and confirmed their condition and scientific potential.

The assessment made the follow recommendations:

- Aboriginal community consultation.
- An additional Aboriginal heritage survey to identify and record a representative sample of material traces and evidence of Aboriginal occupation within the Badgerys Creek area.
- Full archaeological survey of all landforms.
- A program of archaeological test and salvage excavations throughout impact areas.

NICHE ENVIRONMENT AND HERITAGE, 2019. *ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT SOUTH CREEK WEST PRECINCT (SOUTH-WEST) RELEASE AREA REZONING, THE NORTHERN ROAD BRINGELLY, NSW*. PREPARED FOR BHL GROUP.

Niche Environment and Heritage (Niche) was previously engaged by Boyuan Holdings Limited (BHL Group) to conduct an Aboriginal Cultural Heritage Assessment Report for the rezoning of the South Creek West Release Area (South-West) Precinct, 5km south of the study area. The report comprised five separate lots that were zoned for primary production and had been used for agriculture, primarily cattle grazing. Previous archaeological assessments, the desktop assessment and visual inspection that was completed for the report indicated that the proposed rezoning of the study area could potentially impact five registered AHIMS sites (AHIMS ID 45-5-3359, AHIMS ID 45-5-5282, AHIMS ID 45-5-3542, AHIMS ID 45-5-4139 and AHIMS ID 45-5-3543).

A desktop assessment found several landscape features, including raised level creek terraces along tributaries of Cobbitty, South and Lowes Creek that had the potential to yield surface and or buried Aboriginal objects. Due to the proximity of permanent water sources and the landscape, the study area was considered to have a high archaeological potential. However, according to previous investigations and predictive models, the wider region was thought to have been sporadically used by past Aboriginal people.

GML HERITAGE, 2020. *BADGERYS CREEK ABORIGINAL HERITAGE REPORT.* UNPUBLISHED REPORT PREPARED FOR LEND LEASE

In 2020, GML was commissioned by Lendlease to prepare a baseline Aboriginal heritage report that informed the master planning proposal for the future development of 475 Badgerys Creek Road, Badgerys Creek, of which the current study area occupies.

The desktop assessment identified 13 existing AHIMS sites within the study area, including isolated finds, open artefact sites and areas of associated PAD. An archaeological survey conducted with representatives of the registered Aboriginal party Cubbitch Barta identified 7 new Aboriginal sites including three areas of PAD, two ring trees, one scar tree and one isolated artefact. The survey also identified two terraces that formed part of the area of PAD as well as a viewpoint that provided views of the surrounding landscape and the Blue Mountains.

The assessment recommended that an ACHA be conducted for the property, including archaeological test excavation and the implementation of Aboriginal Culture and Heritage Interpretation into the final design of the development. The assessment also recommended two discrete areas of PAD be allocated as primary conservation zones in line with exiting riparian corridor and biobanking zones.

EXTENT HERITAGE 2020, *WESTERN SYDNEY AEROTROPOLIS INITIAL PRECINCTS DRAFT ABORIGINAL AND NON-ABORIGINAL CULTURAL HERITAGE ASSESSMENT* PREPARED FOR WESTERN SYDNEY PLANNING PARTNERSHIP

In 2020, Extent Heritage Pty Ltd was commissioned by the Western Sydney Planning Partnership to prepare an Aboriginal and non-Aboriginal Cultural Heritage Assessment for the initial precincts within the Western Sydney Aerotropolis. This high-level assessment of precincts within the Aerotropolis growth areas includes the current study area.

The report's desktop assessment includes a review of previous archaeological studies in the region, historical research, preliminary cultural values mapping, and desktop research. The report identified three registered Aboriginal sites that imposed specific constraints on the proposed works, and one that may impose specific constraints on the proposed design works, depending on the results of further investigation. Given their sensitive nature, details of the sites have been redacted.

Aboriginal community consultation untaken as part of the report included the formation of a focus group of Elders and knowledge holders comprising the primary traditional owner representatives of Darug and Dharawal descendants as well as the Local Aboriginal Land Councils whose land includes portions of the Aerotropolis study area. Consultation included a cultural values mapping workshop aimed at identifying and understanding key social, cultural and intangible values associated with the Aerotropolis region and to identify how the RAPs would like these values to be conserved, remembered and managed throughout this project and into the future. Key issues identified through consultation included:

- further archaeological investigations
- conservation of key well-preserved landforms, sites and scarred trees
- establishment of a repatriation area for recovered artefactual material
- Aboriginal naming of places within the Aerotropolis
- further consultation and workshops with a wider group of Aboriginal stakeholders
- Aboriginal stakeholder involvement in the development of interpretive stories and media for the precincts
- Additional on-site investigation and face-to-face consultation with Aboriginal stakeholders when the public health situation present at the time of the report would allow.

The assessment of Aboriginal heritage within the study area is an ongoing process that will require continuous consultation with the Aboriginal community and additional field survey and archaeological investigation.

3.4 Archaeological investigation results

An archaeological survey was conducted on 18 November 2021 by ELA Archaeologists Jennifer Norfolk, Declan Coman and field officer Kirsty Lee Chalker from Cubbitch Barta Native Title Claimants Aboriginal Corporation. The purpose of the survey was to assess the condition of the study area and to identify any unrecorded Aboriginal sites or objects and reidentify and assess the condition of the AHIMS sites. The field survey confirmed that the study area has undergone varying levels of disturbance, primarily due to the widescale vegetation clearance, construction of the chicken farms, buildings and outbuildings and the extensive drainage mitigation works across the poor draining landscape. The construction of roads and installation of fences and irrigation have caused minor impacts.

No further Aboriginal objects were identified by the archaeological survey and many AHIMS sites could not be reidentified due to the lack of information, the age of the AHIMS recordings meaning possible disturbance from natural erosional, animal erosion and ongoing use of the property. The low visibility played a key factor as well, the dense ground cover was not favourable for many of the AHIMS sites. AHIMS ID 45-5-2660 was the only artefact site that was identified during the survey. AHIMS ID 45-5-5374, AHIIMS ID 45-5-5375 and AHIMS ID 45-5-5376 were revisited with an Arborist and a RAP in attendance, these are not Aboriginal sites, they have not been culturally modified and are not visible from any viewpoints.

Archaeological assessment identified discreet areas of moderate to high potential for intact archaeological deposits within the large areas of PAD (AHIMS ID 45-5-5370, AHIMS ID 45-5-5371 and AHIMS ID 45-5-5372). These discreet areas were proposed for test excavations if impacts were proposed by the masterplan design for the precinct. It was assessed that the majority of these PADs have been heavily modified and cumulatively impacted by past land use, the scientific significance of these PADs is low however their intangible values the Aboriginal community warrants conservation where possible to retain connections.

A test excavation (ELA ATR 2022) program was undertaken within the study area resulting in the identification of a low density, low significant subsurface artefact scatter adjacent to Badgerys Creek. Test excavations were aimed at areas of PAD that were to be impacted by the proposed future development. The remaining PAD was not investigated due to the level of disturbance observed and

assessed in the archaeological survey and desktop assessment. AHIMS ID 45-5-5372 was recommended by GML to be conserved due to the proximity to South Creek and the future rezoning for this area is open space. This AHIMS site was also mapped as high Aboriginal significance in the Aerotropolis DCP. No investigations were undertaken for this Aboriginal site.

AHIMS ID 45-5-5370 was updated to include the low density scatter and to reduce the area of PAD. Test excavations, the dial before you dig, and historical investigations have identified there is only residual area of PAD along Badgerys Creek.

AHIMS ID 45-5-5371 was investigated where the proposed road connections would impact the identified PAD. No Aboriginal objects were identified, and the remaining area of PAD has also been reduced. The original site card addressed the area of PAD as low significant, and the archaeological assessment identified the majority of the site has been heavily modified, so a more realistic area of PAD was updated for the site adjacent to AHIMS ID 45-5-2780.

The results of the database searches and archaeological investigations have identified that thirteen AHIMS sites are located within the study area. The AHIMS site descriptions are summarised below

Table 8: ACHA and archaeological assessment results

AHIMS ID	Site name	Coordinates	Description and condition
45-5-2660	B64	GDA 2020 z56 291300 6246000	Isolated find - embedded 50cm down in the soil profile of a creek bank of the drainage channel that runs north to south through the study area. The isolated find is described as a white chert core. This site could not be reidentified and has likely been impacted by natural erosional processes
45-5-2661	B63	GDA 2020 z56 291553 6246062	Artefact scatter recorded in 1997 as part of investigations for second Sydney airport. The artefact scatter includes three (3) quartz flakes. This site could not be reidentified and the site card had not mapping, the location on the road means it has likely been destroyed during maintenance works for the activity duration of the Chicken Farm
45-5-2662	B61	GDA 2020 z56 291258 6245649	Isolated find recorded in 1997 as part of investigations for second Sydney airport. The location of the isolated find is described as approximately 300 m south of chicken sheds, within area of disturbance (burial pit for dead cow) east of a creek line. This site could not be reidentified due to the dense grass cover during survey and test excavations.
45-5-2669	B96	GDA 2020 z56 291270 6245670	Artefact scatter recorded in 1997 as part of investigations for second Sydney airport. The location of the artefact scatter is described as within a watering place for stock adjacent to a creek line. The artefact scatter consists of two artefacts – one yellow/orange tuff flaked piece and one grey course granite flake. The scatter is located 2-5 cm below uneroded grassed creek bank. This site could not be reidentified due to the dense grass cover during survey and test excavations. This site has likely been impacted by natural erosion and animal erosion since the date of recording.
45-5-2672	B97	GDA 2020 z56 291270 6245510	Artefact scatter recorded in 1997 as part of investigations for second Sydney airport. The site card contains little information pertaining to the location of the scatter other than the coordinates. The scatter is

AHIMS ID	Site name	Coordinates	Description and condition
			comprised of two artefacts – one silcrete and one tuff. The artefact types are not specified; however, it is specified that one flake and one flaked piece represented in the scatter. This site could not be reidentified due to the dense grass cover during survey and test excavations.
45-5-2674	B100	GDA 2020 z56 290870 6245740	Isolated find (2 flakes) recorded in 1997 as part of investigations for second Sydney airport. The location of the scatter is described as being on a road verge within a gravelled road. The scatter is comprised of two artefacts – one cream chert fragment and one yellow mudstone fragment. This site could not be reidentified and the site card had not mapping, the location on the road means it has likely been destroyed during maintenance works for the activity duration of the Chicken Farm
45-5-2780	B65	GDA 2020 z56 291310 6246110	Isolated find recorded in 1997 as part of investigations for second Sydney airport. The site card identifies the site as being located within an exposed creek bank south of chicken sheds. The artefact is described as a light grey volcanic flake found approximately 30cm into the soil profile. During the archaeological survey a red silcrete flake was identified in this position. This site is likely a low density subsurface scatter associated with AHIMS ID 45-5-5371.
45-5-2786	B 109	GDA 2020 z56 291360 6246530	Artefact scatter recorded in 1997 as part of investigations for second Sydney airport. The site card identifies the site as being located within an exposed creek bank. The scatter consists of two red silcrete flakes. This site could not be reidentified due to the dense grass cover during survey and test excavations. This site has likely been impacted by natural erosion and animal erosion since the date of recording.
45-5-2787	B 110	GDA 2020 z56 291250 6246230	Isolated find recorded in 1997 as part of investigations for second Sydney airport. The location is described as being in close proximity to a blue gum tree and south-east of the house located within the property. The isolated artefact was described as a red silcrete flaked piece. This site could not be reidentified during the archaeological survey, this site has likely been impacted by natural erosion and animal erosion.
45-5-5370	BCLL PAD03	GDA 2020 z56 291175 6246791	Recorded by GML (2020) as part of the Badgerys Creek Aboriginal Heritage Report. The PAD is described as being on a flat within an undulating plain within 5 m of water and located across two raised terraces noted as potential locations for past Aboriginal activity with possible concentrations of Aboriginal objects. Archaeological assessment and test excavations were undertaken for this site. The majority of the PAD extent was found to been heavily modified. No terraces were observed during the survey. A low density artefact scatter was recovered through subsurface investigations along Badgerys Creek. The site extent has been reduced to reflect the results.
45-5-5371	BCLL PAD02	GDA 2020 z56 291428 6246215	Recorded by GML (2020) as part of the Badgerys Creek Aboriginal Heritage Report. The PAD is located across two sides of an unnamed creek line than runs through the centre of the study area. The site card notes one raised terrace as being a possible focus for past Aboriginal activities.

AHIMS ID	Site name	Coordinates	Description and condition
			Archaeological assessment and test excavations were undertaken for this site. The majority of the PAD extent was found to been heavily modified. No terraces were observed during the survey. Archaeological test excavations were focused on areas proposed to be impacted by the future development. No Aboriginal objects were identified. The site extent has been reduced to reflect the results and was focused along the creek bank near exposed AHIMS sites.
45-5-5372	BCLL PAD01	GDA 2020 z56 293117 6246205	Recorded by GML (2020) as part of the Badgerys Creek Aboriginal Heritage Report. The PAD is located on western side of South Creek within the study area with two raised terraces with old growth trees. This area was recommended by GML for conservation, the proposed future development will not be impacting this area, no test excavation were undertaken.
45-5-5373	BCLL IF01	GDA 2020 z56 291300 6246000	Isolated artefact recorded by GML (2020) as part of the Badgerys Creek Aboriginal Heritage Report. The isolated find is described as being located on a slope next to disturbed land, approximately 5 m from west of track leading into former poultry shed. The site card does not include a description of the artefact. This site could not be reidentified during the archaeological investigations and has likely been impacted by erosional processes as the steep slope was highly eroded.

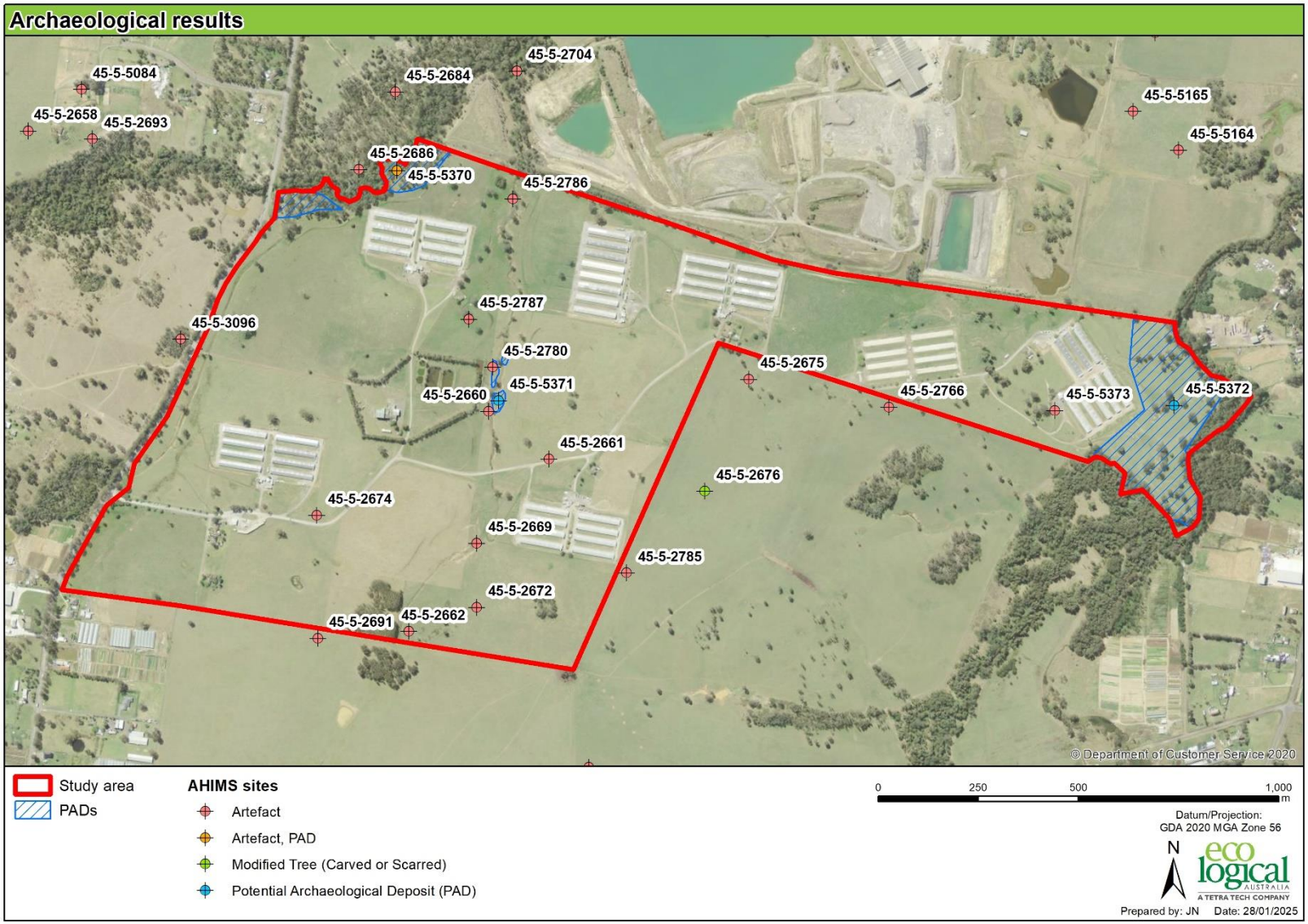

Figure 4: AHIMS sites within the study area identified through the course of archaeological assessment

4. Cultural heritage values and statement of significance

The Australia ICOMOS *Burra Charter 2013* provides guidance for the assessment, conservation, and management of places of cultural significance. Cultural significance is defined in the Burra Charter as 'a concept which helps in estimating the value of places'. The places that are likely to be of significance are those which help an understanding of the past or enrich the present, and which will be of value to future generations" (Burra Charter 2013). The Burra Charter provides a definition of cultural significance as "aesthetic, historic, scientific, social or spiritual value for past, present or future generations". Aboriginal cultural heritage sites can be assessed through the application of these five principle values.

- Social or cultural value (assessed only by Aboriginal people).
- Historical value.
- Scientific/archaeological value (assessed mostly by archaeologists/heritage consultants).
- Aesthetic value.
- Spiritual value.
- This section presents an assessment of Aboriginal cultural heritage values based on these principles.

4.1 Description of cultural heritage values

The review of background research and information gained through consultation with Aboriginal people should provide insight into past events. These include how the landscape was used and why the identified Aboriginal objects are in this location, along with contemporary uses of the land. The following descriptions of cultural heritage values are drawn from the *Guide to investigating, assessing, and reporting on Aboriginal cultural heritage in NSW* (OEH 2011).

Social or cultural value refers to the spiritual, traditional, historical, or contemporary associations and attachments the place or area has for Aboriginal people. Social or cultural value is how people express their connection with a place and the meaning that place has for them.

Historic value refers to the associations of a place with a historically important person, event, phase, or activity in an Aboriginal community. Historic places do not always have physical evidence of their historical importance (such as structures, planted vegetation or landscape modifications). They may have 'shared' historic values with other (non-Aboriginal) communities and include places of post-contact Aboriginal history.

Scientific (archaeological) value refers to the importance of a landscape, area, place or object because of its rarity, representativeness, and the extent to which it may contribute to further understanding and information (Australia ICOMOS 2013.

Aesthetic value refers to the sensory, scenic, architectural, and creative aspects of the place. It is often closely linked with the social values. It may consider form, scale, colour, texture and material of the fabric or landscape, and the smell and sounds associated with the place and its use (Australia ICOMOS 2013).

4.2 Aboriginal cultural assessment

4.2.1 Social or cultural significance

Aboriginal cultural values can only be determined through consultation with the Aboriginal community. All Aboriginal sites are considered to have cultural significance to the Aboriginal community as they provide physical evidence of past Aboriginal use and occupation of the area. Aboriginal cultural significance may include social, spiritual, historic, and archaeological values, and is determined by the Aboriginal community.

Any Aboriginal sites are considered by the Aboriginal community as being of high social and cultural significance. No social or cultural significance was identified through Aboriginal community consultation.

Initial investigations for the Western Sydney Aerotropolis initial Precincts, consultation with stakeholders highlighted the importance of preserving all creek corridors within the study area and keeping them as open space. These creek corridors are culturally significant as resource, mythological and transit places and there is archaeological potential along the creek corridors even in areas where if no sites have been previously recorded. Areas of remnant old growth vegetation and well-preserved creek corridors should be protected where possible as should priority conservation areas identified early in strategic planning work (Extent 2020).

This area is significant to the Darug people due to the evidence of continued occupation, within close proximity to this project site there is a complex of significant sites.

Landscapes and landforms are significant to us for the information that they hold and the connection to Darug people. Aboriginal people (Darug) had a complex lifestyle that was based on respect and belonging to the land, all aspects of life and survival did not impact on the land but helped to care for and conserve land and the sustenance that the land provided. As Darug people moved through the land there were no impacts left, although there was evidence of movement and lifestyle, the people moved through areas with knowledge of their areas and followed signs that were left in the landscape. Darug people knew which areas were not to be entered and respected the areas that were sacred.

Knowledge of culture, lifestyle and lore have been part of Darug people's lives for thousands of years, this was passed down to the next generations and this started with birth and continued for a lifetime. Darug people spent a lifetime learning and as people grew older, they passed through stages of knowledge, elders became elders with the learning of stages of knowledge not by their age, being an elder is part of the kinship system this was a very complicated system based on respect.

Darug sites are all connected, our country has a complex of sites that hold our heritage and past history, evidence of the Darug lifestyle and occupation are all across our country, due to the rapid development of Sydney many of our sites have been destroyed, our sites are thousands of years old and within the short period of time that Australia has been developed pre contact our sites have disappeared (Darug Custodians Aboriginal Corporation).

4.2.2 Aesthetic significance

As noted above aesthetic significance is often closely linked to social and cultural significance. Generally aesthetic significance is considered to mean the visual beauty of a place. Examples of

archaeological sites that may have high aesthetic values include rock art sites or sites located in visually pleasing environments (NSW NPWS 1997: 11).

The site does not appear to meet this criterion, the study area has been modified/disturbed, and no aesthetic value were identified through consultation. The site has low aesthetic significance.

4.2.3 Historic significance

No historic associations with 'place' were identified during the course of the background research and field survey. The study area does not appear to meet this criterion, no historical associations were identified for the study area through consultation.

4.2.4 Scientific significance

As with cultural, historic, and aesthetic significance; scientific significance can be difficult to establish. Certain criteria must therefore be addressed in order to assess the scientific significance of archaeological sites. Scientific significance contains four subsets: research potential, representativeness, rarity, and educational potential. These are outlined below.

Research Potential**:** is the ability of a site to contribute to our understanding of Aboriginal occupation locally and on a regional scale. The potential for the site to build a chronology, the level of disturbance within a site, and the relationship between the site and other sites in the archaeological landscape are factors which are considered when determining the research potential of a site.

Representativeness**:** is defined as the level of how well or how accurately something reflects upon a sample. The objective of this criterion is to determine if the class of site being assessed should be conserved in order to ensure that a representative sample of the archaeological record be retained. The conservation objective which underwrites the 'representativeness' criteria is that such a sample should be conserved (NSW NPWS 1997: 7-9).

Rarity**:** This criterion is similar to that of representativeness, it is defined as something rare, unusual, or uncommon. If a site is uncommon or rare it will fulfil the criterion of representativeness. The criterion of rarity may be assessed at a range of levels including local, regional, state, national and global (NSW NPWS 1997: 10).

Educational Potential**:** This criterion relates to the ability of the cultural heritage item or place to inform and/or educate people about one or other aspects of the past. It incorporates notions of intactness, relevance, interpretative value, and accessibility. Where archaeologists or others carrying out cultural heritage assessments are promoting/advocating the educational value of a cultural heritage item or place it is imperative that public input and support for this value is achieved and sought. Without public input and support the educative value of the items/places is likely to not ever be fully realised (NSW NPWS 1997: 10).

The archaeological investigations within the study area identified thirteen AHIMS sites. Assessment of the scientific significance of the Aboriginal sites is based on the rarity, research potential the representativeness within the wider region and the educational potential.

All isolated finds are considered to be of low scientific significance especially located in disturbed contexts, all artefact scatters were low density with no formal tools. All AHIMS sites with lithic material within the study area have low research potential, are a well-represented Aboriginal site

within the surrounding region and are not rare. There is very little educational value to these sites due to their location in disturbed contexts and the on the basis they could not be reidentified, but the information recorded on AHIMS for these sites have educational value in a regional context to inform future investigations and modelling.

AHIMS ID 45-5-2780 and remainder of AHIMS ID 45-5-5371 are assessed as the same site. AHIMS ID 45-5-2780 is a low density artefact scatter on the floor of a highly eroded drainage line. This site was reidentified during the survey as having red silcrete broken flakes. AHIMS ID 45-5-5371 was registered by GML as covering the entire drainage line, following archaeological survey and test excavations the area of PAD was reduced to the small areas of bank surrounding AHIMS ID 45-5-2780. Although there is a high likelihood of further Aboriginal objects to present the site has been heavily disturbed by drainage erosion and land clearance. There would likely be a low density artefact scatter left with low significance, further investigations of such a small area would not contribute to the current understanding of Aboriginal cultural sites and have low conservation value.

The significance of AHIMS ID 45-5-5372 (PAD) is unknown as the presence of Aboriginal objects has not been investigated due to site restrictions and no proposed impacts at this stage of development. If this site is to be impacted by a change in scope of the future development, then further archaeological investigations will be required to identify the presence of Aboriginal objects and to understand the nature and extent of the site to establish significance and the potential impacts to that significance.

A summary of the scientific significance of sites identified during archaeological investigations is presented in Table 9.

Table 9: Scientific significance assessment

Site name (AHIMS ID)	Research potential	Representative	Rarity	Education potential	Significance assessment
B63 (AHIMS ID 45-5-2661)	Low	Low	Low	Low	Low
B61 (AHIMS ID 45-5-2662)	Low	Low	Low	Low	Low
B61 (AHIMS ID 45-5-2660)	Low	Low	Low	Low	Low
B96 (AHIMS ID 45-5-2669)	Low	Low	Low	Low	Low
B97 (AHIMS ID 45-5-2672)	Low	Low	Low	Low	Low
B100 (AHIMS ID 45-5-2674)	Low	Low	Low	Low	Low
B65 (AHIMS ID 45-5-2780) BCLL PAD02 (AHIMS ID 45-5-5371)	Low	Low	Low	Low	Low
B109 (AHIMS ID 45-5-2786)	Low	Low	Low	Low	Low
B110 (AHIMS ID 45-5-2787)	Low	Low	Low	Low	Low
BCLL AS1 (AHIMS ID 45-5-5370)	Low	Low	Low	Low	Low
BCLL PAD01 (AHIMS ID 45-5-5372)	Unknown	Unknown	Unknown	Unknown	Unknown
BCLL IF 01 (AHIMS ID 45-5-5373)	Low	Low	Low	Low	Low

5. Development proposal activity

Ingham Property Group (the proponent) are proposing to develop a masterplan to facilitate development of an industrial estate for employment and enterprise purposes at 475 Badgerys Creek Road, Badgerys Creek, NSW. The planning proposal will amend the current Aerotropolis Precinct Plan, State Environmental Planning Policy (Precinct - Western Parkland City) 2021 and the DCP.

Impacts within the study area are associated with bulk earthworks, landscaping, road connections and associated infrastructure (electricity, water, internet and drainage) will directly impact several AHIMS sites. The Aboriginal sites to be directly impacted by the planning proposal will result in total loss of value for the sites.

The proposed designated open spaces will aim to conserve and protect the ecological and heritage values within the boundaries. Drainage mitigations will be carried out along the three open spaces. Excavation of a chain of ponds will be established along the western and central drainage lines. Associated works will involve landscaping and revegetation.

CONSIDERATION OF ALTERNATIVES AND JUSTIFICATION OF IMPACTS

The masterplan has been based on many factors and informed by previous investigations. The creeklines and drainage lines associated with Badgerys Creek and South creek were identified as sensitive landscape features for heritage and ecological reasons. These landscape feature have been designated for open space and will not be impacted by future development of the study area.

The majority of the identified Aboriginal sites are located within these designated open spaces. The Aboriginal sites within the areas designated for future development are of low significance and are in existing high disturbance. The majority of sites to be impacted could not be reidentified through the archaeological investigations.

The overall guiding principle for cultural heritage management is that where possible Aboriginal sites should be conserved. If conservation is not practicable, measures should be taken to mitigate against impacts to Aboriginal sites.

The impacts to all AHIMS sites are unavoidable. This impact assessment is based on the planning proposal for 475 Badgerys Creek Road which has been provided by Urbis/ Ingham Property Group, any changes to the final design will require a revision of the impact assessment.

Table 10: Impact assessment

Site name (AHIMS ID)	Type of harm	Degree of harm	Consequence of harm
B63 (AHIMS ID 45-5-2661)	Direct	Total	Total loss of value
B61 (AHIMS ID 45-5-2662)	Direct	Total	Total loss of value
B64 (AHIMS ID 45-5-2660)	Direct	Total	Total loss of value
B96 (AHIMS ID 45-5-2669)	Direct	Total	Total loss of value
B97 (AHIMS ID 45-5-2672)	Direct	Total	Total loss of value
B100 (AHIMS ID 45-5-2674)	Direct	Total	Total loss of value
B109 (AHIMS ID 45-5-2786)	Direct	Total	Total loss of value

Site name (AHIMS ID)	Type of harm	Degree of harm	Consequence of harm
B65 (AHIMS ID 45-5-2780) BCLL PAD02 (AHIMS ID 45-5-5371)	Direct	Total	Total loss of value
B110 (AHIMS ID 45-5-2787)	Direct	Total	Total loss of value
BCLL AS1 (AHIMS ID 45-5-5370)	None	None	No loss of value
BCLL IF 01 (AHIMS ID 45-5-5373)	Direct	Total	Total loss of value
BCLL PAD01 (AHIMS ID 45-5-5372)	None	None	No loss of value

5.1 Cumulative Impact Assessment

Cumulative impact of any development on Aboriginal sites assesses the extent of the proposed impact on the site and how this will affect both the proportion of this type of Aboriginal site in the area and the impact this destruction will have on Aboriginal cultural heritage values generally in the area. For example, if an artefact scatter is destroyed in the course of a proposed development, how many site artefact scatters are likely to remain in that area and how will the destruction of that site affect the overall archaeological evidence remaining in that area. If a site type that was once common in an area becomes rare, the loss of that site (and site type) will affect our ability to understand past Aboriginal land uses, will result in an incomplete archaeological record and will negatively affect intergenerational equity.

EFFECT ON THE PROPORTION OF THIS TYPE OF ABORIGINAL SITE IN THE AREA

One method of calculating the proportion of this site type remaining in the area is to use the results of an AHIMS search. A search of the AHIMS register was updated by ELA on the 28 January 2025. A search of 2km resulted in the identification of 80 Aboriginal sites. A breakdown of site features is presented in Table 11 below.

Table 11: AHIMS site types recorded within 4 km of the study area

Site Features	Number	%
Artefact	71	88.8
Artefact, PAD	2	2.5
Modified Tree (Carved or Scarred)	2	2.5
Potential Archaeological Deposit (PAD)	4	5.0
Grinding Groove	1	1.2
Total	**80**	**100**

Artefact scatters and isolated finds make up the majority of known Aboriginal sites within the surrounding area, they are well represented within the known Aboriginal sites database and have been documented in many assessments. The AHIMS sites to be impacted by the planning proposal have been assessed as having low significance and it has been considered enough information has been gathered following previous assessments, the current archaeological investigations and through community consultation. The consequences of destruction in relation to understanding of past Aboriginal land-use within the region is considered to be negligible.

CHANGES TO THE PROPOSED WORKS

This ACHA is based upon the most recent information made available to ELA as of the date of preparation of this report. Any changes made to the proposal should be assessed by an archaeologist in consultation with the registered Aboriginal stakeholder groups. Any changes that may impact areas not assessed during the current study may warrant further investigation and result in changes to the recommended management and mitigation measures.

5.2 Consideration of Ecologically Sustainable Development

5.2.1 Principles of ESD

Ecological Sustainable Development (ESD) is defined by the Australian Government as 'using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased' (Australian Government, Department of the Environment and Energy website). ESD is contained in both Commonwealth (EPBC Act 1999) and NSW statutes. Section 6 (2) of the *Protection of the Environment Administration Act 1991* (NSW) lists the principals of ESD as:

a. the precautionary principle—namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

In the application of the precautionary principle, public and private decisions should be guided by:

i careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and

ii an assessment of the risk-weighted consequences of various options,

b. inter-generational equity—namely, that the present generation should ensure that the health, diversity, and productivity of the environment are maintained or enhanced for the benefit of future generations,

c. conservation of biological diversity and ecological integrity—namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration,

THE PRINCIPLE OF INTERGENERATIONAL EQUITY

The planning proposal would adhere, as close as possible, to the principle of intergenerational equity by collating scientific and cultural information on former Aboriginal occupation of the study area through the test excavations and this cultural heritage assessment. It has been recommended that the Aboriginal objects be reburied within the study area to maintain connection to country.

THE INTEGRATION PRINCIPLE

The planning proposal would comply with the integration principle in regard to Aboriginal heritage. The potential Aboriginal heritage values of the study area were considered as part of the planning process and a Construction Management Plan should be implemented to help manage the sites within the study area, have an unexpected finds policy for human remains and to mitigate impacts.

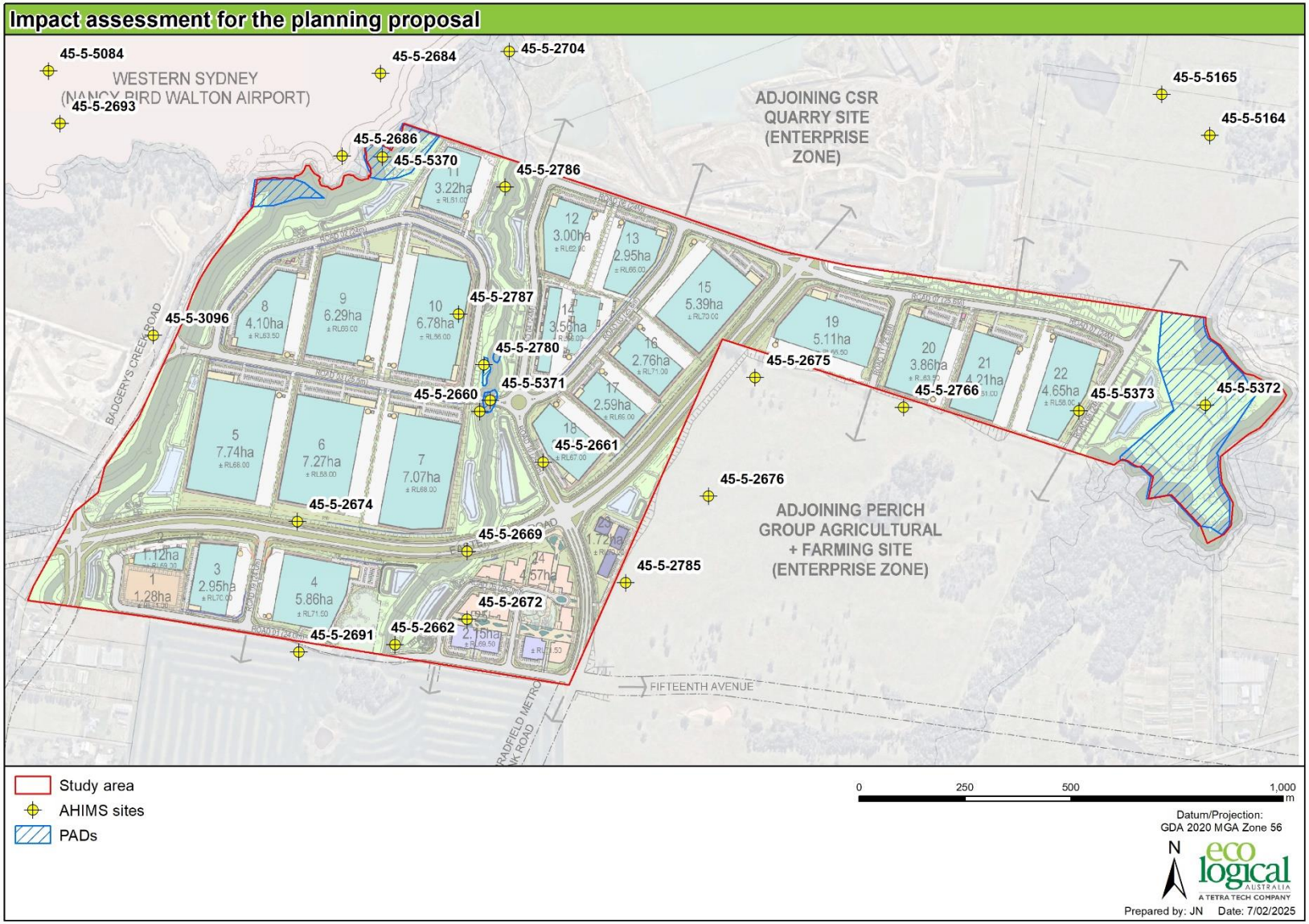

Figure 5: AHIMS sites in relation to the planning proposal for 475 Badgerys Creek Road.

6. Cultural heritage management and mitigation measures

> *Places of cultural significance enrich people's lives, often providing a deep and inspirational sense of connection to community and landscape, to the past, and to lived experiences … they are irreplaceable and precious* (Australia ICOMOS *Burra Charter* 2013:1).

Traditionally, heritage and archaeological assessments have focused on the significance of the tangible elements of cultural heritage (Brown 2008). Items such as structures and archaeological artefacts have been considered predominantly in terms of their scientific/research potential and representativeness (New South Wales Heritage Office 2015:20-24). By focusing on the scientific qualities of heritage, many of the intangible qualities of heritage were not considered. This is especially crucial when participating in the management and protection of Aboriginal cultural heritage. By nature, Aboriginal cultural heritage is multi-faceted: it consists not only of tangible structures and objects of value for scientific investigations, but also of a deeply complex array of intangible expressions, such as stories, memories, and traditions. Many of the rights and interests of Aboriginal communities in their own heritage is formed on the basis of this intangibility. It stems from their spirituality, customary law, original ownership, and continuing custodianship (Australian Heritage Commission 2002:5). These intangible expressions often share a strong link with the landscape. Byrne *et al.* (2003:3) describe this connection in the form of a map, where individuals:

> *Carry around in* [their] *heads a map of the landscape which has all these places, and their meanings detailed on it. When we walk through our landscapes the sight of a place will often trigger the memories and the feelings* [that] *go with them … it is the landscape talking to us.*

Crucially, those who are not connected to the landscape in question will not be able to discern these intangible meanings embedded in the landscape; they can only come to recognise the significance by consulting with local knowledge holders (Byrne *et al.* 2003:3). And, even so, they may vary between individuals, reflecting unique experiences.

By recognising the rights and interests of Aboriginal knowledge holders and community members in their cultural heritage, all parties involved in the identification, conservation, and management of this cultural heritage must acknowledge that Aboriginal people (Australian Heritage Commission 2002:6):

- Are the primary source of information on the value of their heritage and how this is best conserved.
- Must have an active role in any heritage planning processes.
- Must have input into primary decision-making in relation to their heritage so that they can continue to fulfil their obligations towards this heritage; and
- Must control the intellectual property and other information relating specifically to their heritage, as this may be an integral aspect of its heritage value.

As such, cultural heritage sites and objects are fundamental elements of Aboriginal peoples' identities, connections, and belonging to their communities. The careful protection and management of this heritage is essential for the preservation of connection between past, present, and future.

6.1 Conservation/ management areas

South Creek and Badgerys Creek and their tributaries have been identified as high cultural significance for the Aboriginal community and conservation of these areas was recommended in previous investigations for the Aerotropolis Precinct. The planning proposal has designated the creeklines and drainage lines as open space. The majority of the tangible evidence of Aboriginal cultural values for the study area has been identified within these areas of open space and it is recommended these areas be conserved and managed to ensure the cultural values of the Aboriginal sites and potential deposits be protected. It is recommended that prior to future developments a Construction Management Plan be developed to implement protection and awareness prior to any works.

If any impacts area proposed for the open spaces along Badgerys Creek and South Creek (AHIMS ID 45-5 5370 and AHIMS ID 45-5-5372), then further archaeological investigations will be required an Addendum Aboriginal Cultural Heritage Assessment.

6.2 Aboriginal Heritage Impact Permit (AHIP)

Following archaeological assessment within the study area the following Aboriginal sites will be directly impacted by the planning proposal, AHIMS ID 45-5-2660, AHIMS ID 45-5-2661, AHIMS ID 45-5-2662, AHIMS ID 45-5-2669, AHIMS ID 45-5-2672, AHIMS ID 45-5-2674, AHIMS ID 45-5-2780/ AHIMS ID 45-5-5371, AHIMS ID 45-5-2786, AHIMS ID 45-5-2787, AHIMS ID 45-5-5371 and AHIMS ID 45-5-5373. These Aboriginal sites are isolated Aboriginal Objects, low density artefacts scatters and a likely low density subsurface artefact scatter that were recorded in disturbed and eroded landforms with low cultural significance. The impact to these sites will not affect the overall significance of the Aboriginal cultural values of the study area and surrounding region.

An AHIP should be sought for harm to these Aboriginal sites, further mitigations for the AHIMS sites is not warranted as were not able to be re identified during the ACHA fieldwork, all sites are of low significance and scientific value. The following sites are applicable AHIMS ID 45-5-2660, AHIMS ID 45-5-2661, AHIMS ID 45-5-2662, AHIMS ID 45-5-2669, AHIMS ID 45-5-2672, AHIMS ID 45-5-2674, AHIMS ID 45-5-2780/ AHIMS ID 45-5-5371, AHIMS ID 45-5-2786, AHIMS ID 45-5-2787, and AHIMS ID 45-5-5373.

The AHIP will be required for 15 years to cover the development, subdivision, construction and drainage mitigation works. This will be inclusive of reburial of Aboriginal objects form AHIMS ID 45-5-5370 recovered during test excavations.

6.3 Discovery of human remains

If suspected human skeletal remains are uncovered at any time throughout undertaking the proposed works, procedures outlined in Requirement 25 of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2010*) would be followed. In all cases, the special importance of Aboriginal ancestral remains must be acknowledged and respected and the wishes of the Aboriginal community must be respected when making decisions regarding ancestral remains. To avoid doubt, the precautionary principle must be applied to all physical remains suspected to be Aboriginal ancestral remains.

If any human remains are disturbed in, on or under the land, you must:

- not further disturb or move these remains
- immediately cease all work at the particular location
- notify NSW Police
- notify Heritage NSW Environment Line on 131 555 as soon as practicable and provide available details of the remains and their location
- not recommence any work at the particular location unless authorised in writing by Heritage NSW.

6.4 Management of Aboriginal objects

Suitable long-term management of the retrieved artefact assemblage will be a condition of the AHIP and following completion of works a suitable place for reburial will be determined through consultation with the proponent and the Aboriginal community in accordance with Requirement 26 of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2010*)

Previous assessments have recommended a keeping place or centralised burial location be identified for the entire Aerotropolis Precinct.

Table 12: Management and mitigation measures for AHIMS sites

AHIMS ID	Significance	Impact	Mitigation/ management
AHIMS ID 45-5-2661	Low	Transport corridor, earthworks/ ground levelling and subsurface infrastructure	AHIP must be sought prior to impacts
AHIMS ID 45-5-2662	Low	Riparian landscaping, basin construction	AHIP must be sought prior to impacts
AHIMS ID 45-5-2660	Low	Riparian landscaping, basin construction	AHIP must be sought prior to impacts
AHIMS ID 45-5-2669	Low	Riparian landscaping, basin construction	AHIP must be sought prior to impacts
AHIMS ID 45-5-2672	Low	Earthworks/ ground levelling, subsurface infrastructure and landscaping	AHIP must be sought prior to impacts
AHIMS ID 45-5-2674	Low	Transport corridor, earthworks/ ground levelling, subsurface infrastructure	AHIP must be sought prior to impacts
AHIMS ID 45-5-2786	Low	Riparian landscaping, basin construction	AHIP must be sought prior to impacts
AHIMS ID 45-5-2780 AHIMS ID 45-5-5371	Low	Riparian landscaping, basin construction	AHIP must be sought prior to impacts
AHIMS ID 45-5-2787	Low	Earthworks/ ground levelling, subsurface infrastructure and landscaping	AHIP must be sought prior to impacts
AHIMS ID 45-5-5370	Low	None, Riparian Corridor	Cultural induction prior to construction activities, conservation fencing to be erected

AHIMS ID	Significance	Impact	Mitigation/ management
AHIMS ID 45-5-5373	Low	Earthworks/ ground levelling, subsurface infrastructure and landscaping	AHIP must be sought prior to impacts
AHIMS ID 45-5-5372	Unknown	None, Riparian corridor	Cultural induction prior to construction activities, conservation fencing to be erected.

6.5 Heritage interpretation

The key aims of the Aerotropolis region is to have Aboriginal Cultural Values at its core and to make a distinct contrast with other areas of Sydney that are largely focused on European features. Expressions of Aboriginal culture across the landscape would provide a clear distinction and be representative of the importance of Aboriginal cultural values in the Aerotropolis planning process.

Heritage interpretation would connect the public with the Aboriginal cultural values associated with the Cumberland Plain and Badgerys Creek area. Heritage interpretation elements at the site may include:

- Engaging Aboriginal artists to develop designs/artworks that depict both tangible and intangible aspects of traditional Aboriginal culture across a diverse range of traditional and modern media should be considered for the future development. Incorporation into the built forms of the future development through design features such as:
  - Paving – footpaths, communal areas and parks
  - Murals - Large industrial buildings are often large expanses of plain concrete. Murals could be commissioned to assist with connecting to country and intergenerational equity across the precinct.
- Incorporating local Aboriginal naming conventions within the precinct design such as street names, building names, or identification naming between the different sectors of the precinct, this should be done through consultation with RAPs as part of the connecting to country.
- Incorporating native plant species into any landscape plantings in open spaces and street plantings. These species should have been native to the study area and can assist with the aesthetics and cultural connection.
- Providing interpretive information regarding the Aboriginal history of the site within common areas, developed in consultation with RAPs as part of connecting to country.

7. Recommendations

The following recommendations are based on consideration of:

- Statutory requirements under the *National Parks and Wildlife Act 1974*.
- The results of the background research, site survey, test excavations and assessment.
- The planning proposal for the study area.

It was found that:

- Aerotropolis Precinct is to be the focus of Aboriginal Cultural Values for the Sydney region. The Aerotropolis Precinct is to be distinct and is to be designed around connection to country.
- Twelve Aboriginal sites have been identified within the study area, as the Aerotropolis precinct has been the subject of many heritage assessments. The majority of sites are isolated or low density Aboriginal objects located in disturbed erosional contexts with low scientific value but high cultural value.
- The planning proposal for the study area has been informed by the previous assessments, the DCP and the SEPP and has considered the value of connecting to country. The creeklines and major drainage lines have been identified as being of high significance to the Aboriginal community and will be kept as open space.
- There will be direct impacts to ten AHIMS sites, eight AHIMS sites could not be reidentified through this assessment and their location within the existing road corridors and in the actively eroding creeklines means they are likely destroyed.
- Direct impact to AHIMS ID 45-5-5371 is likely for drainage mitigations works and connecting to country interpretation. This PAD was subject to archaeological investigations and the remaining PAD adjacent to in AHIMS ID 45-5-2780 likely contains a low density artefact scatter due to the limited area intact and the existing high erosion disturbance from current drainage line. Further investigations or mitigation measures would not contribute to the understanding of the Aboriginal cultural values of the study area.
- AHIMS ID 45-5-5370 and 45-5-5372 are not proposed to be impacted by the current Badgerys Creek Masterplan. If future works are proposed, then further assessment would be required for these sites.

Based on the findings of this Aboriginal Cultural Heritage Assessment (ACHA) and the archaeological investigation the following is recommended:

Recommendation 1 - Conservation/ management areas

AHIMS sites have been identified within areas of the planning proposal designated as open space. It is recommended that these areas be conserved and managed to ensure the cultural values of the Aboriginal sites and potential deposits be protected. It is recommended that prior to future developments a Construction Management Plan be developed to implement protection and awareness prior to any works.

AHIMS ID 45-5-5370 (adjacent to Badgerys Creek) and AHIMS ID 45-5-5372 (adjacent to South Creek) are located within open space and are not proposed to be impacted by the current Badgerys Creek

Masterplan. If any impacts area proposed for the open spaces adjacent to Badgerys Creek and South Creek, then further archaeological investigations will be required an Addendum Aboriginal Cultural Heritage Assessment.

Recommendation 2 – Targeted AHIP

- An AHIP will be required prior to future development of the study area to cover impacts to AHIMS sites located within the proposed development footprint.
- The current masterplan will impact on the following AHIMS sites, AHIMS ID 45-5-2660, AHIMS ID 45-5-2661, AHIMS ID 45-5-2662, AHIMS ID 45-5-2669, AHIMS ID 45-5-2672, AHIMS ID 45-5-2674, AHIMS ID 45-5-2780/ AHIMS ID 45-5-5371, AHIMS ID 45-5-2786, AHIMS ID 45-5-2787 and AHIMS ID 45-5-5373. They are all of low significance and of low potential, the majority could not be reidentified through archaeological investigations. No further mitigations will be required for these sites.
- If the impact footprint changes from the current design in this reporting, then an updated impact assessment will be required.

Recommendation 3 – Management of Aboriginal objects

All Aboriginal objects collected during the course of the archaeological investigations will be temporarily stored at ELA office (Sydney). Suitable long-term management of the retrieved artefact assemblage will be a condition of the AHIP and following completion of works a suitable place for reburial will be determined through consultation with the proponent and the Aboriginal community. Previous assessments have recommended a keeping place or centralised burial location be identified for the entire Aerotropolis Precinct.

Recommendation 4 – Interpretation of Aboriginal Cultural Values

Expressions of Aboriginal culture across the landscape should be integral to the design process of future development to provide a clear distinction and be representative of the importance of Aboriginal cultural values in the Aerotropolis Precinct. Heritage interpretation would connect the public with the Aboriginal cultural values associated with the Cumberland Plain and Badgerys Creek area. Heritage interpretation elements at the site may include:

- Engaging Aboriginal artists to develop designs/artworks that depict both tangible and intangible aspects of traditional Aboriginal culture across a diverse range of traditional and modern media should be considered for the future development.
- Incorporating local Aboriginal naming conventions within the precinct design
- Incorporating native plant species into any landscape plantings in open spaces and street plantings.
- Providing interpretive information regarding the Aboriginal history of the site within common areas, developed in consultation with RAPs as part of connecting to country.

Recommendation 5 – Submit ACHA to AHIMS

In accordance with Chapter 3 of the *Guide to investigating, assessing, and reporting on Aboriginal cultural heritage in NSW* (OEH 2011) the ACHA should be submitted for registration on the AHIMS register within three months of completion.

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Appendix A Consultation Log

Contact	Organisation	Contacted by	Organisation	Method	Date	Comment/ response
AGENCY LETTERS 4.1.2 NOTIFICATION						
	National Native Title Tribunal	K Storan	ELA	Email	16/08/2021	Section 4.1.2 Letter requesting list of potentially interested stakeholders, information, response by 31 August 2021
	NTS Corp	K Storan	ELA	Email	17/08/2021	Section 4.1.2 Letter requesting list of potentially interested stakeholders, information, response by 31 August 2021
	Heritage NSW	K Storan	ELA	Email	17/08/2021	Section 4.1.2 Letter requesting list of potentially interested stakeholders, information, response by 31 August 2021
	Office of the Registrar	K Storan	ELA	Email	17/08/2021	Section 4.1.2 Letter requesting list of potentially interested stakeholders, information, response by 31 August 2021
	Greater Sydney Local Land Services	K Storan	ELA	Email	17/08/2021	Section 4.1.2 Letter requesting list of potentially interested stakeholders, information, response by 31 August 2021
	Gandangara Local Aboriginal Land Council	K Storan	ELA	Email	17/08/2021	Section 4.1.2 Letter requesting list of potentially interested stakeholders, information, response by 31 August 2021
	Liverpool City Council	K Storan	ELA	Email	17/08/2021	Section 4.1.2 Letter requesting list of potentially interested stakeholders, information, response by 31 August 2021
4.1.3 Advertisement						
Liverpool City Champion		K Storan	ELA	Online ad	15/09/2021	Published Ad 15 September 2021 with a response date of 29 September 2021
Agency Responses						
K Storan	ELA	Geospatial Searches	National Native Title Tribunal	Email	16/08/2021	it would appear that there are no Native Title Determination Applications, Determinations of Native Title, or Indigenous Land Use Agreements over the identified area.
K Storan	ELA	GS LLS	Greater Sydney Local Land Services	Email	18/08/2021	Recommended contacting Heritage NSW for RAP list.
K Storan	ELA	Darren Duncan	LALC	Phone	17/08/2021	Registered interest in project.
K Storan	ELA	Barry Gunther	Heritage NSW	Email	23/08/2021	RAP list sent.
Invitation to Register 4.1.3						
Phil Khan	Kamilaroi Yankuntjatjara Working Group	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Jennifer Beale	Butucarbin Aboriginal Corporation	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Daniel Chalker	Wori Wooilywa	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Lee Field	Barraby Cultural Services	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Bo Field	Yurrandaali Cultural Services	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Carolyn Hickey	A1 Indigenous Services	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Amanda Hickey	Amanda Hickey Cultural Services	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Jamie Eastwood	Aragung Aboriginal Cultural Heritage Site Assessments	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Nola Hampton	B.H Heritage Consultants	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.

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Ralph Hampton	B.H Heritage Consultants	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Jody Kulakowski	Barking Owl Aboriginal Corporation	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Seli Storer	Biamanga	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Simalene Carriage	Bilinga	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Corey Smith	Callendulla	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Clive Freeman	Clive Freeman	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Marilyn Carroll-Johnson	Corroboree Aboriginal Corporation	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Glenda Chalker	Cubbitch Barta	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Mark Dyer	Darug Aboriginal Land Care	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Paul Hand	Darug Boorooberongal Elders Aboriginal Corporation	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Justine Coplin	Darug Custodian Aboriginal Corporation	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Jamie and Anna Workman	Darug Land Observations	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Andrew Bond	Dharug	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Stephen Fields	Dhinawan Culture & Heritage	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Lillie Carroll and Paul Boyd	DNC	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Darren Duncan	DJMD Consultancy	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Carol Slater	Gilay Consultants	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Robert Slater	GCC	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Melissa Williams	Gandangara LALC	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Raymond Ingrey	Garrara Aboriginal Corporation	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Krystle Carroll	Ginninderra Aboriginal Corporation	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Basil Smith	Goobah Developments	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Caine Carroll	Goodradigbee Cultural & Heritage Aboriginal Corporation	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Wendy Smith	Gulaga	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Wendy Morgan	Guntawang	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Kylie Ann Bell	Gunyuu	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Darleen Johnson	Murra Bidgee Mullangari Aboriginal Corporation	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Roxanne Smith	Murramarang	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.

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Mark Henry	Murrumbul	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Kaarina Slater	Ngambaa Cultural Connections	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Dean Delponte	Ngunawal Heritage Aboriginal Corporation	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Newton Carriage	Nundagurri	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Pemulwuy Johnson	Pemulwuy CHTS	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Robyn Straub	Tharawal LALC	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Shane Carriage	Thauaira	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
John Carriage	Thoorga Nura	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Rodney Gunther	Waawaar Awaa Aboriginal Corporation	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Philip Boney	Wailwan Aboriginal Group	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Hika Te Kowhai	Walbunja	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Ronald Stewart	Walgalu	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Aaron Slater	Warragil Cultural Services	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Hayley Bell	Wingikara	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Kerrie Slater	Wurrumay	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Robert Parson	Yerramurra	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Arika Jalomaki	Yulay Cultural Services	K. Storan	ELA	Email	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Gordon Morton	Darug Aboriginal Cultural Heritage Assessments	K. Storan	ELA	Letter	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Aaron Broad	Minnamunnung	K. Storan	ELA	Letter	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Scott Franks	Tocomwall	K. Storan	ELA	Letter	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Phillip Carroll	Mura Indigenous Corporation	K. Storan	ELA	Letter	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Karia Lea Bond	Badu	K. Storan	ELA	Letter	9/09/2021	Section 4.1.3 Letter regarding invitation to register for project, response requested by 23/09/2021.
Registration of Interest						
K Storan	ELA	Paul Boyd & Lilly Carroll	Didge Ngunawal Clan	Email	9/09/2021	Registered interest in the project
K Storan	ELA	Marilyn Carroll-Johnson	Corroboree Aboriginal Corporation	Email	9/09/2021	Registered interest in the project. **Do not pass details onto LALC**
K Storan	ELA	Steve Johnson	Woka Aboriginal Corporation	Email	9/09/2021	Registered interest in the project. **Do not pass details onto LALC**
K Storan	ELA	Glenda Chalker	Cubbitch Barta	Email	9/09/2021	Registered interest in the project.
K Storan	ELA	Phil Khan	Kamilaroi Yankuntjatjara Working Group	Email	9/09/2021	Registered interest in the project

K Storan	ELA	Carolyn Slater	Gilay Consultants	Email	9/09/2021	Registered interest in the project
K Storan	ELA	Carolyn Hickey	A1 Indigenous Services	Email	10/09/2021	Registered interest in the project
K Storan	ELA	Lee Field	Barraby Cultural Services	Email	12/09/2021	Registered interest in the project
K Storan	ELA	Bo Field	Yurrandaali	Email	12/09/2021	Registered interest in the project
K Storan	ELA	Rodney Gunther	Waawaar Awaa	Email	13/09/2021	Registered interest in the project
K Storan	ELA	Scott Franks	Tocomwall	Email	14/09/2021	Registered interest in the project. **Do not pass details onto LALC**
K Storan	ELA	Justine Coplin	Darug Custodian Aboriginal Corporation	Email	15/09/2021	Registered interest in the project
K Storan	ELA	Kaarina Slater	Ngambaa Cultural Connections	Email	18/09/2021	Registered interest in the project
K Storan	ELA	Dean Delponte	Ngunawal Heritage Aboriginal Corporation	Email	17/09/2021	Registered interest in the project. **Do not pass details onto LALC**
K Storan	ELA	Darren Duncan	Gandangara LALC	Phone	20/09/2021	Registered interest in the project
K Storan	ELA	Wendy Morgan	Guntawang	Email	20/09/2021	Registered interest in the project
K Storan	ELA	Arika Jalomaki	Yulay Cultural Services	Email	21/09/2021	Registered interest in the project
K Storan	ELA	Clive Freeman	Clive Freeman	Email	23/09/2021	Registered interest in the project
K Storan	ELA	Lowanna Gibson	Butucarbin	Email	23/09/2021	Registered interest in the project
K Storan	ELA	Vicky Slater	Wurrumay	Email	24/09/2021	Registered interest in the project
4.1.6 Letter to LALC and Heritage NSW						
	Heritage NSW	K Storan	ELA	Email	12/10/2021	Notification of RAPs for project
	Gandangara LALC	K Storan	ELA	Email	12/10/2021	Notification of RAPs for project
ACHAR and Test Excavation Methodology						
Marilyn Carroll-Johnson	Corroboree Aboriginal Corporation	K Storan	ELA	Email	11/02/2022	Sent ACHAR and test excavation methodology for RAP review with a response date of 11 March 2022
Steve Johnson	Woka Aboriginal Corporation	K Storan	ELA	Email	11/02/2022	Sent ACHAR and test excavation methodology for RAP review with a response date of 11 March 2022
Glenda Chalker	Cubbitch Barta	K Storan	ELA	Email	11/02/2022	Sent ACHAR and test excavation methodology for RAP review with a response date of 11 March 2022
Carolyn Slater	Gilay Consultants	K Storan	ELA	Email	11/02/2022	Sent ACHAR and test excavation methodology for RAP review with a response date of 11 March 2022
Carolyn Hickey	A1 Indigenous Services	K Storan	ELA	Email	11/02/2022	Sent ACHAR and test excavation methodology for RAP review with a response date of 11 March 2022
Bo Field	Yurrandaali Cultural Services	K Storan	ELA	Email	11/02/2022	Sent ACHAR and test excavation methodology for RAP review with a response date of 11 March 2022
Lee Field	Barraby Cultural Services	K Storan	ELA	Email	11/02/2022	Sent ACHAR and test excavation methodology for RAP review with a response date of 11 March 2022
Phil Khan	Kamilaroi Yankuntjatjara Working Group	K Storan	ELA	Email	11/02/2022	Sent ACHAR and test excavation methodology for RAP review with a response date of 11 March 2022
Scott Franks	Tocomwall	K Storan	ELA	Email	11/02/2022	Sent ACHAR and test excavation methodology for RAP review with a response date of 11 March 2022

Rodney Gunther	Waawaar Awaa	K Storan	ELA	Email	11/02/2022	Sent ACHAR and test excavation methodology for RAP review with a response date of 11 March 2022
Justine Coplin	Darug Custodian Aboriginal Corporation	K Storan	ELA	Email	11/02/2022	Sent ACHAR and test excavation methodology for RAP review with a response date of 11 March 2022
Kaarina Slater	Ngambaa Cultural Connections	K Storan	ELA	Email	11/02/2022	Sent ACHAR and test excavation methodology for RAP review with a response date of 11 March 2022
Dean Delponte	Mundawari Heritage Consultants Pty Ltd	K Storan	ELA	Email	11/02/2022	Sent ACHAR and test excavation methodology for RAP review with a response date of 11 March 2022
Darren Duncan	Gandangara LALC	K Storan	ELA	Email	11/02/2022	Sent ACHAR and test excavation methodology for RAP review with a response date of 11 March 2022
Wendy Morgan	Guntawang	K Storan	ELA	Email	11/02/2022	Sent ACHAR and test excavation methodology for RAP review with a response date of 11 March 2022
Arika Jalomaki	Yulay Cultural Services	K Storan	ELA	Email	11/02/2022	Sent ACHAR and test excavation methodology for RAP review with a response date of 11 March 2022
Clive Freeman	Clive Freeman	K Storan	ELA	Email	11/02/2022	Sent ACHAR and test excavation methodology for RAP review with a response date of 11 March 2022
Lowanna Gibson	Butucarbin	K Storan	ELA	Email	11/02/2022	Sent ACHAR and test excavation methodology for RAP review with a response date of 11 March 2022
Vicky Slater	Wurrumay	K Storan	ELA	Email	11/02/2022	Sent ACHAR and test excavation methodology for RAP review with a response date of 11 March 2022
Paul Boyd and Lilly Carroll	Didge Ngunawal Clan	K Storan	ELA	Email	11/02/2022	Sent ACHAR and test excavation methodology for RAP review with a response date of 11 March 2022
ACHAR Methodology RAP responses						
K Storan	ELA	Paul Boyd and Lilly Carroll	Didge Ngunawal Clan	Email	11/02/2022	Happy for the project to proceed
K Storan	ELA	Dean Delponte	Mundawari Heritage Consultants Pty Ltd	Email	14/02/2022	Agree with the methodology outlined for the project
K Storan	ELA	Bo Field	Yurrandaali Cultural Services	Email	15/02/2022	Agree with the proposed test excavation methodology for the project
K Storan	ELA	Arika Jalomaki	Yulay Cultural Services	Email	17/02/2022	Agree with the methodology outlined for the project
K Storan	ELA	Carolyn Hickey	A1 Indigenous Services	Email	21/02/2022	Reviewed the document and support the information and methodology
K Storan	ELA	Justine Coplin	Darug Custodian Aboriginal Corporation	Email	22/02/2022	Supports recommendations
K Storan	ELA	Kadi Khan	Kamilaroi Yankuntjatjara Working Group	Email	28/02/2022	Agree with the recommendations and support the report
K Storan	ELA	Wendy Morgan	Guntawang	Email	28/02/2022	Agree with the methodology
K Storan	ELA	Marilyn Carroll-Johnson	Corroboree Aboriginal Corporation	Email	15/03/2022	Agree with the review
ACHAR RAP review						
Marilyn Carroll-Johnson	Corroboree Aboriginal Corporation	J Norfolk	ELA	Email	16/09/2022	Sent ACHAR for RAP review with a response date of 14 October 2022
Steve Johnson	Woka Aboriginal Corporation	J Norfolk	ELA	Email	16/09/2022	Sent ACHAR for RAP review with a response date of 14 October 2022
Glenda Chalker	Cubbitch Barta	J Norfolk	ELA	Email	16/09/2022	Sent ACHAR for RAP review with a response date of 14 October 2022
Carolyn Slater	Gilay Consultants	J Norfolk	ELA	Email	16/09/2022	Sent ACHAR for RAP review with a response date of 14 October 2022
Carolyn Hickey	A1 Indigenous Services	J Norfolk	ELA	Email	16/09/2022	Sent ACHAR for RAP review with a response date of 14 October 2022

Bo Field	Yurrandaali Cultural Services	J Norfolk	ELA	Email	16/09/2022	Sent ACHAR for RAP review with a response date of 14 October 2022
Lee Field	Barraby Cultural Services	J Norfolk	ELA	Email	16/09/2022	Sent ACHAR for RAP review with a response date of 14 October 2022
Phil Khan	Kamilaroi Yankuntjatjara Working Group	J Norfolk	ELA	Email	16/09/2022	Sent ACHAR for RAP review with a response date of 14 October 2022
Scott Franks	Tocomwall	J Norfolk	ELA	Email	16/09/2022	Sent ACHAR for RAP review with a response date of 14 October 2022
Rodney Gunther	Waawaar Awaa	J Norfolk	ELA	Email	16/09/2022	Sent ACHAR for RAP review with a response date of 14 October 2022
Justine Coplin	Darug Custodian Aboriginal Corporation	J Norfolk	ELA	Email	16/09/2022	Sent ACHAR for RAP review with a response date of 14 October 2022
Kaarina Slater	Ngambaa Cultural Connections	J Norfolk	ELA	Email	16/09/2022	Sent ACHAR for RAP review with a response date of 14 October 2022
Dean Delponte	Mundawari Heritage Consultants Pty Ltd	J Norfolk	ELA	Email	16/09/2022	Sent ACHAR for RAP review with a response date of 14 October 2022
Darren Duncan	Gandangara LALC	J Norfolk	ELA	Email	16/09/2022	Sent ACHAR for RAP review with a response date of 14 October 2022
Wendy Morgan	Guntawang	J Norfolk	ELA	Email	16/09/2022	Sent ACHAR for RAP review with a response date of 14 October 2022
Arika Jalomaki	Yulay Cultural Services	J Norfolk	ELA	Email	16/09/2022	Sent ACHAR for RAP review with a response date of 14 October 2022
Clive Freeman	Clive Freeman	J Norfolk	ELA	Email	16/09/2022	Sent ACHAR for RAP review with a response date of 14 October 2022
Lowanna Gibson	Butucarbin	J Norfolk	ELA	Email	16/09/2022	Sent ACHAR for RAP review with a response date of 14 October 2022
Vicky Slater	Wurrumay	J Norfolk	ELA	Email	16/09/2022	Sent ACHAR for RAP review with a response date of 14 October 2022
Paul Boyd and Lilly Carroll	Didge Ngunawal Clan	J Norfolk	ELA	Email	16/09/2022	Sent ACHAR for RAP review with a response date of 14 October 2022
ACHA Review 2						
Marilyn Carroll-Johnson	Corroboree Aboriginal Corporation	J Norfolk	ELA	Email	13/12/2022	Sent updated ACHAR for RAP review with a response date of 20 January 2023
Steve Johnson	Woka Aboriginal Corporation	J Norfolk	ELA	Email	13/12/2022	Sent updated ACHAR for RAP review with a response date of 20 January 2023
Glenda Chalker	Cubbitch Barta	J Norfolk	ELA	Email	13/12/2022	Sent updated ACHAR for RAP review with a response date of 20 January 2023
Carolyn Slater	Gilay Consultants	J Norfolk	ELA	Email	13/12/2022	Sent updated ACHAR for RAP review with a response date of 20 January 2023
Carolyn Hickey	A1 Indigenous Services	J Norfolk	ELA	Email	13/12/2022	Sent updated ACHAR for RAP review with a response date of 20 January 2023
Bo Field	Yurrandaali Cultural Services	J Norfolk	ELA	Email	13/12/2022	Sent updated ACHAR for RAP review with a response date of 20 January 2023
Lee Field	Barraby Cultural Services	J Norfolk	ELA	Email	13/12/2022	Sent updated ACHAR for RAP review with a response date of 20 January 2023
Phil Khan	Kamilaroi Yankuntjatjara Working Group	J Norfolk	ELA	Email	13/12/2022	Sent updated ACHAR for RAP review with a response date of 20 January 2023
Scott Franks	Tocomwall	J Norfolk	ELA	Email	13/12/2022	Sent updated ACHAR for RAP review with a response date of 20 January 2023
Rodney Gunther	Waawaar Awaa	J Norfolk	ELA	Email	13/12/2022	Sent updated ACHAR for RAP review with a response date of 20 January 2023
Justine Coplin	Darug Custodian Aboriginal Corporation	J Norfolk	ELA	Email	13/12/2022	Sent updated ACHAR for RAP review with a response date of 20 January 2023
Kaarina Slater	Ngambaa Cultural Connections	J Norfolk	ELA	Email	13/12/2022	Sent updated ACHAR for RAP review with a response date of 20 January 2023

Dean Delponte	Mundawari Heritage Consultants Pty Ltd	J Norfolk	ELA	Email	13/12/2022	Sent updated ACHAR for RAP review with a response date of 20 January 2023
Darren Duncan	Gandangara LALC	J Norfolk	ELA	Email	13/12/2022	Sent updated ACHAR for RAP review with a response date of 20 January 2023
Wendy Morgan	Guntawang	J Norfolk	ELA	Email	13/12/2022	Sent updated ACHAR for RAP review with a response date of 20 January 2023
Arika Jalomaki	Yulay Cultural Services	J Norfolk	ELA	Email	13/12/2022	Sent updated ACHAR for RAP review with a response date of 20 January 2023
Clive Freeman	Clive Freeman	J Norfolk	ELA	Email	13/12/2022	Sent updated ACHAR for RAP review with a response date of 20 January 2023
Lowanna Gibson	Butucarbin	J Norfolk	ELA	Email	13/12/2022	Sent updated ACHAR for RAP review with a response date of 20 January 2023
Vicky Slater	Wurrumay	J Norfolk	ELA	Email	13/12/2022	Sent updated ACHAR for RAP review with a response date of 20 January 2023
Paul Boyd and Lilly Carroll	Didge Ngunawal Clan	J Norfolk	ELA	Email	13/12/2022	Sent updated ACHAR for RAP review with a response date of 20 January 2023
ACHAR RAP response and comments						
J Norfolk	ELA	Wendy Morgan	Guntawang	Email	20/09/2022	Guntawang supports the reburial of artefacts in a safe protected area of the site
J Norfolk	ELA	Rodney Gunther	Waawaar Awaa	Email	26/09/2022	Supports the draft ACHA and its recommendations
J Norfolk	ELA	Justine Coplin	Darug Custodian Aboriginal Corporation	Email	29/09/2022	Supports the recommendations
J Norfolk	ELA	Phil Khan	Kamilaroi Yankuntjatjara Working Group	Email	6/10/2022	Agree and support the recommendations
J Norfolk	ELA	Carolyn Hickey	A1 Indigenous Services	Email	6/10/2022	Support the information and draft ACHA and artefact reburial
ACHA RAP responses review 2						
J Norfolk	ELA	Wendy Morgan	Guntawang	Email	13/12/2022	
J Norfolk	ELA	Phil Khan	Kamilaroi Yankuntjatjara Working Group	Email	19/12/2022	Agree and support the recommendations
J Norfolk	ELA	Justine Coplin	Darug Custodian Aboriginal Corporation	Email	29/12/2022	Supports the recommendations
J Norfolk	ELA	Rodney Gunther	Waawaar Awaa	Email	8/1/2023	Support the draft ACHA for proposed development
Project update						
Marilyn Carroll-Johnson	Corroboree Aboriginal Corporation	J Norfolk	ELA	Email	6/06/2023	Sent project update to keep consultation active
Steve Johnson	Woka Aboriginal Corporation	J Norfolk	ELA	Email	6/06/2023	Sent project update to keep consultation active
Glenda Chalker	Cubbitch Barta	J Norfolk	ELA	Email	6/06/2023	Sent project update to keep consultation active
Carolyn Slater	Gilay Consultants	J Norfolk	ELA	Email	6/06/2023	Sent project update to keep consultation active
Carolyn Hickey	A1 Indigenous Services	J Norfolk	ELA	Email	6/06/2023	Sent project update to keep consultation active
Bo Field	Yurrandaali Cultural Services	J Norfolk	ELA	Email	6/06/2023	Sent project update to keep consultation active
Lee Field	Barraby Cultural Services	J Norfolk	ELA	Email	6/06/2023	Sent project update to keep consultation active
Phil Khan	Kamilaroi Yankuntjatjara Working Group	J Norfolk	ELA	Email	6/06/2023	Sent project update to keep consultation active

Scott Franks	Tocomwall	J Norfolk	ELA	Email	6/06/2023	Sent project update to keep consultation active
Rodney Gunther	Waawaar Awaa	J Norfolk	ELA	Email	6/06/2023	Sent project update to keep consultation active
Justine Coplin	Darug Custodian Aboriginal Corporation	J Norfolk	ELA	Email	6/06/2023	Sent project update to keep consultation active
Kaarina Slater	Ngambaa Cultural Connections	J Norfolk	ELA	Email	6/06/2023	Sent project update to keep consultation active
Dean Delponte	Mundawari Heritage Consultants Pty Ltd	J Norfolk	ELA	Email	6/06/2023	Sent project update to keep consultation active
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Lowanna Gibson	Butucarbin	J Norfolk	ELA	Email	6/06/2023	Sent project update to keep consultation active
Vicky Slater	Wurrumay	J Norfolk	ELA	Email	6/06/2023	Sent project update to keep consultation active
Paul Boyd and Lilly Carroll	Didge Ngunawal Clan	J Norfolk	ELA	Email	6/06/2023	Sent project update to keep consultation active
Project update						
Marilyn Carroll-Johnson	Corroboree Aboriginal Corporation	J Norfolk	ELA	Email	8/12/2023	Sent project update to keep consultation active
Steve Johnson	Woka Aboriginal Corporation	J Norfolk	ELA	Email	8/12/2023	Sent project update to keep consultation active
Glenda Chalker	Cubbitch Barta	J Norfolk	ELA	Email	8/12/2023	Sent project update to keep consultation active
Carolyn Slater	Gilay Consultants	J Norfolk	ELA	Email	8/12/2023	Sent project update to keep consultation active
Carolyn Hickey	A1 Indigenous Services	J Norfolk	ELA	Email	8/12/2023	Sent project update to keep consultation active
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Justine Coplin	Darug Custodian Aboriginal Corporation	J Norfolk	ELA	Email	8/12/2023	Sent project update to keep consultation active
Kaarina Slater	Ngambaa Cultural Connections	J Norfolk	ELA	Email	8/12/2023	Sent project update to keep consultation active
Dean Delponte	Mundawari Heritage Consultants Pty Ltd	J Norfolk	ELA	Email	8/12/2023	Sent project update to keep consultation active
Darren Duncan	Gandangara LALC	J Norfolk	ELA	Email	8/12/2023	Sent project update to keep consultation active
Wendy Morgan	Guntawang	J Norfolk	ELA	Email	8/12/2023	Sent project update to keep consultation active

Arika Jalomaki	Yulay Cultural Services	J Norfolk	ELA	Email	8/12/2023	Sent project update to keep consultation active
Clive Freeman	Clive Freeman	J Norfolk	ELA	Email	8/12/2023	Sent project update to keep consultation active
Lowanna Gibson	Butucarbin	J Norfolk	ELA	Email	8/12/2023	Sent project update to keep consultation active
Vicky Slater	Wurrumay	J Norfolk	ELA	Email	8/12/2023	Sent project update to keep consultation active
Paul Boyd and Lilly Carroll	Didge Ngunawal Clan	J Norfolk	ELA	Email	8/12/2023	Sent project update to keep consultation active
Project update						
Marilyn Carroll-Johnson	Corroboree Aboriginal Corporation	J Norfolk	ELA	Email	6/06/2024	Sent project update to keep consultation active
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Vicky Slater	Wurrumay	J Norfolk	ELA	Email	6/06/2024	Sent project update to keep consultation active
Paul Boyd and Lilly Carroll	Didge Ngunawal Clan	J Norfolk	ELA	Email	6/06/2024	Sent project update to keep consultation active
Project update						
Marilyn Carroll-Johnson	Corroboree Aboriginal Corporation	J Norfolk	ELA	Email	4/12/2024	Sent project update to keep consultation active

Steve Johnson	Woka Aboriginal Corporation	J Norfolk	ELA	Email	4/12/2024	Sent project update to keep consultation active
Glenda Chalker	Cubbitch Barta	J Norfolk	ELA	Email	4/12/2024	Sent project update to keep consultation active
Carolyn Slater	Gilay Consultants	J Norfolk	ELA	Email	4/12/2024	Sent project update to keep consultation active
Carolyn Hickey	A1 Indigenous Services	J Norfolk	ELA	Email	4/12/2024	Sent project update to keep consultation active
Bo Field	Yurrandaali Cultural Services	J Norfolk	ELA	Email	4/12/2024	Sent project update to keep consultation active
Lee Field	Barraby Cultural Services	J Norfolk	ELA	Email	4/12/2024	Sent project update to keep consultation active
Phil Khan	Kamilaroi Yankuntjatjara Working Group	J Norfolk	ELA	Email	4/12/2024	Sent project update to keep consultation active
Scott Franks	Tocomwall	J Norfolk	ELA	Email	4/12/2024	Sent project update to keep consultation active
Rodney Gunther	Waawaar Awaa	J Norfolk	ELA	Email	4/12/2024	Sent project update to keep consultation active
Justine Coplin	Darug Custodian Aboriginal Corporation	J Norfolk	ELA	Email	4/12/2024	Sent project update to keep consultation active
Kaarina Slater	Ngambaa Cultural Connections	J Norfolk	ELA	Email	4/12/2024	Sent project update to keep consultation active
Dean Delponte	Mundawari Heritage Consultants Pty Ltd	J Norfolk	ELA	Email	4/12/2024	Sent project update to keep consultation active
Darren Duncan	Gandangara LALC	J Norfolk	ELA	Email	4/12/2024	Sent project update to keep consultation active
Wendy Morgan	Guntawang	J Norfolk	ELA	Email	4/12/2024	Sent project update to keep consultation active
Arika Jalomaki	Yulay Cultural Services	J Norfolk	ELA	Email	4/12/2024	Sent project update to keep consultation active
Clive Freeman	Clive Freeman	J Norfolk	ELA	Email	4/12/2024	Sent project update to keep consultation active
Lowanna Gibson	Butucarbin	J Norfolk	ELA	Email	4/12/2024	Sent project update to keep consultation active
Vicky Slater	Wurrumay	J Norfolk	ELA	Email	4/12/2024	Sent project update to keep consultation active
Paul Boyd and Lilly Carroll	Didge Ngunawal Clan	J Norfolk	ELA	Email	4/12/2024	Sent project update to keep consultation active

GOVERNMENT LETTER EXAMPLE AND RESPONSES

Norfolk, Jennifer

From: Geospatial Search Requests <GeospatialSearch@NNTT.gov.au>
Sent: Monday, 16 August 2021 6:04 PM
To: Storan, Kate
Subject: RE: SR21/1260 - request for search of tribunal registers - SR21/1260

Follow Up Flag: Follow up
Flag Status: Completed

⚠ **CAUTION:** This email originated from an external sender. Verify the source before opening links or attachments. ⚠

UNCLASSIFIED

Native title search – *NSW Parcel – Lot 1 on DP1123344*
Your ref: *21SYD-19853* - **Our ref:** *SR21/1260*

Dear Kate Storan**,**

Thank you for your search request received on 16 August 2021 in relation to the above area. Based on the records held by the National Native Title Tribunal as at 16 August 2021 it would appear that there are no Native Title Determination Applications, Determinations of Native Title, or Indigenous Land Use Agreements over the identified area.

Search Results
The results provided are based on the information you supplied and are derived from a search of the following Tribunal databases:

- Schedule of Native Title Determination Applications
- Register of Native Title Claims
- Native Title Determinations
- Indigenous Land Use Agreements (Registered and notified)

At the time this search was carried out, there were **no relevant entries** in the above databases.

Cadastral data as at: 01/02/2021

Parcel ID	Feature Area SqKm	Overlapping Native Title Feature				
		Tenure	NNTT File Number	Name	Category	% Selected Feature
1//DP1123344	1.8209	FREEHOLD	No overlap			0.00%

For more information about the Tribunal's registers or to search the registers yourself and obtain copies of relevant register extracts, please visit our website.

Information on native title claims and freehold land can also be found on the Tribunal's website here: Native title claims and freehold land .

Please note: There may be a delay between a native title determination application being lodged in the Federal Court and its transfer to the Tribunal. As a result, some native title determination applications recently filed with the Federal Court may not appear on the Tribunal's databases.

The search results are based on analysis against external boundaries of applications only. Native title applications commonly contain exclusions clauses which remove areas from within the external boundary. To determine whether the areas described are in fact subject to claim, you need to refer to the "Area covered by claim" section of the relevant Register Extract or Schedule Extract and any maps attached.

Search results and the existence of native title
Please note that the enclosed information from the Register of Native Title Claims and/or the Schedule of Applications is **not** confirmation of the existence of native title in this area. This cannot be confirmed until the Federal Court makes a determination that native title does or does not exist in relation to the area. Such determinations are registered on the National Native Title Register.

The Tribunal accepts no liability for reliance placed on enclosed information
The enclosed information has been provided in good faith. Use of this information is at your sole risk. The National Native Title Tribunal makes no representation, either express or implied, as to the accuracy or suitability of the information enclosed for any particular purpose and accepts no liability for use of the information or reliance placed on it.

If you have any further queries, please do not hesitate to contact us via GeospatialSearch@NNTT.gov.au

Regards,

Geospatial Searches
National Native Title Tribunal | Perth
Email: GeospatialSearch@nntt.gov.au | **www.nntt.gov.au**

From: Storan, Kate <Kate.Storan@ecoaus.com.au>
Sent: Monday, 16 August 2021 2:27 PM
To: Geospatial Search Requests <GeospatialSearch@NNTT.gov.au>
Subject: SR21/1260 - request for search of tribunal registers

Caution: This is an external email. DO NOT click links or open attachments unless you recognise the sender and know the content is safe.

To whom it may concern,

Please find attached the NNTT form.

Regards,

Kate Storan
Heritage Advisor

T + 92593753

Eco Logical Australia Pty Ltd
Level 3, 101 Sussex Street, Sydney NSW 2000
PO Box Q1082, Queen Victoria Building, NSW 1230

From: Barry Gunther
To: Storan, Kate
Subject: DPC RAP list for - (Lot 1 DP1123344) 475 Badgerys Creek Road, Badgerys Creek NSW – Liverpool LGA.
Date: Monday, 23 August 2021 10:04:31 AM
Attachments: image001.png
19853 HeritageNSW.pdf
RAP list request (Lot 1 DP1123344) 475 Badgerys Creek Road, Badgerys Creek NSW .docx
Attachment A - DPC RAP list - Liverpool Local Government Area.docx

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

Hi Kate,

Please find attached the DPC RAP list for - (Lot 1 DP1123344) 475 Badgerys Creek Road, Badgerys Creek NSW – Liverpool LGA.

regards

Barry Gunther, Aboriginal Heritage Planner Officer
Heritage NSW, Community Engagement, Department of Premier and Cabinet
Level 6, 10 Valentine Ave, Parramatta | Locked Bag 5020 Parramatta 2124
T: 02 9995 6830 | barry.gunther @environment.nsw.gov.au

Please lodge all Applications to Heritagemailbox@environment.nsw.gov.au

Website Facebook Instagram LinkedIn

The Heritage Management System is live from 31 May. More information is available here

I acknowledge and respect the traditional custodians and ancestors of the lands I work across.

Heritage NSW and coronavirus (COVID-19)
Heritage NSW has taken steps to protect the safety, health and wellbeing of our staff, communities and customers. Whilst our offices remain open, we have put in place flexible working arrangements for our teams across NSW and continue to adapt our working arrangements as necessary. Face-to-face meetings and field work/site visits with our customers are subject to rules on gatherings and social distancing measures. We thank you for your patience and understanding at this time.

This email is intended for the addressee(s) named and may contain confidential and/or privileged information.
If you are not the intended recipient, please notify the sender and then delete it immediately.
Any views expressed in this email are those of the individual sender except where the sender expressly and with authority states them to be the views of the NSW Office of Environment, Energy and Science.

PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS EMAIL

From: LLS GS Service Mailbox
To: Storan, Kate
Subject: Re: Request for Aboriginal stakeholders
Date: Wednesday, 18 August 2021 2:23:41 PM

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

Dear Ms Storan

Thank you for your recent letter seeking assistance to identify Aboriginal stakeholder organisations and persons who may hold an interest in Country at the project area designated in your correspondence.

Greater Sydney Local Land Services (GS LLS) acknowledges that Local Land Services (formerly as Catchment Management Authorities) has been listed in Section 4.1.3.(g) of the Aboriginal Cultural Heritage Consultation requirements for proponents 2010, to support Part 6, of the NSW National Parks and Wildlife Act 1974 as a source of information to obtain the 'names of Aboriginal people who may hold cultural knowledge relevant to determining the significance of Aboriginal objects and/or places'.

GS LLS understands and respects the significant role and values that tangible and intangible Aboriginal Cultural Heritage holds for First Nations/Aboriginal people with Country. GS LLS also partners with many First Nations communities on Caring for Country projects that aim to protect and enhance those tangible and intangible values in Country including Aboriginal Cultural Heritage. GS LLS considers Aboriginal Cultural Heritage matters in relation to its role in land management and considers cultural heritage issues in the context of Natural Resource Management.

However, GS LLS feels that it is not a primary source of contact for First Nations (Aboriginal) communities or persons that may inform or provide comment on development or planning issues.

GS LLS strongly recommends you contact Heritage NSW to seek their advice on all-inclusive contact lists of persons and organisations who 'speak for Country' and that may assist with your investigation.

Regards

Customer Service Team
Greater Sydney Local Land Services
Level 4, 2 - 6 Station St Penrith | PO Box 4515, Westfield Penrith NSW 2750
T: 02 4724 2100
E: gs.service@lls.nsw.gov.au | **W:** www.greatersydney.lls.nsw.gov.au

You can also contact us through our online enquiry form

Greater Sydney Local Land Services acknowledges we operate in and deliver services throughout Country of First Nations people in the Greater Sydney Region.
We recognise and respect Elders and cultural knowledge holders, past and present, while acknowledging the unique and diverse enduring cultures and histories of all First Nations people. Always was and always will be Aboriginal land.

From: Storan, Kate <Kate.Storan@ecoaus.com.au>
Sent: Tuesday, 17 August 2021 10:48 AM
To: LLS GS Service Mailbox <gs.service@lls.nsw.gov.au>
Subject: Request for Aboriginal stakeholders

To whom it may concern,

Please find attached a request for Aboriginal stakeholders for this project.

Regards,

Kate Storan
Heritage Advisor

T + 92593753

Eco Logical Australia Pty Ltd
Level 3, 101 Sussex Street, Sydney NSW 2000
PO Box Q1082, Queen Victoria Building, NSW 1230

Advertisement

Notice of Aboriginal Stakeholder Consultation

Eco Logical Australia (ELA) has been engaged by Ingham Rural Property Group Pty Ltd to conduct an Aboriginal Cultural Heritage Assessment (ACHA) to support the proposed development at 475 Badgerys Creek Road, Badgerys Creek NSW. This notice is an invitation for Aboriginal organisations or people who hold cultural knowledge relevant to determining the significance of Aboriginal object(s) and/or place(s) in the area of the proposed works to register an interest in a process of community consultation with Council regarding the proposed activity. Interested Aboriginal organisations are invited to contact ELA in writing to: Kate Storan, Eco Logical Australia, Level 3, 101 Sussex Street, Sydney NSW 2000 E:

kate.storan@ecoaus.com.au

P: 02 9259 3753.

Expressions of interest should include current contact details. Closing date for registration is 29 September 2021. Please note Aboriginal people who register an interest will have their details forwarded to Heritage NSW, Department of Premier and Cabinet and Local Aboriginal Land Council (LALC) unless they specify that they do not want their details released.

Please note that under Heritage NSW guidelines registration for consultation does not guarantee employment.

Client contact details: Michael Parkinson, Ingham Rural Property Group Pty Ltd, 0419 638 337,

michaelp@inghamproperty.com.au

INVITATION EXAMPLE AND RAP REGISTRATIONS

From:	Carolyn .H
To:	Storan, Kate; michaelp@inghamproperty.com.au
Subject:	Re: 475 Badgerys Creek Road - Invitation to register for Aboriginal Stakeholder Consultation
Date:	Friday, 10 September 2021 9:08:17 AM
Attachments:	image004.png A1.WC2022.pdf A1.PL2022.pdf CAROLYN A HICKEY COVID-19 Digital Certificate 20210906.pdf

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

INDIGENOUS SERVICES PTY LTD

Contact: Carolyn Hickey
M: 0411650057
E: Cazadirect@live.com
A: 10 Marie Pitt Place, Glenmore Park, NSW 2745
ACN: 639 868 876
ABN: 31 639 868 876

Hi,
Thank you for your email, I would like to register in being involved in all levels of consultation for this project.
Including, Meetings, Reports, Sharing Cultural Information, and available Field Work.

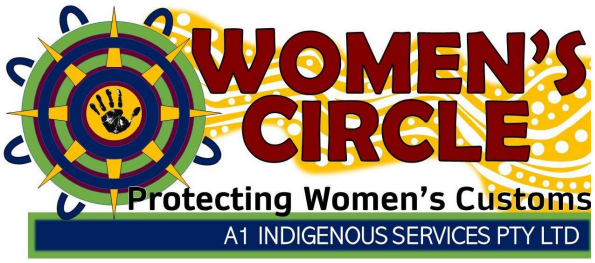
Carolyn Hickey
I am a traditional custodian with over 20 years experience in helping preserve Aboriginal cultural heritage on projects.
I hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and values that exist in the project area.
I have attached A1 Indigenous Services Insurances.

COVID 19 VACCINATION;
Carolyn ; 1st & 2nd Vaccination (Finished) Emu Plains (Vaccination certificate attached)
Steven ; 1st & 2nd Vaccination (Finished) Emu Plains
Julie ; 1st & 2nd Vaccination (Finished) Emu Plains
Anthony ; 1st Vaccination (Done) Mount Druitt
Ronald ; 1st Vaccination (Done) Mount Druitt
Other employees are awaiting appointments.

All staff will comply with all workplace, covid health and safety protocols. (including, Regular Covid Testing if needed)

We would like the Proponent to consider including **A1's, Kawalkan youth and the Women's Circle Employees** for all future field work.

The Kawalkan Youth Program is a designed program created to employ young indigenous youths between the ages of (18-29) years of age.



The Women's Circle was created with the need to always have Experienced Indigenous Women present in all field work.
To aim for not only gender equality in the workplace but, to help identify and protect any women's sacred places.

OUR MISSION

Building strength in aboriginal families, communities, and services.

It is our mission to commit to an innovative approach to a better future for indigenous employment.
Giving our people the opportunity to gain employment in a culturally sensitive work environment also giving them the opportunity to work on country and continue the tradition of protecting and passing down
Cultural knowledge from one generation to the next – continuing the importance of keeping culture.

Please feel free to contact me on details supplied

Kind Regards,
Carolyn Hickey
Managing Director

From: Storan, Kate <Kate.Storan@ecoaus.com.au>
Sent: Thursday, 9 September 2021 9:44 AM
To: cazadirect@live.com <cazadirect@live.com>
Subject: 475 Badgerys Creek Road - Invitation to register for Aboriginal Stakeholder Consultation

Level 3 101 Sussex Street,
Sydney NSW 2000
t: (02) 9259 3800

9 September 2021

Via: cazadirect@live.com

From: Lee Field
To: Storan, Kate
Subject: Re: 475 Badgerys Creek Road - Invitation to register for Aboriginal Stakeholder Consultation
Date: Sunday, 12 September 2021 2:42:58 PM

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

Dear Kate

Barraby Cultural Services would like to register for this project

Regards
Lee Field

On 9 Sep 2021, at 9:44 am, Storan, Kate <Kate.Storan@ecoaus.com.au> wrote:

Level 3 101 Sussex Street,
Sydney NSW 2000
t: (02) 9259 3800

9 September 2021

Via: barrabyculturalservices@gmail.com
Barraby Cultural Services

Dear Lee Field,

Re: 475 Badgerys Creek Road, Badgerys Creek – Invitation to Register for Aboriginal Stakeholder Consultation
Eco Logical Australia (ELA) has been engaged by Ingham Rural Property Group Pty Ltd to conduct an Aboriginal Cultural Heritage Assessment (ACHA) to support the proposed substation and mixed-use development at 475 Badgerys Creek Road, Badgerys Creek NSW (Lot 1 DP1123344) (Figure 1). Please refer to the bottom of this letter for client contact details.

Due to the presence of Aboriginal sites and areas of potential within the study area, council requires further investigation in the form of an ACHA be undertaken to allow for the appropriate management and mitigation of any impacts that may be inflicted on any Aboriginal sites identified within the area.

This letter is an invitation for Aboriginal people who hold cultural knowledge relevant to determining the significance of Aboriginal objects and places in the area of the proposed project to register an interest in a process of community consultation. Your contact details have been provided to ELA by Heritage NSW, Department of Premier and Cabinet (Heritage NSW) as a person / or group who may have a cultural interest in the proposed project.

Interested Aboriginal organisations or people having cultural knowledge relating to this area are invited to register their interest to be consulted in writing to: Kate Storan, Eco Logical Australia, Level 3, 101 Sussex Street, Sydney NSW 2000 – E: kate.storan@ecoaus.com.au - T: 02 9259 3753 by 23 September 2021**.**

Please note under the consultation requirements your details will be forwarded to Heritage NSW and the Local Aboriginal Land Council (LALC) upon receipt of your

From: Butucarbin Heritage
To: Storan, Kate
Subject: Re: 475 Badgerys Creek Road - Invitation to register for Aboriginal Stakeholder Consultation
Date: Thursday, 23 September 2021 11:57:33 PM
Attachments: image004.png
Badgerys Creek- EOI, Eco.docx

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

Hi Kate,
Please see attached registration.

Kind regards,
Lowanna

On Thu, Sep 9, 2021 at 9:45 AM Storan, Kate <Kate.Storan@ecoaus.com.au> wrote:

> Level 3 101 Sussex Street, t: (02) 9259 3800
>
> Sydney NSW 2000
>
> 9 September 2021
>
> **Via: butuheritage@gmail.com**
> **Butucarbin Aboriginal Corporation**
>
> **Dear Jennifer Beale,**
>
> **Re: 475 Badgerys Creek Road, Badgerys Creek – Invitation to Register for Aboriginal Stakeholder Consultation**
>
> Eco Logical Australia (ELA) has been engaged by Ingham Rural Property Group Pty Ltd to conduct an Aboriginal Cultural Heritage Assessment (ACHA) to support the proposed substation and mixed-use development at 475 Badgerys Creek Road, Badgerys Creek NSW (Lot 1 DP1123344) (Figure 1). Please refer to the bottom of this letter for client contact details.
>
> Due to the presence of Aboriginal sites and areas of potential within the study area, council requires further investigation in the form of an ACHA be undertaken to allow for the appropriate management and mitigation of any impacts that may be inflicted on any Aboriginal sites identified within the area.
>
> This letter is an invitation for Aboriginal people who hold cultural knowledge relevant to determining the significance of Aboriginal objects and places in the area of the proposed project to register an interest in a process of community consultation. Your contact details have been provided to ELA by Heritage NSW, Department of Premier and Cabinet (Heritage NSW) as a person / or group who may have a cultural interest in the proposed project.
>
> Interested Aboriginal organisations or people having cultural knowledge relating to this area are invited to register their interest to be consulted in writing to: Kate Storan, Eco Logical Australia, Level 3, 101 Sussex Street, Sydney NSW 2000 – E: kate.storan@ecoaus.com.au - T: 02 9259 3753 by 23 September 2021.
>
> Please note under the consultation requirements your details will be forwarded to Heritage NSW and the Local Aboriginal Land Council (LALC) upon receipt of your registration of interest. If you do not wish to have your details forwarded on to these organisations, please notify ELA when registering your interest in the proposed project. In addition, also note that

From: Clive Freeman
To: Storan, Kate
Subject: Re: 475 Badgerys Creek Road - Invitation to register for Aboriginal Stakeholder Consultation
Date: Thursday, 23 September 2021 7:44:57 PM
Attachments: Workers Insurance Certificate of Currency (2).pdf
Liability Insurance - Freeman Marx Pty Ltd - CofC.pdf
image004.png

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Hi Team,

Please register our interest in the project and please find attached a copy of the relevant documentation (worker comp & Public Liability) for your records.

If you require anything further please don't hesitate to make contact with us.

Kind Regards

Clive Freeman
Managing Director
Freeman & Marx Pty Ltd
(M) 0437721481

Please consider the environment before printing this message

On Thursday, 9 September 2021, 09:45:10 am AEST, Storan, Kate <kate.storan@ecoaus.com.au> wrote:

Level 3 101 Sussex Street,
Sydney NSW 2000

t: (02) 9259 3800

9 September 2021

Via: clive.freeman@y7mail.com
Clive Freeman

Dear Clive Freeman,

Re: 475 Badgerys Creek Road, Badgerys Creek – Invitation to Register for Aboriginal Stakeholder Consultation

Eco Logical Australia (ELA) has been engaged by Ingham Rural Property Group Pty Ltd to conduct an Aboriginal Cultural Heritage Assessment (ACHA) to support the proposed substation and mixed-use development at 475 Badgerys Creek Road, Badgerys Creek NSW (Lot 1 DP1123344) (Figure 1). Please refer to the bottom of this letter for client contact details.

Due to the presence of Aboriginal sites and areas of potential within the study area, council requires further investigation in the form of an ACHA be undertaken to allow for the appropriate management and mitigation of any impacts that may be inflicted on any Aboriginal sites identified within the area.

This letter is an invitation for Aboriginal people who hold cultural knowledge relevant to determining the significance of Aboriginal objects and places in the area of the proposed project to register an interest in a process of community consultation. Your contact details have been provided to ELA by Heritage NSW, Department of Premier and Cabinet (Heritage NSW) as a person / or group who may have a cultural interest in the proposed project.

Interested Aboriginal organisations or people having cultural knowledge relating to this area are invited to

From: Corrroboree Aboriginal Corporation
To: Storan, Kate
Subject: Re: Expression of interest for 475 Badgerys Creek Road -
Date: Thursday, 9 September 2021 12:06:40 PM

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

Dear Kate

Please register Corroboree Aboriginal Corporation. We have worked on projects as Cultural Heritage Officers in the project area. We have participated on projects in the area. My family and other family members have lived in the area and family currently reside in the surrounding areas. We are registering in a full capacity. We are aboriginal people who are culturally & heritage aware. We have the necessary ability, experience, skills, insight and the knowledge to identify artefacts on field work. And as Aboriginal People we connect thru the land, thru our ancestors and our heritage. Therefore we are able participate on all levels. We have worked with many archaeologists across a broad landscape. We have consulted with most archeological companies over many years on projects. We have all the relevant insurances and safety gear. We are all fit, capable and adapt to a vast landscape.
Contact is preferred via email: ***corroboreecorp@bigpond.com.*** *The* contact number, email and contact person is also listed in the signature.
Please do not disclose any of our details to LALC. We have responded for inclusion, to participate on all levels. Thanks.

Kind regards
Marilyn Carroll-Johnson
Director
Corroboree Aboriginal Corporation
Mob: 0415911159
Ph: 0288244324
E: corroboreecorp@bigpond.com
Address: PO Box 3340
ROUSE HILL NSW 2155

> On 9 Sep 2021, at 9:45 am, Storan, Kate <Kate.Storan@ecoaus.com.au> wrote:
>
> Level 3 101 Sussex Street,
> Sydney NSW 2000
> t: (02) 9259 3800
>
> 9 September 2021
>
> **Via: corroboreecorp@bigpond.com**
> **Corroboree Aboriginal Corporation**
>
> **Dear Marilyn Carroll-Johnson,**

From: Glenda Chalker
To: Storan, Kate
Subject: RE: 475 Badgerys Creek Road - Invitation to register for Aboriginal Stakeholder Consultation
Date: Thursday, 9 September 2021 11:03:31 AM
Attachments: image007.emz
image008.png

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

Kate,

Could you please register Cubbitch Barta for this project

Thank you

Glenda Chalker

From: Storan, Kate [mailto:Kate.Storan@ecoaus.com.au]
Sent: Thursday, 9 September 2021 9:45 AM
To: kgchalker@bigpond.com
Subject: 475 Badgerys Creek Road - Invitation to register for Aboriginal Stakeholder Consultation

Level 3 101 Sussex Street,
Sydney NSW 2000

t: (02) 9259 3800

9 September 2021

Via: kgchalker@bigpond.com
Cubbitch Barta

Dear Glenda Chalker,

Re: 475 Badgerys Creek Road, Badgerys Creek – Invitation to Register for Aboriginal Stakeholder Consultation

Eco Logical Australia (ELA) has been engaged by Ingham Rural Property Group Pty Ltd to conduct an Aboriginal Cultural Heritage Assessment (ACHA) to support the proposed substation and mixed-use development at 475 Badgerys Creek Road, Badgerys Creek NSW (Lot 1 DP1123344) (Figure 1). Please refer to the bottom of this letter for client contact details.

Due to the presence of Aboriginal sites and areas of potential within the study area, council requires further investigation in the form of an ACHA be undertaken to allow for the appropriate management and mitigation of any impacts that may be inflicted on any Aboriginal sites identified within the area.

This letter is an invitation for Aboriginal people who hold cultural knowledge relevant to determining the significance of Aboriginal objects and places in the area of the proposed project to register an interest in a process of community consultation. Your contact details have been provided to ELA by Heritage NSW, Department of Premier and Cabinet (Heritage NSW) as a person / or group who may have a cultural interest in the proposed project.

From: justinecoplin@optusnet.com.au
To: Storan, Kate
Subject: reg of interest 475 Badgerys Creek Road, Badgerys Creek
Date: Wednesday, September 15, 2021 2:46:17 PM
Attachments: reg of interest 475 Badgerys Creek Road, Badgerys Creek.pdf
2022 - Standard Template - CERTIFICATE OF CURRENCY - 104600488.pdf
CMLC250- 2022.pdf

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

From: lilly carroll
To: Storan, Kate
Subject: Re: 475 Badgerys Creek Road - Invitation to register for Aboriginal Stakeholder Consultation
Date: Thursday, 9 September 2021 12:59:32 PM
Attachments: image004.png

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

Hi Kate

DNC would like to register an interest into
475 Badgerys Creek Road Badgerys Creek

Kind regards DNC
Paul Boyd & lolly Carroll
0426823944

Sent from Yahoo Mail for iPhone

On Thursday, September 9, 2021, 9:45 am, Storan, Kate <Kate.Storan@ecoaus.com.au> wrote:

Level 3 101 Sussex Street,
Sydney NSW 2000
t: (02) 9259 3800

9 September 2021

Via: didgengunawalclan@yahoo.com.au
Didge Ngunawal Clan

Dear Paul Boyd,

Re: 475 Badgerys Creek Road, Badgerys Creek – Invitation to Register for Aboriginal Stakeholder Consultation

Eco Logical Australia (ELA) has been engaged by Ingham Rural Property Group Pty Ltd to conduct an Aboriginal Cultural Heritage Assessment (ACHA) to support the proposed substation and mixed-use development at 475 Badgerys Creek Road, Badgerys Creek NSW (Lot 1 DP1123344) (Figure 1). Please refer to the bottom of this letter for client contact details.

Due to the presence of Aboriginal sites and areas of potential within the study area, council requires further investigation in the form of an ACHA be undertaken to allow for the appropriate management and mitigation of any impacts that may be inflicted on any Aboriginal sites identified within the area.

This letter is an invitation for Aboriginal people who hold cultural knowledge relevant to determining the significance of Aboriginal objects and places in the area of the proposed project to register an interest in a process of community consultation. Your contact details have been provided to ELA by Heritage NSW, Department of Premier and Cabinet (Heritage NSW) as a person / or group who may have a cultural interest in the proposed project.

Interested Aboriginal organisations or people having cultural knowledge relating to this area are invited to register their interest to be consulted in writing to: Kate Storan, Eco Logical Australia, Level 3, 101 Sussex Street, Sydney NSW 2000 – E:

From: carolyn slater
To: Storan, Kate
Subject: Re: 475 Badgerys Creek Road - Invitation to register for Aboriginal Stakeholder Consultation
Date: Thursday, 9 September 2021 2:33:41 PM
Attachments: image003.emz
image004.png
image004.png

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

Hi Kate

Gilay Consultants has knowledge, respect and connections to the Dharug, Gundungarra and Tharawal areas. I would like to register our interest and be consulted in The 475 Badgerys Creek Road area.

We are able to identify Aboriginal sites and objects across all areas. Cheers,

Thank you

Carolyn Slater

On Thu, 9 Sep. 2021, 9:46 am Storan, Kate, <Kate.Storan@ecoaus.com.au> wrote:

> Level 3 101 Sussex Street, t: (02) 9259 3800
>
> Sydney NSW 2000
>
> 9 September 2021
>
> **Via: cal.slater61@gmail.com**
> **Gilay Consultants**
>
> **Dear Carol Slater,**
>
> **Re: 475 Badgerys Creek Road, Badgerys Creek – Invitation to Register for Aboriginal Stakeholder Consultation**
>
> Eco Logical Australia (ELA) has been engaged by Ingham Rural Property Group Pty Ltd to conduct an Aboriginal Cultural Heritage Assessment (ACHA) to support the proposed substation and mixed-use development at 475 Badgerys Creek Road, Badgerys Creek NSW (Lot 1 DP1123344) (Figure 1). Please refer to the bottom of this letter for client contact details.
>
> Due to the presence of Aboriginal sites and areas of potential within the study area, council requires further investigation in the form of an ACHA be undertaken to allow for the appropriate management and mitigation of any impacts that may be inflicted on any Aboriginal sites identified within the area.
>
> This letter is an invitation for Aboriginal people who hold cultural knowledge relevant to determining the significance of Aboriginal objects and places in the area of the proposed project to register an interest in a process of community consultation. Your contact details have been provided to ELA by Heritage NSW, Department of Premier and Cabinet (Heritage

From: Kaarina Slater
To: Storan, Kate
Subject: Re: 475 Badgerys Creek Road - Invitation to register for Aboriginal Stakeholder Consultation
Date: Saturday, 18 September 2021 3:16:32 PM
Attachments: image004.png

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

Hi Kate

My apologies for the delay in replying.
On behalf of Ngambaa Cultural Connections we would like to register our expression of interest in the upcoming project at badgerys Creek.

Available for upcoming consultation/ field work & more then happy for you to pass on my details to the LAC.

All insurances including

Regards
Kaarina Slater -Director NCC
0402 520 517 (updated number)

Get Outlook for iOS

From: Storan, Kate <Kate.Storan@ecoaus.com.au>
Sent: Thursday, September 9, 2021 9:47:18 AM
To: ngambaaculturalconnections@hotmail.com <ngambaaculturalconnections@hotmail.com>
Subject: 475 Badgerys Creek Road - Invitation to register for Aboriginal Stakeholder Consultation

Level 3 101 Sussex Street,
Sydney NSW 2000

t: (02) 9259 3800

9 September 2021

Via: ngambaaculturalconnections@hotmail.com
Ngambaa Cultural Connections

Dear Kaarina Slater,

Re: 475 Badgerys Creek Road, Badgerys Creek – Invitation to Register for Aboriginal Stakeholder Consultation
Eco Logical Australia (ELA) has been engaged by Ingham Rural Property Group Pty Ltd to conduct an Aboriginal Cultural Heritage Assessment (ACHA) to support the proposed substation and mixed-use development at 475 Badgerys Creek Road, Badgerys Creek NSW (Lot 1 DP1123344) (Figure 1). Please refer to the bottom of this letter for client contact details.

Due to the presence of Aboriginal sites and areas of potential within the study area, council requires further investigation in the form of an ACHA be undertaken to allow for the appropriate management and mitigation of any impacts that may be inflicted on any Aboriginal sites identified within the area.

This letter is an invitation for Aboriginal people who hold cultural knowledge relevant to determining the significance of Aboriginal objects and places in the area of the proposed project to

From: ngunawalhac@gmail.com
To: Storan, Kate
Subject: Re: 475 Badgerys Creek Road - Invitation to register for Aboriginal Stakeholder Consultation
Date: Friday, 17 September 2021 5:13:22 PM
Attachments: image004.png

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

Hi Kate,

Thank you for your email.

Please be informed that we would like to register our interest in the Aboriginal Cultural Heritage Assessment for the proposed substation and mixed-use development at 475 Badgerys Creek Road, Badgerys Creek NSW.

Our consultants are passionate about their Aboriginal heritage and are dedicated to working with Governments, Proponents, Archaeologists and other Aboriginal organisations to ensure that Aboriginal objects and places with Aboriginal cultural heritage significance are appropriately protected.

Please note that we do not wish our details to be provided to the Local Aboriginal Land Council.

We look forward to working with you on this project. If you require any further information please do not hesitate to contact us.

Kind Regards

Dean Delponte
Director
0413186133
ngunawalhac@gmail.com

Ngunawal Heritage Aboriginal Corporation
ICN 4755

Sent from myMail for iOS

Thursday, 9 September 2021, 9:47 am +1000 from Kate.Storan@ecoaus.com.au <Kate.Storan@ecoaus.com.au>:

> Level 3 101 Sussex Street, t: (02) 9259 3800
>
> Sydney NSW 2000
>
> 9 September 2021
>
> **Via: ngunawalhac@gmail.com**
> **Ngunawal Heritage Aboriginal Corporation**
>
> **Dear Dean Delponte,**

From: Philip khan
To: Storan, Kate
Subject: RE: 475 Badgerys Creek Road - Invitation to register for Aboriginal Stakeholder Consultation
Date: Thursday, 9 September 2021 10:04:35 AM
Attachments: 83B98E5E94AD4FBBA589BB2A9700931D.png
C4E20D5DF98C43829A296DC045AAEB90.png
Public Liability Kamilaroi 2021 to 2022.pdf
ICARE workers comp. insurance Kamilaroi Yankuntjatjara Working Group 2021.pdf

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

Hi Kate,

Thank you for informing us that **Eco Logical** will be involved in an Aboriginal Cultural Heritage Assessment at **475 Badgerys Creek Road** &, that you are inviting Aboriginal organisations to register, if they wish too be involved in the community consultation process.

As a senior Aboriginal person for the past 50yrs, I actively participate in the protection of the Aboriginal Cultural Heritage throughout the Sydney Basin, & particularly throughout Western Sydney, on behalf of Kamilaroi Yankuntjatjara Working Group I wish to provide to you my organisation's registration of interest.

I wish to be involved & participate in all levels of consultation/project involvement. I wish to attend all meetings, participate in available field work & receive a copy of the report.

I have attached a copy of Kamilaroi Yankuntjatjara Working group's Public Liability Insurance & Workers Compensation certificate.
Our Rates - $100 per hour, $400 half day & $800 full day (Exc. GST)
Our RAPS have up to 15yrs Cultural Heritage experience in – field work which involves manual excavation (digging), sieving , identifying artefacts, setting up transits, setting up equipment, packing equipment, site surveys & attending meetings.

Should you wish me to provide further information, please do not hesitate to contact me on 0434545982 or Stefeanie on 0451068480.

Kind Regards
Phil Khan

Sent from Mail for Windows 10

From: Storan, Kate

From:	Scott Franks
To:	Storan, Kate; Danny Franks
Subject:	475 Badgerys creek road Badgerys creek
Date:	Tuesday, 14 September 2021 1:02:35 PM
Attachments:	image001.png image002.png image003.png
Importance:	High

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

Dear Kate,

Please be advised the Tocomwall is seeking interest this the 475 Badgerys creek road Badgerys creek, received today in the post today, Also be advised that we do object to our details being provided to the local LALC.

Regards
Scott Franks
CEO

Native Title & Environmental Services Consultant
Native title applicant for the PCWP

Tocomwall Pty Ltd
Po box 145
Miranda NSW 1490
Dharawal Country

m: 0404 171544
e: scott@tocomwall.com.au
www.tocomwall.com.au

The information contained in this e-mail message and any attached files may be confidential and may contain copyright material of Tocomwall Pty Ltd or third parties. Any unauthorised use, disclosure or copying of this e-mail and/or its attachments is prohibited. If you have received this e-mail in error, please notify the sender immediately by return e-mail and delete all copies of the message and attachments. Before opening or using attachments, please check them for viruses or defects. Our liability is limited to resupplying the e-mail and attached files. Content and views expressed in this e-mail may be those of the sender, and are not necessarily endorsed by Tocomwall Pty Ltd.

From: Rodney Gunther
To: Storan, Kate
Subject: Re: 475 Badgerys Creek Road - Invitation to register for Aboriginal Stakeholder Consultation
Date: Monday, 13 September 2021 4:35:48 PM
Attachments: image004.png
Certificate of Currency.pdf
Workers Insurance Certificate of Currency 2022 (1).pdf

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Hi Kate,

Please register Waawaar Awaa Aboriginal Corporation for the Aboriginal Cultural Heritage Assessment at **475 Badgerys Creek Road, Badgerys Creek.**

Waawaar Awaa members have been vaccinated for Covid.

Relevant insurances are attached for future reference.

regards

Rodney Gunther
0410 580 962

On Thu, Sep 9, 2021 at 9:47 AM Storan, Kate <Kate.Storan@ecoaus.com.au> wrote:

> Level 3 101 Sussex Street, t: (02) 9259 3800
>
> Sydney NSW 2000
>
> 9 September 2021
>
> **Via: Waawaar.awaa@gmail.com**
> **Waawaar Awaa Aboriginal Corporation**
>
> **Dear Barry Gunther,**
>
> **Re: 475 Badgerys Creek Road, Badgerys Creek – Invitation to Register for Aboriginal Stakeholder Consultation**
>
> Eco Logical Australia (ELA) has been engaged by Ingham Rural Property Group Pty Ltd to conduct an Aboriginal Cultural Heritage Assessment (ACHA) to support the proposed substation and mixed-use development at 475 Badgerys Creek Road, Badgerys Creek NSW (Lot 1 DP1123344) (Figure 1). Please refer to the bottom of this letter for client contact details.
>
> Due to the presence of Aboriginal sites and areas of potential within the study area, council requires further investigation in the form of an ACHA be undertaken to allow for the appropriate management and mitigation of any impacts that may be inflicted on any Aboriginal sites identified within the area.
>
> This letter is an invitation for Aboriginal people who hold cultural knowledge relevant to determining the significance of Aboriginal objects and places in the area of the proposed project to register an interest in a process of community consultation. Your contact details have been provided to ELA by Heritage NSW, Department of Premier and Cabinet (Heritage NSW) as a person / or group who may have a cultural interest in the proposed project.

From: Wendy Morgan
To: Storan, Kate
Subject: RE: 475 Badgerys Creek Road - Invitation to register for Aboriginal Stakeholder Consultation
Date: Monday, 20 September 2021 1:45:25 PM
Attachments: 2D58E2F319AC45CB8762785531A168E1.png
DCE8DFDBB737406089B3384301E644C9.png

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

Good afternoon,

Guntawang Aboriginal Resources Inc (GARI) would like to express in the Aboriginal Community Stakeholder Consultation.

Both the Cultural and Heritage Officer and the CEO have lived in this area for over 40 yrs

Kind regards

Wendy Morgan
CEO GARI
0414 964 657

Sent from Mail for Windows

From: Storan, Kate
Sent: Thursday, 9 September 2021 9:46 AM
To: wenlissa01@hotmail.com
Subject: 475 Badgerys Creek Road - Invitation to register for Aboriginal Stakeholder Consultation

Level 3 101 Sussex Street,
Sydney NSW 2000

t: (02) 9259 3800

9 September 2021

Via: Wenlissa01@hotmail.com
Guntawang Aboriginal Resources Incorporated

Dear Wendy Morgan,

Re: 475 Badgerys Creek Road, Badgerys Creek – Invitation to Register for Aboriginal Stakeholder Consultation
Eco Logical Australia (ELA) has been engaged by Ingham Rural Property Group Pty Ltd to conduct an Aboriginal Cultural Heritage Assessment (ACHA) to support the proposed substation and mixed-use development at 475 Badgerys Creek Road, Badgerys Creek NSW (Lot 1 DP1123344) (Figure 1). Please refer to the bottom of this letter for client contact details.

Due to the presence of Aboriginal sites and areas of potential within the study area, council requires further investigation in the form of an ACHA be undertaken to allow for the appropriate management and mitigation of any impacts that may be inflicted on any Aboriginal sites identified within the area.

This letter is an invitation for Aboriginal people who hold cultural knowledge relevant to determining the significance of Aboriginal objects and places in the area of the proposed project to

From: Steven Johnson
To: Storan, Kate
Subject: Re: 475 Badgerys Creek Road, Badgerys Creek – Registration
Date: Thursday, 9 September 2021 12:04:12 PM

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

Woka Aboriginal Corporation
Preservation of Culture & Heritage
Mob: 0406991221
Email:wokacorp@yahoo.com

Attention: Kate Storan

Re: Expressing Interest -

Please accept our registration of Woka Aboriginal Corporation for full process on this project. We have worked on projects in the subject area. We are all aboriginal people. We are all experienced Aboriginal Cultural Heritage Site Officers. We have worked with the National Parks & Wildlife, WaterNSW, RMS/TFNSW on numerous projects. We have our history & stories passed down to us by our Elders. We have assisted in surveys, salvage & consulting with archaeologists over a vast number of years. We are experienced in the field of identifying artefacts, Including our learned history and knowledge passed down. We appreciate the opportunity to be part of protecting and preserving our Aboriginal heritage. We are very proud of our heritage and culture passed to us by our Ancestors. We are therefore pleased with being a part of this research and to provide our experience and knowledge.
Our organisation has the current Public liability insurance and is WHS compliant, with all member's holding white cards and required PPE.
All our members are extremely experienced in the identification of Aboriginal artefacts and have worked with numerous Archeologists in field surveys, including test and salvage excavations on fieldwork. We are very passionate about our ancestral land and our conservation of our history matters the upmost to us. We hold strong links to our ancestors, our culture and our heritage. We are motivated to share our history with our current generation and future generations to pass down to our Mob.
Please note we do not want our details forwarded to LALC, please do not release our correspondence. Please register Woka Aboriginal Corporations name for this project. Please feel free to contact me if you have any questions.

Sincerely
Steve
Aboriginal Heritage Custodian
Mob: 0406991221

From: Vicky slater
To: Storan, Kate
Subject: Re: 475 Badgerys Creek Road - Invitation to register for Aboriginal Stakeholder Consultation
Date: Friday, 24 September 2021 11:17:52 AM
Attachments: image004.png
Workers Comp - Certificate of Currency.pdf
Certificate of Currency Public Liability.pdf

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

Good Morning Kate

Wurrumay Pty Ltd would like to register for the above project.

Connection & Knowledge of the project area.
Experienced Indigenous Site Officer with the knowledged of determining the significance of Aboriginal Artefacts & Places.

Current Insurances

From: Storan, Kate <Kate.Storan@ecoaus.com.au>
Sent: Thursday, 9 September 2021 9:48 AM
To: wurrumay@hotmail.com <wurrumay@hotmail.com>
Subject: 475 Badgerys Creek Road - Invitation to register for Aboriginal Stakeholder Consultation

Level 3 101 Sussex Street,
Sydney NSW 2000

t: (02) 9259 3800

9 September 2021

Via: wurrumay@hotmail.com
Wurrumay Pty Ltd

Dear Vicky Slater,

Re: 475 Badgerys Creek Road, Badgerys Creek – Invitation to Register for Aboriginal Stakeholder Consultation
Eco Logical Australia (ELA) has been engaged by Ingham Rural Property Group Pty Ltd to conduct an Aboriginal Cultural Heritage Assessment (ACHA) to support the proposed substation and mixed-use development at 475 Badgerys Creek Road, Badgerys Creek NSW (Lot 1 DP1123344) (Figure 1). Please refer to the bottom of this letter for client contact details.

Due to the presence of Aboriginal sites and areas of potential within the study area, council requires further investigation in the form of an ACHA be undertaken to allow for the appropriate management and mitigation of any impacts that may be inflicted on any Aboriginal sites identified within the area.

This letter is an invitation for Aboriginal people who hold cultural knowledge relevant to determining the significance of Aboriginal objects and places in the area of the proposed project to register an interest in a process of community consultation. Your contact details have been provided to ELA by Heritage NSW, Department of Premier and Cabinet (Heritage NSW) as a person / or group who may have a cultural interest in the proposed project.

From: Arika J
To: Storan, Kate
Subject: Re: 475 Badgerys Creek Road - Invitation to register for Aboriginal Stakeholder Consultation
Date: Tuesday, 21 September 2021 11:59:38 AM
Attachments: image004.png

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

Dear Kate,

Yulay Cultural service's would like to register our interest in the above project and be involved in all aspects of the project.

Kind regards,
Arika Jalomaki
0481 251 385

On Thu, 9 Sep 2021 at 9:48 am, Storan, Kate <Kate.Storan@ecoaus.com.au> wrote:

> Level 3 101 Sussex Street,
>
> Sydney NSW 2000
> t: (02) 9259 3800
>
> 9 September 2021
>
> **Via: yulayculturalservices@gmail.com**
> **Yulay Cultural Services**
>
> **Dear Arika Jalomaki,**
>
> **Re: 475 Badgerys Creek Road, Badgerys Creek – Invitation to Register for Aboriginal Stakeholder Consultation**
>
> Eco Logical Australia (ELA) has been engaged by Ingham Rural Property Group Pty Ltd to conduct an Aboriginal Cultural Heritage Assessment (ACHA) to support the proposed substation and mixed-use development at 475 Badgerys Creek Road, Badgerys Creek NSW (Lot 1 DP1123344) (Figure 1). Please refer to the bottom of this letter for client contact details.
>
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>
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>
> Interested Aboriginal organisations or people having cultural knowledge relating to this

From: Bo Field
To: Storan, Kate
Subject: Re: 475 Badgerys Creek Road - Invitation to register for Aboriginal Stakeholder Consultation
Date: Sunday, 12 September 2021 3:00:57 PM
Attachments: image004.png

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

Dear Kate

Yurrandaali would like to regsiter for this project.

Regards,

Bo Field - Manager
Yurrandaali Cultural Services
0403 048 263 | yurrandaali_cs@hotmail.com

From: Storan, Kate <Kate.Storan@ecoaus.com.au>
Sent: Thursday, 9 September 2021 9:48 AM
To: yurrandaali_cs@hotmail.com <yurrandaali_cs@hotmail.com>
Subject: 475 Badgerys Creek Road - Invitation to register for Aboriginal Stakeholder Consultation

Level 3 101 Sussex Street,
Sydney NSW 2000
t: (02) 9259 3800

9 September 2021

Via: yurrandaali_cs@hotmail.com
Yurrandaali

Dear Bo Field,

Re: 475 Badgerys Creek Road, Badgerys Creek – Invitation to Register for Aboriginal Stakeholder Consultation
Eco Logical Australia (ELA) has been engaged by Ingham Rural Property Group Pty Ltd to conduct an Aboriginal Cultural Heritage Assessment (ACHA) to support the proposed substation and mixed-use development at 475 Badgerys Creek Road, Badgerys Creek NSW (Lot 1 DP1123344) (Figure 1). Please refer to the bottom of this letter for client contact details.

Due to the presence of Aboriginal sites and areas of potential within the study area, council requires further investigation in the form of an ACHA be undertaken to allow for the appropriate management and mitigation of any impacts that may be inflicted on any Aboriginal sites identified within the area.

This letter is an invitation for Aboriginal people who hold cultural knowledge relevant to determining the significance of Aboriginal objects and places in the area of the proposed project to register an interest in a process of community consultation. Your contact details have been provided to ELA by Heritage NSW, Department of Premier and Cabinet (Heritage NSW) as a person / or group who may have a cultural interest in the proposed project.

Interested Aboriginal organisations or people having cultural knowledge relating to this area are

4.1.6 HERITAGE NSW AND LALC NOTIFICATION

Heritage NSW, Department of Premier and Cabinet
via: heritagemailbox@environment.nsw.gov.au

ECO LOGICAL AUSTRALIA PTY LTD
ABN 87 096 512 088
www.ecoaus.com.au

12 October 2021

To Whom It May Concern,

RE: RAP List – 475 Badgerys Creek Road, Badgerys Creek, Aboriginal Cultural Heritage Assessment

Eco Logical Australia (ELA) has been engaged by Ingham Rural Property Group Pty Ltd to undertake an Aboriginal Cultural Heritage Assessment (ACHA) to support the proposed development at 475 Badgerys Creek Road, Badgerys Creek NSW. In accordance with Section 4.1.6 of the *Aboriginal cultural heritage consultation requirements for proponents 2010* please find below the list of all Registered Aboriginal Parties (RAPs) for the project:

Organisation Identified by Heritage NSW	Contact Name
Didge Ngunawal Clan	Paul Boyd & Lilly Carroll
Cubbitch Barta	Glenda Chalker
Kamilaroi Yankuntjatjara Working Group	Phil Khan
Gilay Consultants	Carolyn Slater
A1 Indigenous Services	Carolyn Hickey
Barraby Cultural Services	Lee Field
Yurrandaali	Bo Field
Waawaar Awaa	Rodney Gunther
Darug Custodian Aboriginal Corporation	Justine Coplin
Ngambaa Cultural Connections	Kaarina Slater
Gandangara Local Aboriginal Land Council	Darren Duncan
Guntawang	Wendy Morgan
Yulay	Arika Jalomaki
Clive Freeman	Clive Freeman
Butucarbin	Lowanna Gibson
Wurrumay	Vicky Slater

Also included is a copy of the Step 4.1.3 advertisement providing an invitation to register interest in the project. The advertisement was published in print in the *Liverpool City Champion* on 15 September 2021. If you would like to discuss any of these details, or have any comments, please do not hesitate to contact me at kate.storan@ecoaus.com.au or 02 9259 3753.

Kind regards,

Kate Storan, ELA Archaeologist

Notice of Aboriginal Stakeholder Consultation
Eco Logical Australia (ELA) has been engaged by Ingham Rural Property Group Pty Ltd to conduct an Aboriginal Cultural Heritage Assessment (ACHA) to support the proposed development at 475 Badgerys Creek Road, Badgerys Creek NSW. This notice is an invitation for Aboriginal organisations or people who hold cultural knowledge relevant to determining the significance of Aboriginal object(s) and/or place(s) in the area of the proposed works to register an interest in a process of community consultation with Council regarding the proposed activity. Interested Aboriginal organisations are invited to contact ELA in writing to: Kate Storan, Eco Logical Australia, Level 3, 101 Sussex Street, Sydney NSW 2000 E: kate.storan@ecoaus.com.au P: 02 9259 3753.

Expressions of interest should include current contact details. Closing date for registration is 29 September 2021. Please note Aboriginal people who register an interest will have their details forwarded to Heritage NSW, Department of Premier and Cabinet and Local Aboriginal Land Council (LALC) unless they specify that they do not want their details released.

Please note that under Heritage NSW guidelines registration for consultation does not guarantee employment.
Client contact details: Michael Parkinson, Ingham Rural Property Group Pty Ltd, 0419 638 337, michaelp@inghamproperty.com.au

Gandangara Local Aboriginal Land Council
via: finance@glalc.org.au

ECO LOGICAL AUSTRALIA PTY LTD
ABN 87 096 512 088
www.ecoaus.com.au

12 October 2021

To Whom It May Concern,

RE: RAP List – 475 Badgerys Creek Road, Badgerys Creek, Aboriginal Cultural Heritage Assessment

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Organisation Identified by Heritage NSW	Contact Name
Didge Ngunawal Clan	Paul Boyd & Lilly Carroll
Cubbitch Barta	Glenda Chalker
Kamilaroi Yankuntjatjara Working Group	Phil Khan
Gilay Consultants	Carolyn Slater
A1 Indigenous Services	Carolyn Hickey
Barraby Cultural Services	Lee Field
Yurrandaali	Bo Field
Waawaar Awaa	Rodney Gunther
Darug Custodian Aboriginal Corporation	Justine Coplin
Ngambaa Cultural Connections	Kaarina Slater
Gandangara Local Aboriginal Land Council	Darren Duncan
Guntawang	Wendy Morgan
Yulay	Arika Jalomaki
Clive Freeman	Clive Freeman
Butucarbin	Lowanna Gibson
Wurrumay	Vicky Slater

Also included is a copy of the Step 4.1.3 advertisement providing an invitation to register interest in the project. The advertisement was published in print in the *Liverpool City Champion* on 15 September 2021. If you would like to discuss any of these details, or have any comments, please do not hesitate to contact me at kate.storan@ecoaus.com.au or 02 9259 3753.

Kind regards,

Kate Storan, ELA Archaeologist

Notice of Aboriginal Stakeholder Consultation
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Expressions of interest should include current contact details. Closing date for registration is 29 September 2021. Please note Aboriginal people who register an interest will have their details forwarded to Heritage NSW, Department of Premier and Cabinet and Local Aboriginal Land Council (LALC) unless they specify that they do not want their details released.

Please note that under Heritage NSW guidelines registration for consultation does not guarantee employment.
Client contact details: Michael Parkinson, Ingham Rural Property Group Pty Ltd, 0419 638 337, michaelp@inghamproperty.com.au

ACHA METHODOLOGY RAP REVIEW

DARUG CUSTODIAN
ABORIGINAL CORPORATION

DARUG CUSTODIAN
ABORIGINAL
CORPORATION

PO BOX 81 WINDSOR 2756
PHONE: 0245775181 FAX: 0245775098
MOBILE: 0415770163 Leanne Watson
0414962766 Justine Coplin
EMAIL: mulgokiwi@bigpond.com / justinecoplin@optusnet.com.au

Attention: Ecological **Date:22/2/22**

Subject: 475 Badgerys Creek Road

Dear Kate

Our group is a non- profit organisation that has been active for over forty years in Western Sydney, we are a Darug community group with over three hundred members. The main aim in our constitution is the care of Darug sites, places, wildlife and to promote our culture and provide education on the Darug history.

Our group promotes Darug Culture and works on numerous projects that are culturally based as a proud and diverse group. It has been discussed by our group and with many consultants and researches that our history is generic and is usually from an early colonists perspective or solely based on archaeology and sites. These histories are adequate but they lack the people's stories and parts of important events and connections of the Darug people and also other Aboriginal people that now call this area home and have done so for numerous generations.

This area is significant to the Darug people due to the evidence of continued occupation, within close proximity to this project site there is a complex of significant sites.

Landscapes and landforms are significant to us for the information that they hold and the connection to Darug people. Aboriginal people (Darug) had a complex lifestyle that was based on respect and belonging to the land, all aspects of life and survival did not impact on

the land but helped to care for and conserve land and the sustenance that the land provided. As Darug people moved through the land there were no impacts left, although there was evidence of movement and lifestyle, the people moved through areas with knowledge of their areas

and followed signs that were left in the landscape. Darug people knew which areas were not to be entered and respected the areas that were sacred.

Knowledge of culture, lifestyle and lore have been part of Darug people's lives for thousands of years, this was passed down to the next generations and this started with birth and continued for a lifetime. Darug people spent a lifetime learning and as people grew older they passed through stages of knowledge, elders became elders with the learning of stages of knowledge not by their age, being an elder is part of the kinship system this was a very complicated system based on respect.

Darug sites are all connected, our country has a complex of sites that hold our heritage and past history, evidence of the Darug lifestyle and occupation are all across our country, due to the rapid development of Sydney many of our sites have been destroyed, our sites are thousands of years old and within the short period of time that Australia has been developed pre contact our sites have disappeared.

The *Aboriginal cultural heritage consultation requirements for proponents* Section 4.1.8 refers to "Aboriginal organisations representing Aboriginal people who hold cultural knowledge". Recent consultation meetings have revealed that many of these Aboriginal organisations and individuals do not hold cultural knowledge of the Western Sydney area. The increasing involvement of such parties in cultural heritage management means that genuine local Aboriginal organisations are unable to properly care for our cultural heritage.

Many Aboriginal organisations listed in the OEH response letter do not contribute to the Aboriginal community of Western Sydney. Individuals listed in the OEH response letter do not represent the community and while they may be consulted with, should not be employed for their own personal financial benefit.

Our organisation is committed to providing benefits back to our local Aboriginal community through such measures as funding the local Aboriginal juniors' touch football team, painting classes for the local children and donating money to various charities. Employment in cultural heritage activities is source of income that organisations such as ours can use to contribute to beneficial activities and support within the community.

Darug custodian Aboriginal Corporation's site officers have knowledge of Darug land, Darug Culture,Oral histories, landforms, sites, Darug history, wildlife, flora and legislative requirements. We have worked with consultants and developers for many years in Western

Sydney (Darug Land) for conservation, site works, developments and interpretation/education strategie.

Darug Custodian Aboriginal Corporation have received and reviewed the report for 475 Badgerys Creek Road.

We support the recommendations set out in this report.

Please contact us with all further enquiries on the above contacts.

Regards

Justine Coplin

Norfolk, Jennifer

From: lilly carroll <didgengunawalclan@yahoo.com.au>
Sent: Friday, 11 February 2022 4:42 PM
To: Storan, Kate; darrenjohnduncan@gmail.com
Subject: Re: 475 Badgerys Creek Road ACHA - Stage 1 - RAP Review of Methodology

Follow Up Flag: Follow up
Flag Status: Flagged

⚠ **CAUTION:** This email originated from an external sender. Verify the source before opening links or attachments. ⚠

Hi Kate

DNC worked out here late last year along the creekline, near the old facility and tower and would love to work with you on this project to assist you and is happy for this project to proceed

Kind regards
Paul Boyd & Lilly carroll
Directors DNC
0426823944

Sent from Yahoo Mail for iPhone

On Friday, February 11, 2022, 4:23 pm, Storan, Kate <Kate.Storan@ecoaus.com.au> wrote:

> Dear Registered Stakeholder,
>
> Thank you for registering your interest in the Aboriginal Cultural Heritage Assessment of 475 Badgerys Creek Road, Badgerys Creek, NSW. The proposed development of this site has been separated into two (2) stages; all information provided in this email refers to Stage 1 of the project.

Norfolk, Jennifer

From: Ngunawal Heritage Aboriginal Corporation <ngunawalhac@gmail.com>
Sent: Monday, 14 February 2022 9:58 AM
To: Storan, Kate
Subject: Re: 475 Badgerys Creek Road ACHA - Stage 1 - RAP Review of Methodology

Follow Up Flag: Follow up
Flag Status: Flagged

⚠ **CAUTION:** This email originated from an external sender. Verify the source before opening links or attachments. ⚠

Hi Kate,

Thank you for providing us with a copy of the project information and sampling methodology.

We agree with the methodology outlined for this project and we would also like to inform you that our preference would be for any cultural material that is identified to be reburied on site in a suitable location (if possible) which would not be impacted by any future development.

Post subsurface excavations, can you please provide any information on whether the Ingham Property Group Project Scope of Works for stage 1 includes the removal of bulk earthworks from the site as part of the development. In particular the top layer of excavated material (where artefacts are likely to be found). Will this material be maintained onsite and used as part of the landscape development or removed from site and taken elsewhere by the proponent/contractor?

Please also be advised that Ngunawal Heritage Aboriginal Corporation has changed its business name to Mundawari Heritage Consultants Pty Ltd. Therefore can you please send through any future correspondence regarding this project to myself using the below email address.

mundawari.hc@gmail.com

We thank you in advance for your assistance in this matter.

Kind Regards

Dean Delponte

Director
0413186133
ngunawalhac@gmail.com

Ngunawal Heritage Aboriginal Corporation

IMPORTANT: The contents of this email and any attachments are confidential. They are intended for the named recipient(s) only. If you have received this email by mistake, please notify the sender immediately and do not disclose the contents to anyone or make copies thereof.

On Fri, Feb 11, 2022 at 4:23 PM Storan, Kate <Kate.Storan@ecoaus.com.au> wrote:

> Dear Registered Stakeholder,
>
> Thank you for registering your interest in the Aboriginal Cultural Heritage Assessment of 475 Badgerys Creek Road, Badgerys Creek, NSW. The proposed development of this site has been separated into two (2) stages; all information provided in this email refers to Stage 1 of the project.
>
> Please find attached the Archaeological Assessment conducted of the site, as well as the proposed methodology for test excavation based on this assessment. If you wish to provide comment or request changes to this methodology please send your feedback to the details listed below by 11 March 2022.
>
> Kind Regards,
>
> **Kate Storan**
>
> Archaeologist

Norfolk, Jennifer

From: Arika J <yulayculturalservices@gmail.com>
Sent: Thursday, 17 February 2022 4:02 PM
To: Storan, Kate
Subject: Re: 475 Badgerys Creek Road ACHA - Stage 1 - RAP Review of Methodology

Follow Up Flag: Follow up
Flag Status: Flagged

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Dear Kate,

On behalf of Yulay cultural service's I have read and agree with the methodology for this project and would like to be involved in up coming test excavations.

Kind regards,

Arika Jalomaki
Manager
0481251385

On Fri, 11 Feb 2022 at 4:23 pm, Storan, Kate <Kate.Storan@ecoaus.com.au> wrote:

> Dear Registered Stakeholder,
>
> Thank you for registering your interest in the Aboriginal Cultural Heritage Assessment of 475 Badgerys Creek Road, Badgerys Creek, NSW. The proposed development of this site has been separated into two (2) stages; all information provided in this email refers to Stage 1 of the project.
>
> Please find attached the Archaeological Assessment conducted of the site, as well as the proposed methodology for test excavation based on this assessment. If you wish to provide comment or request changes to this methodology please send your feedback to the details listed below by 11 March 2022.

Norfolk, Jennifer

From: Bo Field <yurrandaali_cs@hotmail.com>
Sent: Tuesday, 15 February 2022 7:37 PM
To: Storan, Kate
Subject: Re: 475 Badgerys Creek Road ACHA - Stage 1 - RAP Review of Methodology

Follow Up Flag: Follow up
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Good afternoon Kate,

I on behalf of Yurrandaali has read and agrees with the proposed test excavation methodology for this project.

Should you require any assistance from experiences RAPS in the test excavations please let me know.

Regards,

Bo Field
Yurrandaali
0403 048 263 | yurrandaali_cs@hotmail.com

From: Storan, Kate <Kate.Storan@ecoaus.com.au>
Sent: Friday, 11 February 2022 4:22 PM
To: darrenjohnduncan@gmail.com <darrenjohnduncan@gmail.com>
Subject: 475 Badgerys Creek Road ACHA - Stage 1 - RAP Review of Methodology

Dear Registered Stakeholder,

Norfolk, Jennifer

From: Carolyn .H <cazadirect@live.com>
Sent: Monday, 21 February 2022 3:56 PM
To: Storan, Kate
Subject: Re: 475 Badgerys Creek Road ACHA - Stage 1 - RAP Review of Methodology
Attachments: 2NSW Member Certificate 2022 - A1 INDIGENOUS SERVICES PTY LTD.pdf; A1.WC2023.pdf; A1.PL2023.pdf

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A1 INDIGENOUS SERVICES PTY LTD

Contact: **Carolyn Hickey**
Mobile: **0411650057**
Email: **Cazadirect@live.com**
Address: **10 Marie Pitt Place, Glenmore Park, NSW 2745**
ACN: **639 868 876**
ABN: **31 639 868 876**

Hi Kate,
I have reviewed the document and support the Information and Methodology.

We would like the you to consider including **A1's employees, Kawalkan workforce and the Women's Circle Employees** for all future field work.

Norfolk, Jennifer

From: Philip khan <philipkhan.acn@live.com.au>
Sent: Monday, 28 February 2022 11:00 AM
To: Storan, Kate
Subject: Re: 475 Badgerys Creek Road ACHA - Stage 1 - RAP Review of Methodology

Follow Up Flag: Follow up
Flag Status: Flagged

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Dear Kate,

Thank you for your ACHA methodology for 475 Badgerys Creek Road, Badgerys Creek, NSW. The whole study area is highly significance to us Aboriginal people due to the water ways that run close by. We have walked this land for thousands of years and continue to do so today, we live off mother earth and we care for her. Hunting and gathering would have taken place, suggesting camping could have taken place. We hold a deep connection to the land and the skies and the water ways.

The areas that look good to us today were valued back then to the Aboriginal people. It is important that we grab hold of what we have left from our old people and honor them. We can do this through interpretation within the development through artwork, 3D replicas of artefacts on display, native gardens and digital display or app. It is just as important to recognise the Aboriginal people and to educated the wider community.

We would like to agree to your recommendations and support your report, we look forward to working alongside you on this project.

Kind Regards

Kadibulla Khan

Norfolk, Jennifer

From: Wendy Morgan <wenlissa01@hotmail.com>
Sent: Monday, 28 February 2022 2:10 PM
To: Storan, Kate
Subject: RE: 475 Badgerys Creek Road ACHA - Stage 1 - RAP Review of Methodology

Follow Up Flag: Follow up
Flag Status: Flagged

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Hi Kate,

GARI agrees with the methodology as to stage (2) of this project for the test excavation based on this assessment.

GARI would like to work with you on this site, we have a very experience and respected Cultural and Heritage Officer Brad Maybury who has worked in this field for over 10yrs.

He has also worked along side numerous archaeologist on other projects and was involved in the project at the beginning as the Gandangara Local Aboriginal Land Council Senior Manager of Cultural and Heritage.

We have all of the relevant insurance required both Workers Comp and Public Liability Insurance for sites work along with WHS equipment.

Warm regards

Wendy Morgan
CEO GARI
0414 964 657

Sent from Mail for Windows

Norfolk, Jennifer

From: Corrroboree Aboriginal Corporation <corroboreecorp@bigpond.com>
Sent: Tuesday, 15 March 2022 7:31 PM
To: Storan, Kate
Subject: Re: 475 Badgerys Creek Road ACHA - Stage 1 - RAP Review of Methodology
Attachments: 19853 Stage 1; 475 Badgerys Creek Road Badgerys Creek - Methodology v1.pdf; 19853 Stage 1; 475 Badgerys Creek Road Badgerys Creek - Archaeological Assessment v6.pdf

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Hi Kate
We agree with the review

Kind regards
Marilyn Carroll-Johnson
Director
Corroboree Aboriginal Corporation
Mob: 0415911159
Ph: 0288244324
E: corroboreecorp@bigpond.com
Address: PO Box 3340
ROUSE HILL NSW 2155

CAC acknowledges the Traditional Owners of Country throughout Australia and their continuing connection to land, sea & community. We pay our respects to them and their cultures, to the Elders past and present, and emerging.

> On 11 Feb 2022, at 4:22 pm, Storan, Kate <Kate.Storan@ecoaus.com.au> wrote:
>
> Dear Registered Stakeholder,

ACHA REVIEW RAP RESPONSES

Norfolk, Jennifer

From: Carolyn .H <cazadirect@live.com>
Sent: Thursday, 6 October 2022 10:42 AM
To: Norfolk, Jennifer
Subject: Re: Draft ACHA for 475 Badgerys Creek Rood, Badgerys Creek - Planning proposal

⚠ **CAUTION:** This email originated from an external sender. Verify the source before opening links or attachments. ⚠

A1 INDIGENOUS SERVICES PTY LTD

Contact: Carolyn Hickey
Mobile: 0411650057
Email: Cazadirect@live.com
Address: 10 Marie Pitt Place, Glenmore Park, NSW 2745
ACN: 639 868 876
ABN: 31 639 868 876

Hi,
I have reviewed the document and support the Information and Draft ACHA for 475 Badgerys Creek Road, I am also happy with the Artefacts to be reburied in a safe location.

About the founder Carolyn Hickey
I am a **T**raditional Owner and Custodian with over 20 years experience in helping preserve Aboriginal cultural heritage on projects.

DARUG CUSTODIAN
ABORIGINAL CORPORATION

DARUG CUSTODIAN
ABORIGINAL
CORPORATION

PO BOX 81 WINDSOR 2756
PHONE: 0245775181 FAX: 0245775098
MOBILE: 0415770163 Leanne Watson
0414962766 Justine Coplin
EMAIL: mulgokiwi@bigpond.com / justinecoplin@optusnet.com.au

Attention: eco logical **Date:**

Subject: 475 Badgerys Creek Rood, Badgerys Creek

Dear Jennifer

Our group is a non- profit organisation that has been active for over forty years in Western Sydney, we are a Darug community group with over three hundred members. The main aim in our constitution is the care of Darug sites, places, wildlife and to promote our culture and provide education on the Darug history.

Our group promotes Darug Culture and works on numerous projects that are culturally based as a proud and diverse group. It has been discussed by our group and with many consultants and researches that our history is generic and is usually from an early colonists perspective or solely based on archaeology and sites. These histories are adequate but they lack the people's stories and parts of important events and connections of the Darug people and also other Aboriginal people that now call this area home and have done so for numerous generations.

This area is significant to the Darug people due to the evidence of continued occupation, within close proximity to this project site there is a complex of significant sites.

Landscapes and landforms are significant to us for the information that they hold and the connection to Darug people. Aboriginal people (Darug) had a complex lifestyle that was based on respect and belonging to the land, all aspects of life and survival did not impact on

the land but helped to care for and conserve land and the sustenance that the land provided. As Darug people moved through the land there were no impacts left, although there was evidence of movement and lifestyle, the people moved through areas with knowledge of their areas

and followed signs that were left in the landscape. Darug people knew which areas were not to be entered and respected the areas that were sacred.

Knowledge of culture, lifestyle and lore have been part of Darug people's lives for thousands of years, this was passed down to the next generations and this started with birth and continued for a lifetime. Darug people spent a lifetime learning and as people grew older they passed through stages of knowledge, elders became elders with the learning of stages of knowledge not by their age, being an elder is part of the kinship system this was a very complicated system based on respect.

Darug sites are all connected, our country has a complex of sites that hold our heritage and past history, evidence of the Darug lifestyle and occupation are all across our country, due to the rapid development of Sydney many of our sites have been destroyed, our sites are thousands of years old and within the short period of time that Australia has been developed pre contact our sites have disappeared.

The *Aboriginal cultural heritage consultation requirements for proponents* Section 4.1.8 refers to "Aboriginal organisations representing Aboriginal people who hold cultural knowledge". Recent consultation meetings have revealed that many of these Aboriginal organisations and individuals do not hold cultural knowledge of the Western Sydney area. The increasing involvement of such parties in cultural heritage management means that genuine local Aboriginal organisations are unable to properly care for our cultural heritage.

Many Aboriginal organisations listed in the Heritage response letter do not contribute to the Aboriginal community of Western Sydney. Individuals listed in the Heritage response letter do not represent the community and while they may be consulted with, should not be employed for their own personal financial benefit.

Our organisation is committed to providing benefits back to our local Aboriginal community through such measures as funding the local Aboriginal juniors' touch football team, painting classes for the local children and donating money to various charities. Employment in cultural heritage activities is source of income that organisations such as ours can use to contribute to beneficial activities and support within the community.

Darug custodian Aboriginal Corporation's site officers have knowledge of Darug land, Darug Culture,Oral histories, landforms, sites, Darug history, wildlife, flora and legislative requirements. We have worked with consultants and developers for many years in Western

Sydney (Darug Land) for conservation, site works, developments and interpretation/education strategie.

Darug Custodian Aboriginal Corporation have received and reviewed the report for 475 Badgerys Creek Rood, Badgerys Creek.

We support the recommendations set out in this report.

Our Country is the traditional land of the Darug people, who speak the Darug language.
Our Country isn't defined or identified by government bodies and their agencies.
These agencies and bodies do not support the people of our Country and are not the traditional custodians and therefore should not be in a position to speak for the Darug people, Darug land or Darug knowledge.
Maintaining cultural protocols is fundamental in obtaining knowledge and invoking discussion for Country. To speak directly to and consult with the people of traditional lands, in this case the Darug people, is necessary to maintain correct protocol and acquire accurate knowledge.
It is culturally inappropriate for any Non-Darug person or group/s to speak on Darug cultural heritage.
Darug people are the only people that have the authority to speak for Darug Country, and hence should be the only peoples that can and must speak for Darug Country.

Please contact us with all further enquiries on the above contacts.

Regards

Justine Coplin

Norfolk, Jennifer

From: Wendy Morgan <wenlissa01@hotmail.com>
Sent: Tuesday, 20 September 2022 3:25 PM
To: Norfolk, Jennifer
Subject: RE: Draft ACHA for 475 Badgerys Creek Rood, Badgerys Creek - Planning proposal

Follow Up Flag: Follow up
Flag Status: Flagged

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Hi Jennifer,

Thank you for sending through the draft ACHA.

I note that Guntawang has been misspelt in the RAP consultation group can you please change it.

Guntawang would also like to support all artefacts should be reburied in a safe and protected area of the site, with access for the boarder community and articles saying what some of the artefacts were used for. This process is respectful to the aboriginal community and could be an education tool for non aboriginal people.

Kind regards

Wendy Morgan
CEO GARI
Wenlissa01@hotmail.com
0414 964 657

Sent from Mail for Windows

From: Norfolk, Jennifer
Sent: Friday, 16 September 2022 5:56 PM
To: darrenjohnduncan@gmail.com
Subject: Draft ACHA for 475 Badgerys Creek Rood, Badgerys Creek - Planning proposal

Dear Aboriginal stakeholders

Please find attached the draft Aboriginal Cultural Heritage Assessment for 475 Badgerys Creek Road.

The assessment has been undertaken to inform masterplan for the study area so as to amend the current precinct plan. The design has taken into consideration the development controls for the precinct and many of the Aboriginal sites and areas of high to moderate cultural significance are not expected to be impacted and have been retained within areas designated as open space.

If there are any preferences for long term management of the Aboriginal objects retrieved from the archaeological investigations please let us know. Previous assessment for the wider area have recommended a centralised keeping place for all Aboriginal objects within the Aerotropolis Precinct so as to be accessible to the Aboriginal community. Or if it is preferential we can investigate a safe reburial location within the study area.

An AHIP will be required as several AHIMS sites (isolated artefacts) have been registered across the study area and due to the time between registration and this assessment they could not be reidentified so impacts are unavoidable.

If you have any cultural knowledge for the study area or any comments on the assessment please provide any responses to this email

Thank you for your participation and contributions to this project so far

Regards,

Jennifer Norfolk
Senior Heritage Advisor / Archaeologist

Eco Logical Australia Pty Ltd
Level 3, 101 Sussex Street, Sydney NSW 2000
PO Box Q1082, Queen Victoria Building, NSW 1230

☎ T +61 2 9259 3792
jennifer.norfolk@ecoaus.com.au
http://www.ecoaus.com.au

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Norfolk, Jennifer

From: Phil Khan <philipkhan.acn@live.com.au>
Sent: Thursday, 6 October 2022 4:16 PM
To: Norfolk, Jennifer
Subject: RE: Draft ACHA for 475 Badgerys Creek Rood, Badgerys Creek - Planning proposal

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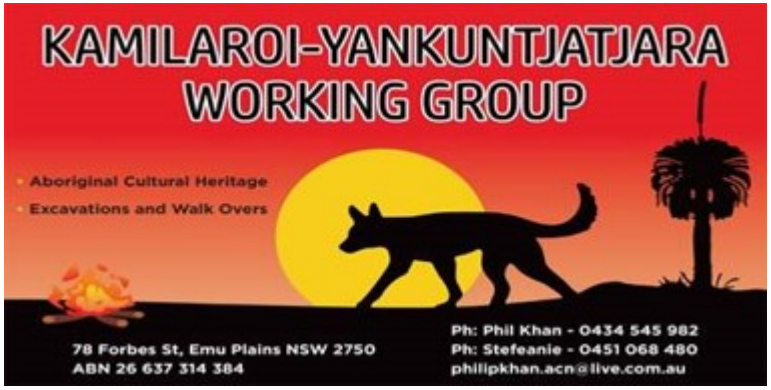
Hi Jennifer,

Thank you for you draft ACHA report regarding 475 Badgerys Creek Rd, Badgerys Creek. We agree and support your recommendations.

Kind Regards
Phil Khan



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From: Norfolk, Jennifer <Jennifer.Norfolk@ecoaus.com.au>
Sent: Friday, September 16, 2022 5:55:36 PM
To: darrenjohnduncan@gmail.com <darrenjohnduncan@gmail.com>
Subject: Draft ACHA for 475 Badgerys Creek Rood, Badgerys Creek - Planning proposal

Waawaar Awaa Aboriginal Corporation

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RE: 475 Badgerys Creek Road, Badgerys Creek.

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Recommendation 2 - Targeted AHIP

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Recommendation 3 - Management of Aboriginal objects□

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Recommendation 4□–□Interpretation of Aboriginal Cultural Values

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Recommendation 5 - Submit ACHA to AHIMS

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Norfolk, Jennifer

From: Wendy Morgan <wenlissa01@hotmail.com>
Sent: Tuesday, 20 September 2022 3:25 PM
To: Norfolk, Jennifer
Subject: RE: Draft ACHA for 475 Badgerys Creek Rood, Badgerys Creek - Planning proposal

Follow Up Flag: Follow up
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Subject: Draft ACHA for 475 Badgerys Creek Rood, Badgerys Creek - Planning proposal

DARUG CUSTODIAN
ABORIGINAL CORPORATION

DARUG CUSTODIAN
ABORIGINAL
CORPORATION

PO BOX 81 WINDSOR 2756
PHONE: 0245775181 FAX: 0245775098
MOBILE: 0415770163 Leanne Watson
0414962766 Justine Coplin
EMAIL: mulgokiwi@bigpond.com / justinecoplin@optusnet.com.au

Attention: ecological **Date:29/12/22**

Subject: 475 Badgerys Creek Rood, Badgerys Creek

Dear Jennifer

Our group is a non- profit organisation that has been active for over forty years in Western Sydney, we are a Darug community group with over three hundred members. The main aim in our constitution is the care of Darug sites, places, wildlife and to promote our culture and provide education on the Darug history.

Our group promotes Darug Culture and works on numerous projects that are culturally based as a proud and diverse group. It has been discussed by our group and with many consultants and researches that our history is generic and is usually from an early colonists perspective or solely based on archaeology and sites. These histories are adequate but they lack the people's stories and parts of important events and connections of the Darug people and also other Aboriginal people that now call this area home and have done so for numerous generations.

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Our Country is the traditional land of the Darug people, who speak the Darug language.
Our Country isn't defined or identified by government bodies and their agencies.
These agencies and bodies do not support the people of our Country and are not the traditional custodians and therefore should not be in a position to speak for the Darug people, Darug land or Darug knowledge.
Maintaining cultural protocols is fundamental in obtaining knowledge and invoking discussion for Country. To speak directly to and consult with the people of traditional lands, in this case the Darug people, is necessary to maintain correct protocol and acquire accurate knowledge.
It is culturally inappropriate for any Non-Darug person or group/s to speak on Darug cultural heritage.
Darug people are the only people that have the authority to speak for Darug Country, and hence should be the only peoples that can and must speak for Darug Country.

Please contact us with all further enquiries on the above contacts.

Regards

Justine Coplin

Norfolk, Jennifer

From: Wendy Morgan <wenlissa01@hotmail.com>
Sent: Tuesday, 13 December 2022 10:18 AM
To: Norfolk, Jennifer
Subject: RE: Draft ACHA for 475 Badgerys Creek Rood, Badgerys Creek - Planning proposal update

⚠ **CAUTION:** This email originated from an external sender. Verify the source before opening links or attachments. ⚠

Hi Jennifer,

Guntawangs' cultural and heritage officer worked with Gandangara Local Aboriginal land council during the implementation phrase of the Western Sydney Airport. He has extensive knowledge of the area and we have lived in the local area for over 40yrs. Our Cultural and Heritage Officer has would be of great benefit to your project, he is aware of the land and how our people used it. He has been on numerous archaeological dig in and around this location.

Guntawang members would like to wish you a very merry Christmas and a happy festive season

We look forward to working with you.

Warm regards

Wendy Morgan
CEO GARI
0414 964 657

Sent from Mail for Windows

From: Norfolk, Jennifer
Sent: Tuesday, 13 December 2022 9:51 AM
To: darrenjohnduncan@gmail.com
Subject: Draft ACHA for 475 Badgerys Creek Rood, Badgerys Creek - Planning proposal update

Dear Aboriginal stakeholders

Please find attached the updated draft Aboriginal Cultural Heritage Assessment for 475 Badgerys Creek Road.

Norfolk, Jennifer

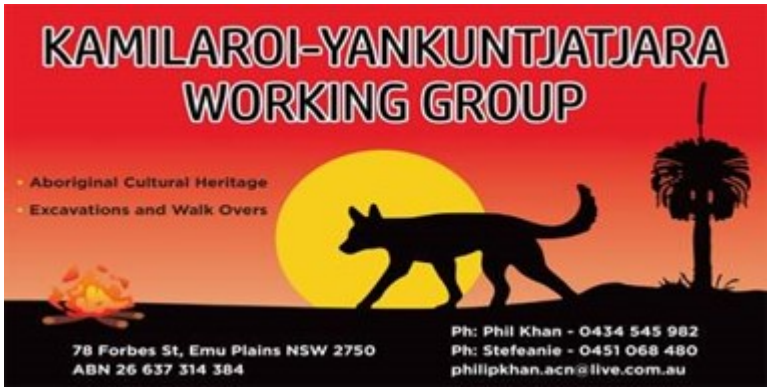
From: Phil Khan <philipkhan.acn@live.com.au>
Sent: Monday, 19 December 2022 2:11 PM
To: Norfolk, Jennifer
Subject: RE: Draft ACHA for 475 Badgerys Creek Rood, Badgerys Creek - Planning proposal update

⚠ **CAUTION:** This email originated from an external sender. Verify the source before opening links or attachments. ⚠

Hi Jennifer,

Thank you for Draft ACHA, we would like to agree & support your recommendations regarding 475 Badgerys Creek. We look forward to working on this project with you and the team. Its been a pleasure working with you guys this year & we would like to Wish you all a Merry Christmas and a Happy New Year.

Kind Regards
Phil Khan



Sent from Mail for Windows 10

From: Norfolk, Jennifer
Sent: Tuesday, 13 December 2022 9:51 AM
To: darrenjohnduncan@gmail.com
Subject: Draft ACHA for 475 Badgerys Creek Rood, Badgerys Creek - Planning proposal update

Waawaar Awaa Aboriginal Corporation

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RE: 475 Badgerys Creek Road, Badgerys Creek.

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Appendix B AHIMS Database Searches

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 21SYD19853
Client Service ID : 968994

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
45-5-2659	B66	AGD	56	289990	6246750	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-2661	B63	AGD	56	291450	6245880	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-2666	B85	AGD	56	290000	6244893	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-2674	B100	AGD	56	290870	6245740	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-2677	B16	AGD	56	291830	6244780	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-5057	B120	GDA	56	290162	6246756	Open site	Valid	Grinding Groove : 1		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd,Mrs.Jo Dibden					**Permits**		
45-5-2767	B53	AGD	56	292070	6247620	Open site	Valid	Artefact : -		105389
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-5162	BCBW18 AS 01	GDA	56	293069	6247136	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact Heritage and Environment - Pyrmont,Mr.Ryan Taddeucci					**Permits**		
45-5-5373	BCLL IF01	GDA	56	292819	6246192	Open site	Valid	Artefact : -		
	Contact	**Recorders**	GML Heritage Pty Ltd - Surry Hills,Ms.Hannah Morris					**Permits**		
45-5-5376	BCLL RT02	GDA	56	293065	6246202	Open site	Not a Site	Modified Tree (Carved or Scarred) : -		
	Contact	**Recorders**	GML Heritage Pty Ltd - Surry Hills,Eco Logical Australia Pty Ltd - Sydney - Individu					**Permits**		
45-5-2586	B3	AGD	56	290240	6247220	Open site	Valid	Artefact : -	Isolated Find	
	Contact	**Recorders**	Mr.Kelvin Officer					**Permits**		
45-5-2780	B65	AGD	56	291310	6246110	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-2624	B 34	AGD	56	291750	6244890	Open site	Valid	Artefact : -		
	Contact Gandangara LALC - Liverpool	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-5930	Western Road AFT 1	GDA	56	293864	6246696	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Mr.Matthew Kelleher,Kelleher Nightingale Consulting Pty Ltd (Generic users)					**Permits**		
45-5-2814	B103	AGD	56	290250	6247270	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-5375	BCLL RT01	GDA	56	293109	6246170	Open site	Not a Site	Modified Tree (Carved or Scarred) : -		
	Contact	**Recorders**	GML Heritage Pty Ltd - Surry Hills,Eco Logical Australia Pty Ltd - Sydney - Individu					**Permits**		
45-5-2798	B27	AGD	56	291650	6245090	Open site	Valid	Artefact : -		

Report generated by AHIMS Web Service on 28/01/2025 for Jennifer Norfolk for the following area at Datum :GDA, Zone : 56, Eastings : 289875.0 - 293875.0, Northings : 6244469.0 - 6248469.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 85

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 21SYD19853
Client Service ID : 968994

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2630	B 40	AGD	56	291900	6247660	Open site	Valid	Modified Tree (Carved or Scarred) : -		105389
	Contact Gandangara LALC - Liverpool	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2662	B61	AGD	56	291100	6245450	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2676	B98	AGD	56	291840	6245800	Open site	Destroyed	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Hilton Naden					Permits		
45-5-2656	B102	AGD	56	290400	6247070	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2694	B52	AGD	56	290550	6246580	Open site	Not a Site	Modified Tree (Carved or Scarred) : -		103124
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd,Mr.James Hammond					Permits		
45-5-2704	B13	AGD	56	291370	6246850	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-5163	BCBW18 AS 03	GDA	56	293557	6247292	Open site	Valid	Artefact : -		
	Contact	Recorders	Artefact Heritage and Environment - Pyrmont,Mr.Ryan Taddeucci					Permits		
45-5-5165	BCBW18 IF 01	GDA	56	293014	6246939	Open site	Valid	Artefact : -		
	Contact	Recorders	Artefact Heritage and Environment - Pyrmont,Mr.Ryan Taddeucci					Permits		
45-5-5372	BCLL PAD01	GDA	56	293117	6246205	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	GML Heritage Pty Ltd - Surry Hills,Ms.Hannah Morris					Permits		
45-5-2627	B 37	AGD	56	290500	6244900	Open site	Valid	Artefact : -		
	Contact Gandangara LALC - Liverpool	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-5703	PADLR	GDA	56	292447	6248462	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	City Plan Services - Sydney,Mr.Jakub Czastka					Permits		
45-5-5696	LR01	GDA	56	292420	6248348	Open site	Valid	Artefact : -		
	Contact	Recorders	City Plan Services - Sydney,Mr.Jakub Czastka					Permits		
45-5-5933	Rossmore Grange AFT 1	GDA	56	292940	6244595	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Kelleher,Kelleher Nightingale Consulting Pty Ltd (Generic users)					Permits		
45-5-2660	B64	AGD	56	291300	6246000	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		

Report generated by AHIMS Web Service on 28/01/2025 for Jennifer Norfolk for the following area at Datum :GDA, Zone : 56, Eastings : 289875.0 - 293875.0, Northings : 6244469.0 - 6248469.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 85

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 21SYD19853
Client Service ID : 968994

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
45-5-2682	B75	AGD	56	291640	6247700	Open site	Valid	Artefact : -		102196,105389
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-2695	B51	AGD	56	290150	6246420	Open site	Not a Site	Artefact : -		103124
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd,Mr.James Hammond					**Permits**		
45-5-4099	BC-EX01-11	GDA	56	291932	6247569	Open site	Valid	Artefact : 11		
	Contact	**Recorders**	Mr.Geordie Oakes,AECOM Australia Pty Ltd - Sydney					**Permits**		
45-5-2813	B104	AGD	56	290300	6247520	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-4098	BC-01-09	GDA	56	292062	6247272	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Mr.Geordie Oakes,AECOM Australia Pty Ltd - Sydney					**Permits**		
45-5-5083	B160	GDA	56	291510	6247663	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd,Miss.Jasmine Fenyvesi					**Permits**		
45-5-2626	B 36	AGD	56	291060	6244350	Open site	Valid	Artefact : -		
	Contact Gandangara LALC - Liverpool	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-2785	B 107	AGD	56	291550	6245560	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-2787	B 110	AGD	56	291250	6246230	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-5697	LR02	GDA	56	292433	6248429	Open site	Valid	Artefact : -		
	Contact	**Recorders**	City Plan Services - Sydney,Mr.Jakub Czastka					**Permits**		
45-5-5842	Rossmore Grange	GDA	56	293095	6245035	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Mr.Matthew Kelleher,Kelleher					**Permits**		
45-5-0517	Badgery's Creek / Longleys Road Badgery's Creek	AGD	56	291940	6247650	Open site	Valid	Artefact : -	Open Camp Site	1018,105389
	Contact	**Recorders**	Mr.Allan Lance					**Permits**		
45-5-2616	B 28	AGD	56	291700	6244980	Open site	Valid	Artefact : -		
	Contact Gandangara LALC - Liverpool	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-2691	B60	GDA	56	290970	6245611	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd,Eco Logical Australia Pty Ltd - Sydney -					**Permits**		
45-5-2703	B12	AGD	56	289840	6246320	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-2772	B33	AGD	56	290480	6244800	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-2812	b105	AGD	56	289920	6245360	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		

Report generated by AHIMS Web Service on 28/01/2025 for Jennifer Norfolk for the following area at Datum :GDA, Zone : 56, Eastings : 289875.0 - 293875.0, Northings : 6244469.0 - 6248469.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 85

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 21SYD19853
Client Service ID : 968994

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
45-5-5084	B161	GDA	56	290387	6246994	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd,Miss.Jasmine Fenyvesi					**Permits**		
45-5-5085	B162	GDA	56	291157	6248456	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd,Miss.Jasmine Fenyvesi					**Permits**		
45-5-5370	BCLL AS1	GDA	56	291175	6246791	Open site	Partially Destroyed	Potential Archaeological Deposit (PAD) : -, Artefact : -		
	Contact	**Recorders**	GML Heritage Pty Ltd - Surry Hills,Eco Logical Australia Pty Ltd - Sydney - Individu					**Permits**		
45-5-2675	B99	AGD	56	291950	6246080	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-2683	B76	AGD	56	291860	6247720	Open site	Valid	Artefact : -		105389
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-2686	B72	AGD	56	290800	6246500	Open site	Valid	Artefact : -		102196
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-2690	B59	AGD	56	291550	6247420	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-2766	B108	AGD	56	292300	6246010	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-5090	B158	GDA	56	291916	6247879	Open site	Valid	Artefact : -		105389
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd,Miss.Jasmine Fenyvesi					**Permits**		
45-5-5164	BCBW18 AS 02	GDA	56	293128	6246842	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact Heritage and Environment - Pyrmont,Mr.Ryan Taddeucci					**Permits**		
45-5-5374	BCLL ST01	GDA	56	292766	6246163	Open site	Not a Site	Modified Tree (Carved or Scarred) : -		
	Contact	**Recorders**	GML Heritage Pty Ltd - Surry Hills,Eco Logical Australia Pty Ltd - Sydney - Individu					**Permits**		
45-5-2619	B 29	AGD	56	291970	6244700	Open site	Valid	Artefact : -		
	Contact Gandangara LALC - Liverpool	**Recorders**	Kerry Navin					**Permits**		
45-5-2625	B 35	AGD	56	291550	6244330	Open site	Valid	Artefact : -		
	Contact Gandangara LALC - Liverpool	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-2786	B 109	AGD	56	291360	6246530	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-2685	B74	AGD	56	291520	6247320	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-5773	WSSRRC (Western Sydney Sustainable Rd Resource Centre)	GDA	56	293806	6247411	Open site	Valid	Potential Archaeological Deposit (PAD) : -		

Report generated by AHIMS Web Service on 28/01/2025 for Jennifer Norfolk for the following area at Datum :GDA, Zone : 56, Eastings : 289875.0 - 293875.0, Northings : 6244469.0 - 6248469.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 85

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 21SYD19853

Client Service ID : 968994

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
	Contact	**Recorders**	Artefact Heritage and Environment - Pyrmont,Miss.Lily (artefact) Hackett					**Permits**		
45-5-0213	South Creek;	AGD	56	293700	6247000	Open site	Valid	Artefact : -	Open Camp Site	104106
	Contact	**Recorders**	Ms.Laila Haglund					**Permits**		
45-5-2658	B67	AGD	56	290150	6246700	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-2672	B97	AGD	56	291270	6245510	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-2673	B101	AGD	56	290320	6246980	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-2684	B73	GDA	56	291171	6246988	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd,Eco Logical Australia Pty Ltd - Sydney -					**Permits**		
45-5-2693	B55	AGD	56	290310	6246680	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-2705	B15	AGD	56	291000	6248120	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-5175	B167	GDA	56	291064	6248281	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd,Miss.Jasmine Fenyvesi					**Permits**		
45-5-5598	INGHAM IF1	GDA	56	291433	6245246	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Austral Archaeology,Mr.Declan (gml) Coman					**Permits**		
45-5-2583	B 30	AGD	56	292370	6244490	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	**Recorders**	Mr.Kelvin Officer					**Permits**		
45-5-2779	B17	AGD	56	291060	6244300	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	5244	
45-5-2623	B 68	AGD	56	289800	6246810	Open site	Valid	Artefact : -		
	Contact Gandangara LALC - Liverpool	**Recorders**	Kerry Navin					**Permits**		
45-5-3096	B58	AGD	56	290530	6246180	Open site	Destroyed	Artefact : 2		
	Contact T Russell	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	3752	
45-5-2669	B96	AGD	56	291270	6245670	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-5055	B118	GDA	56	290118	6246822	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd,Mrs.Jo Dibden					**Permits**		
45-5-2769	B-14	AGD	56	292070	6247700	Open site	Valid	Artefact : -		105389
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
45-5-5067	B130	GDA	56	290085	6246717	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd,Mrs.Jo Dibden					**Permits**		
45-5-5081	B157	GDA	56	292146	6248243	Open site	Valid	Artefact : -		105389

Report generated by AHIMS Web Service on 28/01/2025 for Jennifer Norfolk for the following area at Datum :GDA, Zone : 56, Eastings : 289875.0 - 293875.0, Northings : 6244469.0 - 6248469.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 85

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 21SYD19853
Client Service ID : 968994

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd,Miss.Jasmine Fenyvesi					**Permits**		
45-5-5371	BCLL PAD02	GDA	56	291429	6246217	Open site	Partially Destroyed	Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	GML Heritage Pty Ltd - Surry Hills,Eco Logical Australia Pty Ltd - Sydney - Individu					**Permits**		
45-5-5597	INGHAM AS1	GDA	56	291433	6245246	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Austral Archaeology,Mr.Declan (gml) Coman					**Permits**		
45-5-2644	B 26	AGD	56	291550	6245110	Open site	Valid	Artefact : -		
	Contact Gandangara LALC - Liverpool	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		

**** Site Status**
Valid - The site has been recorded and accepted onto the system as valid
Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.
Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground
Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

Report generated by AHIMS Web Service on 28/01/2025 for Jennifer Norfolk for the following area at Datum :GDA, Zone : 56, Eastings : 289875.0 - 293875.0, Northings : 6244469.0 - 6248469.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 85

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Appendix C Archaeological Technical Reports

475 Badgerys Creek Road, NSW – Stage 1 (Substation) Archaeological Technical Report

Ingham Rural Property Group Pty Limited

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Template 2.8.1

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Abbreviations

Abbreviation	Description
ACHA	Aboriginal Cultural Heritage Assessment
AHID	Australian Heritage Database
AHIP	Aboriginal Heritage Impact Permit
AHIMS	Aboriginal Heritage Information Management System
ARD	Archaeological Research Design
ATR	Archaeological Technical Report
CHL	Commonwealth Heritage List
DECCW	(Former) Department of Environment Climate Change and Water
ELA	Eco Logical Australia Pty Ltd
Heritage NSW	Heritage NSW, Department of Premier and Cabinet
LEP	Local Environmental Plan
LGA	Local Government Area
NHL	National Heritage List
OEH	NSW Office of Environment and Heritage
PAD	Potential Archaeological Deposit
SHI	State Heritage Inventory
SHR	State Heritage Register
WHL	World Heritage List

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1. Introduction

1.1 Project background

Ingham Property Group (the proponent) are proposing to subdivide and develop 475 Badgerys Creek Road, Badgerys Creek, NSW. The proposed subdivision will be undertaken in two stages, this assessment will address requirements to inform the Stage 1 Development Application (DA) for the proposed substation works in the south west corner of 475 Badgerys Creek Road, Badgerys Creek.

GML prepared a baseline Aboriginal Heritage Report to inform a master planning proposal for the property identified as Lot 1 DP 1123344. Thirteen sites had previously been recorded on the property comprising stone artefacts and Potential Archaeological Deposits (PAD). GML recorded one additional artefact site and 12 locations with potential cultural heritage values. Two zones for potential future conservation were identified as well as several locations that were considered as archaeologically sensitive, three 'culturally modified' trees and a high point believed to have views. The report states that these issues should be considered during the master planning process and provides recommendations for Aboriginal heritage management in association with the master planning and rezoning process and future development (GML 2020).

Ingham Property Group engaged Eco Logical Australia (ELA) to conduct an Archaeological Assessment to document the archaeological values within the study area and to identify any known or unrecorded Aboriginal sites.

This assessment has been undertaken in accordance with Heritage NSW, Department of Premier and Cabinet (Heritage NSW) *Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010a).

1.2 Study area

The study area is situated in the south-western corner of 475 Badgerys Creek Road, Badgerys Creek NSW (Lot 1, DP1123344) (Figure 1). The study area covers approximately 18 ha of the property and is on a gently sloping landform bound by property fencing, access roads and two minor drainage lines of Badgerys Creek.

The study area is located in the Parish of Bringelly in the County of Cumberland, within the Liverpool Local Government Area (LGA). The study area falls within the Gandangara Local Aboriginal Land Council boundaries.

1.3 Purpose and Objectives of the archaeological assessment

The purpose of the archaeological investigation is to understand the presence, nature, and extent of the Aboriginal archaeological resource within the areas of proposed works. The cataloguing and analysis of the recovered artefacts will inform the scientific, cultural, and historical significance of the site and in turn management of the heritage resource

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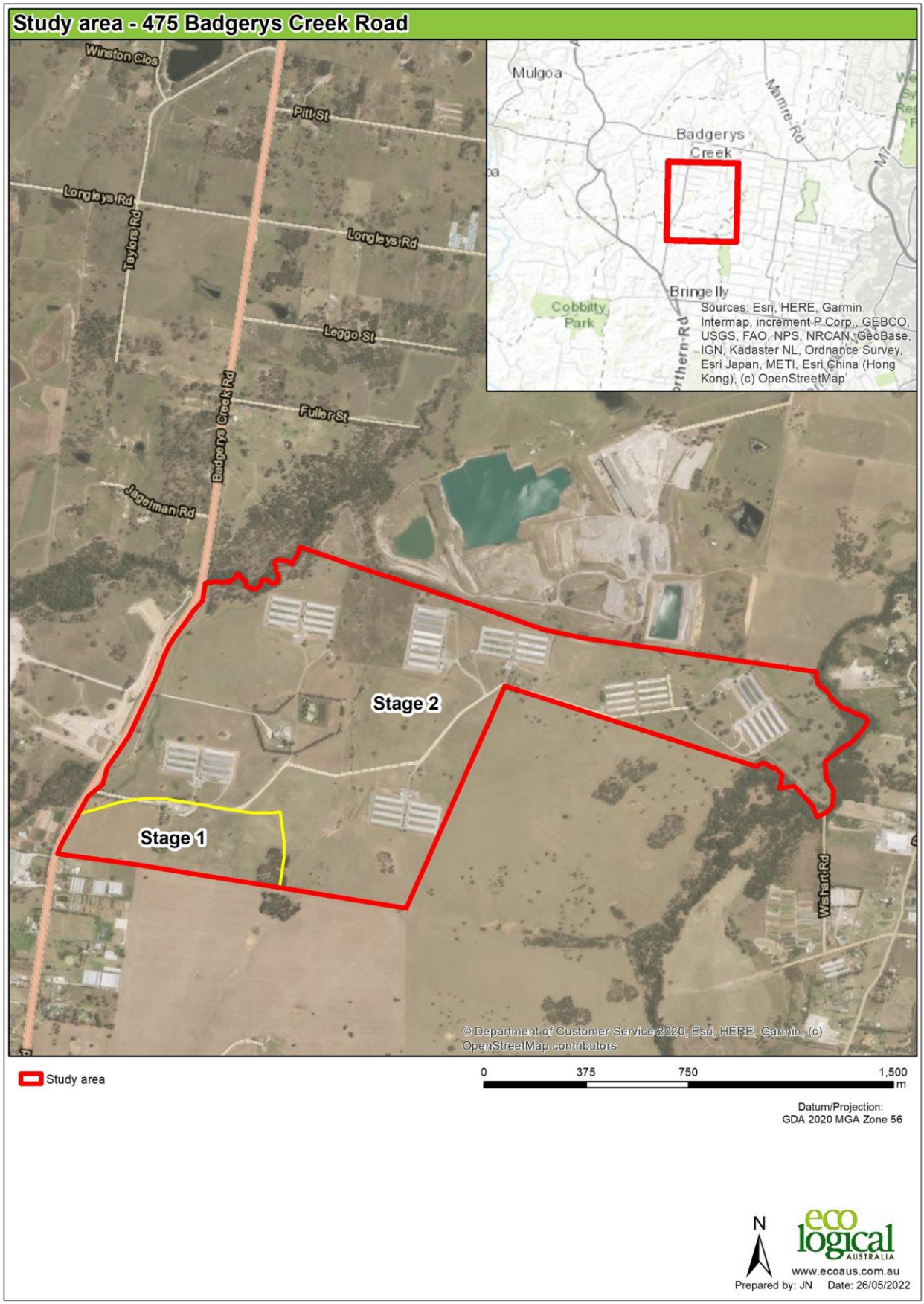

Figure 1: The study area, Stage 1 Substation works – south west corner of Lot 1 DP 1123344

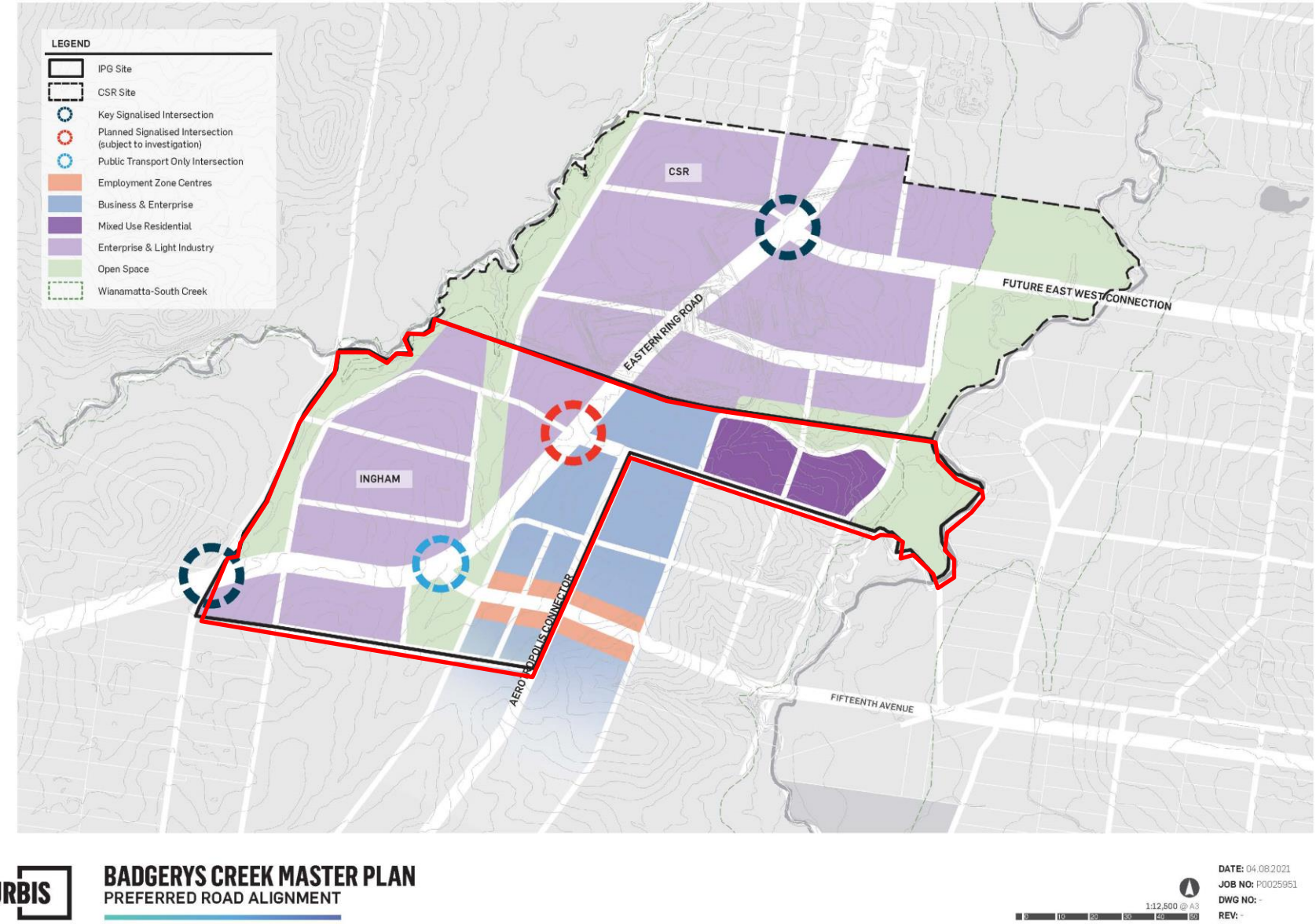

Figure 2: Proposed area of works for 475 Badgerys Creek Road, Badgerys Creek (source: Ingham Property Development Pty Ltd 2021) (study area in red)

1.4 Legislative context

1.4.1 National Parks and Wildlife Act 1974

Aboriginal cultural heritage in NSW is afforded protection under the provisions of the *National Parks and Wildlife Act* 1974 (NSW) [NPW Act]. The Act is administered by Heritage NSW, which has responsibilities under the legislation for the proper care, preservation, and protection of 'Aboriginal objects' and 'Aboriginal places'.

Under the provisions of the NPW Act, all Aboriginal objects are protected irrespective of their level of significance or issues of land tenure. Aboriginal objects are defined by the Act as, *any deposit, object or material evidence (that is not a handicraft made for sale) relating to Aboriginal habitation of NSW, before or during the occupation of that area by persons of non-Aboriginal extraction (and includes Aboriginal remains).* Aboriginal objects are limited to physical evidence and may be referred to as 'Aboriginal sites', 'relics' or 'cultural material'. Aboriginal objects can include scarred trees, artefact scatters, middens, rock art and engravings, as well as post-contact sites and activities such as fringe camps and stockyards. Heritage NSW must be notified about the discovery of Aboriginal objects under section 89A of the NPW Act.

Part 5 of the NPW Act provides specific protection for Aboriginal objects and places by making it an offence to destroy, deface, damage, or move them from the land. *The Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (CoP) (DECCW 2010b) as adopted by the and Wildlife Regulation 2019 (NPW Regulation) made under the NPW Act, provides guidance to individuals and organisations to exercise due diligence when carrying out activities that may harm Aboriginal objects. The CoP also determines whether proponents should apply for consent in the form of an Aboriginal Heritage Impact Permit (AHIP) under section 90 of the Act. The CoP can be used for all activities across all environments. The NPW Act provides that a person who exercises due diligence in determining that their actions will not harm Aboriginal objects has a defence against prosecution for the strict liability offence if they later unknowingly harm an object without an AHIP. However, if an Aboriginal object is encountered in the course of an activity work must cease and an application should be made for an AHIP.

The Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2010a) assists in establishing the requirements for undertaking archaeological investigation without an AHIP or establishing the requirements that must be followed when carrying out archaeological investigation in NSW where an application for an AHIP is likely to be made. Heritage NSW recommends that the requirements of this Code also be followed where a proponent may be uncertain about whether or not their proposed activity may have the potential to harm Aboriginal objects or declared Aboriginal places.

1.4.2 Aboriginal Land Rights Acts 1983

The *Aboriginal Land Rights Act 1983* (ALR Act) established Aboriginal Land Councils (at State and Local levels). Division 1A outlines the functions of Local Aboriginal Land Councils and their statutory obligation under the ALR Act to:

(a) take action to protect the culture and heritage of Aboriginal persons in the council's area, subject to any other law, and

(b) promote awareness in the community of the culture and heritage of Aboriginal persons in the council's area.

The study area is within the boundary of the Gandangara Local Aboriginal Land Council (LALC).

1.4.3 Environmental Planning & Assessment Act 1979

*The Environmental Planning and Assessment Act 1979 (*NSW) [EP&A Act] requires that consideration is given to environmental impacts as part of the land use planning process. In NSW, environmental impacts are interpreted as including cultural heritage impact. Proposed activities and development are considered under different parts of the EP&A Act, including:

- Major projects (State Significant Development under Part 4.1 and State Significant Infrastructure under Part 5.1), requiring the approval of the Minister for Planning.
- Minor or routine developments, requiring local council consent, are usually undertaken under Part 4. In limited circumstances, projects may require the Minister's consent; and
- Part 5 activities which do not require development consent. These are often infrastructure projects approved by local councils or the State agency undertaking the project.

The EP&A Act also controls the making of environmental planning instruments (EPIs) such as Local Environment Plans (LEPs) and State Environmental Planning Policies (SEPPs). The study area is within the Liverpool LGA and activities undertaken on this land are controlled by *the State Environmental Planning Policy (Western Sydney Aerotropolis) 2020*. SEPPs commonly identify and have provisions for the conservation archaeological sites, Aboriginal objects and Aboriginal places of heritage significance. SEPPs are prepared by the state government to guide planning and management decisions in the LGAs and establish the requirements for the use and development of land. Part 4 (28) of the SEPP *State Environmental Planning Policy* states.

(2) ***Requirement for consent****. Development consent is required for the following—*

(c) disturbing or excavating an archaeological site while knowing, or having reasonable cause to suspect, that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed,

(d) disturbing or excavating an Aboriginal place of heritage significance,

1.5 Investigators and contributors

This report has been prepared by Jennifer Norfolk ELA Archaeologist, with review by Karyn McLeod, ELA Principal Archaeologist.

Jennifer Norfolk has an MSc. (Marine Archaeology) from Southampton University. Karyn McLeod has a BA Honours (Archaeology) from the University of Sydney and a MA (Cultural Heritage) from Deakin University.

Aboriginal community consultation process is being undertaken in accordance with Heritage NSW *Aboriginal cultural heritage consultation requirements for proponents* 2010 (DECCW, 2010b). The field

survey was undertaken with Heritage Officer Kirsty Chalker of Cubbitch Barta Native Title Claimants Aboriginal Corporation in attendance. Kirsty Chalker provided a report of findings and recommendations from field survey (Appendix B).

Test excavations were conducted by ELA archaeologists with assistance from the following Aboriginal organisations (Table 1) over a period of 2 weeks. Test excavations were directed by Jennifer Norfolk, ELA Archaeologist.

Table 1: Test excavation field personnel

Organisation	Name
ELA Archaeologists	Jennifer Norfolk
	Charlotte Bradshaw
	Kate Storan
	Jessica Horton
Kamilaroi-Yankuntjatjarra Working Group	Ray Adams
	Jamie Currell
	Robert Hunter
Waawaar Awaa Aboriginal Corporation	Todd Hall
	Justin Kennedy

2. Environmental context

Landscape, geomorphic history, and extent of disturbance within a given area all play a role in the presence and/or preservation of Aboriginal objects. As outlined in the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010a), this section aims to assist in the prediction of:

- The potential of the landscape to contain Aboriginal objects; and
- The ways Aboriginal people have used the landscape in the past, with reference to the presence of resource areas, surfaces for art and other focal points which may have been used for particular activities and settlement; and
- Disturbance, including historical land-use, which may have removed earlier archaeological evidence; and
- The likely distribution of the material traces of Aboriginal land use based on the above.

To investigate these elements, this section focuses on the environmental context of the current study area, including geomorphology and soils, vegetation, hydrology, and previous land use to identify potential disturbance.

The study area is situated within the Cumberland subregion of the NSW Sydney Basin bioregion of NSW. A summary of the geology, landforms, soils, and vegetation typical within this subregion is provided in Table 2 below:

Table 2: Cumberland Plain subregion summary (source: NSW Department of Planning, Industry and Environment)

Cumberland Subregion	
Geology	Triassic Wianamatta groups shales and sandstones. A down warped block on the coastal side of the Lapstone monocline. Intruded by a small number of volcanic vents and partly covered by Tertiary river gravels and sands. Quaternary alluvium along the mains streams.
Characteristic Landforms	Low rolling hills and wide valleys in a rain shadow area below the Blue Mountains. At least three terrace levels evident in the gravel splays. Volcanics from low hills in the shale landscapes. Swamps and lagoons on the floodplain of the Nepean River.
Typical Soils	Red and yellow texture contrast soils on slopes, becoming harsher and sometimes affected by salt in tributary valley floors. Pedal uniform red to brown clays on volcanics. Poor uniform stony soils, often with texture contrast profiles on older gravels, high quality loams on modern floodplain alluvium.
Vegetation	Grey box, forest red gum, narrow-leaved ironbark woodland with some spotted gum on the shale hills. Hard-leaved scribbly gum, rough-barked apple and old man banksia on alluvial sands and gravels. Broad-leaved apple, cabbage gum and forest red gum with abundant swamp oak on river flats. Tall spike rush, and juncus with Parramatta red gum in lagoons and swamps.

2.1 Soil Landscapes

The study area covers the Blacktown (residual) Soil Landscape. Dominant soil types include friable greyish brown loam and hard setting brown clay loam overlying strongly pedal mottled brown light clay. Topsoils reach a depth of up to 300mm and contain significant sand and silt content overlying hard-

setting clay subsoils (Hazelton & Tille 1990:28-29). Shallow to moderately deep (<1.5m) soils occur on crests, upper slopes, and well-drained areas.

These types of soils are often shallow and can be significantly disturbed by historical and modern activities. This has significant implications for the survivability of historical and Aboriginal deposits, and it is rare for these types of soils to contain significantly deep, stratified, or old archaeological deposits.

2.2 Hydrology

The study area is 1.8km west of South Creek which is a high order system that runs south to north and feeds into the Hawkesbury River. Badgerys Creek is 800m to the north of the study area and runs in a general direction from south west to north east and is a tributary of South Creek. Two minor tributaries of Badgerys Creek pass through the study area across the west and east boundaries. These minor drainage lines are unnamed, have been heavily modified from past land use and may be seasonal.

2.3 Vegetation

Across a majority of the study area, native vegetation has been cleared for agricultural land use with a few small stands of vegetation remaining. The landscape would have been open woodland with dry sclerophyll forest, the native vegetation would have been dominated by tree species including Grey box (E. moluccana) and Forest red gum (E. tereticornis) Broad-leaved ironbark, narrow-leaved ironbark, Woollybutt and forest oak would have been less common. The understorey would have hosted various shrub and grass species.

2.4 Land use history

The study area has historically been extensively cleared for grazing and pastoral practices. The earliest available aerial imagery from 1955 shows that the area was historically cleared of native vegetation and possibly used for pastoral activities. Later imagery from 1965 and 1989 show the development of agricultural infrastructure including the construction of large sheds, several residences, a dam, and access roads.

The study area has had irrigation infrastructure buried through the fields, fencing and vehicle access tracks.

2.5 Summary

Overall, the characteristics of the study area present moderate sensitivity for evidence of Aboriginal occupation. There is the potential for archaeological deposits in the sheltered and relatively flat area in close proximity to the second order stream in the west. As a majority of the area has been extensively cleared of vegetation, very few trees remain, none of which appear to be old growth. A majority of the study area has undergone moderate disturbances associated with the construction of buildings and vehicle access, land clearing and pastoral land use.

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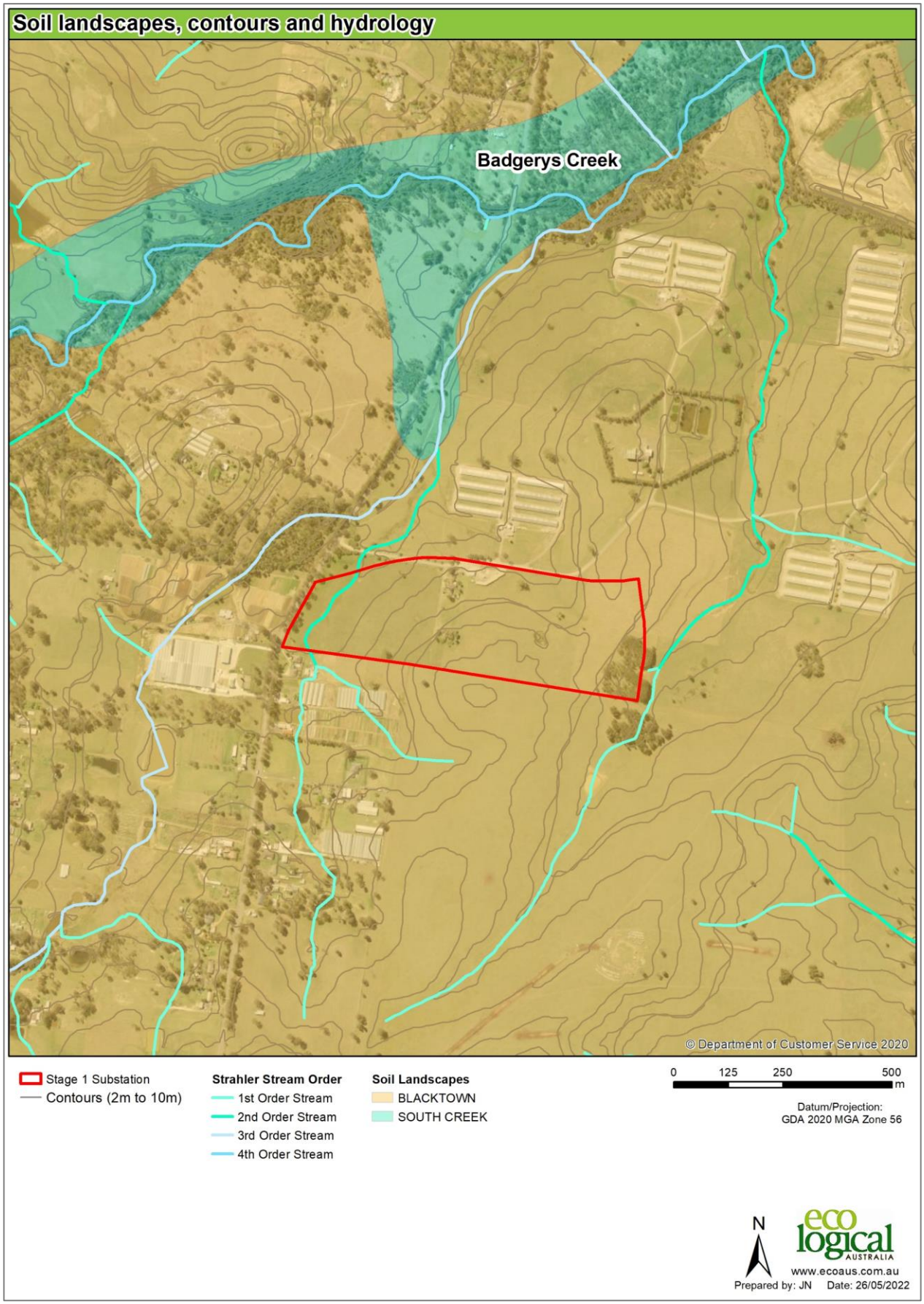

Figure 3: Soils, hydrology, and elevation within the study area

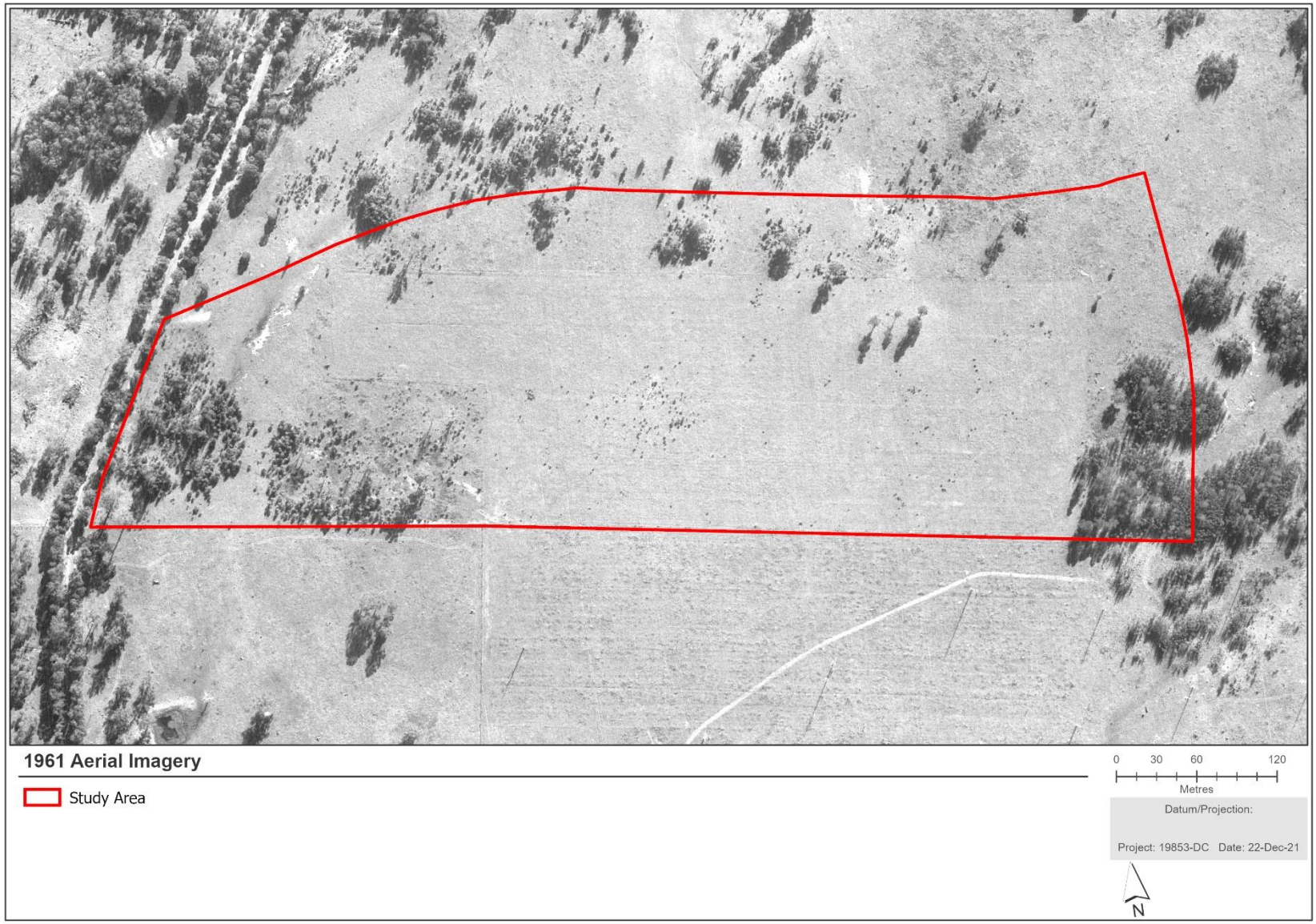

Figure 4: 1961 aerial imagery – majority of Stage 1 area has been cleared and ploughed for pasture.

Figure 5: 1978 aerial imagery – further disturbance from property/ agricultural practices (irrigation, fencing dams).

Figure 6: 1991 aerial imagery

3. Aboriginal context

3.1 Ethnohistory

An accurate reconstruction of past lifeways, technologies and land-use patterns of the Aboriginal people who inhabited the Badgerys Creek region is often hindered by a lack of written records and an ethnocentric bias of European settlers. Oral histories by Aboriginal people provide valuable insights into the past, though these are not always available.

Aboriginal people have continuously occupied Australia for at least 65,000 years (Clarkson et al 2017), utilising the land and available resources. Dates of the earliest occupation of the continent by Aboriginal people are subject to continued revision as more research is undertaken. The earliest undisputed radiocarbon date from the Sydney region comes from a rock shelter site north of Penrith, Shaw's Creek, dated to around 14,700 BP (Attenbrow 2010). Alternate artefactual evidence found on the Nepean River suggests Aboriginal people have occupied the Sydney region for at least 40,000 years (Nanson *et al*. 1987; Stockton & Holland 1974).

Badgerys Creek lies within a transitional area between the tribal boundaries of the Dharug, Dharawal and Gundungurra language groups (Attenbrow, 2002). The precise geographical boundaries between these three groups cannot be clearly defined due to the limitations of historical records (Kohen and Lampert 1987), however the study area (present-day Penrith and Liverpool LGAs) is now generally considered to have been occupied by Darug-speaking clans (Attenbrow 2010). Anthropologist R.H. Matthews writes:

> *"The Dharukk speaking people adjoined the Thurrawal on the north, extending along the coast to the Hawkesbury River, and inland to what are now Windsor, Penrith, Campbelltown, and intervening towns."* (Matthew, 1901d: 55 in Attenbrow, 2010: 32)

The Darug people were semi-nomadic hunter gatherers who utilised available resources, including the various animals and plants in the region. Aboriginal people hunted wallabies, kangaroos, possums, flying foxes, birds and fish and collected wild honey and yams, which also served as important food sources. Family groups belonged to clans who were united by languages and cultural affinities and had ties to specific areas of land.

The arrival of European settlers severely impacted the lives of the local Aboriginal populations as it led to a smallpox epidemic which spread to neighbouring regions and killed over half of the Aboriginal population in the Sydney Basin region (Organ, 1990) and led to significant social restructuring. In the Cumberland Plains region, European graziers slowly took over the traditional Aboriginal land, creating a competition for resources, widespread social disruption to traditional ways of life and ultimately led to a disconnection of local Aboriginal people from their traditional lands. Some Aboriginal people remained and continued to live a semi-traditional life on the peripheries of European settlements until at least the mid-1800s, despite the impacts to their traditional ways of being (Attenbrow, 2002).

3.2 Archaeological context

3.2.1 Database searches

AHIMS SEARCH

The Aboriginal Heritage Information Management System (AHIMS) database is maintained by Heritage NSW and regulated under Section 90Q of the *National Parks and Wildlife Act 1974.* The AHIMS database holds information and records regarding the registered Aboriginal archaeological sites (Aboriginal objects, as defined under the Act) and declared Aboriginal places that exist in NSW.

A search of the AHIMS database was conducted on 23 August 2021 (Search ID 615973) to identify if any registered Aboriginal sites were present within the study area (Appendix A). The search covered 4 km surrounding the study area to understand the known archaeological resource and provide an understanding of the types of features that might be present in the current landscape.

Table 3: Parameters for the AHIMS database search and results

Search Parameters		Search Result	
GDA Zone	56	**Aboriginal sites recorded**	76
EastingsEastings	289875 - 293875	**Aboriginal places declared**	0
NorthingsNorthings	6244469 - 6248469		
Buffer	0m		

The extensive search identified a total of 76 Aboriginal sites within the search parameters. The vast majority of Aboriginal sites are artefact scatters or isolated finds (88%).

The distribution of recorded Aboriginal sites adjacent toadjacent to the study area is shown in Figure 8. The frequencies of site types and contexts recorded within the AHIMS database search area are listed below.

Table 4: Frequencies of site types

Site Features	Number	%
Artefact	65	88
Modified Tree (Carved or Scarred)	5	6.7
Potential Archaeological Deposit (PAD)	3	4
Grinding Groove	1	1.3
Total	**74**	**100**

Two (2) Aboriginal sites have been identified by the AHIMS search as located within the study area with and additional three (3) sites located in the immediate vicinity of the study area.

Table 5: AHIMS sites within the study area

AHIMS ID	Site name	Site features	Description
45-5-2691 ***	B60	Artefact	Recorded by Navin Officer (1997) for the archaeological assessment of the proposed Second Sydney Airport at Badgerys Creek or Holsworthy Military Area EIS. The site card identifies the site as being on the fence line at the southern extent of the property (first order tributary). The site is comprised of a single isolated lithic, located approximately 300m south southeast of the chicken sheds, on the fence line that delineates the southern extent of the study area The site was recorded on the old AGD system and has the incorrect coordinates.
45-5-5370	BCLL PAD 03	PAD	Recorded by GML (2020) the area of PAD included 173,525 m^2 at the western extent of 475 Badgerys Creek Rd. Of this area, 51,662 m^2 is located inside the study area. The site was identified during an archaeological survey and was registered as PAD as it comprised two raised terraces following a former creek line.

*** This site is an old site card that has been assigned the wrong coordinates. Review of the site card has identified the actual location of the AHIMS site is in the property south of the study area. The site is located on the boundary but outside the impact area.

Table 6: AHIMS sites adjacent to the study area

AHIMS ID	Site name	Site features	Description
45-5-2662	B61	Artefact	An isolated artefact located in an exposed section of turned earth on a valley floor. The artefact was a single, large, quartz flake. Identified during survey by Navin Officer in 1996.
45-5-2674	B100	PAD	An open artefact scatter consisting of two broken flakes, one chert and one tuff located on a mid-slope. Identified during survey by Navin Officer in 1996.
45-5-5371	BCLL PAD 02	PAD	Recorded by GML (2020) the area of PAD included both sides of unnamed creek line that runs through the centre of the property. A raised terrace in the centre of the PAD near to the bridge was identified as a possible focus fort past Aboriginal activities.

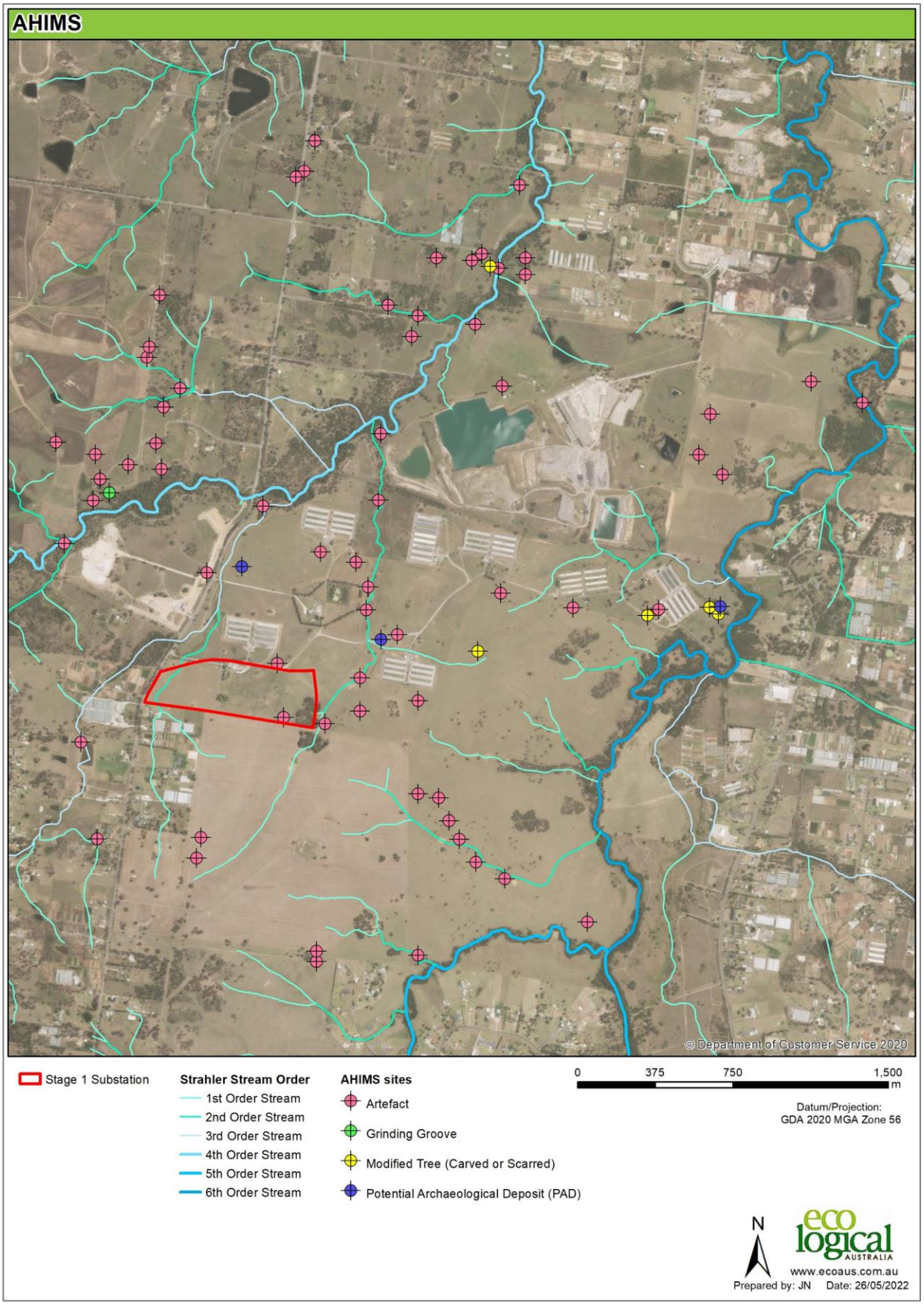

Figure 7: Regional overview of AHIMS sites surrounding the study area

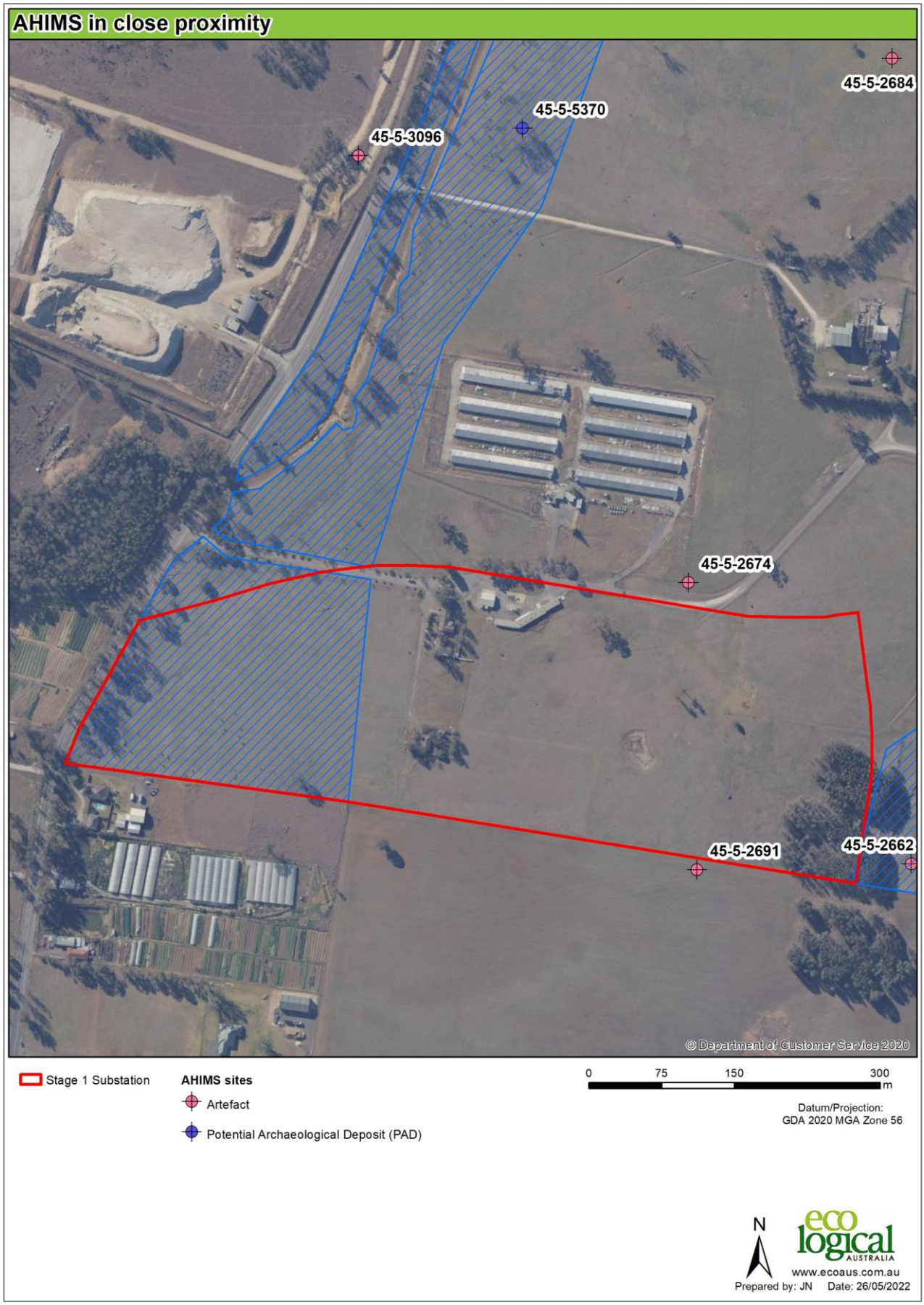

Figure 8: AHIMS sites within the study area

3.2.2 Previous archaeological investigations in the region

Several archaeological assessments have been carried out in the wider Greater Western Sydney region in recent years as there has been an increasing number of residential developments in the area. The most relevant investigations to this project will be summarised below.

AUSTRALIAN MUSEUM CONSULTING 2014, ENVIRONMENTAL SURVEY OF COMMONWEALTH LAND AT BADGERYS CREEK: ABORIGINAL HERITAGE. CONSULTANCY REPORT TO SMEC AUSTRALIA.

Australian Museum Consulting (AMC) prepared an environmental survey of Commonwealth owned land at Badgerys Creek for SMEC Australia Pty Ltd, on behalf of the Western Sydney Unit of the Department of Infrastructure and Regional Development. The report assessed the condition of specific environmental aspects with a particular focus on Aboriginal cultural heritage over a large area located immediately to the study areas southwest.

The report detailed the findings of previous environmental investigations undertaken during the 1980s and 1990s. These assessments had previously identified 60 Aboriginal heritage sites, comprising open artefact scatters, scarred trees, and isolated artefacts. Of these, 23 Aboriginal heritage sites were identified within areas of moderate and high archaeological potential, associated primarily with minor and secondary creek corridors. AMC 2014 conducted a targeted survey of these moderate and high potential sites and confirmed their condition and scientific potential.

The assessment made the follow recommendations:

- Aboriginal community consultation.
- An additional Aboriginal heritage survey to identify and record a representative sample of material traces and evidence of Aboriginal occupation within the Badgerys Creek area.
- Full archaeological survey of all landforms.
- A program of archaeological test and salvage excavations throughout impact areas.

AMBS, 2012. INDIGENOUS HERITAGE ASSESSMENT PROJECT: AUSTRAL AND LEPPINGTON NORTH PRECINCTS, SOUTH WEST GROWTH CENTRES. PREPARED FOR THE NSW DEPARTMENT OF PLANNING AND INFRASTRUCTURE.

Australian Museum Business Services (AMBS) was commissioned by the NSW Department of Planning and Infrastructure to prepare an Aboriginal heritage assessment for the Austral and Leppington North Precincts of the South West Growth Centres located 3km to the west of the study area.

The AMBS study was important for the establishment of areas of archaeological potential in the Austral and Leppington North Precinct and its contribution to predictive modelling for artefact distribution and density within the area. This model is based primarily on proximity to water courses and the level of ground disturbance within an area. AMBS defined disturbance areas in Austral and North Leppington as:

- High disturbance – “road corridors, underground gas pipelines, dams, and properties classified as childcare centres, churches, commercial, community halls, industrial, market gardens, poultry, Rebels club, residential/retirement village and schools, as well as the SWRL corridor which will be constructed in the near future”.

- Moderate disturbance – “Transmission lines and properties classified as dual occupancy/large residential”.
- Low disturbance - “Properties classified as parks, significant vegetation / bushland, and vacant / grazing/ developable.”

The AMBS report recommended that conservation zones be established for areas of moderate and high archaeological potential. Where this is not possible, detailed Aboriginal heritage impact assessments of site-specific development areas was recommended to be undertaken including, if necessary, archaeological test excavation.

ARTEFACT HERITAGE, 2012. THE NORTHERN ROAD UPGRADE FROM THE OLD NORTHERN ROAD, NARELLAN TO MERSEY RD, BRINGELLY – ABORIGINAL ASR. PREPARED FOR ROADS AND MARITIME SERVICES.

Artefact Heritage were previously engaged by Sinclair Knight Merz, on behalf of the NSW Roads and Maritime Services (RMS), to conduct an Aboriginal archaeological survey and assessment report for the proposed upgrade of the Northern Road. The proposed upgrade included 15km of the Northern Road between the Old Northern Road, Narellan and Mersey Road, Bringelly located 2.5km south of the study area.

An initial desktop assessment, including an extensive search of the AHIMS database, identified eighteen Aboriginal sites within the area of investigation. Fourteen previously unrecorded Aboriginal sites were identified during the site survey, with two of the sites being re-recordings of previous sites. Five of the sites were artefact scatters and nine were isolated finds. Four previously recorded sites and PADs within the study area were found to be either destroyed or disturbed and five were found to be subject to existing AHIPS.

The survey resulted in the identification of twenty four Aboriginal sites within the study area, with seven sites located more than 20m outside of the study area and two new sites more than 50m outside. Fifteen sites were identified as being directly impacted by the proposal. Ten sites were assessed as having a low archaeological significance and five were assessed as having a moderate archaeological significance.

Recommendations included that salvage excavations be conducted for the five sites with moderate archaeological significance that could not be avoided by the proposed works and that an Aboriginal Heritage Impact Permit (AHIP) be sought prior to any impacts.

NICHE ENVIRONMENT AND HERITAGE, 2019. ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT SOUTH CREEK WEST PRECINCT (SOUTH-WEST) RELEASE AREA REZONING, THE NORTHERN ROAD BRINGELLY, NSW. PREPARED FOR BHL GROUP.

Niche Environment and Heritage (Niche) was previously engaged by Boyuan Holdings Limited (BHL Group) to conduct an Aboriginal Cultural Heritage Assessment Report for the rezoning of the South Creek West Release Area (South-West) Precinct, 5km south of the study area. The report comprised five separate lots that were zoned for primary production and had been used for agriculture, primarily cattle grazing. Previous archaeological assessments, the desktop assessment and visual inspection that was completed for the report indicated that the proposed rezoning of the study area could potentially impact five registered AHIMS sites (AHIMS ID 45-5-3359, AHIMS ID 45-5-5282, AHIMS ID 45-5-3542, AHIMS ID 45-5-4139 and AHIMS ID 45-5-3543).

A desktop assessment found several landscape features, including raised level creek terraces along tributaries of Cobbitty, South and Lowes Creek that had the potential to yield surface and or buried Aboriginal objects. Due to the proximity of permanent water sources and the landscape, the study area was considered to have a high archaeological potential. However, according to previous investigations and predictive models, the wider region was thought to have been sporadically used by past Aboriginal people.

3.2.3 Previous archaeological investigations within the Study Area

GML HERITAGE, 2020. *BADGERYS CREEK ABORIGINAL HERITAGE REPORT.* UNPUBLISHED REPORT PREPARED FOR LEND LEASE

In 2020, GML was commissioned by Lendlease to prepare a baseline Aboriginal heritage report that informed the master planning proposal for the future development of 475 Badgerys Creek Road, Badgerys Creek, of which the current study area occupies the southwest extent.

The desktop assessment identified 13 existing AHIMS sites within the study area, including isolated finds, open artefact sites and areas of associated PAD. An archaeological survey conducted with representatives of the registered Aboriginal party Cubbitch Barta identified 7 new Aboriginal sites including three areas of PAD, two ring trees, one scar tree and one isolated artefact. The survey also identified two terraces that formed part of the area of PAD as well as a viewpoint that provided views of the surrounding landscape and the Blue Mountains.

The assessment recommended that an ACHA be conducted for the property, including archaeological test excavation and the implementation of Aboriginal Culture and Heritage Interpretation into the final design of the development. The assessment also recommended two discrete areas of PAD be allocated as primary conservation zones in line with exiting riparian corridor and biobanking zones.

EXTENT HERITAGE 2020, WESTERN SYDNEY AEROTROPOLIS INITIAL PRECINCTS DRAFT ABORIGINAL AND NON-ABORIGINAL CULTURAL HERITAGE ASSESSMENT PREPARED FOR WESTERN SYDNEY PLANNING PARTNERSHIP

In 2020, Extent Heritage Pty Ltd was commissioned by the Western Sydney Planning Partnership to prepare an Aboriginal and non-Aboriginal Cultural Heritage Assessment for the initial precincts within the Western Sydney Aerotropolis. This high level assessment of precincts within the Aerotropolis growth areas includes the current study area.

The report's desktop assessment includes a review of previous archaeological studies in the region, historical research, preliminary cultural values mapping, and desktop research. The report identified three registered Aboriginal sites that imposed specific constraints on the proposed works, and one that may impose specific constraints on the proposed design works, depending on the results of further investigation. Given their sensitive nature, details of the sites have been redacted.

Aboriginal community consultation untaken as part of the report included the formation of a focus group of Elders and knowledge holders comprising the primary traditional owner representatives of Darug and Dharawal descendants as well as the Local Aboriginal Land Councils whose land includes portions of the Aerotropolis study area. Consultation included a cultural values mapping workshop aimed at identifying and understanding key social, cultural and intangible values associated with the Aerotropolis region and

to identify how the RAPs would like these values to be conserved, remembered and managed throughout this project and into the future. Key issues identified through consultation included:

- further archaeological investigations
- conservation of key well-preserved landforms, sites and scarred trees
- establishment of a repatriation area for recovered artefactual material
- Aboriginal naming of places within the Aerotropolis
- further consultation and workshops with a wider group of Aboriginal stakeholders
- Aboriginal stakeholder involvement in the development of interpretive stories and media for the precincts
- Additional on-site investigation and face-to-face consultation with Aboriginal stakeholders when the public health situation present at the time of the report would allow.

The assessment of Aboriginal heritage within the study area is an ongoing process that will require continuous consultation with the Aboriginal community and additional field survey and archaeological investigation.

3.3 Regional character and predictive model

REGIONAL CHARACTER

Previous archaeological assessments across the region provide important data on Aboriginal archaeological site distribution and typology from which an understanding of the archaeological landscape within the study area can be developed.

Aboriginal occupation in the Sydney region encompasses at least 20,000 years with dates of 13,000 Before Present (BP) at Shaws Creek in the Blue Mountain foothills; 11,000 BP for Mangrove Creek and Loggers Shelter and c. 20,000 BP at Burrill Lake on the South Coast (Attenbrow 2002). The majority of sites in the Sydney region have been dated to within the last 3,000 to 5,000 years, with many researchers proposing that occupation intensity increased from this period. This apparent intensity of occupation may have been influenced by rising sea levels which by about 6,500 years ago had risen to their present levels.

Open artefact sites and artefact scatters are the most common site types identified within the Cumberland Plain (Artefact 2012). These sites are most commonly found in landforms associated with permanent water sources, such as river banks and alluvial flats (White and McDonald 2010).

Large, concentrated assemblages are more likely to be located within resource rich areas (AMC 2014). Complex sites, containing multiple artefact types and archaeological features, are often located in close proximity (~150m) to permanent water sources (Niche 2020). The confluence of creek lines could provide focal points for occupation and the size of the stream's Strahler order could influence the size of the assemblages present (Niche 2020). The crests of hills and ridge tops also have the potential to contain larger sites (AMBS 2012).

Low density assemblages of artefacts are also located in close proximity to reliable water sources. Whilst these sites can represent smaller or less frequent instances of occupation, disturbances from historic land use and erosion can also affect artefact count (Niche 2020).

The majority of artefact assemblages are comprised primarily of unretouched flakes and debitage, with a smaller percentage of formal tool types being present (AMBS 2012). The most common raw material used to manufacture tools is silcrete (Niche, 2020, Artefact 2012), followed by tuff/chert (AMC 2014). Silcrete sources are generally located in the north western Cumberland Plain

Areas with few or no sites identified on the surface have often been shown to contain subsurface archaeological deposits and the distribution of surface artefacts is not a reliable indicator of an area's archaeological potential (Niche 2012). PADs are most likely to be located along valley floors and low slopes and ridgelines between flat landforms (GML 2020) and possess low-to-moderate density archaeological deposits (AHMS 2005 in AMC 2014). Sites situated in the alluvial soils of the South Creek Soil Profile have the potential for stratified deposits (GML 2020), however; low-lying, flood prone areas are unlikely to have been used extensively for camping (Steele 2001 in AMC 2014).

Instances of old growth vegetation are present in the region and have the potential to contain culturally modified trees (Artefact 2010). However, such instances are rare as large-scale land clearance has removed the majority of old growth vegetation from the Cumberland plain (AMC 2014).

PREDICTIVE MODELS

A commonly utilised tool in the planning and management of Aboriginal cultural heritage are predictive models. These models aim to identify specific landforms and places within the landscape which may contain archaeological material. They usually begin as geographically broad models, constructed through extensive reviews of the available literature to determine basic patterns of site distribution, before being refined according to the specific landform and environmental characteristics of the study area.

Predictive models are almost solely based upon a cultural ecological perspective of the landscape: landforms and environmental characteristics provided a distinct set of subsistence constraints, meaning the landscape could only be occupied in particular ways in order to minimise distance to potable water, maximise biodiversity, and provide shelter from the elements. Accordingly, there is an expectation that land use patterns vary between separate environmental zones due to differing constraints and that this will manifest in alternate spatial distributions of archaeological material. While some social factors may have influenced communities to venture through certain landscapes, other social factors may have resulted in the avoidance of landscapes, regardless of environmental conditions. Due to this, to understand the cultural context of a certain landscape consultation with local Aboriginal knowledge holders and community members is essential.

3.3.1 Site types

There are several common Aboriginal cultural heritage site types that may be found in the study area.

Open camp sites / stone artefact scatters represent past Aboriginal subsistence and stone knapping activities and may include archaeological remains such as stone artefacts and hearths. This site type usually appears as surface artefact scatters in areas where vegetation is limited, and ground surface visibility is high. They are also often exposed by erosion, agricultural events (such as ploughing), and the creation of informal, unsealed vehicle access tracks and walking paths. Open campsites are often located on dry, relatively flat land along or adjacent to rivers and creeks. Sites that contain surface or subsurface deposits resulting from repeated or continuous occupation are more likely to occur on elevated ground

near permanent, reliable water sources. Flat, open areas associated with creeks and their resource-rich environments would have offered ideal camping areas to the Aboriginal inhabitants of the local area.

Isolated artefacts may represent a single item discard event or the result of limited stone knapping activity. The identification of isolated artefacts may indicate the presence of a more extensive, subsurface in situ archaeological deposit, or a larger deposit obscured by low ground visibility. Isolated artefacts are likely to be located on landforms associated with a range of activities, such as ridge lines that would have provided ease of movement through the area and level areas with access to a water source. Artefact scatters and isolated artefacts are the most common site types found in association with fresh water and/or food resource gathering areas.

Potential Archaeological Deposit (PAD) are areas where there is no surface expression of stone artefacts, but, due to a landscape feature or isolated artefact, there is a strong likelihood that the area will contain subsurface *in situ* archaeological deposits. Landscape features that may indicate a PAD include proximity to reliable water sources, particularly terraces and flats, ridge lines and ridge tops, and sand dune systems.

Culturally modified trees exhibit evidence of the deliberate removal of the *periderm* (outer bark), *phloem* (inner bark), and, in some cases, the sapwood. These materials can be used to manufacture a variety of items, including shields, Coolamon (bowls or trays), watercraft, containers, and a range of wooden tools and implements. Trees may also have been scarred in order to gain access to food resources (such as cutting toe-holds so as to climb the tree and catch possums or birds) or to mark locations (such as tribal territories). In some instances, Aboriginal people marked important features or locations (such as ceremonial grounds) by carving patterns or motifs into the sapwood of established trees or bending and grafting the branches of saplings to create rings.

Grinding grooves are the physical evidence of tool making or food processing activities undertaken by Aboriginal people. The manual rubbing of stones against other stones creates grooves in the rock; these are usually found on flat areas of abrasive rock such as sandstone in close proximity to water courses.

Bora grounds / ceremonial sites are locations that have spiritual or ceremonial values to Aboriginal people. Such sites may comprise natural or altered landforms and, in some cases, will also contain archaeological material. For example, bora grounds are a ceremonial site type usually consisting of a cleared area around one or more raised earth circles connected by a pathway. Bora grounds are often accompanied by ground drawings or mouldings of people, animals or deities, or geometrically carved designs on the surrounding trees.

Burials often took place in proximity to camp sites, as most people tended to die in or close to camp and it is difficult to move a body over a long distance. Soft, sandy soils on or close to rivers and creeks allowed for easier removal of earth for burial. Similarly, rock shelters or middens also provided accessible burial places. Burial sites may be marked by stone cairns, modified trees, or a natural landmark. They may also be identified through historic records or oral histories.

Contact / historical sites can include a wide variety of sites and may be identified through artefactual evidence or oral histories. Artefacts located at such sites may involve the use of introduced materials such as glass or ceramics or may have social significance regarding the interaction between Aboriginal people and European settlers.

3.3.2 Site occurrence

Based on the results produced from the landscape assessment, searches of the AHIMS and state heritage registers, and examination of the regional and local Aboriginal archaeological context, the below predictive model (Table 7) has been designed for the study area.

Table 7: Predictive model for the occurrence of archaeological site types in the study area

Site Type	Description	Likelihood of occurrence
Open camp sites / stone artefact scatters / isolated finds	Artefact scatters and isolated artefacts are the most common site types found in association with fresh water, and/or food resource gathering areas. Artefact scatters and isolated finds are reported to be the most common archaeological site type in the study area.	High
Potential Archaeological Deposits	The study area is a landform that could be considered to be potentially archaeologically sensitive	Moderate
Culturally modified trees	Culturally modified trees may be present wherever tree specimens of an appropriate age are present. Widespread land clearing has been undertaken within the study area.	Low
Axe grinding grooves	Although the study area is in proximity to a watercourse, the underlying geomorphology of the study area is not conducive to this site type, no naturally exposed bedrock	Low
Bora grounds / ceremonial sites	There is a low reported incidence of ceremonial sites in proximity to the study area.	Low
Burials	There is a low reported incidence of burial sites in proximity to the study area. The Blacktown soils are shallow, and it is unlikely that this site type would be present.	Low
Contact / historical sites	Contact sites may occur in any area where Aboriginal people encountered early European settlers.	Low

3.3.3 Archaeological assemblages

Kuskie (2009:81-82) describes an interpretive model for examining the archaeological assemblages that are expected to result from varying cultural, behavioural, and subsistence activities associated with the above site types (Table 7). Whilst this model is useful for making inferences concerning the activities that were likely occurring in a specific study area, the effects of taphonomic and depositional processes on a given assemblage must be considered. It is likely that Aboriginal people primarily worked with organic materials (such as wood, bark, resin, leaves, reeds, shell, and bone; Holdaway and Stern 2008:1-2). Resultingly, due to the durability of stone and the rare preservation of organic materials, the archaeological record of Aboriginal culture is incomplete. Hence, interpretations regarding the significance of certain sites and assemblages must be considered as based on incomplete data.

Table 8: Interpretive model for examining archaeological assemblages, after Kuskie (2009:81-82).

Activity	Likely associated archaeological assemblage
Ceremonial activities	Presence of ochre in sites; and Evidence of ceremonial sites (such as bora grounds, stone arrangements, carved trees, or rock engravings).

Activity	Likely associated archaeological assemblage
Spiritual, social, and other activities	Presence of ochre in sites; or Evidence of ceremonial sites (such as bora grounds, stone arrangements, carved trees, or rock engravings); and Rock art and engravings.
Food procurement	Stone artefacts (such as eloueras); or Wooden implements (such as digging sticks), where preserved; and Food refuse (such as shell or bone).
Food processing and consumption	Tools with specific use-wear/residues on cutting/chopping/pounding edges; or Specific tools that are related to processing certain foods (such as eloueras or seed grinding slabs); or Evidence associated with hearths or ovens; and Food refuse (such as shell or bone).
Production and maintenance of wooden implements	Stone and shell tools with design and/or use-wear/residues consistent with working wood; and Presence of wooden implements, where preserved.
Procurement of stone	Presence of stone sources; and Evidence for procurement activities.
Production of stone tools	Hammerstones and anvils; or Debitage (such as cores, flakes, flake portions, or microblades); and Finished tools.
Production of backed artefacts	Microliths (unused); or Bondi point preforms; or Backing flakes; or Hammerstones; and High quantities of debitage, including a high frequency of microblades.
Maintenance of stone tools	Cutting-edge rejuvenation flakes; or Portable whetstones; and Axe-grinding grooves.

4. Archaeological survey

4.1 Purpose

The purpose of the survey was to assess the current condition of the Aboriginal sites identified within the study area and to identify any unrecorded Aboriginal sites or objects. Areas of subsurface archaeological potential identified in the desktop assessment were also inspected.

4.2 Survey strategy

Archaeological survey of the study area was conducted on foot, in accordance with the *Code of Practice*. The overall strategy was to complete a full coverage survey, as the exact locations of the impacts are not yet known. A handheld Global Positioning System (GPS) was used to track the survey area covered and record the location of key features (disturbances, areas of archaeological sensitivity/potential). The coordinate system projection used for all site recording was GDA94 MGA 56.

The field survey methodology was as follows:

- Record the landform, general soil information, surface conditions and vegetation conditions encountered during the survey and how these impact on the visibility of objects
- Define the boundaries of any Aboriginal sites and areas of PAD based on landmarks and historical maps
- Reinspect previously identified Aboriginal sites and areas of archaeological potential within the study area
- Identify areas of disturbance which may have impacted the presence of intact soils and archaeological features
- Consultation with Aboriginal representatives to discuss the potential intangible cultural heritage values of the study area
- Collect information to ascertain whether further archaeological investigation is required.

All ground exposures were examined for Aboriginal objects (stone artefacts, imported shell, or other traces of Aboriginal occupation and old growth trees were examined for signs of cultural scarring and marking.

A photographic record was kept during the survey. Photographs were taken to record aspects of survey units including vegetation and disturbance. Scales were used for photographs where appropriate.

4.2.1 Site definition and recording

An Aboriginal site is generally defined as an Aboriginal object or place. An Aboriginal object is the material evidence of Aboriginal land use, such as stone tools, scarred trees, or rock art. Some sites, or Aboriginal places can also be intangible and although they might not be visible, these places have cultural significance to Aboriginal people.

The Heritage NSW guidelines state, in regard to site definition, that one or more of the following criteria must be used when recording material traces of Aboriginal land use:

- The spatial extent of the visible objects, or direct evidence of their location.

- Obvious physical boundaries where present, e.g., mound site and middens (if visibility is good), a ceremonial ground.
- Identification by the Aboriginal community on the basis of cultural information.

For the purposes of this study an Aboriginal site would be defined by recording the spatial extent of visible traces or the direct evidence of their location.

4.2.2 Protocol for recording Potential Archaeological Deposits

Where areas of PAD were identified towards the margins of each survey unit, efforts were made by the survey team to delineate each area of potential beyond the survey unit. Where the extent of the PAD extends beyond the survey unit, the extent of that feature up to approximately 70m outside the survey unit was mapped. If it is likely that these PADs continue beyond that point, the survey team justified that the distance is adequate to provide an accurate representation of the PAD with regard to future planning and design for the project.

4.3 Survey results

The field survey was conducted on 18 November 2021 by ELA Archaeologists Jennifer Norfolk and Declan Coman and field officer Kirsty Lee Chalker from Cubbitch Barta Native Title Claimants Aboriginal Corporation. The study area was covered as a single survey unit and was sample surveyed due to the dense vegetation cover.

The study area is descried as two landform units, sloping landform and flat landform. The flat landform is located in the west end of the study area and is in association with the unnamed drainage line that runs adjacent to Badgerys Creek Road. The landform slopes up towards the centre of the study area with a low lying crest and then slopes to the east to another unnamed drainage line.

The majority of study area is covered in dense grasses and has been cleared of native vegetation, there are a few stands of native trees (new growth) and introduced species around previous residences and outbuildings. This dense vegetation cover has limited the visibility across the study area (2%).

There was evidence of various degrees of disturbance across the study area. Minor disturbance from fencing, and land clearance has impacted the majority of the study area, there is moderate disturbance from potential irrigation, drainage mitigations and pastoral activities. There has been high disturbance along the northern boundary of the study area from the construction of property access tracks/ roads and from the former residence and outbuildings on the highest point of the study area. There was low exposure across the study area near the fencing, along the road verge and in patches across the sloping landform (2%). A soil exposure was observed in a disturbed context and a thin, orange-brown soil profile on a shallow clay layer was visible in the cross section.

AHIMS ID 45-5-2691 is recorded as being located along the fencing on the south eastern boundary of the study area, however the survey was unable to reidentify the site due to low visibility. The previous site survey conducted by GML (2020) was also unable to identify this Aboriginal object.

No further Aboriginal sites were identified during the survey but areas with the potential to contain Aboriginal objects were observed.

Figure 9: Drainage line/ flat landform in west of study area; view south-west.

Figure 10: Ground surfaces and vegetation cover in middle of creek line; view southwest

Figure 11: Visible ground surface and shallow soil exposure on bank of drainage line.

Figure 12: Limited visibility in patches across study area.

Figure 13: Gently sloping landform, dense grass cover and small stands of trees; view south east

Figure 14: Modified landform and surface disturbance from former residence in centre of study area; view south

Figure 15: Prior disturbance from pastural infrastructure in north-east of study area

Figure 16: Prior disturbances from road along northern extent of study area; view west

Figure 17: Recorded location of registered AHIMS ID 45-5-2691, low visibility

Figure 18: Soil exposure on top of sloping landform; at southern extent of study area

Figure 19: Gentle sloping landform descending to the east of the study area; view north-east of unnamed drainage line and stand of new tree growth

4.3.1 Survey coverage

In accordance with Heritage NSW *Code of Practice* the study area was surveyed in relation to survey units, landforms, and landscapes.

Table 9: Survey coverage

Survey Unit	Landform	Survey Unit Area (m^2)	Visibility (%)	Exposure (%)	Effective coverage (ECA)	Effective coverage
Study area	Flat	8,215	2	2	3.2	<1%
	Slope	33,985	2	2	13.6	<1%

Table 10: Landform summary

Landform	Landform Area	Area effectively surveyed	% of landform effectively surveyed	Number of sites	Number of artefacts or features
Slope	33,985	13.6	<1	1	1 (PAD)
Flat	8,215	3.2	<1	1	1 (PAD)

The field survey confirmed that portions of the study area have undergone varying levels of disturbance, primarily due to the construction of residential buildings and outbuildings associated with pastoral activities, the construction of roads and installation of fences and irrigation. The entire study area has been impacted by land clearance.

Ground surfaces within the study area that comprised AHIMS ID 45-5-5370 were inspected, and additional areas that could potentially contain Aboriginal objects were observed.

4.4 Discussion

The study area contains sensitive landforms due to the proximity of two ephemeral drainage lines either side of a gentle, undulating landform. The exploitable resources that the creek lines would have represented are easily accessible from the undulating landform which also provides areas of flat even ground with good views of the surrounding landscape making it suitable for habitation.

AHIMS ID 45-5-5370 had low visibility and a few small soil exposures, the site has had low disturbance from previous land clearance. The soils are likely to be shallow but due to the low effective coverage of the study area the potential for aboriginal objects and intact archaeological deposits is unknown but due to the sites location within the landform and available water source there is potential for evidence of Aboriginal occupation.

The eastern boundary of the study area is adjacent to AHIMS ID 45-5-5371, a registered PAD that covers the ephemeral drainage line of the east. Aerial Imagery indicates the ground surface has had limited disturbance. Due to the location in the landform, the proximity to water source, registered AHIMs and low levels of disturbance there is the potential for further Aboriginal objects to be located in this area.

This is consistent with advice provided in the field by Kirsty Lee Chalker of Cubbitch Barta Native Title Claimants who was in attendance for the survey.

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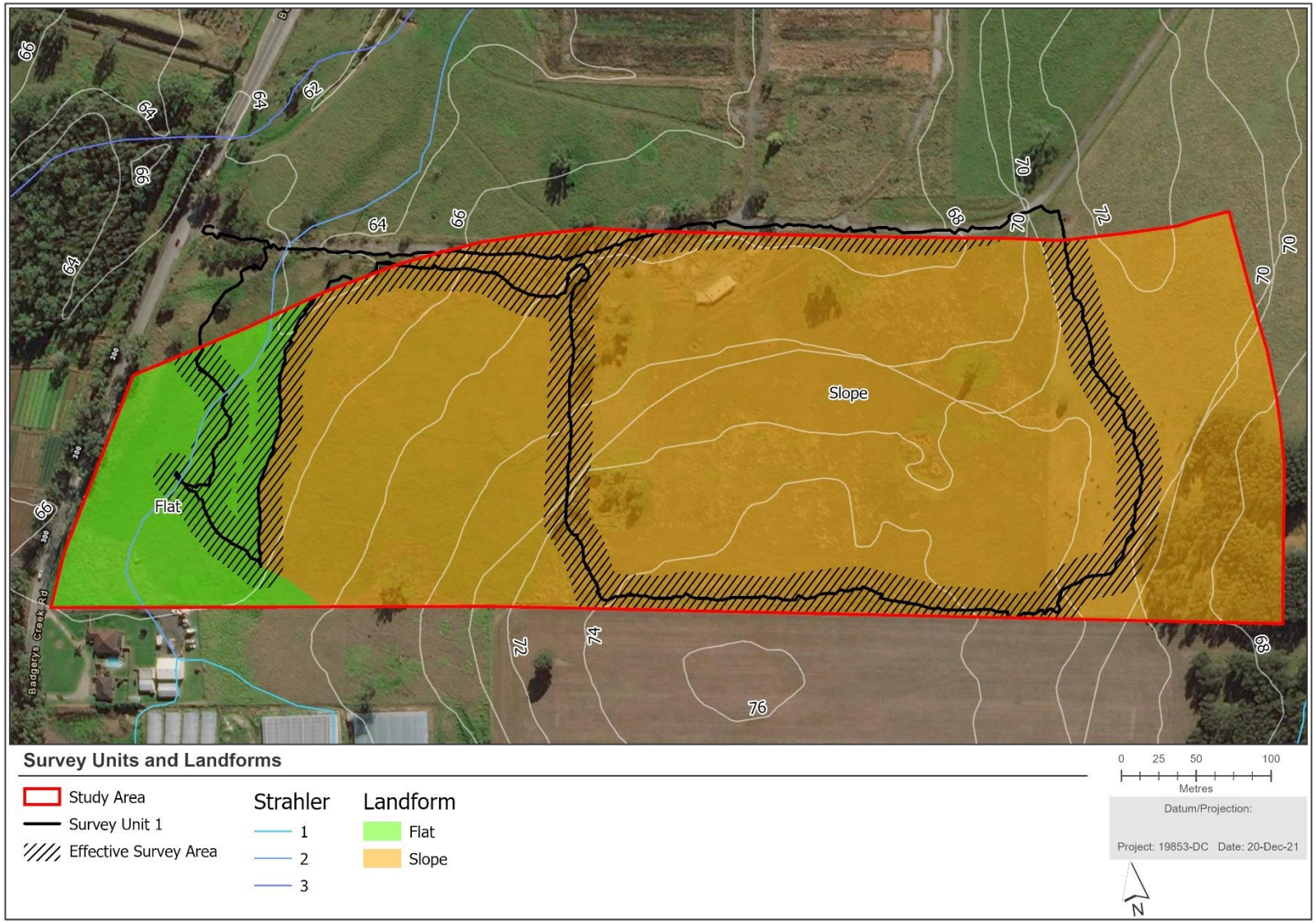

Figure 20: Survey Units, Contours and Landforms

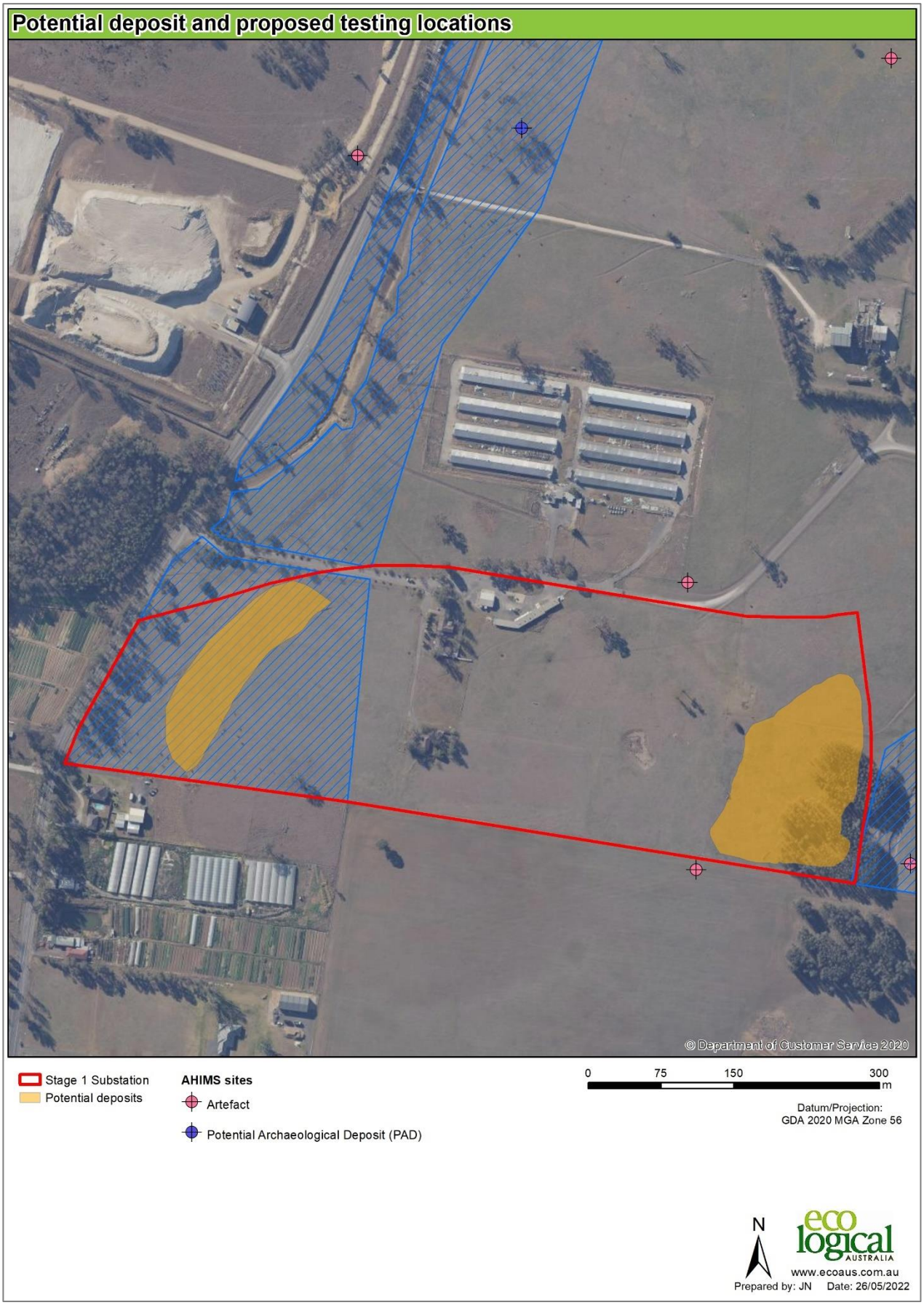

Figure 21: Areas of Potential Archaeological Deposit; both previously registered and newly identified

5. Archaeological test excavations

5.1 Introduction

The purpose of the Archaeological Research Design (ARD) is two-fold: to provide and direct a reasonable foundation for management decisions for the archaeological resource as well as satisfying regulatory requirements through a standardised process. The research design will be founded on: "what questions one is interested in investigating, what kinds of sites one expects to find, and the information needed to be collected" (Burke & Smith 2004:3). All related future archaeological studies and analyses stand to benefit if guided by clear linkage of study goals, relevant theory, methods, and data collection. The application of a research design is international best practice and plays a vital role in the planning and management of cultural heritage.

The aim of this research design is to assist in furthering our understanding of how Aboriginal people utilised the study area in the past. The archaeological investigation proposes to firstly, conduct archaeological survey of the areas of proposed development and secondly, undertake test excavations within the areas of proposed development. Testing programs are intended to understand the presence, nature, extent and inform significance of the archaeological resource.

5.2 Research design

The test excavation investigated the study area and collected information about the nature and extent of sub-surface Aboriginal objects, based on a sample gathered from sub-surface investigations. The research questions outlined below include broad questions that attempted to show the level of information the site might be expected to reveal as well as questions specifically related to the site:

- What was the distribution of evidence of past Aboriginal peoples use and occupation within the study area?
- What types of raw materials, artefact types and tool types are present within the assemblage?
- What types of stone tool technology are present within the site?
- Have the test excavations revealed other site types such as hearths, heating ovens, knapping floors or other foci or activity areas?
- Do the results of the test excavation demonstrate any evidence of disturbance within the study area?
- What can the artefact assemblage (or lack thereof) indicate about previous land use by Aboriginal people?
- How does the pattern of landscape use compare to previous studies in the region?

The research design questions developed to guide the testing program are not limited to the questions above and other pertinent questions may arise (or be fine-tuned) during the course of the work being undertaken.

5.3 Test Excavation methodology

ELA undertook archaeological test excavations under the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010a) in order to understand the presence, nature, extent, and significance of the Aboriginal archaeological resource and how best to manage it.

This section presents the methodology for the test excavation. The purpose of archaeological test excavations was to collect information about the nature and extent of sub-surface Aboriginal objects, based on a sample gathered from sub-surface investigations. The work was undertaken by a team comprising archaeologists and representatives from the RAPs.

5.3.1 Test Excavation Area 1

Test Excavation Area 1 will be investigated through the utilisation of a systemic grid of test excavation units (50cm X 50cm). The placement of the test excavation units will be a minimum of 15 metres and a maximum of 50 metres distance from the nearest adjacent unit with the possibility to expand on units displaying high density assemblages to 1 m^2 in accordance with the Code of Practice.

Up to thirty four (34) test excavation units will be placed in the test excavation area to ensure it is adequately assessed.

5.3.2 Test Excavation Area 2

Test Excavation Area 2 will be investigated through the utilisation of a systemic grid of test excavation units (50cm X 50cm). The placement of the test excavation units will be a minimum of 15 metres and a maximum of 50 metres distance from the nearest adjacent unit with the possibility to expand on units displaying high density assemblages to 1 m^2 in accordance with the Code of Practice.

Up to fifty (50) test excavation units will be placed in the test excavation area to ensure the area is adequately assessed.

The test excavation methodology applied to both areas is outlined below:

5.3.3 Stage 1 test pits

- The test pits will be excavated by hand (inclusive of trowels, spades and other hand tools) and placed on a systematic grid appropriate to the scale of the area being investigated e.g., 10 m intervals, 20 m intervals, or other justifiable and regular spacing.
- The first test pit within a landform or PAD area will be excavated in 5 cm spits; the subsequent test pits conducted within the landform or PAD area can then be excavated in either 10 cm spits or stratigraphic units (whichever is smaller) to the base of Aboriginal object-bearing units being the removal of the A-horizon soil deposit down to the sterile clay layer (B-horizon).
- Depending on the depth and in order to achieve this, additional adjacent 50 cm x 50 cm test pits may be excavated (for example expanding the test pit to 50 cm x 1 m) to reach the sterile clay layer.

5.3.4 Stage 2 expansion pits

- If five or more stone artefacts or formal tools are located within a 50 cm x 50 cm test pit, or suspected features such as heat treatment pits, hearths, or evidence of knapping events are identified, the test pit may be expanded into a 1 m x 1 m square at the discretion of the

Excavation Director. The additional pits would be excavated in 50 cm x 50 cm test pit units in order to further understand the archaeological resource.

- Alternately, if five or more artefacts or formal tools are located within a 50 cm x 50 cm test pit, up to four 50 cm x 50 cm test pits may be placed at an interval of 5, 10, or 20 m (or other justifiable and regular spacing appropriate to the scale of the area being tested) from the test pit to test further the immediate area for artefact concentrations and/or archaeological features, or to define a site boundary. These additional test pits will be excavated until clay, or culturally sterile soils are reached.
- Expansion test pits may be combined and excavated as necessary in 50 cm x 50 cm units for the purposes of further understanding site characteristics. Note that under the Code of Practice, the maximum area that can be excavated in any one continuous area is 3 m^2.

5.3.5 General procedures

- The Code of Practice dictates that the maximum surface area of all test excavation units must be no greater than 0.5% of the PAD or area being investigated.
- All excavated soil will be sieved in 5 mm sieves. Artefacts will be collected and bagged according to test pit location and spit or context number.
- Wet or dry sieving may be employed depending on the nature of the soils. For example, dry sieving may be used for sandy soils.
- Each test pit will be recorded using standardised recording forms, coordinates collected using a GPS, and photographed using a range pole.
- The stratigraphic / soil profile for each test pit will be recorded in scale drawings as required by Heritage NSW Code of Archaeological Practice recording requirements.
- Test excavation units will be backfilled as soon as practicable, to be organised by the proponent.
- An AHIMS site card will be prepared and submitted to the AHIMS Registrar for any new sites identified during test excavations.
- An AHIMS Site Impact Recording form will be completed and submitted to the AHIMS Registrar for any sites impacted during test excavations.
- In the unlikely event that suspected human remains are identified works will immediately cease and the NSW Police and OEH will be notified.
- Test excavations will cease when enough information* has been recovered to adequately characterise the objects present with regard to their nature and significance.

*Enough information is defined by Heritage NSW as meaning “that the sample of excavated material clearly and self-evidently demonstrates the deposit’s nature and significance. This may include things like locally or regionally high object density: presence of rare or representative objects: presence of archaeological features: or locally or regionally significant deposits stratified or not.” (DECCW 2010a).

5.3.6 Lithic Analysis

Collected materials are temporarily held at the ELA office, where they have been analysed and catalogued by Jennifer Norfolk, ELA Archaeologist. Any artefacts that were particularly interesting or representative are photographed and included in the report. The collection was analysed using *A Record in Stone* (Holdaway & Stern 2004).

5.4 Test excavation results

Archaeological excavations within the study area identified that there has been heavy disturbance from previous land use and vegetation clearance as identified through the archaeological assessment.

No Aboriginal objects were recovered from test excavation area 1 (AHIMS ID 45-5-5370) and no Aboriginal objects were recovered from test excavation area 2. Enough information has been gathered to understand the nature of the study area and the following section presents a summary of the test excavation results.

5.4.1 Soils and stratigraphy

TEST EXCAVATION AREA 1

Area 1 is located at the western extent of the study area, within the registered PAD (AHIMS ID 45-5-5370). The area was situated on gentle sloping landform that runs east-west with the low lying drainage line. The area had been cleared of all native vegetation and surface disturbance included minor fencing.

Soils across the testing area were generally shallow and consisted of a mixed brownish loam/ clay loam over a yellow-brown to red medium clay. Depths varied from 200-300mm, and there were gravel inclusions (up to 70%) throughout. The test excavation units were saturated during excavation from the heavy rainfall, several test excavation units were abandoned from the flooding and from high disturbance witnessed during excavations. Representative sections and a summary of the soil profiles of test excavation units are presented and described below.

Table 11: Soil summaries for test pits 3-18 in Area 1

Stratigraphy	Description	
A Horizon	Depth	0 – 200 mm
	pH	5.5 - 7
	Munsell	10YR 2/2
	Friable brownish loam, root and grass inclusions throughout with minor gravel inclusions.	
B horizon	Depth	200 – 300 mm
	pH	4.5-6.5
	Munsell	2.5YR 3/3
	Transition to yellow brown medium clay and red medium clay between 200-300mm, gravel inclusions (up to 70%).	

Figure 22: Area 1 test pit 11 –View north west from test area towards the drainage line and Badgerys Creek

Figure 23: Area 1 test pit 11 – North profile – mixed brown clay loams, clear horizon orange medium clay

Figure 24: Area 1 test pit 5 – View across transect (TP 5-6)

Figure 25: Area 1 test pit 5 – North profile of test pit 5, flooding, ground saturated, mixed clay loams

TEST EXCAVATION AREA 2

Area 2 is located at the eastern extent of the study area, within the curtilage of the area of PAD that was identified by ELA during the archaeological survey. The PAD was identified as being on a relatively flat landform adjacent to AHIMS ID 45-5-5371, a PAD identified by GML 2020. The gentle sloping landform runs west-east towards a second-order tributary. The area had been partially cleared of native vegetation and surface disturbance included minor fencing.

Soils across the testing area were generally very shallow and consisted of a friable, brownish silty loam, with a clear horizon over compact, medium clay layer. Depths varied from 50-200mm, and there were ironstone gravel inclusions (less than 10%) throughout. The test excavation units were saturated during excavation from the heavy rainfall, several test excavation units were abandoned from the flooding and from high disturbance witnessed during excavations. Representative sections and a summary of the soil profiles of test excavation units are presented and described below.

Table 12: Soil summaries for test pits 1-24 across Area 2

Stratigraphy	Description	
A Horizon	Depth	0 – 100 mm
	pH	5.5-7
	Munsell	10YR 2/2
	Friable, moist brown silty loams. Some roots and grass inclusions, charcoal flecks, small ironstone gravels (<10%) throughout.	
B Horizon	Depth	60 – 250 mm
	pH	4.5-6.5
	Munsell	5YR 3/2
	Orange medium clay at base, moist and compact.	

Figure 26: North profile for test pit 9 – homogenous friable brown loams – clear horizon orange clays

Figure 27: North profile of test pit 21 showing shallow mixed soils – clay loam to medium orange clay.

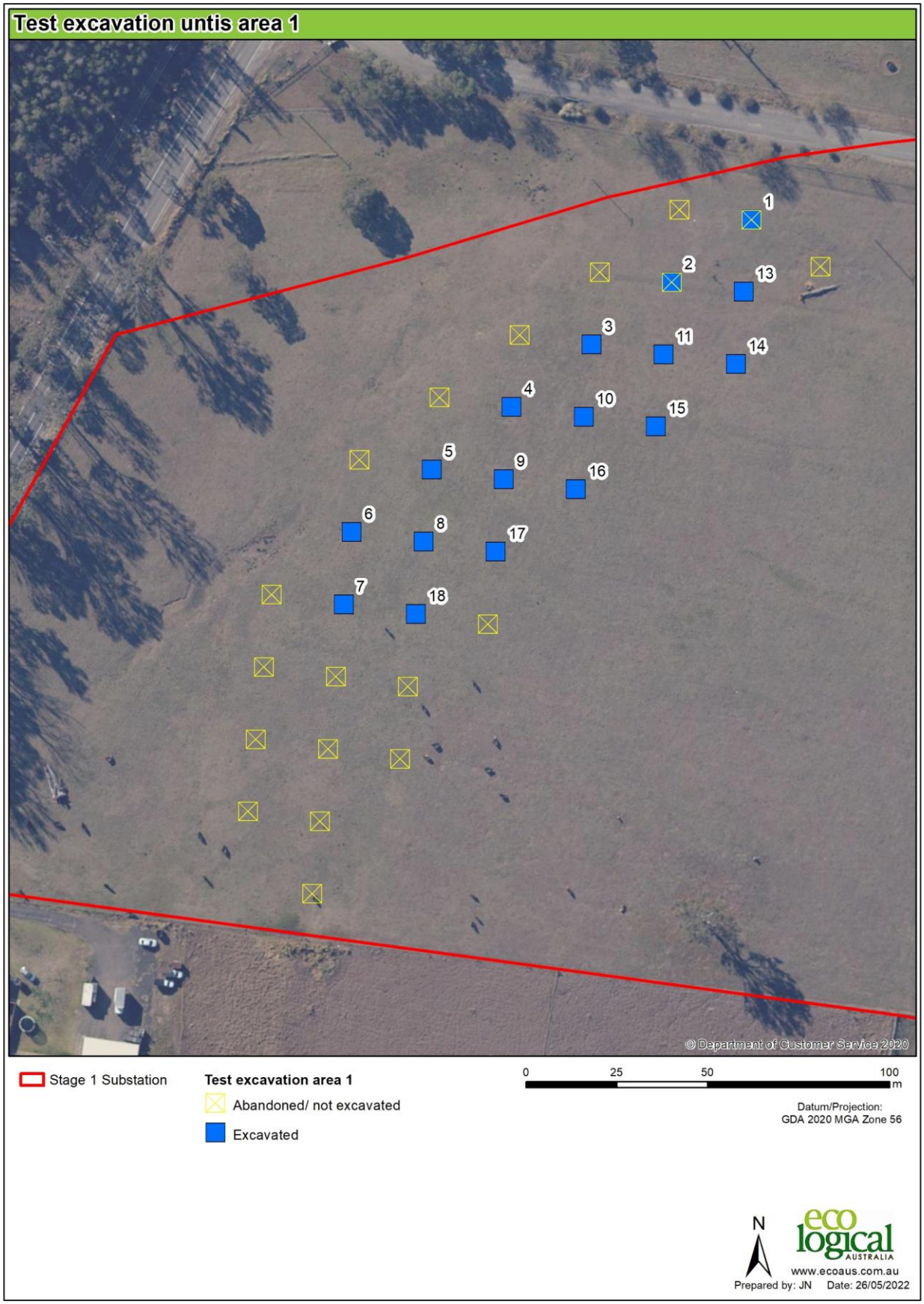

Figure 28: Results for test excavation area 1, units not excavated due to visible disturbance and flooding. Test pits 1 and 2 abandoned due to flooding.

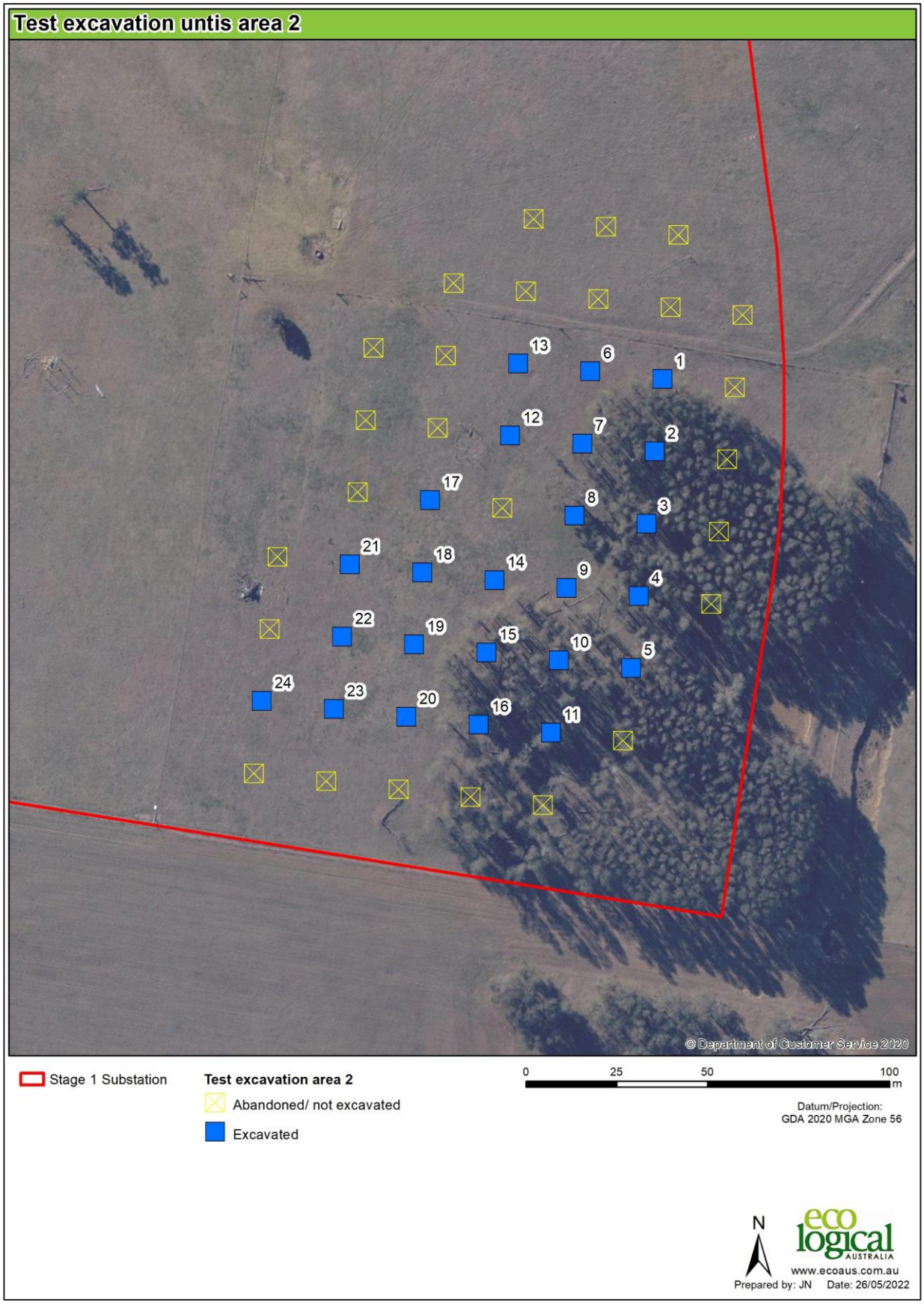

Figure 29: Results for test excavation area 2, units not excavated due to visible disturbance, shallow soils and flooding.

6. Analysis and discussion

WHAT IS THE DISTRIBUTION OF EVIDENCE OF PAST ABORIGINAL PEOPLES USE AND OCCUPATION WITHIN THE STUDY AREA

No evidence of Aboriginal occupation or utilisation was identified within the Stage 1 portion of the wider study area of 475 Badgerys Creek Road. The majority of identified Aboriginal sites within the wider study area have been located in close proximity to the water sources. Isolated artefacts have been recorded on the minor crest and in highly disturbed contexts along the vehicle access tracks and the former chicken shed locations.

WHAT TYPES OF RAW MATERIALS, ARTEFACT TYPES AND TOOL TYPES ARE PRESENT WITHIN THE ASSEMBLAGE?

No artefacts or raw materials were identified within the stage 1 study area.

WHAT TYPES OF STONE TOOL TECHNOLOGY ARE PRESENT WITHIN THE SITES?

No stone tool technology was present within the stage 1 study area.

HAVE THE TEST EXCAVATIONS REVEALED OTHER SITE TYPES SUCH AS HEARTHS, HEATING OVENS, KNAPPING FLOORS OR OTHER FOCI OR ACTIVITIES AREAS?

The test excavation program did not reveal any hearths or heating ovens, knapping floors or other foci or activities areas.

DO THE RESULTS OF THE TEST EXCAVATION DEMONSTRATE ANY EVIDENCE OF DISTURBANCE WITHIN THE STUDY AREA?

Evidence of previous land disturbance was visible during the survey, the study area had been mostly cleared, and affected by agricultural and pastoral practices.

The majority of test excavations units exhibited mixed brown loams to clay loams with a homogenous structure and a clear horizon with the medium to heavy clay loam typical of Blacktown soil landscapes

Test excavation unit in area 2 had very shallow soils the likely result of a combination of disturbances of land clearance, pastoral and agricultural processes, increased erosion and the degree of slope.

WHAT CAN THE ARTEFACT ASSEMBLAGE (OR LACK THEREOF) INDICATE ABOUT PREVIOUS LAND USE BY ABORIGINAL PEOPLE?

The result of the archaeological investigations is not a true indication about the previous land use by Aboriginal people in the past. The lack of tangible evidence is likely due to Aboriginal people primarily working with organic materials such as wood, bark, resin, leaves, reeds, shell, and bone (Holdaway and Stern 2008:1-2). The durability of lithic material is the reason the artefact scatters or isolated finds are the dominant site type represented in the archaeological record of Aboriginal culture. Hence, interpretations regarding the significance of certain sites and assemblages must be considered as based on incomplete data.

The study area has a long history of disturbance of varying degrees which could be a reason for the absence of evidence of Aboriginal occupation. Aboriginal objects are often located within highly disturbed contexts so the lack of artefacts could indicate the unsuitable nature of the test excavation

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area. Open artefact sites and artefact scatters are the most common site types identified within landforms associated with permanent water sources, such as river banks and alluvial flats (White and McDonald 2010). The study area may not have supported a permanent water source, rather a seasonal source. During the dry season or drought drainage line would The current weather conditions have highlighted the flooding implications of the landform and the lack of drainage on the gentle slope created swamp like conditions. This could indicate that the upper slope or crest may have been the location of Aboriginal occupation. The crest was not investigated due to the heavy disturbance from residential buildings and agricultural practices.

HOW DOES THE PATTERN OF LANDSCAPE USE COMPARE TO PREVIOUS STUDIES IN THE REGION?

Low density assemblages of artefacts have been identified in close proximity to reliable water sources. Whilst these sites can represent smaller or less frequent instances of occupation, disturbances from historic land use and erosion can also affect artefact count (Niche 2020).

Artefact Heritage 2020 undertook test excavations to the north east of the study area adjacent Boral Bricks and South Creek. The results of their excavations also identified the lack of artefactual material in the low lying areas adjacent to the water sources. The artefactual material was however located on the higher elevations or raised areas in the vicinity of South Creek.

AECOM 2010 undertook excavations as a result of the proposed Boral Bricks expansion directly north of 475 Badgerys Creek Road. A series of transect were placed adjacent to Badgerys Creek to investigate the presence and distribution of Aboriginal objects. The result was a very low density background scatter identified, with no formal tools or technology evidence. It was identified that the Aboriginal heritage values of the assessment area pertained to low density artefact scatters or 'background scatter' occurring throughout the assessment are, which are considered to be of low archaeological (scientific) significance.

The lack of artefactual material retrieved could indicate the unsuitability of the landscape for Aboriginal occupation but also it could represent a very low density artefact scatter or background scatter that was missed by the excavation methodology. This low density artefact site type is of low significance and impact on this site type would not affect the overall cultural significance of the Aboriginal cultural heritage of the Badgerys Creek area.

6.1 Impact assessment

The desktop assessment identified two previously recorded AHIMS sites within the Stage 1 study area: AHIMS ID 45-5-5370 (BCLL PAD 03) and AHIMS ID 45-5-2691 (B06 an isolated artefact). AHIMS ID 45-5-2691 is an old site that was recorded for the initial investigation works for the Western Sydney Airport. The coordinates on AHIMS were incorrect and the site is located on the southern boundary fence outside the current Stage 1 study area. The AHIMS site card confirms that the site is located on the boundary of the study area, and it will potentially be impacted by the proposed substation works.

The archaeological survey concluded there was large scale disturbance, the majority of the registered AHIMS site (AHIMS ID 45-5-5370) was viewed as not having potential. The majority of the site is a low lying waterlogged area and the western portion has been impacted by the construction of Badgerys Creek Road. A gentle rise on the eastern portion was recommended for testing to investigate the landform. An additional area of PAD was identified on the eastern boundary on a relatively flat to gentle sloping landform. This area was thought to have potential for Aboriginal objects due to the relatively intact nature of the site during the survey, its proximity to the watercourse and historical imagery.

The proposed substation works have not been specified at this stage and therefore this assessment assumes that all ground surfaces may be impacted. The likely impacts of such works will involve levelling of ground surfaces and associated utilities such as sewerage, water and electricity and access. Further archaeological investigations were required to identify the nature and extent of potential Aboriginal objects in areas of PAD in order to assess potential impacts.

Following test excavations of the two areas of PAD no Aboriginal objects were identified and the Stage 1 study area has been heavily impacted by previous land use and the likelihood of impacts to Aboriginal objects is low. There will be no impacts to Aboriginal cultural heritage values by the proposed substation works within Stage 1 study area.

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7. Management and mitigation measures

7.1 AHIMS sites

AHIMS ID 45-5-2691 has been identified as being registered on the AHIMS database with the wrong coordinates. To insure this site is properly managed in the future the AHIMS site card will be updated to reflect the true location.

No mitigation measures area required for this Aboriginal site being located outside the current assessment area.

AHIMS ID 45-5-5370 was registered without an adequate archaeological assessment being undertaken to address the historical impacts to the site boundaries. Following test excavations across a portion of the site no Aboriginal objects were identified and the soils exhibited significant disturbance due to the homogenous nature of the A horizon and clear boundary with the clay B horizon.

An impact recording form will completed and the AHIMS site information updated to record the actual site boundary with moderate to high potential for archaeological deposits.

7.2 Unexpected finds

ABORIGINAL OBJECTS

are protected under the NPW Act even if they are not *in situ*. On the basis of the predictive model outlined in Section 3.3 and the identification of registered Aboriginal objects within the study an AHIP should be sought to cover impacts.

If unexpected finds are identified during any phase of construction, works should cease and a qualified archaeologist should be sought to assess the finds and determine what steps should be taken next.

HUMAN REMAINS

If suspected human skeletal remains are uncovered at any time throughout undertaking the proposed works, procedures outlined in the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2010*) would be followed. In all cases, the special importance of Aboriginal ancestral remains must be acknowledged and respected and the wishes of the Aboriginal community must be respected when making decisions regarding ancestral remains. To avoid doubt, the precautionary principle must be applied to all physical remains suspected to be Aboriginal ancestral remains.

If any human remains are disturbed in, on or under the land, you must:

- not further disturb or move these remains
- immediately cease all work at the particular location
- notify NSW Police
- notify Heritage NSW Environment Line on 131 555 as soon as practicable and provide available details of the remains and their location
- not recommence any work at the particular location unless authorised in writing by Heritage NSW.

8. Recommendations

The following recommendations are based on consideration of:

- Statutory requirements under the *National Parks and Wildlife Act 1974* as amended
- The results of the Aboriginal technical report
- The interests of the Aboriginal stakeholder groups
- The known impacts of the proposed works

It was found that:

- One AHIMS site (AHIMS ID 45-5-5370) is located within the study area. AHIMS ID 45-5-2691 was incorrectly recorded and is located outside the study area.
- Archaeological survey was undertaken to identify any Aboriginal objects and to assess the potential for archaeological deposits. No Aboriginal objects were identified, an additional area was PAD was identified and the known AHIMS site PAD area was reduced.
- Test excavations were undertaken to investigate the areas of PAD, no Aboriginal objects were identified, and the soil were moderately to highly disturbed.
- No Aboriginal cultural values will be impacted by the proposed substation works.

Based on the findings of this Aboriginal Heritage Assessment and the archaeological investigation the following is recommended:

Recommendation 1 – No further assessment required, works may proceed with caution

No further archaeological assessment is required for the study area. Although general measures will need to be undertaken. These general measures include:

- Management of AHIMS ID 45-5-2691 will be to update the registered information to reflect the actual location of the Aboriginal site.
- Management of AHIMS ID 45-5-5370 will be to submit an Aboriginal site impact form to AHIMS to update the information about the Aboriginal site. The potential archaeological deposit site boundary will be updated to reflect the areas of moderate to high potential.

UNEXPECTED FINDS POLICY

- Aboriginal objects are protected under the NPW Act regardless of if they are registered on AHIMS or not. If suspected Aboriginal objects, such as stone artefacts are located during future works, works must cease in the affected area and an archaeologist called in to assess the finds.
- If the finds are found to be Aboriginal objects, the Heritage NSW must be notified under section 89A of the NPW Act. Appropriate management and avoidance or approval under a section 90 AHIP should then be sought if Aboriginal objects are to be moved or harmed.
- In the extremely unlikely event that human remains are found, works should immediately cease, and the NSW Police should be contacted. If the remains are suspected to be Aboriginal, Heritage NSW may also be contacted at this time to assist in determining appropriate management of the human remains.

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Appendix A AHIMS Search Results

AHIMS Web Services (AWS)
Extensive search - Site list report

Your Ref/PO Number : 19853
Client Service ID : 615973

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
45-5-2583	B 30	AGD	56	292370	6244490	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	Mr.Kelvin Officer					Permits		
45-5-2586	B3	AGD	56	290240	6247220	Open site	Valid	Artefact : -	Isolated Find	
	Contact	Recorders	Mr.Kelvin Officer					Permits		
45-5-0213	South Creek;	AGD	56	293700	6247000	Open site	Valid	Artefact : -	Open Camp Site	104106
	Contact	Recorders	Ms.Laila Haglund					Permits		
45-5-0517	Badgery's Creek / Longleys Road Badgery's Creek	AGD	56	291940	6247650	Open site	Valid	Artefact : -	Open Camp Site	1018
	Contact	Recorders	Mr.Allan Lance					Permits		
45-5-2658	B67	AGD	56	290150	6246700	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2659	B66	AGD	56	289990	6246750	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2660	B64	AGD	56	291300	6246000	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2661	B63	AGD	56	291450	6245880	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2662	B61	AGD	56	291100	6245450	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2666	B85	AGD	56	290000	6244893	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2669	B96	AGD	56	291270	6245670	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2672	B97	AGD	56	291270	6245510	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2673	B101	AGD	56	290320	6246980	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2674	B100	AGD	56	290870	6245740	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2675	B99	AGD	56	291950	6246080	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2676	B98	AGD	56	291840	6245800	Open site	Destroyed	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Hilton Naden					Permits		
45-5-2677	B16	AGD	56	291830	6244780	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2682	B75	AGD	56	291640	6247700	Open site	Valid	Artefact : -		102196

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 19853

Client Service ID : 615973

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2616	B 28	AGD	56	291700	6244980	Open site	Valid	Artefact : -		
	Contact Gandangara LALC	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2683	B76	AGD	56	291860	6247720	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2684	B73	AGD	56	291080	6246280	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2686	B72	AGD	56	290800	6246500	Open site	Valid	Artefact : -		102196
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2656	B102	AGD	56	290400	6247070	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2690	B59	AGD	56	291550	6247420	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2691	B60	AGD	56	290900	6245480	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2693	B55	AGD	56	290310	6246680	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2694	B52	AGD	56	290550	6246580	Open site	Not a Site	Modified Tree (Carved or Scarred) : -		103124
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd,Mr.James Hammond					Permits		
45-5-2695	B51	AGD	56	290150	6246420	Open site	Not a Site	Artefact : -		103124
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd,Mr.James Hammond					Permits		
45-5-2703	B12	AGD	56	289840	6246320	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2704	B13	AGD	56	291370	6246850	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2705	B15	AGD	56	291000	6248120	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2798	B27	AGD	56	291650	6245090	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2779	B17	AGD	56	291060	6244300	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2780	B65	AGD	56	291310	6246110	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2619	B 29	AGD	56	291970	6244700	Open site	Valid	Artefact : -		
	Contact Gandangara LALC	Recorders	Kerry Navin					Permits		

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 19853
Client Service ID : 615973

SiteID	SiteName		Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
45-5-2623	B 68		AGD	56	289800	6246810	Open site	Valid	Artefact : -		
	Contact	Gandangara LALC	Recorders	Kerry Navin					Permits		
45-5-2624	B 34		AGD	56	291750	6244890	Open site	Valid	Artefact : -		
	Contact	Gandangara LALC	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2625	B 35		AGD	56	291550	6244330	Open site	Valid	Artefact : -		
	Contact	Gandangara LALC	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2626	B 36		AGD	56	291060	6244350	Open site	Valid	Artefact : -		
	Contact	Gandangara LALC	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2627	B 37		AGD	56	290500	6244900	Open site	Valid	Artefact : -		
	Contact	Gandangara LALC	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2630	B 40		AGD	56	291900	6247660	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Gandangara LALC	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2644	B 26		AGD	56	291550	6245110	Open site	Valid	Artefact : -		
	Contact	Gandangara LALC	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2785	B 107		AGD	56	291550	6245560	Open site	Valid	Artefact : -		
	Contact		Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2786	B 109		AGD	56	291360	6246530	Open site	Valid	Artefact : -		
	Contact		Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2787	B 110		AGD	56	291250	6246230	Open site	Valid	Artefact : -		
	Contact		Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2766	B108		AGD	56	292300	6246010	Open site	Valid	Artefact : -		
	Contact		Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2767	B53		AGD	56	292070	6247620	Open site	Valid	Artefact : -		
	Contact		Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2769	B-14		AGD	56	292070	6247700	Open site	Valid	Artefact : -		
	Contact		Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2772	B33		AGD	56	290480	6244800	Open site	Valid	Artefact : -		
	Contact		Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2812	b105		AGD	56	289920	6245360	Open site	Valid	Artefact : -		
	Contact		Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2813	B104		AGD	56	290300	6247520	Open site	Valid	Artefact : -		
	Contact		Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2814	B103		AGD	56	290250	6247270	Open site	Valid	Artefact : -		
	Contact		Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-3096	B58		AGD	56	290530	6246180	Open site	Destroyed	Artefact : 2		

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 19853
Client Service ID : 615973

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
	Contact T Russell	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits	3752	
45-5-2685	B74	AGD	56	291520	6247320	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-4098	BC-01-09	GDA	56	292062	6247272	Open site	Valid	Artefact : 1		
	Contact	Recorders	Mr.Geordie Oakes.AECOM Australia Pty Ltd - Sydney					Permits		
45-5-4099	BC-EX01-11	GDA	56	291932	6247569	Open site	Valid	Artefact : 11		
	Contact	Recorders	Mr.Geordie Oakes.AECOM Australia Pty Ltd - Sydney					Permits		
45-5-5067	B130	GDA	56	290085	6246717	Open site	Valid	Artefact : 1		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd,Mrs.Jo Dibden					Permits		
45-5-5090	B158	GDA	56	291916	6247879	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd,Miss.Jasmine Fenyvesi					Permits		
45-5-5081	B157	GDA	56	292146	6248243	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd,Miss.Jasmine Fenyvesi					Permits		
45-5-5083	B160	GDA	56	291510	6247663	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd,Miss.Jasmine Fenyvesi					Permits		
45-5-5084	B161	GDA	56	290387	6246994	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd,Miss.Jasmine Fenyvesi					Permits		
45-5-5085	B162	GDA	56	291157	6248456	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd,Miss.Jasmine Fenyvesi					Permits		
45-5-5162	BCBW18 AS 01	GDA	56	293069	6247136	Open site	Valid	Artefact : -		
	Contact	Recorders	Artefact - Cultural Heritage Management - Pyrmont,Mr.Ryan Taddeucci					Permits		
45-5-5163	BCBW18 AS 03	GDA	56	293557	6247292	Open site	Valid	Artefact : -		
	Contact	Recorders	Artefact - Cultural Heritage Management - Pyrmont,Mr.Ryan Taddeucci					Permits		
45-5-5164	BCBW18 AS 02	GDA	56	293128	6246842	Open site	Valid	Artefact : -		
	Contact	Recorders	Artefact - Cultural Heritage Management - Pyrmont,Mr.Ryan Taddeucci					Permits		
45-5-5165	BCBW18 IF 01	GDA	56	293014	6246939	Open site	Valid	Artefact : -		
	Contact	Recorders	Artefact - Cultural Heritage Management - Pyrmont,Mr.Ryan Taddeucci					Permits		
45-5-5175	B167	GDA	56	291064	6248281	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd,Miss.Jasmine Fenyvesi					Permits		
45-5-5055	B118	GDA	56	290118	6246822	Open site	Valid	Artefact : 1		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd,Mrs.Jo Dibden					Permits		
45-5-5057	B120	GDA	56	290162	6246756	Open site	Valid	Grinding Groove : 1		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd,Mrs.Jo Dibden					Permits		
45-5-5370	BCLL PAD03	GDA	56	290804	6246398	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	GML Heritage Pty Ltd - Surry Hills,Miss.Hannah Morris					Permits		

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 19853
Client Service ID : 615973

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
45-5-5371	BCLL PAD02	GDA	56	291476	6246047	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	GML Heritage Pty Ltd - Surry Hills,Miss.Hannah Morris					Permits		
45-5-5372	BCLL PAD01	GDA	56	293117	6246205	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	GML Heritage Pty Ltd - Surry Hills,Miss.Hannah Morris					Permits		
45-5-5373	BCLL IF01	GDA	56	292819	6246192	Open site	Valid	Artefact : -		
	Contact	Recorders	GML Heritage Pty Ltd - Surry Hills,Miss.Hannah Morris					Permits		
45-5-5374	BCLL ST01	GDA	56	292766	6246163	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	GML Heritage Pty Ltd - Surry Hills,Miss.Hannah Morris					Permits		
45-5-5375	BCLL RT01	GDA	56	293109	6246170	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	GML Heritage Pty Ltd - Surry Hills,Miss.Hannah Morris					Permits		
45-5-5376	BCLL RT02	GDA	56	293065	6246202	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	GML Heritage Pty Ltd - Surry Hills,Miss.Hannah Morris					Permits		

** Site Status
Valid - The site has been recorded and accepted onto the system as valid
Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.
Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground
Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

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Appendix B Site Cards

open Artefact [✓] New recording [ ] Additional Info

National Parks and Wildlife Service
Box 1967, Hurstville NSW 2220. Tel: (02) 9585 6444
Standard Site Recording Form Revised 5/88

45-5-2691

1:250,000 map sheet: SYDNEY NPWS Code 45

Zone: 56
AMG Grid reference (Full reference - please include leading digits)
250K 290900 mE 25K
250K 6245480 mN 25K 5/6

Scale of map used for grid reference (Please use largest scale available) [✓] 25K, ~~50K~~ (preferred) [ ] 100K [ ] 250K

1:25K, ~~50K, 100K~~ map name: WARRAGAMBA

HEAD OFFICE USE ONLY:
NPWS Site no: 45-5-2691
Site types.
Accessioned by: Date:
Data entered by: NSP Date: 31/05/02
Owner/Manager
Address.

Site name: B60 Locality/property name. Badgery's Creek
NPWS District Region: Sydney

Reason for investigation Second Sydney Airport EIS (1997) Assessment.

Portion no:
Parish:

Photos taken?
How many attached?

How to get to the site (refer to permanent features, give best approach to site eg. from above, below, along cliff (Draw diagram on separate sheet.)

refer topographic map and sketch plan (if attached).

Other sites in locality? yes.
Are sites in NPWS Register? yes.
Site Types include: isolated finds, open artefact scatters and scarred trees.

Have artefacts been removed from site? no.
By whom? When? Deposited where?

Is site important to local Aborigines? yes - varying degrees of significance (refer report).
Give contact(s) name(s) + address(es)

Contacted for this recording? Gandangara L.A.L.C. (refer report).
(Attach additional information separately) If not, why not?

Verbal/written reference sources (including full title of accompanying report) NPWS Report Catalogue #
Navin Officer Heritage Consultants 1997 Aboriginal Cultural Heritage, Proposal for a Second Sydney Airport at Badgerys Creek or Holsworthy Military Area EIS, Technical Paper 11. ~~PPK Environment & Infrastructure, Dept. Transport and~~ Regional Development.

Checklist surface visibility, damage/disturbance/ threat to site
Condition of site refer report.

Recommendations for management & protection (attach separate sheet if necessary)
refer report.

Site recorded by. NAVIN OFFICER
Address/institution HERITAGE CONSULTANTS
102 JERVOIS ST
DEAKIN ACT 2600
Date: July 2000 (NPWS site card)
1996 (field recording)

ABORIGINAL SITE FIELD DATA RECORDING FORM 45-5- **2ND SYD AIRPT** B6C

Site Name/code: IK69
Recorder: Tom Knight
Date: 9/12/98
Photos:

☑ map grid Warragamba 1:25000
☐ GPS
☐ mark map & plot later 290906254548

Site Type
☐ open artefact scatter ☐ rockshelter *with:*
☑ isolated find ☐ *surface artefacts*
☐ open midden ☐ *arch'l deposit*
☐ open grinding grooves ☐ *midden deposit*
☐ open engravings ☐ *pigment art*
☐ quarry ☐ *engraved art*
☐ procurement site ☐ *grinding grooves*
☐ burial ☐ *rock surface pitting*

Site measurements
length: 1 width/depth: 1 height:
Gradient: ☑ gen.flat ☐ low ☐ mod. ☐ high
Aspect: ☐N ☑NE ☐E ☐SE ☐S ☐SW ☐W ☐NW
open.

Visibility & Exposure
exposure. type: turned earth (on fireline)
soil/matrix type: grey loam
ground visibility in exposure 5%
exposure dimensions 2 x 0.5 x
visibility away from exposure 0

Large scale landform
☐ crest ☐ valley side/slopes ☐ flats ☑ plains

Small scale landform
☐ major ridge ☐ break-of-slope ☐ major escarpment
☑ spurline ☐ uppr slopes ☐ minor escarpment
☐ knoll ☑ mid slopes ☐ discontinuous outcrop
☐ shoulder ☐ basal slopes ☐ isolated tor/outcrop
☐ saddle ☐ rock platform
☐ valley floor ☐ colluvial fan
☐ terrace ☐ river bed/margin
Bedrock ☐ dune ☐ creek bed/margin
☐ sandstone ☐ sand sheet ☐ wetland margin
☑ shales ? ☐ lake margin

Vegetation

	Canopy:	*Height:*	
☐ forest	☐ closed	☐ >30m	
☐ woodland	☐ open	☐ 10-30m	☐ 4-2m
☐ shrubland	☐ sparse	☐ 10-4m	☐ <2m
☑ grassland			

main species

SITE CONTENTS

Artefact numbers
actual no: 1
Estimate:
☑ 1-5 ☐ 16-50 ☐ 101-500
☐ 6-15 ☐ 50-100 ☐ >500

Artefact density
average (a/m²) 1
max. (a/m²) 1

Artefact material types

	✓	*no.*	*%*
quartz	☐		
quartzite	☐		
silcrete	☐		
chert	☑	1	100
rhyolite	☐		
volcanic	☐		
pet'd wood	☐		
tuff	☐		

other:

Artefact descriptions

	✓	*no.*	*percentage*
flakes	☑	1	100
flaked pieces	☐		
cores	☐		
hatchet head/frag't	☐		
secondary flaking	☐		
use wear	☐		
pebble cortex	☐		
microliths	☐		
backed blades	☐		
geometric microliths	☐		
microblade cores	☐		
bipolar cores	☐		
single platform cores	☐		
multiplatform cores	☐		
hammerstones	☐		
anvil stones	☐		
grinding stones	☐		
hearth stones	☐		
manuports	☐		

Other features
☐ shell: ☐ *isolated/sparse* ☐ *low density* ☐ *mod density* ☐ *high density*
☐ bone
☐ charcoal ☐ hearth
☐ evidence of Ab'l quarrying
other:

Archaeological Potential to:
be larger than record'd area: ☐ low ☑ mod. ☐ high ☐ can't tell
contain (more) artefacts: ☐ low ☑ mod. ☐ high ☐ can't tell
have *in situ* subsurface mat'l ☑ low ☐ mod. ☐ high ☐ can't tell

Site Condition/impacts
General rating ☐ poor ☐ good. ☐ v.good ☐ excel. ☐ can't tell
visitor/landuse impacts: ☐ low ☑ mod. ☐ high ☐ can't tell
natural impacts: ☑ low ☐ mod. ☐ high ☐ can't tell
☐ graffiti ☐ rubbish ☐ camp'g ☐ vehicles ☐ fill ☐ animal digg'g
☐ veg.clear'g ☑ plough'g ☐ erosion ☐ quarry'g ☐ ordnance
Other: stock trampling

Abraded/Pecked features
☐ grinding grooves: no. of grooves
no. of groups
groove length: max: min:
groove width: max: max:
☐ channels: no.
☐ other:

X

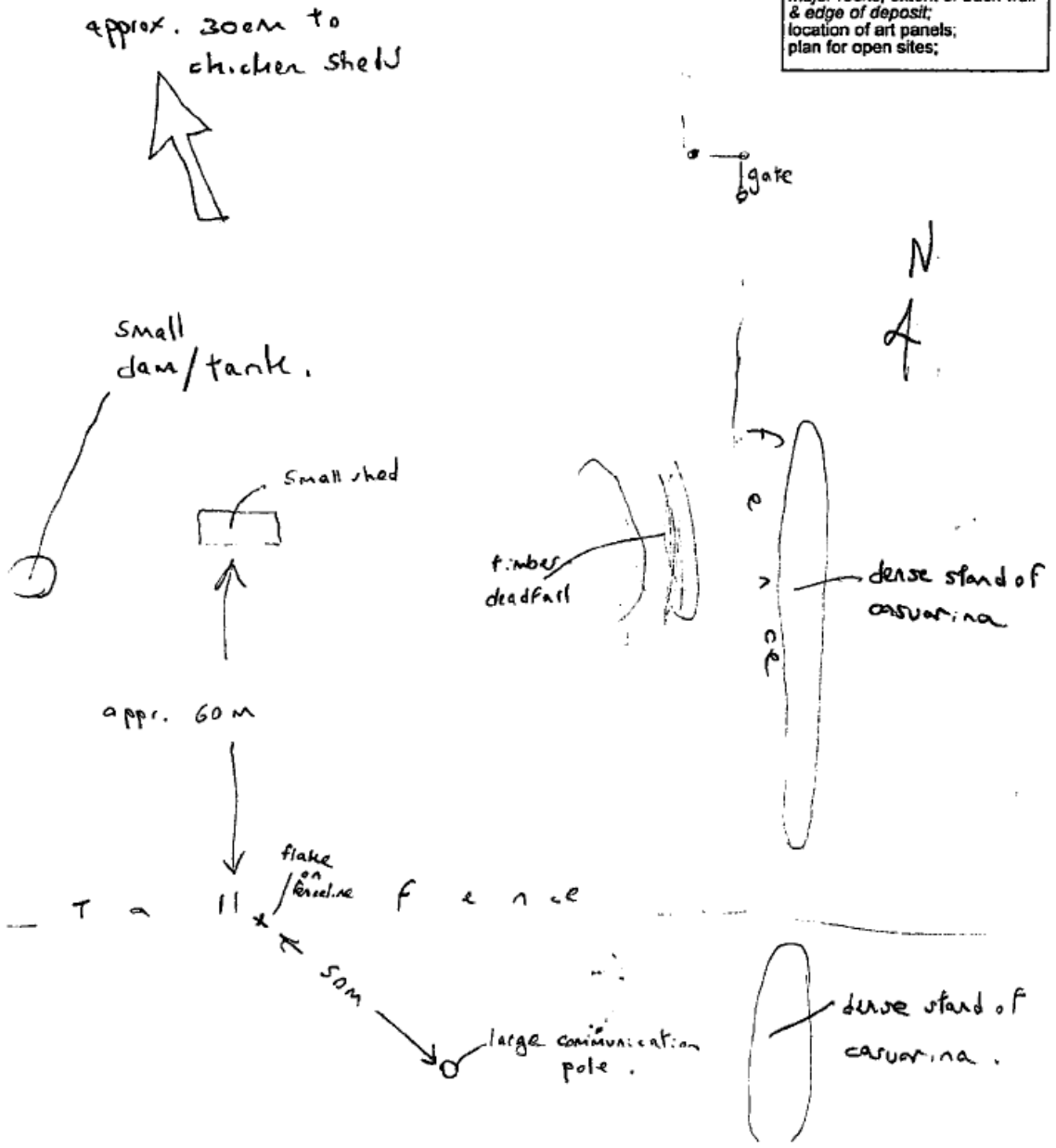
(over for site sketch & individual artefact descriptions: art description on separate form) *Navin Officer Heritage Consultants 1996*

Individual artefact descriptions *(up to 10)* **/notes:**

Single grey banded chert flake. Step fracturing evident L W T 26×18×9 mm.

SITE SKETCHES

Include:
north arrow;
rough scale or measurements;
plan & profile for rock shelters;
for shelters include overhang extent, dripline (if different), major rocks, extent of back wall & edge of deposit;
location of art panels;
plan for open sites;



NSW GOVERNMENT Office of Environment & Heritage

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 45-5-5370 **Date recorded:** 23-10-2020

Site Location Information

Site name: BCLL PAD03

Easting: 290804 **Northing:** 6246398 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 15

Zone: 56 **Location method:** Phone GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Morris	Hannah

Organisation: GML Heritage

Address: 372 Elizabeth Street Surry Hills

Phone: 0452334339 **E-mail:** hannahm@gml.com.au

Site Context Information

Land Form Pattern: Undulating Plain **Land Use:** Farming Low Intensity

Land Form Unit: Flat **Vegetation:** Isolated clumps of trees

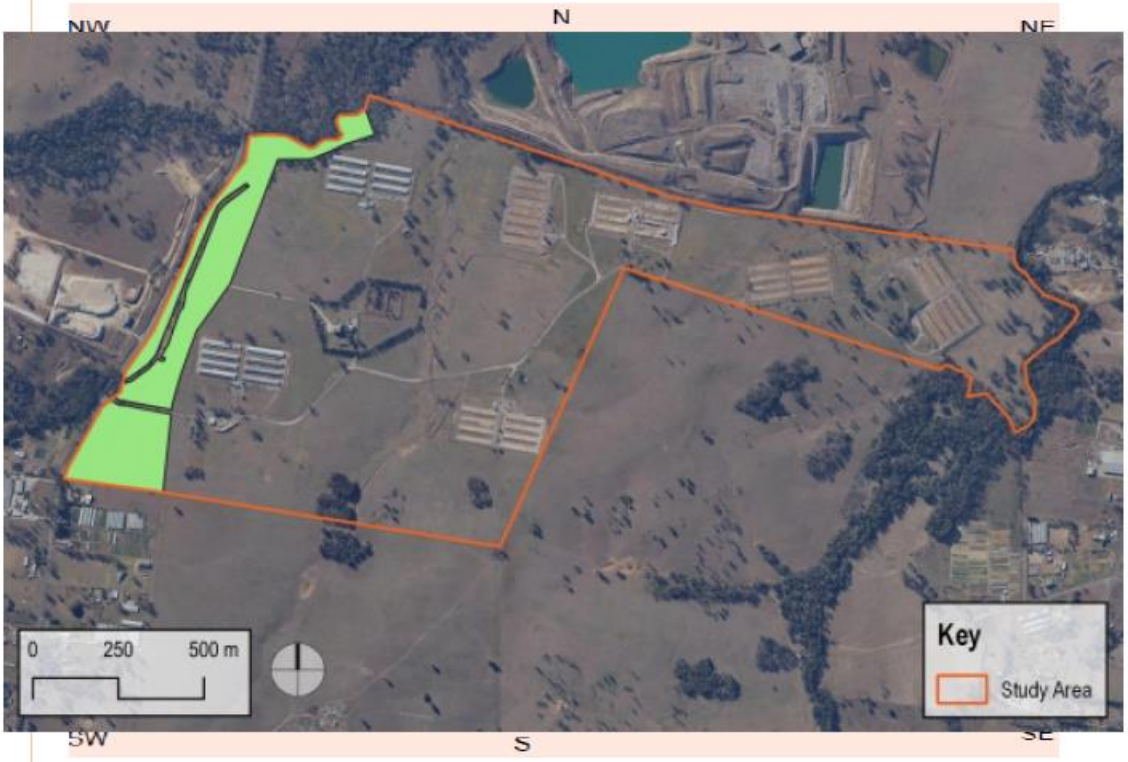
Distance to Water (m): 5 **Primary Report:** Badgerys Creek Aboriginal Heritage Report

How to get to the site: Enter site from Badgerys Creek Rd. Drive east to central creek.

Other site information: Heavily impacted area next two western boundary of study area to divert water from natural creek line. Heavily impacted area for the main gravel track.

1

Site location map



Site contents information

open/closed site: Open **Site condition:** Good

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1. Potential Archaeological Deposit		1200	200				

Description:

Following former creek on western boundary. Two raised terraces are possible focus fort past Aboriginal activities. Possible concentration of Aboriginal objects. Identified on survey. Soil landscape South Creek Alluvium. Revegetated trees along Badgers Creek in the northern section.

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.							

Description:

2

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
3.							

Description:

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
4.							

Description:

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
5.							

Description:

Other Site Info: Heavily impacted area next two western boundary of study area to divert water from natural creek line. Heavily impacted area for the main gravel track.

Site plan

3

Site photographs

Description: Southern raised terrace, facing east.

Description: Northern raised terrace, facing north

Description: Area of mostly uncleared vegetation along Badgerys Creek.

Description: Mid section of PAD

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title | Surname | First name

Organisation:

Address:

Phone: E-mail:

4

475 Badgerys Creek Road, NSW – Stage 2 Archaeological Technical Report

Ingham Rural Property Group Pty Limited

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Template 2.8.1

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1. Introduction

1.1 Project background

Ingham Property Group (the proponent) are proposing to subdivide and develop 475 Badgerys Creek Road, Badgerys Creek, NSW. The proposed subdivision will be undertaken in two stages, this assessment will address requirements to inform the Stage 2 Development Application (DA) for the proposed works across the majority of 475 Badgerys Creek Road, Badgerys Creek (hence forth referred to as the study area), excluding the south west corner.

GML prepared a baseline Aboriginal Heritage Report to inform a master planning proposal for the property identified as Lot 1 DP 1123344. Thirteen sites had previously been recorded on the property comprising stone artefacts and Potential Archaeological Deposits (PAD). GML recorded one additional artefact site and 12 locations and aspects with potential cultural heritage values. Two zones for potential future conservation were identified as well as several locations that were considered as archaeologically sensitive, three 'culturally modified' trees and a high point believed to have views. The report states that these issues should be considered during the master planning process and provides recommendations for Aboriginal heritage management in association with the master planning and rezoning process and future development (GML 2020).

Ingham Property Group engaged Eco Logical Australia (ELA) to conduct an Archaeological Assessment to document the archaeological values within the study area and to identify any known or unrecorded Aboriginal sites.

This assessment has been undertaken in accordance with Heritage NSW, Department of Premier and Cabinet (Heritage NSW) *Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010a).

1.2 Study area

The study area comprises the majority of the 475 Badgerys Creek Road, Badgerys Creek NSW (Lot 1, DP1123344) (Figure 1), excluding the south west corner which was assessed in *'Eco Logical Australia, 2022 475 Badgerys Creek Road, NSW – Stage 1 (Substation) Archaeological Assessment*. *Prepared for Ingham Rural Property Group Pty Limited*.'. The study area covers approximately 165 ha of the property and is on a gently undulating landform that lies between the water ways of Badgerys Creek and South Creek.

The study area is located in the Parish of Bringelly in the County of Cumberland, within the Liverpool Local Government Area (LGA). The study area falls within the Gandangara Local Aboriginal Land Council boundaries.

1.3 Purpose and Objectives of the archaeological assessment

The purpose of the archaeological investigation is to establish whether known or additional unrecorded Aboriginal objects are present within the study area and assess the likelihood of archaeological deposits within the study area and determine whether further archaeological investigation is required and inform the next stage.

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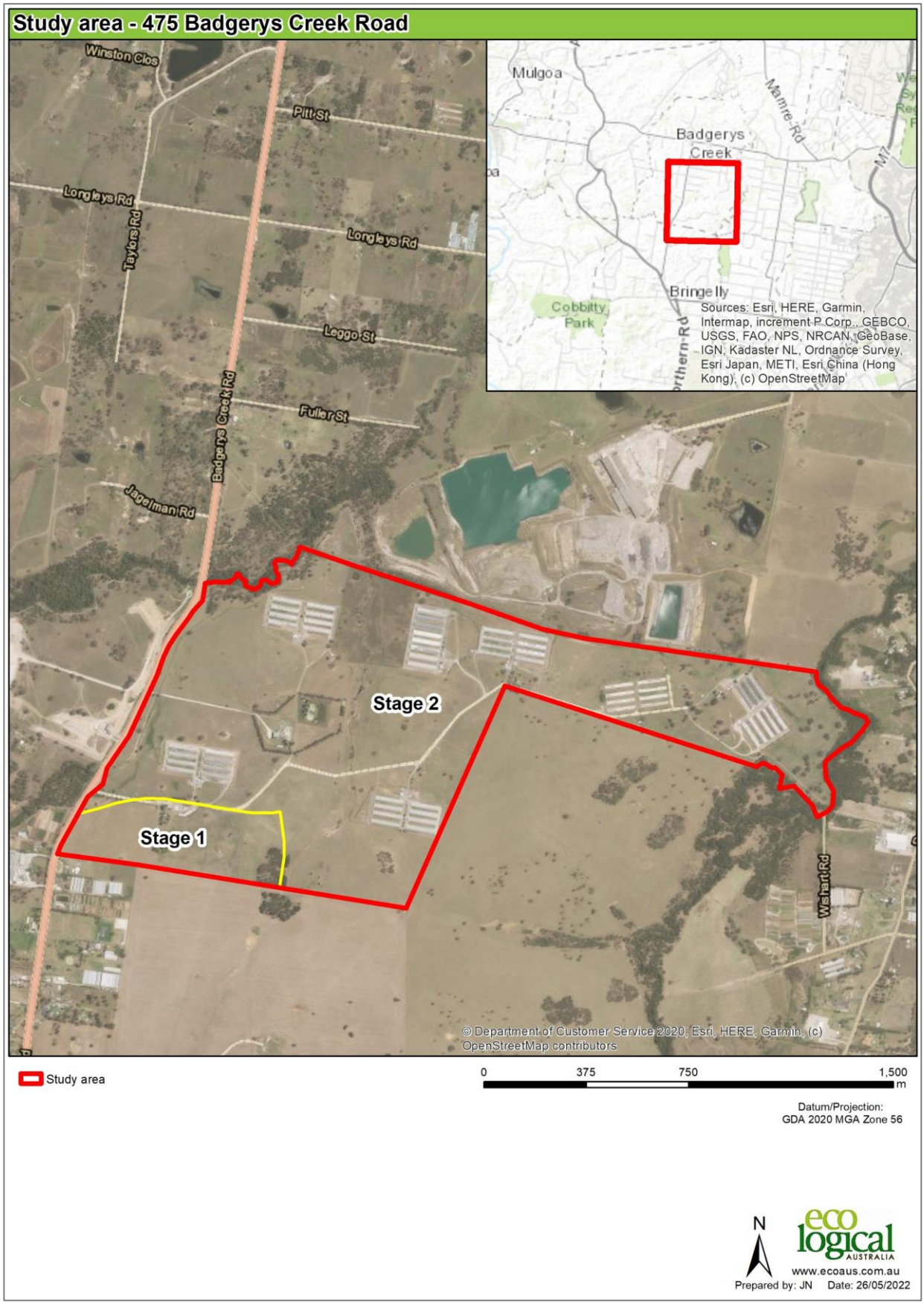

Figure 1: The study area, Stage 2 proposed subdivision area for 475 Badgerys Creek Road.

1.4 Legislative context

1.4.1 National Parks and Wildlife Act 1974

Aboriginal cultural heritage in NSW is afforded protection under the provisions of the *National Parks and Wildlife Act* 1974 (NSW) [NPW Act]. The Act is administered by Heritage NSW, which has responsibilities under the legislation for the proper care, preservation, and protection of 'Aboriginal objects' and 'Aboriginal places'.

Under the provisions of the NPW Act, all Aboriginal objects are protected irrespective of their level of significance or issues of land tenure. Aboriginal objects are defined by the Act as, *any deposit, object or material evidence (that is not a handicraft made for sale) relating to Aboriginal habitation of NSW, before or during the occupation of that area by persons of non-Aboriginal extraction (and includes Aboriginal remains).* Aboriginal objects are limited to physical evidence and may be referred to as 'Aboriginal sites', 'relics' or 'cultural material'. Aboriginal objects can include scarred trees, artefact scatters, middens, rock art and engravings, as well as post-contact sites and activities such as fringe camps and stockyards. Heritage NSW must be notified about the discovery of Aboriginal objects under section 89A of the NPW Act.

Part 5 of the NPW Act provides specific protection for Aboriginal objects and places by making it an offence to destroy, deface, damage, or move them from the land. *The Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (CoP) (DECCW 2010b) as adopted by the and Wildlife Regulation 2019 (NPW Regulation) made under the NPW Act, provides guidance to individuals and organisations to exercise due diligence when carrying out activities that may harm Aboriginal objects. The CoP also determines whether proponents should apply for consent in the form of an Aboriginal Heritage Impact Permit (AHIP) under section 90 of the Act. The CoP can be used for all activities across all environments. The NPW Act provides that a person who exercises due diligence in determining that their actions will not harm Aboriginal objects has a defence against prosecution for the strict liability offence if they later unknowingly harm an object without an AHIP. However, if an Aboriginal object is encountered in the course of an activity work must cease and an application should be made for an AHIP.

The Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2010a) assists in establishing the requirements for undertaking archaeological investigation without an AHIP or establishing the requirements that must be followed when carrying out archaeological investigation in NSW where an application for an AHIP is likely to be made. Heritage NSW recommends that the requirements of this Code also be followed where a proponent may be uncertain about whether or not their proposed activity may have the potential to harm Aboriginal objects or declared Aboriginal places.

1.4.2 Aboriginal Land Rights Acts 1983

The *Aboriginal Land Rights Act 1983* (ALR Act) established Aboriginal Land Councils (at State and Local levels). Division 1A outlines the functions of Local Aboriginal Land Councils and their statutory obligation under the ALR Act to:

> (a) take action to protect the culture and heritage of Aboriginal persons in the council's area, subject to any other law, and

(b) promote awareness in the community of the culture and heritage of Aboriginal persons in the council's area.

The study area is within the boundary of the Gandangara Local Aboriginal Land Council (LALC).

1.4.3 Environmental Planning & Assessment Act 1979

*The Environmental Planning and Assessment Act 1979 (*NSW) [EP&A Act] requires that consideration is given to environmental impacts as part of the land use planning process. In NSW, environmental impacts are interpreted as including cultural heritage impact. Proposed activities and development are considered under different parts of the EP&A Act, including:

- Major projects (State Significant Development under Part 4.1 and State Significant Infrastructure under Part 5.1), requiring the approval of the Minister for Planning.
- Minor or routine developments, requiring local council consent, are usually undertaken under Part 4. In limited circumstances, projects may require the Minister's consent; and
- Part 5 activities which do not require development consent. These are often infrastructure projects approved by local councils or the State agency undertaking the project.

The EP&A Act also controls the making of environmental planning instruments (EPIs) such as Local Environment Plans (LEPs) and State Environmental Planning Policies (SEPPs). The study area is within the Liverpool LGA and activities undertaken on this land are controlled by *the State Environmental Planning Policy (Western Sydney Aerotropolis) 2020*. SEPPs commonly identify and have provisions for the conservation archaeological sites, Aboriginal objects and Aboriginal places of heritage significance. SEPPs are prepared by the state government to guide planning and management decisions in the LGAs and establish the requirements for the use and development of land. Part 4 (28) of the SEPP *State Environmental Planning Policy* states.

(2) ***Requirement for consent****. Development consent is required for the following—*

(c) disturbing or excavating an archaeological site while knowing, or having reasonable cause to suspect, that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed,

(d) disturbing or excavating an Aboriginal place of heritage significance,

1.5 Investigators and contributors

This report has been prepared by Jennifer Norfolk ELA Archaeologist, with review by Karyn McLeod, ELA Principal Archaeologist.

Jennifer Norfolk has an MSc. (Marine Archaeology) from Southampton University. Karyn McLeod has a BA Honours (Archaeology) from the University of Sydney and a MA (Cultural Heritage) from Deakin University.

Aboriginal community consultation process is being undertaken in accordance with Heritage NSW *Aboriginal cultural heritage consultation requirements for proponents* 2010 (DECCW, 2010b). The field survey was undertaken with Heritage Officer Kirsty Chalker of Cubbitch Barta Native Title Claimants

Aboriginal Corporation in attendance. Kirsty Chalker provided a report of findings and recommendations from field survey (Appendix B).

Test excavations were conducted by ELA archaeologists with assistance from the following Aboriginal organisations (Table 1) over a period of 2 weeks. Test excavations were directed by Jennifer Norfolk, ELA Archaeologist.

Table 1: Test excavation field personnel

Organisation	Name
ELA Archaeologists	Jennifer Norfolk
	Charlotte Bradshaw
	Kate Storan
	Jessica Horton
Kamilaroi-Yankuntjatjarra Working Group	Ray Adams
	Jamie Currell
	Robert Hunter
Waawaar Awaa Aboriginal Corporation	Todd Hall
	Justin Kennedy

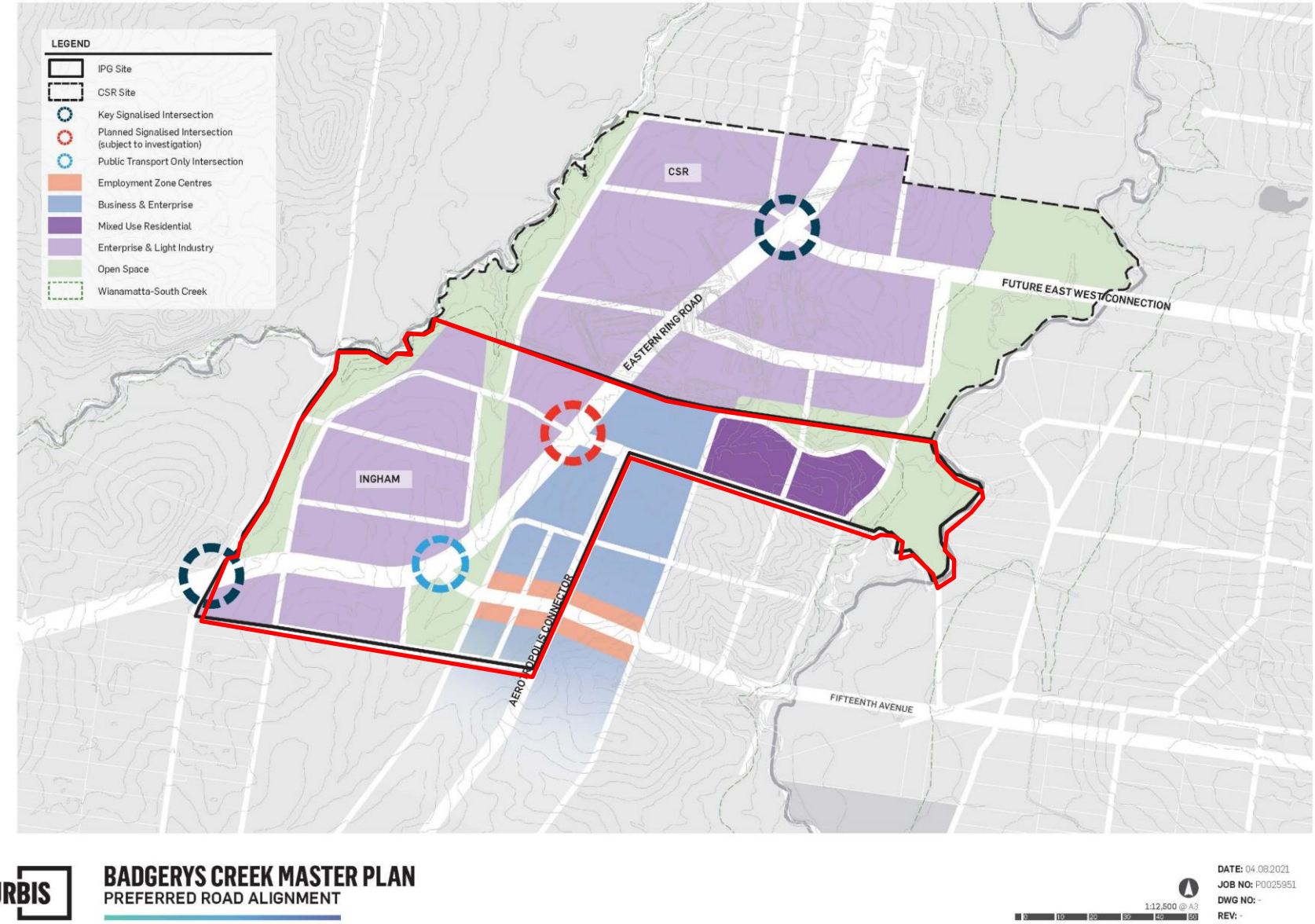

Figure 2: Proposed area of works for 475 Badgerys Creek Road, Badgerys Creek (source: Ingham Property Development Pty Ltd 2021) (study area in red)

2. Environmental context

Landscape, geomorphic history, and extent of disturbance within a given area all play a role in the presence and/or preservation of Aboriginal objects. As outlined in the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010a), this section aims to assist in the prediction of:

- The potential of the landscape to contain Aboriginal objects; and
- The ways Aboriginal people have used the landscape in the past, with reference to the presence of resource areas, surfaces for art and other focal points which may have been used for particular activities and settlement; and
- Disturbance, including historical land-use, which may have removed earlier archaeological evidence; and
- The likely distribution of the material traces of Aboriginal land use based on the above.

To investigate these elements, this section focusses on the environmental context of the current study area, including geomorphology and soils, vegetation, hydrology, and previous land use to identify potential disturbance.

The study area is situated within the Cumberland subregion of the NSW Sydney Basin bioregion of NSW. A summary of the geology, landforms, soils, and vegetation typical within this subregion is provided in Table 2 below:

Table 2: Cumberland Plain subregion summary (source: NSW Department of Planning, Industry and Environment)

Cumberland Subregion	
Geology	Triassic Wianamatta groups shales and sandstones. A down warped block on the coastal side of the Lapstone monocline. Intruded by a small number of volcanic vents and partly covered by Tertiary river gravels and sands. Quaternary alluvium along the mains streams.
Characteristic Landforms	Low rolling hills and wide valleys in a rain shadow area below the Blue Mountains. At least three terrace levels evident in the gravel splays. Volcanics from low hills in the shale landscapes. Swamps and lagoons on the floodplain of the Nepean River.
Typical Soils	Red and yellow texture contrast soils on slopes, becoming harsher and sometimes affected by salt in tributary valley floors. Pedal uniform red to brown clays on volcanics. Poor uniform stony soils, often with texture contrast profiles on older gravels, high quality loams on modern floodplain alluvium.
Vegetation	Grey box, forest red gum, narrow-leaved ironbark woodland with some spotted gum on the shale hills. Hard-leaved scribbly gum, rough-barked apple and old man banksia on alluvial sands and gravels. Broad-leaved apple, cabbage gum and forest red gum with abundant swamp oak on river flats. Tall spike rush, and juncus with Parramatta red gum in lagoons and swamps.

2.1 Soil Landscapes

Blacktown (residual) Soil Landscape, dominant soil types include friable greyish brown loam and hard setting brown clay loam overlying strongly pedal mottled brown light clay. Topsoils reach a depth of up to 300mm and contain significant sand and silt content overlying hard-setting clay subsoils (Hazelton &

Tille 1990:28-29). Shallow to moderately deep (<1.5m) soils occur on crests, upper slopes, and well-drained areas. These types of soils are often shallow and can be significantly disturbed by historical and modern activities. This has significant implications for the survivability of historical and Aboriginal deposits, and it is rare for these types of soils to contain significantly deep, stratified, or old archaeological deposits.

South Creek Alluvial Soil Landscape typically occurs along creek lines associated with large drainage lines within the Cumberland Plain. Soils in this landscape consist of deep, loamy soils atop orange-brown clay. The landscape comprises flat to gently sloping floodplains and valley flats, drainage depressions with occasional terraces or levees. The soil landscape is an active floodplain that is presently reworked by fluvial processes, resulting in streambank and gully erosion periods. Due to consistent exposure to flooding and waterflow soils in this landscape are highly erodible, compromising the stratigraphic integrity of any artefact deposits within these soils.

2.2 Hydrology

The study area is situated between South Creek and Badgerys Creek, both high order systems that run south to north and feed into the Hawkesbury River. Minor tributaries of these two high order streams carve through the study area.

These minor drainage lines are unnamed, have been heavily modified from past land use and have likely been silted due to erosion form the surrounding landscape cause d by widescale vegetation clearance. These minor drainage lines are not reliable water sources and are likely seasonal. Across the entire study area large scale drains have been carved into the landform due to the por drainage characteristics of the study area.

2.3 Vegetation

Across a majority of the study area, native vegetation has been cleared like the rest of the Cumberland Plain since early occupation initially for agricultural and pastoral practices and more recently for residential subdivisions and commercial, and industrial land uses. Few stands of remnant native vegetation remain, and the majority of native vegetation left is from regrowth. Currently the study area is covered in various grass species and non-native shrub and ornamental tree species.

The elevated landscape would have been open woodland with dry sclerophyll forest, the native vegetation would have been dominated by tree species including Grey box (*E. moluccana*) and Forest red gum (*E. tereticornis*) Broad-leaved ironbark, narrow-leaved ironbark, Woollybutt and forest oak would have been less common. The understorey would have hosted various shrub and grass species.

On the floodplains and low lying poorly draining landscape common species would have included Broad-leaved Apple (*Angophora subvelutina*), Cabbage Gum (*E. amplifolia*) and Swamp Oak (*Casuarina glauca*), while tall shrublands of paperbarks and tea trees may occur on more elevated streambanks.

2.4 Land use history

These types of soils are often shallow and can be significantly disturbed by historical and modern activities. This has significant implications for the survivability of historical and Aboriginal deposits, and it is rare for these types of soils to contain significantly deep, stratified, or old archaeological deposits.

The study area has historically been used for the grazing of livestock and has undergone localised disturbances. The earliest available aerial imagery from 1955 shows that the area was historically cleared of a majority of the native vegetation and possibly used for pastoral activities. By 1965 the property has been extensively cleared and heavily modified with the construction of vehicle access track, large scale earth movement to form flat stands for chicken sheds. These large stand were raised flat areas to avoid flooding issues and to assist in drainage of the farm large scale drains were carved across the study area. By 1989 the chicken farms had been established, permanent vehicle tracks and residential settlements built. To further help with the poor drainage of the study area the minor tributary along Badgerys Creek Road has been channelised, requiring significant earth movement. The minor tributary that runs the length through the centre of the study area has drastically changed, the vehicle track has caused the northern area to become waterlogged/ swampy, whereas the northern portion has narrowed and infilled form erosion and destabilisation.

There has been significant disturbance from historical and recent land use.

2.5 Summary

Overall, the environmental characteristics of the study area present moderate sensitivity for evidence of Aboriginal occupation. There is the potential for archaeological deposits in discreet areas that have avoided high levels of disturbance on the relatively flat areas in close proximity to the South Creek in the east, Badgerys Creek in the north west and along the minor tributary through the middle of the study area.

As a majority of the study area has been extensively cleared of vegetation, very few trees remain, none of which appear to be old enough to have been culturally modified or scarred. A majority of the study area has undergone moderate to high disturbances associated with the most recent land use as a chicken farm. There are discreet areas of potential for intact soils and sensitive landforms.

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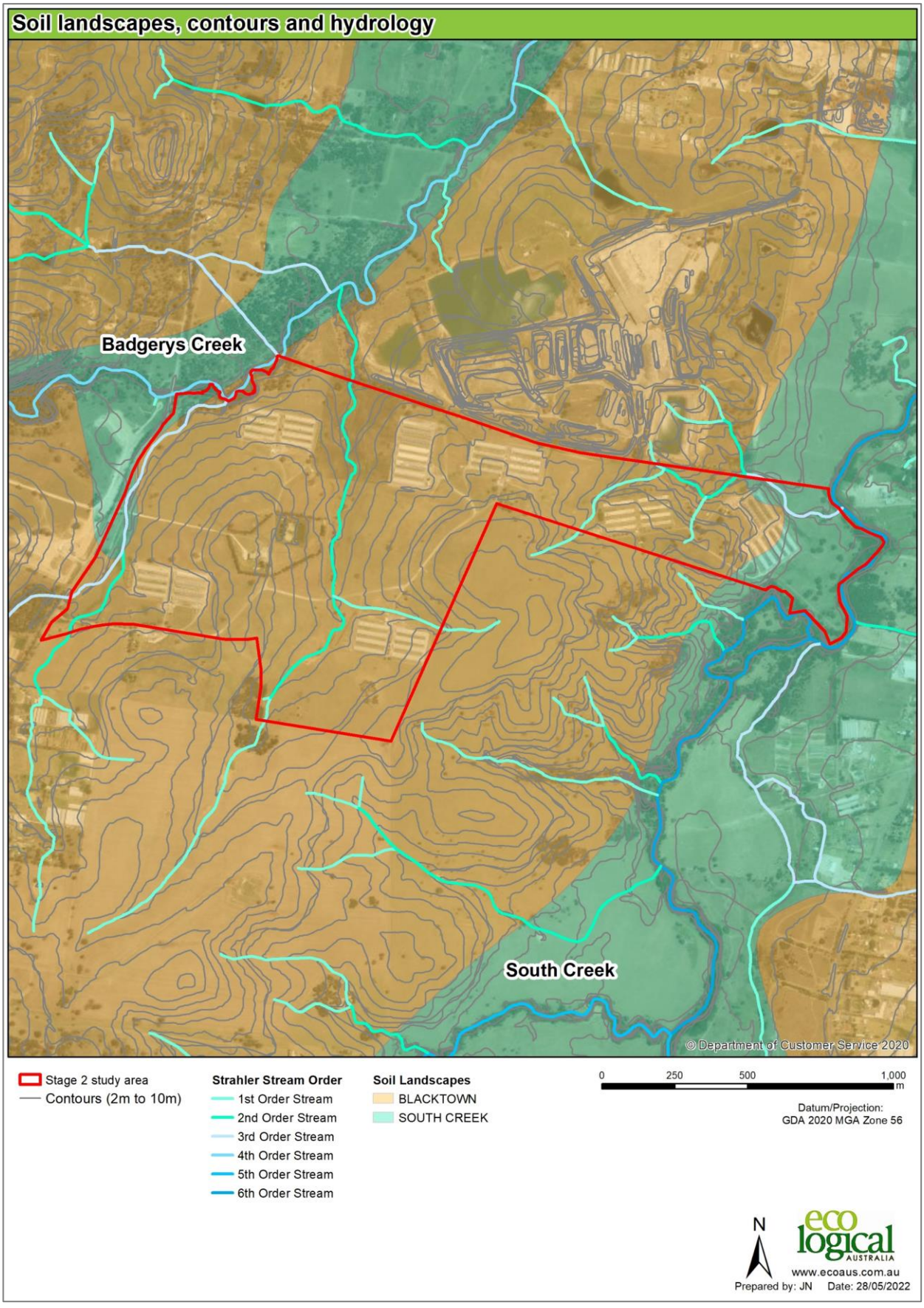

Figure 3: Soils, hydrology, and elevation within the study area

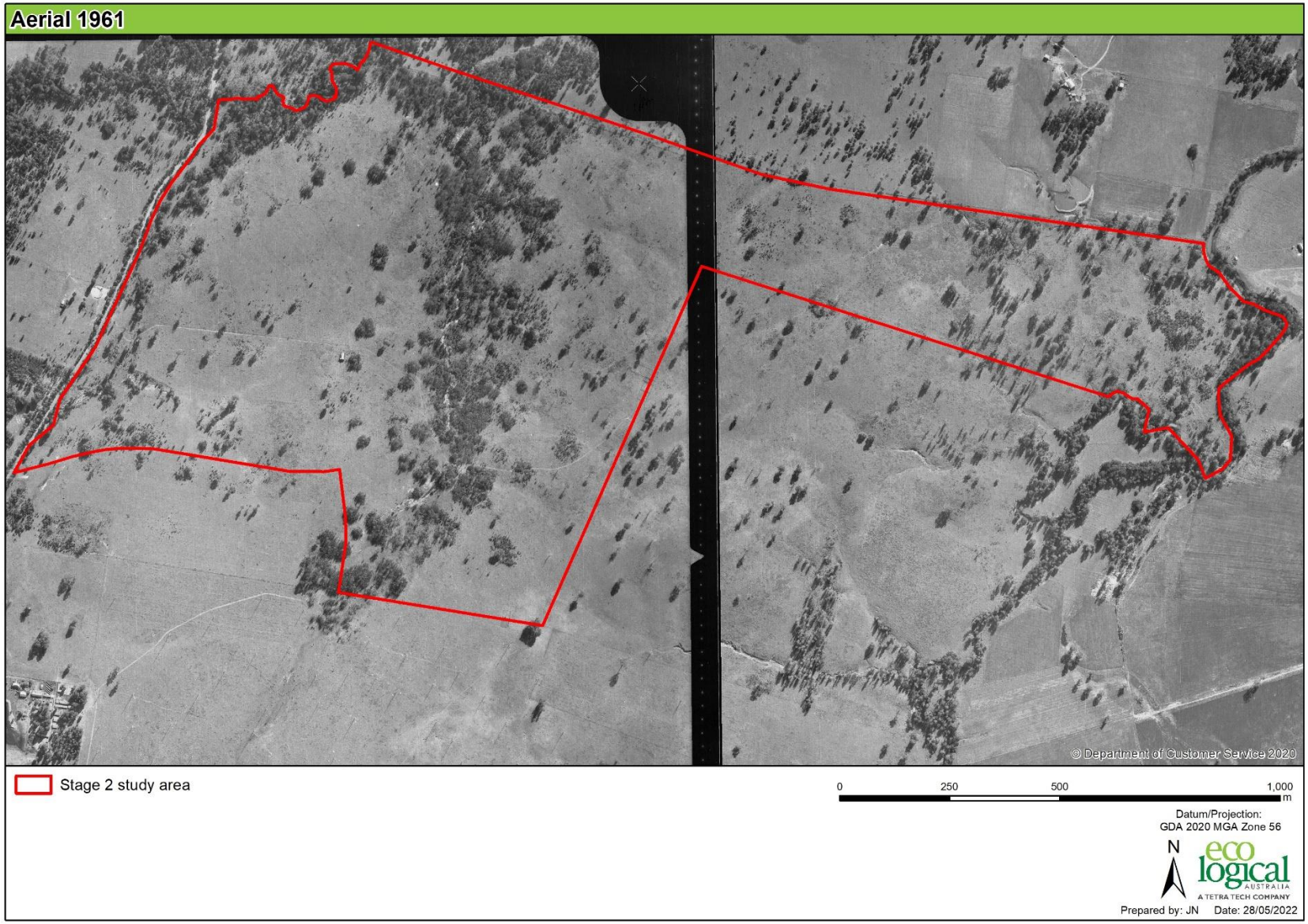

Figure 4: Soils, hydrology, and elevation within the study area

3. Aboriginal context

3.1 Ethnohistory

An accurate reconstruction of past lifeways, technologies and land-use patterns of the Aboriginal people who inhabited the Badgerys Creek region is often hindered by a lack of written records and an ethnocentric bias of European settlers. Oral histories by Aboriginal people provide valuable insights into the past, though these are not always available.

Aboriginal people have continuously occupied Australia for at least 65,000 years (Clarkson et al 2017), utilising the land and available resources. Dates of the earliest occupation of the continent by Aboriginal people are subject to continued revision as more research is undertaken. The earliest undisputed radiocarbon date from the Sydney region comes from a rock shelter site north of Penrith, Shaw's Creek, dated to around 14,700 BP (Attenbrow 2010). Alternate artefactual evidence found on the Nepean River suggests Aboriginal people have occupied the Sydney region for at least 40,000 years (Nanson *et al*. 1987; Stockton & Holland 1974).

Badgerys Creek lies within a transitional area between the tribal boundaries of the Dharug, Dharawal and Gundungurra language groups (Attenbrow, 2002). The precise geographical boundaries between these three groups cannot be clearly defined due to the limitations of historical records (Kohen and Lampert 1987), however the study area (present-day Penrith and Liverpool LGAs) is now generally considered to have been occupied by Darug-speaking clans (Attenbrow 2010). Anthropologist R.H. Matthews writes:

> *"The Dharukk speaking people adjoined the Thurrawal on the north, extending along the coast to the Hawkesbury River, and inland to what are now Windsor, Penrith, Campbelltown, and intervening towns."* (Matthew, 1901d: 55 in Attenbrow, 2010: 32)

The Darug people were semi-nomadic hunter gatherers who utilised available resources, including the various animals and plants in the region. Aboriginal people hunted wallabies, kangaroos, possums, flying foxes, birds and fish and collected wild honey and yams, which also served as important food sources. Family groups belonged to clans who were united by languages and cultural affinities and had ties to specific areas of land.

The arrival of European settlers severely impacted the lives of the local Aboriginal populations as it led to a smallpox epidemic which spread to neighbouring regions and killed over half of the Aboriginal population in the Sydney Basin region (Organ, 1990) and led to significant social restructuring. In the Cumberland Plains region, European graziers slowly took over the traditional Aboriginal land, creating a competition for resources, widespread social disruption to traditional ways of life and ultimately led to a disconnection of local Aboriginal people from their traditional lands. Some Aboriginal people remained and continued to live a semi-traditional life on the peripheries of European settlements until at least the mid-1800s, despite the impacts to their traditional ways of being (Attenbrow, 2002).

3.2 Archaeological context

3.2.1 Previous archaeological investigations in the region

Several archaeological assessments have been carried out in the wider Greater Western Sydney region in recent years as there has been an increasing number of residential developments in the area. The most relevant investigations to this project will be summarised below.

AUSTRALIAN MUSEUM CONSULTING 2014, ENVIRONMENTAL SURVEY OF COMMONWEALTH LAND AT BADGERYS CREEK: ABORIGINAL HERITAGE. CONSULTANCY REPORT TO SMEC AUSTRALIA.

Australian Museum Consulting (AMC) prepared an environmental survey of Commonwealth owned land at Badgerys Creek for SMEC Australia Pty Ltd, on behalf of the Western Sydney Unit of the Department of Infrastructure and Regional Development. The report assessed the condition of specific environmental aspects with a particular focus on Aboriginal cultural heritage over a large area located immediately to the study areas southwest.

The report detailed the findings of previous environmental investigations undertaken during the 1980s and 1990s. These assessments had previously identified 60 Aboriginal heritage sites, comprising open artefact scatters, scarred trees, and isolated artefacts. Of these, 23 Aboriginal heritage sites were identified within areas of moderate and high archaeological potential, associated primarily with minor and secondary creek corridors. AMC 2014 conducted a targeted survey of these moderate and high potential sites and confirmed their condition and scientific potential.

The assessment made the follow recommendations:

- Aboriginal community consultation.
- An additional Aboriginal heritage survey to identify and record a representative sample of material traces and evidence of Aboriginal occupation within the Badgerys Creek area.
- Full archaeological survey of all landforms.
- A program of archaeological test and salvage excavations throughout impact areas.

AMBS, 2012. INDIGENOUS HERITAGE ASSESSMENT PROJECT: AUSTRAL AND LEPPINGTON NORTH PRECINCTS, SOUTH WEST GROWTH CENTRES. PREPARED FOR THE NSW DEPARTMENT OF PLANNING AND INFRASTRUCTURE.

Australian Museum Business Services (AMBS) was commissioned by the NSW Department of Planning and Infrastructure to prepare an Aboriginal heritage assessment for the Austral and Leppington North Precincts of the South West Growth Centres located 3km to the west of the study area.

The AMBS study was important for the establishment of areas of archaeological potential in the Austral and Leppington North Precinct and its contribution to predictive modelling for artefact distribution and density within the area. This model is based primarily on proximity to water courses and the level of ground disturbance within an area. AMBS defined disturbance areas in Austral and North Leppington as:

- High disturbance – “road corridors, underground gas pipelines, dams, and properties classified as childcare centres, churches, commercial, community halls, industrial, market gardens,

poultry, Rebels club, residential/retirement village and schools, as well as the SWRL corridor which will be constructed in the near future".

- Moderate disturbance – "Transmission lines and properties classified as dual occupancy/large residential".
- Low disturbance - "Properties classified as parks, significant vegetation / bushland, and vacant / grazing/ developable."

The AMBS report recommended that conservation zones be established for areas of moderate and high archaeological potential. Where this is not possible, detailed Aboriginal heritage impact assessments of site-specific development areas was recommended to be undertaken including, if necessary, archaeological test excavation.

ARTEFACT HERITAGE, 2012. THE NORTHERN ROAD UPGRADE FROM THE OLD NORTHERN ROAD, NARELLAN TO MERSEY RD, BRINGELLY – ABORIGINAL ASR. PREPARED FOR ROADS AND MARITIME SERVICES.

Artefact Heritage were previously engaged by Sinclair Knight Merz, on behalf of the NSW Roads and Maritime Services (RMS), to conduct an Aboriginal archaeological survey and assessment report for the proposed upgrade of the Northern Road. The proposed upgrade included 15km of the Northern Road between the Old Northern Road, Narellan and Mersey Road, Bringelly located 2.5km south of the study area.

An initial desktop assessment, including an extensive search of the AHIMS database, identified eighteen Aboriginal sites within the area of investigation. Fourteen previously unrecorded Aboriginal sites were identified during the site survey, with two of the sites being re-recordings of previous sites. Five of the sites were artefact scatters and nine were isolated finds. Four previously recorded sites and PADs within the study area were found to be either destroyed or disturbed and five were found to be subject to existing AHIPS.

The survey resulted in the identification of twenty four Aboriginal sites within the study area, with seven sites located more than 20m outside of the study area and two new sites more than 50m outside. Fifteen sites were identified as being directly impacted by the proposal. Ten sites were assessed as having a low archaeological significance and five were assessed as having a moderate archaeological significance.

Recommendations included that salvage excavations be conducted for the five sites with moderate archaeological significance that could not be avoided by the proposed works and that an Aboriginal Heritage Impact Permit (AHIP) be sought prior to any impacts.

NICHE ENVIRONMENT AND HERITAGE, 2019. ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT SOUTH CREEK WEST PRECINCT (SOUTH-WEST) RELEASE AREA REZONING, THE NORTHERN ROAD BRINGELLY, NSW. PREPARED FOR BHL GROUP.

Niche Environment and Heritage (Niche) was previously engaged by Boyuan Holdings Limited (BHL Group) to conduct an Aboriginal Cultural Heritage Assessment Report for the rezoning of the South Creek West Release Area (South-West) Precinct, 5km south of the study area. The report comprised five separate lots that were zoned for primary production and had been used for agriculture, primarily cattle grazing. Previous archaeological assessments, the desktop assessment and visual inspection that was completed for the report indicated that the proposed rezoning of the study area could potentially impact

five registered AHIMS sites (AHIMS ID 45-5-3359, AHIMS ID 45-5-5282, AHIMS ID 45-5-3542, AHIMS ID 45-5-4139 and AHIMS ID 45-5-3543).

A desktop assessment found several landscape features, including raised level creek terraces along tributaries of Cobbitty, South and Lowes Creek that had the potential to yield surface and or buried Aboriginal objects. Due to the proximity of permanent water sources and the landscape, the study area was considered to have a high archaeological potential. However, according to previous investigations and predictive models, the wider region was thought to have been sporadically used by past Aboriginal people.

3.2.2 Previous archaeological investigations within the Study Area

GML HERITAGE, 2020. *BADGERYS CREEK ABORIGINAL HERITAGE REPORT.* UNPUBLISHED REPORT PREPARED FOR LEND LEASE

In 2020, GML was commissioned by Lendlease to prepare a baseline Aboriginal heritage report that informed the master planning proposal for the future development of 475 Badgerys Creek Road, Badgerys Creek, of which the current study area occupies the southwest extent.

The desktop assessment identified 13 existing AHIMS sites within the study area, including isolated finds, open artefact sites and areas of associated PAD. An archaeological survey conducted with representatives of the registered Aboriginal party Cubbitch Barta identified 7 new Aboriginal sites including three areas of PAD, two ring trees, one scar tree and one isolated artefact. The survey also identified two terraces that formed part of the area of PAD as well as a viewpoint that provided views of the surrounding landscape and the Blue Mountains.

The assessment recommended that an ACHA be conducted for the property, including archaeological test excavation and the implementation of Aboriginal Culture and Heritage Interpretation into the final design of the development. The assessment also recommended two discrete areas of PAD be allocated as primary conservation zones in line with exiting riparian corridor and biobanking zones.

EXTENT HERITAGE 2020, WESTERN SYDNEY AEROTROPOLIS INITIAL PRECINCTS DRAFT ABORIGINAL AND NON-ABORIGINAL CULTURAL HERITAGE ASSESSMENT PREPARED FOR WESTERN SYDNEY PLANNING PARTNERSHIP

In 2020, Extent Heritage Pty Ltd was commissioned by the Western Sydney Planning Partnership to prepare an Aboriginal and non-Aboriginal Cultural Heritage Assessment for the initial precincts within the Western Sydney Aerotropolis. This high-level assessment of precincts within the Aerotropolis growth areas includes the current study area.

The report's desktop assessment includes a review of previous archaeological studies in the region, historical research, preliminary cultural values mapping, and desktop research. The report identified three registered Aboriginal sites that imposed specific constraints on the proposed works, and one that may impose specific constraints on the proposed design works, depending on the results of further investigation. Given their sensitive nature, details of the sites have been redacted.

Aboriginal community consultation untaken as part of the report included the formation of a focus group of Elders and knowledge holders comprising the primary traditional owner representatives of Darug and Dharawal descendants as well as the Local Aboriginal Land Councils whose land includes portions of the

Aerotropolis study area. Consultation included a cultural values mapping workshop aimed at identifying and understanding key social, cultural and intangible values associated with the Aerotropolis region and to identify how the RAPs would like these values to be conserved, remembered and managed throughout this project and into the future. Key issues identified through consultation included:

- further archaeological investigations
- conservation of key well-preserved landforms, sites and scarred trees
- establishment of a repatriation area for recovered artefactual material
- Aboriginal naming of places within the Aerotropolis
- further consultation and workshops with a wider group of Aboriginal stakeholders
- Aboriginal stakeholder involvement in the development of interpretive stories and media for the precincts
- Additional on-site investigation and face-to-face consultation with Aboriginal stakeholders when the public health situation present at the time of the report would allow.

The assessment of Aboriginal heritage within the study area is an ongoing process that will require continuous consultation with the Aboriginal community and additional field survey and archaeological investigation.

3.2.3 Database searches

AHIMS SEARCH

The Aboriginal Heritage Information Management System (AHIMS) database is maintained by Heritage NSW and regulated under Section 90Q of the *National Parks and Wildlife Act 1974.* The AHIMS database holds information and records regarding the registered Aboriginal archaeological sites (Aboriginal objects, as defined under the Act) and declared Aboriginal places that exist in NSW.

A search of the AHIMS database was conducted on 23 August 2021 (Search ID 615973) to identify if any registered Aboriginal sites were present within the study area (Appendix A). The search covered 4 km surrounding the study area to understand the known archaeological resource and provide an understanding of the types of features that might be present in the current landscape.

Table 3: Parameters for the AHIMS database search and results

Search Parameters		Search Result	
GDA Zone	56	**Aboriginal sites recorded**	76
EastingsEastings	289875 - 293875	**Aboriginal places declared**	0
NorthingsNorthings	6244469 - 6248469		
Buffer	0m		

The extensive search identified a total of 76 Aboriginal sites within the search parameters. The vast majority of Aboriginal sites within the search parameters are artefact scatters or isolated finds (88%).

The distribution of recorded Aboriginal sites adjacent toadjacent to the study area is shown in Figure 6

. The frequencies of site types and contexts recorded within the AHIMS database search area are listed below.

Table 4: Frequencies of site types

Site Features	Number	%
Artefact	65	88
Modified Tree (Carved or Scarred)	5	6.7
Potential Archaeological Deposit (PAD)	3	4
Grinding Groove	1	1.3
Total	**74**	**100**

Eighteen (18) Aboriginal sites have been identified by the AHIMS search as located within the study area (Table 5) with and additional five (5) sites located in the immediate vicinity of the study area.

Table 5: AHIMS sites within the study area

AHIMS ID	Site name	Description
45-5-2660	B64	This site is an isolated artefact recorded by Navin Officer Heritage Consultants (1997) as part of an EIS for a second Sydney airport. The location of the isolated find is described as being embedded 50cm down in the soil profile of a creek bank of the drainage channel that runs north to south through the study area. The isolated find is described as a white chert core.
45-5-2661	B63	This site is an artefact scatter recorded by Navin Officer Heritage Consultants (1997) as part of an EIS for a second Sydney airport. The artefact scatter includes three (3) quartz flakes.
45-5-2662	B61	This site is an isolated artefact recorded by Navin Officer Heritage Consultants (1997) as part of an EIS for a second Sydney airport. The location of the isolated find is described as approximately 300 m south of chicken sheds, within area of disturbance (burial pit for dead cow) east of a creek line.
45-5-2669	B96	This site is an artefact scatter recorded by Navin Officer Heritage Consultants (1997) as part of an EIS for a second Sydney airport. The location of the artefact scatter is described as within a watering place for stock adjacent to a creek line. The artefact scatter consists of two artefacts – one yellow/orange tuff flaked piece and one grey course granite flake. The scatter is located 2-5 cm below uneroded grassed creek bank.
45-5-2672	B97	This site is an artefact scatter recorded by Navin Officer Heritage Consultants (1997) as part of an EIS for a second Sydney airport. The site card contains little information pertaining to the location of the scatter other than the coordinates. The scatter is comprised of two artefacts – one silcrete and one tuff. The artefact types are not specified; however, it is specified that one flake and one flaked piece represented in the scatter.
45-5-2674	B100	This site is an artefact scatter recorded by Navin Officer Heritage Consultants (1997) as part of an EIS for a second Sydney airport. The location of the scatter is described as being on a road verge within a gravelled road. The scatter is comprised of two artefacts – one cream chert fragment and one yellow mudstone fragment.
45-5-2684	B73	This site is an artefact scatter recorded by Navin Officer Heritage Consultants (1997) as part of an EIS for a second Sydney airport. The location of the scatter is described as being north of a man-made drainage channel and greater than 20 m from Badgerys Creek and located across a 60 m area parallel to animal tracks. The artefact scatter is comprised of one chert manuport with flake scar, one silcrete proximal flake and silcrete flaked piece.
45-5-2780	B65	This site is an isolated artefact recorded by Navin Officer Heritage Consultants (1997) as part of an EIS for a second Sydney airport. The site card identifies the site as being located within an exposed vehicle track north of a fence line and south of chicken sheds. The artefact is described as a light grey volcanic flake found approximately 30cm into the soil profile.

AHIMS ID	Site name	Description
45-5-2786	B 109	This site is an artefact scatter recorded by Navin Officer Heritage Consultants (1997) as part of an EIS for a second Sydney airport. The location of the scatter is described as being immediately west of a gravel road. The scatter consists of two red silcrete flakes.
45-5-2787	B 110	This site is an isolated artefact recorded by Navin Officer Heritage Consultants (1997) as part of an EIS for a second Sydney airport. The location is described as being in close proximity to a blue gum tree and south-east of the house located within the property. The isolated artefact was described as a red silcrete flaked piece.
45-5-5370	BCLL PAD03	Recorded by GML (2020) as part of the Badgerys Creek Aboriginal Heritage Report. The PAD is described as being on a flat within an undulating plain within 5 m of water and located across two raised terraces noted as potential locations for past Aboriginal activity with possible concentrations of Aboriginal objects.
45-5-5371	BCLL PAD02	Recorded by GML (2020) as part of the Badgerys Creek Aboriginal Heritage Report. The PAD is located across two sides of an unnamed creek line than runs through the centre of the study area. The site card notes one raised terrace as being a possible focus for past Aboriginal activities.
45-5-5372	BCLL PAD01	Recorded by GML (2020) as part of the Badgerys Creek Aboriginal Heritage Report. The PAD is located on western side of South Creek within the study area with two raised terraces with old growth trees.
45-5-5373	BCLL IF01	This site is an isolated artefact recorded by GML (2020) as part of the Badgerys Creek Aboriginal Heritage Report. The isolated find is described as being located on a slope next to disturbed land, approximately 5 m from west of track leading into former poultry shed. The site card does not include a description of the artefact.
45-5-5374 ***	BCLL ST01	Recorded by GML (2020) as part of the Badgerys Creek Aboriginal Heritage Report. The modified tree is described as being located to the north of a gravel road in an area that has been predominately stripped. The scar is described as 80cm above the base of the tree, west-facing with straight sides with cut marks across the base. The species is listed as box and the condition of the tree is poor.
45-5-5375 ***	BCLL RT01	Recorded by GML (2020) as part of the Badgerys Creek Aboriginal Heritage Report. The modified tree is described as being located near earth works on the western bank of South Creek. The 'ring' is with a red gum 4 m from base.
45-5-5376 ***	BCLL RT02	Recorded by GML (2020) as part of the Badgerys Creek Aboriginal Heritage Report. The modified tree is described as being located between two raised terraces in close proximity to South Creek. The modified tree is described as a 'ring tree' with two rings starting at 1.3m from base.

*** It was recommended that these sites be inspected by an arborist to ascertain the age of the trees.

AHIMS ID 45-5-5374 - is not a culturally scarred tree. The arborist aged the tree between 80 to 100 years, the cars regrowth was approximately 30 years. The scar is more likely an historical survey marker primarily due to the shape.

AHIMS ID 45-5-5375 and AHIMS ID 45-5-5376 – these two trees have been registered as ring trees. They are not culturally modified (Carved or Scarred) trees. The naturally formed trees have young growth branches forming the space between the limbs. The young growth branches are approximately 20 years.

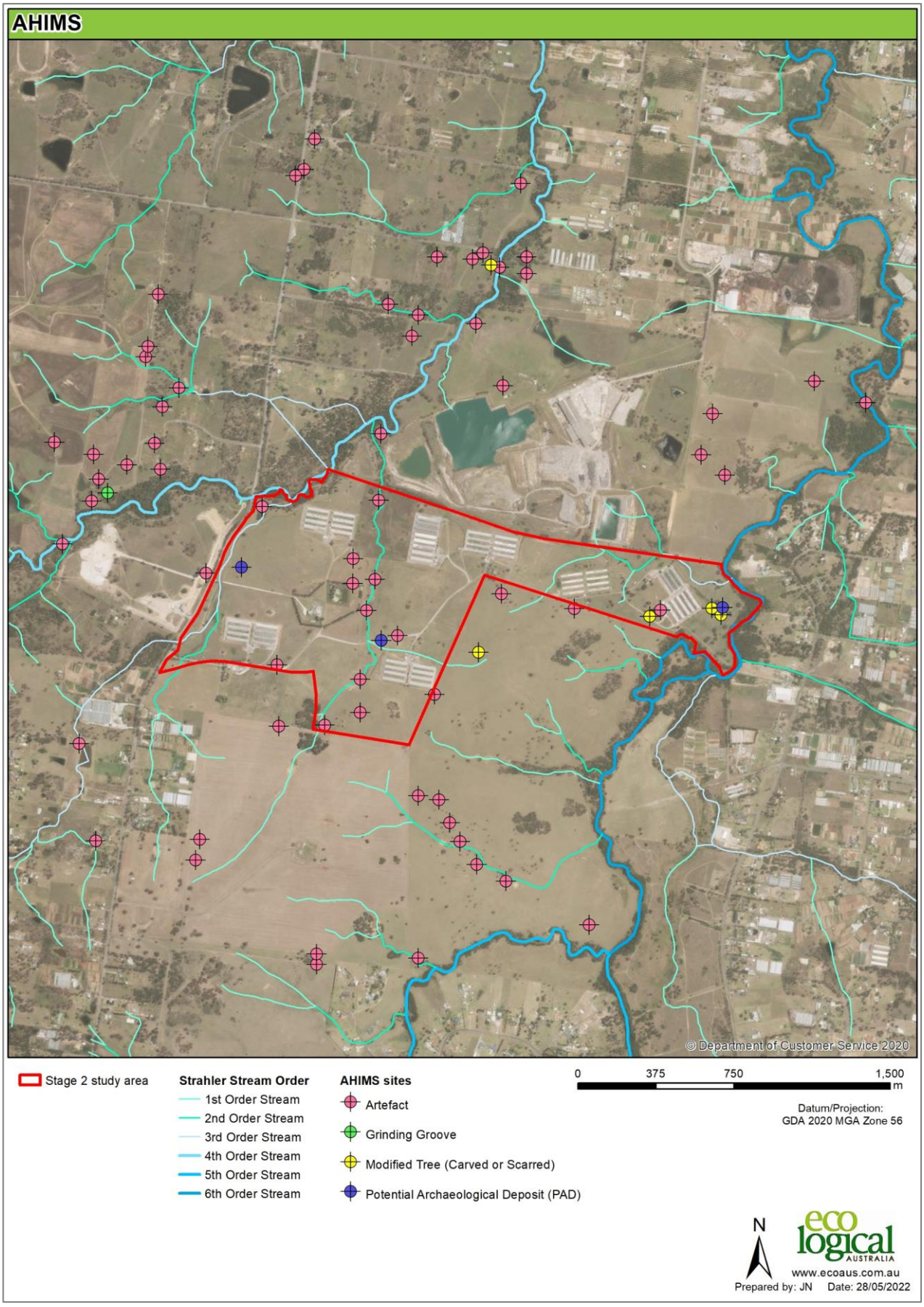

Figure 5: Regional overview of AHIMS sites surrounding the study area

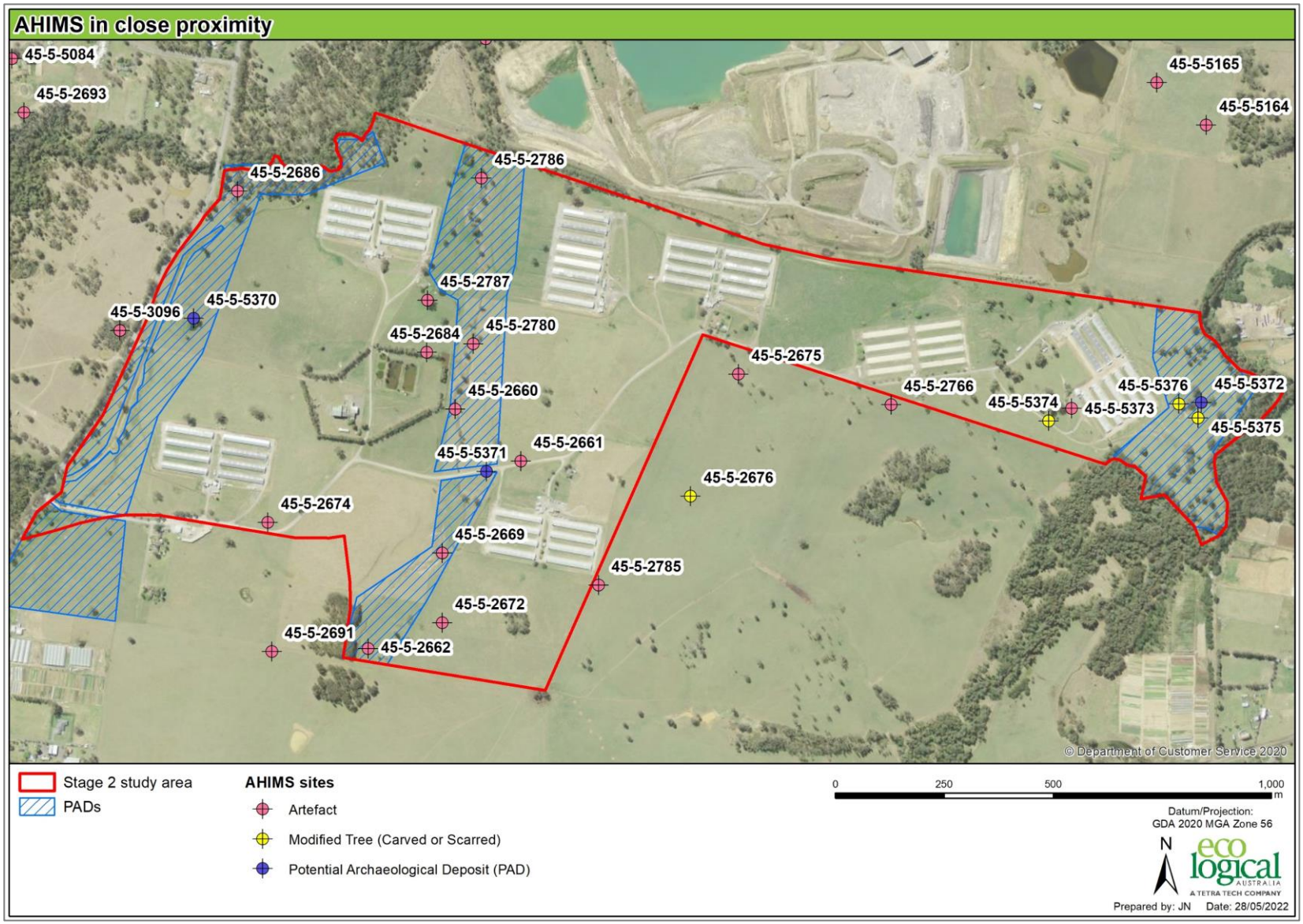

Figure 6: AHIMS sites within the study area

4. Regional character and predictive model

4.1 Regional character

Previous archaeological assessments across the region provide important data on Aboriginal archaeological site distribution and typology from which an understanding of the archaeological landscape within the study area can be developed.

Aboriginal occupation in the Sydney region encompasses at least 20,000 years with dates of 13,000 Before Present (BP) at Shaws Creek in the Blue Mountain foothills; 11,000 BP for Mangrove Creek and Loggers Shelter and c. 20,000 BP at Burrill Lake on the South Coast (Attenbrow 2002). The majority of sites in the Sydney region have been dated to within the last 3,000 to 5,000 years, with many researchers proposing that occupation intensity increased from this period. This apparent intensity of occupation may have been influenced by rising sea levels which by about 6,500 years ago had risen to their present levels.

Open artefact sites and artefact scatters are the most common site types identified within the Cumberland Plain (Artefact 2012). These sites are most commonly found in landforms associated with permanent water sources, such as river banks and alluvial flats (White and McDonald 2010).

Large, concentrated assemblages are more likely to be located within resource rich areas (AMC 2014). Complex sites, containing multiple artefact types and archaeological features, are often located in close proximity (~150m) to permanent water sources (Niche 2020). The confluence of creek lines could provide focal points for occupation and the size of the stream's Strahler order could influence the size of the assemblages present (Niche 2020). The crests of hills and ridge tops also have the potential to contain larger sites (AMBS 2012).

Low density assemblages of artefacts are also located in close proximity to reliable water sources. Whilst these sites can represent smaller or less frequent instances of occupation, disturbances from historic land use and erosion can also affect artefact count (Niche 2020).

The majority of artefact assemblages are comprised primarily of unretouched flakes and debitage, with a smaller percentage of formal tool types being present (AMBS 2012). The most common raw material used to manufacture tools is silcrete (Niche, 2020, Artefact 2012), followed by tuff/chert (AMC 2014). Silcrete sources are generally located in the north western Cumberland Plain

Areas with few or no sites identified on the surface have often been shown to contain subsurface archaeological deposits and the distribution of surface artefacts is not a reliable indicator of an area's archaeological potential (Niche 2012). PADs are most likely to be located along valley floors and low slopes and ridgelines between flat landforms (GML 2020) and possess low-to-moderate density archaeological deposits (AHMS 2005 in AMC 2014). Sites situated in the alluvial soils of the South Creek Soil Profile have the potential for stratified deposits (GML 2020), however; low-lying, flood prone areas are unlikely to have been used extensively for camping (Steele 2001 in AMC 2014).

Instances of old growth vegetation are present in the region and have the potential to contain culturally modified trees (Artefact 2010). However, such instances are rare as large-scale land clearance has removed the majority of old growth vegetation from the Cumberland plain (AMC 2014).

4.2 Predictive models

A commonly utilised tool in the planning and management of Aboriginal cultural heritage are predictive models. These models aim to identify specific landforms and places within the landscape which may contain archaeological material. They usually begin as geographically broad models, constructed through extensive reviews of the available literature to determine basic patterns of site distribution, before being refined according to the specific landform and environmental characteristics of the study area.

Predictive models are almost solely based upon a cultural ecological perspective of the landscape: landforms and environmental characteristics provided a distinct set of subsistence constraints, meaning the landscape could only be occupied in particular ways in order to minimise distance to potable water, maximise biodiversity, and provide shelter from the elements. Accordingly, there is an expectation that land use patterns vary between separate environmental zones due to differing constraints and that this will manifest in alternate spatial distributions of archaeological material. While some social factors may have influenced communities to venture through certain landscapes, other social factors may have resulted in the avoidance of landscapes, regardless of environmental conditions. Due to this, to understand the cultural context of a certain landscape consultation with local Aboriginal knowledge holders and community members is essential.

4.2.1 Site types

There are several common Aboriginal cultural heritage site types that may be found in the study area.

Open camp sites / stone artefact scatters represent past Aboriginal subsistence and stone knapping activities and may include archaeological remains such as stone artefacts and hearths. This site type usually appears as surface artefact scatters in areas where vegetation is limited, and ground surface visibility is high. They are also often exposed by erosion, agricultural events (such as ploughing), and the creation of informal, unsealed vehicle access tracks and walking paths. Open campsites are often located on dry, relatively flat land along or adjacent to rivers and creeks. Sites that contain surface or subsurface deposits resulting from repeated or continuous occupation are more likely to occur on elevated ground near permanent, reliable water sources. Flat, open areas associated with creeks and their resource-rich environments would have offered ideal camping areas to the Aboriginal inhabitants of the local area.

Isolated artefacts may represent a single item discard event or the result of limited stone knapping activity. The identification of isolated artefacts may indicate the presence of a more extensive, subsurface in situ archaeological deposit, or a larger deposit obscured by low ground visibility. Isolated artefacts are likely to be located on landforms associated with a range of activities, such as ridge lines that would have provided ease of movement through the area and level areas with access to a water source. Artefact scatters and isolated artefacts are the most common site types found in association with fresh water and/or food resource gathering areas.

Potential Archaeological Deposit (PAD) are areas where there is no surface expression of stone artefacts, but, due to a landscape feature or isolated artefact, there is a strong likelihood that the area will contain subsurface *in situ* archaeological deposits. Landscape features that may indicate a PAD include proximity to reliable water sources, particularly terraces and flats, ridge lines and ridge tops, and sand dune systems.

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Culturally modified trees exhibit evidence of the deliberate removal of the *periderm* (outer bark), *phloem* (inner bark), and, in some cases, the sapwood. These materials can be used to manufacture a variety of items, including shields, Coolamon (bowls or trays), watercraft, containers, and a range of wooden tools and implements. Trees may also have been scarred in order to gain access to food resources (such as cutting toe-holds so as to climb the tree and catch possums or birds) or to mark locations (such as tribal territories). In some instances, Aboriginal people marked important features or locations (such as ceremonial grounds) by carving patterns or motifs into the sapwood of established trees or bending and grafting the branches of saplings to create rings.

Grinding grooves are the physical evidence of tool making or food processing activities undertaken by Aboriginal people. The manual rubbing of stones against other stones creates grooves in the rock; these are usually found on flat areas of abrasive rock such as sandstone in close proximity to water courses.

Bora grounds / ceremonial sites are locations that have spiritual or ceremonial values to Aboriginal people. Such sites may comprise natural or altered landforms and, in some cases, will also contain archaeological material. For example, bora grounds are a ceremonial site type usually consisting of a cleared area around one or more raised earth circles connected by a pathway. Bora grounds are often accompanied by ground drawings or mouldings of people, animals or deities, or geometrically carved designs on the surrounding trees.

Burials often took place in proximity to camp sites, as most people tended to die in or close to camp and it is difficult to move a body over a long distance. Soft, sandy soils on or close to rivers and creeks allowed for easier removal of earth for burial. Similarly, rock shelters or middens also provided accessible burial places. Burial sites may be marked by stone cairns, modified trees, or a natural landmark. They may also be identified through historic records or oral histories.

Contact / historical sites can include a wide variety of sites and may be identified through artefactual evidence or oral histories. Artefacts located at such sites may involve the use of introduced materials such as glass or ceramics or may have social significance regarding the interaction between Aboriginal people and European settlers.

4.2.2 Site occurrence

Based on the results produced from the landscape assessment, searches of the AHIMS and state heritage registers, and examination of the regional and local Aboriginal archaeological context, the below predictive model (Table 6) has been designed for the study area.

Table 6: Predictive model for the occurrence of archaeological site types in the study area

Site Type	Description	Likelihood of occurrence
Open camp sites / stone artefact scatters / isolated finds	Artefact scatters and isolated artefacts are the most common site types found in association with fresh water, and/or food resource gathering areas. Artefact scatters and isolated finds are reported to be the most common archaeological site type in the study area.	High
Potential Archaeological Deposits	The study area is a landform that could be considered to be potentially archaeologically sensitive	Moderate
Culturally modified trees	Culturally modified trees may be present wherever tree specimens of an appropriate age are present. Widespread land clearing has been undertaken within the study area.	Low

Site Type	Description	Likelihood of occurrence
Axe grinding grooves	Although the study area is in proximity to a watercourse, the underlying geomorphology of the study area is not conducive to this site type, no naturally exposed bedrock	Low
Bora grounds / ceremonial sites	There is a low reported incidence of ceremonial sites in proximity to the study area.	Low
Burials	There is a low reported incidence of burial sites in proximity to the study area. The Blacktown soils are shallow, and it is unlikely that this site type would be present.	Low
Contact / historical sites	Contact sites may occur in any area where Aboriginal people encountered early European settlers.	Low

5. Archaeological survey

5.1 Purpose

The purpose of the survey was to assess the current condition of the Aboriginal sites identified within the study area and to identify any unrecorded Aboriginal sites or objects. Areas of subsurface archaeological potential identified in the desktop assessment were also inspected.

5.2 Survey strategy

Archaeological survey of the study area was conducted on foot, in accordance with the *Code of Practice*. The overall strategy was to complete a full coverage survey, as the exact locations of the impacts are not yet known. A handheld Global Positioning System (GPS) was used to track the survey area covered and record the location of key features (disturbances, areas of archaeological sensitivity/potential). The coordinate system projection used for all site recording was GDA94 MGA 56.

The field survey methodology was as follows:

- Record the landform, general soil information, surface conditions and vegetation conditions encountered during the survey and how these impact on the visibility of objects
- Define the boundaries of any Aboriginal sites and areas of PAD based on landmarks and historical maps
- Reinspect previously identified Aboriginal sites and areas of archaeological potential within the study area
- Identify areas of disturbance which may have impacted the presence of intact soils and archaeological features
- Consultation with Aboriginal representatives to discuss the potential intangible cultural heritage values of the study area
- Collect information to ascertain whether further archaeological investigation is required.

All ground exposures were examined for Aboriginal objects (stone artefacts, imported shell, or other traces of Aboriginal occupation and old growth trees were examined for signs of cultural scarring and marking.

A photographic record was kept during the survey. Photographs were taken to record aspects of survey units including vegetation and disturbance. Scales were used for photographs where appropriate.

5.2.1 Site definition and recording

An Aboriginal site is generally defined as an Aboriginal object or place. An Aboriginal object is the material evidence of Aboriginal land use, such as stone tools, scarred trees, or rock art. Some sites, or Aboriginal places can also be intangible and although they might not be visible, these places have cultural significance to Aboriginal people.

The Heritage NSW guidelines state, in regard to site definition, that one or more of the following criteria must be used when recording material traces of Aboriginal land use:

- The spatial extent of the visible objects, or direct evidence of their location.

- Obvious physical boundaries where present, e.g., mound site and middens (if visibility is good), a ceremonial ground.
- Identification by the Aboriginal community on the basis of cultural information.

For the purposes of this study an Aboriginal site would be defined by recording the spatial extent of visible traces or the direct evidence of their location.

5.2.2 Protocol for recording Potential Archaeological Deposits

Where areas of PAD are identified towards the margins of each survey unit, efforts were made by the survey team to delineate each area of potential beyond the survey unit. Where the extent of the PAD extends beyond the survey unit, efforts were made to map the extent of that feature up to approximately 70m outside the survey unit. If it is likely that these PADs continue beyond that point, the survey team justified that the distance is adequate to provide an accurate representation of the PAD with regard to future planning and design for the project.

5.3 Survey results

The field survey was conducted on 18 November 2021 by ELA Archaeologists Jennifer Norfolk and Declan Coman and field officer Kirsty Lee Chalker from Cubbitch Barta Native Title Claimants Aboriginal Corporation. The survey area was divided into four (4) survey units and was sample surveyed due to the dense vegetation cover.

SURVEY UNIT 1

SU 1 comprised an alluvial flat landform adjacent to South Creek (Figure 7). The flat landform had sparse tree coverage, with dense grass cover offering low visibility and limited exposures (Figure 8).

A minor drainage line flows through the northern half of the survey unit (Figure 9), the minor drainage line was highly disturbed due to gully erosion (Figure 10). Inside the deeper gully, the soil exposures showed a soil profile consistent with the South Creek soil landscape. No artefacts were observed within this soil exposure.

Along the western extent of the survey unit, where the flat landform transition to a gentle slope, extensive disturbances from the construction of the chicken sheds is observable (Figure 11). This disturbance extends out into the flat landform in the form of artificial drainage lines that were likely excavated to drain water from the sheds (Figure 12). The landform location of the chicken sheds has been heavily modified with deep excavation, large scape earth movement and long term natural erosional affects.

AHIMS ID 45-5-5375 (Figure 13), was re assessed as being a natural growth and in consultation with site officer Kirsty Lee Chalker (Cubbitch Barta) confirmed the site was not a culturally modified tree.

AHIMS ID 45-5-5376 (Figure 14), was re assessed as being a natural growth and in consultation with site officer Kirsty Lee Chalker (Cubbitch Barta) confirmed the site was not a culturally modified tree.

Figure 7: View south east of South Creek, elevated alluvial landform.

Figure 8: View north east open woodland on flat alluvial landform in eastern end of study area.

Figure 9: Minor drainage line of South Creek in north of study area.

Figure 10: Soil exposure in gully erosion of minor drainage line in the north eastern corner of study area.

Figure 11: Extensive disturbance from chicken sheds, view west.

Figure 12: Extensive disturbance from artificial drainage lines across the study area, view north.

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Figure 13: AHIMS ID 45-5-5375, natural shape formed by branch growth, no visible lines from any point across the study area

Figure 14: Open flat landform with AHIMS ID 45-5-5376 in background

SURVEY UNIT 2

SU2 comprised the slope covered in low shrubs and scattered trees (Figure 15) and the landform sloped away to the east and the north with a moderate slope (Figure 16). Visibility ranged from low, in areas of consistent grass cover, to high with area of disturbance being cleared and large-scale landscaping works having exposed the soil profile (Figure 17). Disturbances from the chicken coops was confirmed to be extensive with large scale earthworks, paving of surfaces and the introduction of building debris and foreign materials into the soil profile (Figure 18). Along the western and southern side of SU2 an unsealed road surface had disturbed ground surfaces.

AHIMS ID 45-5-5373 could not be re identified during the survey, the location of the AHIMS site is highly disturbed with introduced gravels (Figure 20). The site is likely destroyed from natural erosional processes.

Figure 15: Ground surfaces and vegetation on top of hill in centre of SU2, view west

Figure 16: Sloping landform view east towards South Creek. Low visibility no exposures

Figure 17: Soil exposure, shallow A horizon over medium clays with exposed shale bedrock. Surrounding landform has been cut down.

Figure 18: Disturbance from levelling from vehicle access and drainage mitigations in north of SU2

Figure 19: AHIMS ID 45-5-5374, not culturally modified, European marking

Figure 20: Soil exposure at location of AHIMS ID 45-5-5373, Aboriginal object not found, soils mixed

SURVEY UNIT 3

SU3 covered the two man drainage lines that run through the centre of the study area and the western boundary parallel with Badgerys Creek Road. Both drainage lines run south north towards Badgerys Creek. The central drainage line has been impacted by fluvial erosion and grazing cattle.

AHIMS ID 45-5-2660 was reidentified, two red silcrete flakes were located in an erosion scour on the drainage line. The survey was also unable to reidentify AHIMS ID 45-5-2780, AHIMS sites are in highly eroded locations.

Further north along the central drainage line, an isolated artefact was identified. The isolated artefact is a white silcrete medial flake. The site was observed in situ and was located 440mm depth. Further downstream the survey observed significant disturbances in the form of building debris in the river and artificial drainage lines from the elevated chicken sheds to the east.

Within the north-western portion of SU3, the landform slopes south-east to north-west. Predominately cleared of vegetation, this landform transitioned into open woodland as it moved west towards the

banks of Badgerys Creek (Figure 25). As the sloping landform transitions into river bank at the north-western corner of the study area (Figure 26) it has been subject to erosion which has exposed the soil profile.

Along the western extent of the study area, the minor tributary of Badgerys Creek has been modified. The eastern creek bank is relatively flat with some evidence of minor disturbance from the creek re-alignment. Within the modified creek line, soil exposures showed a highly mixed profile, within this exposure, mixed deposits and disturbance is evident. Overall, surface visibility amounted to approximately 5% with extensive grass cover across a majority of SU3. Erosion scours and areas of disturbance account for most of the areas of surface visibility. There was approximately 5% of exposure, predominately within the walls of drainage channels.

AHIMS ID 45-5-2674 was recorded in the disturbed context of the road corridor but could not be reidentified during the survey.

Figure 21: Typical surface visibility within study area to the southwest portion of SU3

Figure 22: Soil exposure and erosion within the drainage line immediately south of the AHIMS ID 45-5-2660

Figure 23: Ground surfaces, erosion, and vegetation in the drainage line, location of two artefacts (AHIMS ID 45-5-2660)

Figure 24: Red silcrete flakes eroding out of bank at location of AHIMS ID 45-5-2660.

Figure 25: Badgerys Creek at north-western extent of study area, view north showing raised landform

Figure 26: View west at northern extent of study area showing sloping landform adjacent to Badgerys Creek

Figure 27: View north along western boundary showing heaving landscape modification for property drainage.

Figure 28: Exposed soil profile of excavated drainage line, shallow A1 horizon over a clay rich A2 horizon.

SURVEY UNIT 4

SU4 was located on the gentle, sloping landform that runs north south in the centre of the study area. The site survey was unable to reidentify AHIMS ID 45-5-2787 (Figure 29), the visibility was high, and the site has likely been lost to erosion. AHIMS ID 45-5-2684 (Figure 30) could also not be reidentified, the visibility was low with dense grass cover and vegetation overgrowth. The entire survey unit was heavily modified from the construction of the chicken sheds, large scale drainage works, vegetation clearance and various other modifications.

There was low visibility overall across the survey unit and low exposures. There is no potential for intact archaeological deposits.

Figure 29: Location of AHIMS ID 45-5-2787, view east

Figure 30: Location of AHIMS ID 45-5-2684, no visibility, view west

5.3.1 Survey coverage

In accordance with Heritage NSW *Code of Practice* the study area was surveyed in relation to survey units, landforms, and landscapes.

Table 7: Survey coverage

Survey Unit	Landform	Survey Unit Area (m^2)	Visibility (%)	Exposure (%)	Effective coverage (ECA)	Effective coverage
SU1	Alluvial	39,720	10	2	79.5	<1%
SU2	Slope	21,529	5	3	32.3	<1%
SU3	Alluvial	55,386	50	10	2,769	5%
	Slope	57,027	5	2	57	<1%
SU4	Slope	12,773	2	2	5	<1%

Table 8: Landform summary

Landform	Landform Area	Area effectively surveyed	% of landform effectively surveyed	Number of sites	Number of artefacts or features
Slope	91,398	94.3	<1	1	3 (PAD)
Alluvial	95,106	2,848	5	1	2 (PAD)

The field survey confirmed that the study area has undergone varying levels of disturbance, primarily due to the widescale vegetation clearance, construction of the chicken farms, buildings and outbuildings and the extensive drainage mitigation works across the poor draining landscape, the construction of roads and installation of fences and irrigation have caused minor impacts.

Areas of moderate to high potential for intact archaeological deposits have been identified, the large areas of PAD (AHIMS ID 45-5-5370 and AHIMS ID 45-5-5381) have been heavily modified and been impacted by past land use, the scientific significance of these PADs is low.

AHIMS ID 45-5-2660 was the only artefact site that was identified during the survey, within the study area the remaining artefact sites could not be identified due to the low visibility, the age of the sites and the likelihood of them being destroyed thought past land use and natural erosion.

AHIMS ID 45-5-5374, AHIIMS ID 45-5-5375 and AHIMS ID 45-5-5376 are not Aboriginal sites.

5.4 Discussion

The study area contains sensitive landforms in the proximity of two major creek lines of Badgerys Creek and South Creek, as well as the two smaller drainage lines that run through the property. The exploitable resources that the creek lines would have represented are easily accessible from the undulating landform which also provides areas of flat, terraced ground with good views of the surrounding landscape making it suitable for habitation.

Areas close to the major conjunction of streams would have likely been a focus for past occupation, with raised terraces being another indicator of increased potential. Disturbances varied but were most pronounced in the areas formerly used by the chicken farm and roads concentrated along ridgelines and on crests. The potential archaeological deposits (AHIMS ID 45-5-5370, AHIMS ID 45-5-5371 and AHIMS ID 45-5-5372) were reassessed and areas of moderate to high potential were confirmed and the remainder of the AHIMS sites area considered to be of low scientific significance due to the high disturbance levels.

AHIMS ID 45-5-2660 is of low scientific significance being a low density artefact scatter affected by gully erosion, AHIMS ID 45-5-2661, AHIMS ID 45-5-2662, AHIMS ID 45-5-2669, AHIMS ID 45-5-2672, AHIMS ID 45-5-2674, AHIMS ID 45-5-2684, AHIMS ID 45-5-2780, AHIMS ID 45-5-2786 and AHIMS ID 45-5-2787 could not be reidentified through survey by ELA in 2021, nor by GML in 2020. The visibility across the study area was low due to dense grass cover and several AHIMS sites in disturbed/ erosional locations may have been impacted. These AHIMS sites are likely destroyed and are of low scientific significance. AHIMS ID 45-5-5373 was identified by GML in 2020 but could not be reidentified through survey by ELA 2021. The site is located in a highly disturbed context and is of low scientific significance.

AHIMS ID 45-5-5376 and AHIMS ID 45-5-5375 were assessed by an arborist and in consultation confirmed to be natural growths of not considerable age to be culturally modified, these two sites are not Aboriginal sites. AHIMS ID 45-5-5374 was assessed by an arborist and in consultation also not a culturally modified tree, the tree age was assessed as being between 800-100 years and the scar age less than 50 years, this is most likely a European scar marking the public access road due to the age and shape.

This is consistent with advice provided in the field by Kirsty Lee Chalker of Cubbitch Barta Native Title Claimants who was in attendance for the survey.

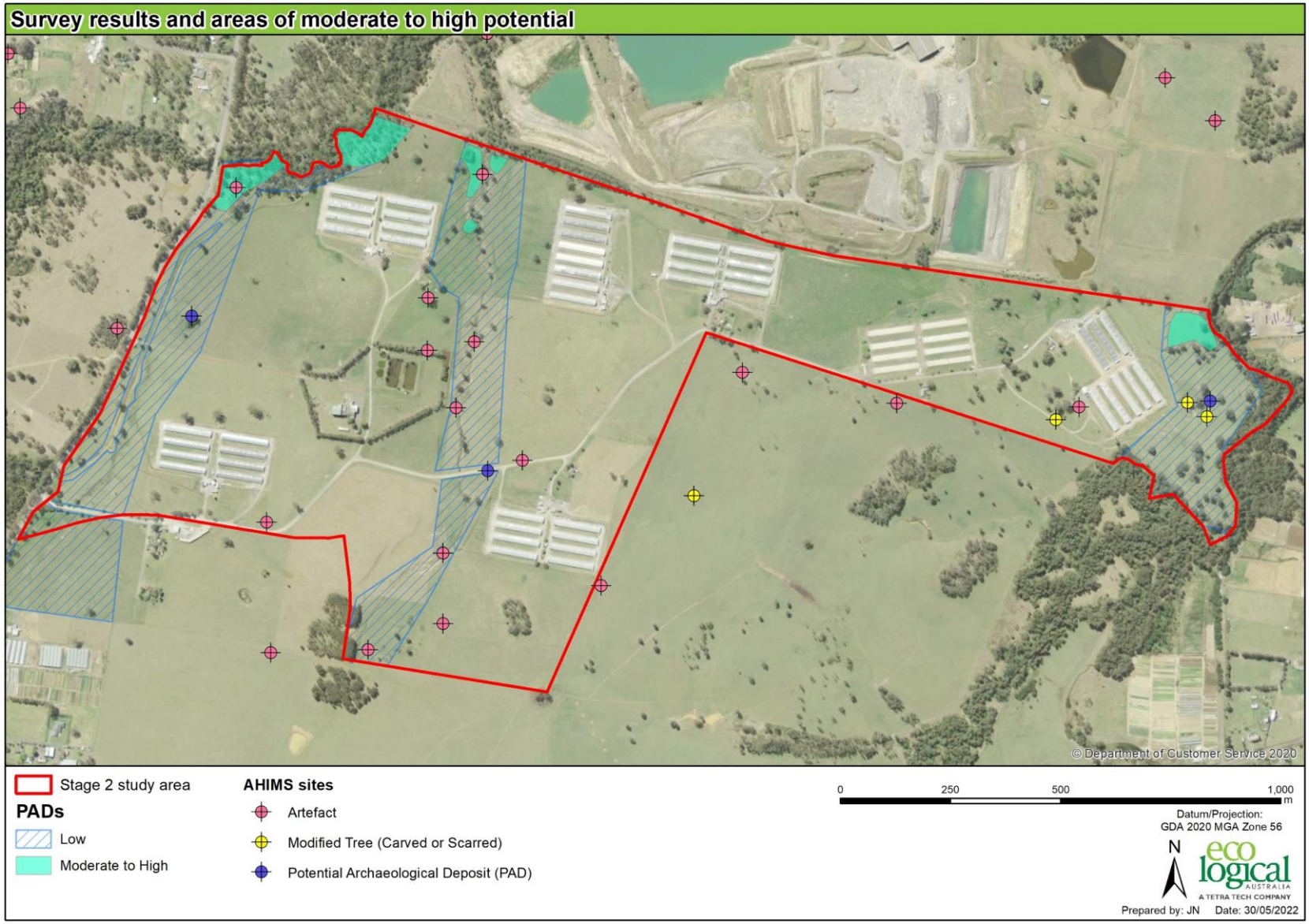

Figure 31: Results of ELA 2021 Survey

6. Archaeological test excavations

6.1 Introduction

The purpose of the Archaeological Research Design (ARD) is two-fold: to provide and direct a reasonable foundation for management decisions for the archaeological resource as well as satisfying regulatory requirements through a standardised process. The research design will be founded on: "what questions one is interested in investigating, what kinds of sites one expects to find, and the information needed to be collected" (Burke & Smith 2004:3). All related future archaeological studies and analyses stand to benefit if guided by clear linkage of study goals, relevant theory, methods, and data collection. The application of a research design is international best practice and plays a vital role in the planning and management of cultural heritage.

The aim of this research design is to assist in furthering our understanding of how Aboriginal people utilised the study area in the past. The archaeological investigation proposes to firstly, conduct archaeological survey of the areas of proposed development and secondly, undertake test excavations within the areas of proposed development. Testing programs are intended to understand the presence, nature, extent and inform significance of the archaeological resource.

6.2 Research design

The test excavation investigated the study area and collected information about the nature and extent of sub-surface Aboriginal objects, based on a sample gathered from sub-surface investigations. The research questions outlined below include broad questions that attempted to show the level of information the site might be expected to reveal as well as questions specifically related to the site:

- What was the distribution of evidence of past Aboriginal peoples use and occupation within the study area?
- What types of raw materials, artefact types and tool types are present within the assemblage?
- What types of stone tool technology are present within the site?
- Have the test excavations revealed other site types such as hearths, heating ovens, knapping floors or other foci or activity areas?
- Do the results of the test excavation demonstrate any evidence of disturbance within the study area?
- What can the artefact assemblage (or lack thereof) indicate about previous land use by Aboriginal people?
- How does the pattern of landscape use compare to previous studies in the region?

The research design questions developed to guide the testing program are not limited to the questions above and other pertinent questions may arise (or be fine-tuned) during the course of the work being undertaken.

6.3 Test Excavation methodology

ELA undertook archaeological test excavations under the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010a) in order to understand the presence, nature, extent, and significance of the Aboriginal archaeological resource and how best to manage it.

This section presents the methodology for the test excavation. The purpose of archaeological test excavations was to collect information about the nature and extent of sub-surface Aboriginal objects, based on a sample gathered from sub-surface investigations. The work was undertaken by a team comprising archaeologists and representatives from the RAPs.

6.3.1 Test Excavation Area 3

Test Excavation Area 4 will be investigated through the utilisation of a systemic grid of test excavation units (50cm X 50cm). The placement of the test excavation units will be a minimum of 20 metres and a maximum of 40 metres distance from the nearest adjacent unit with the possibility to expand on units displaying high density assemblages to 1 m^2 in accordance with the *Code of Practice*.

Up to twelve (12) test excavation units will be placed in the test excavation area to ensure the areas is adequately assessed.

6.3.2 Test Excavation Area 4

Test Excavation Area 5 will be investigated through the utilisation of a systemic grid of test excavation units (50cm X 50cm). The placement of the test excavation units will be a minimum of 20 metres and a maximum of 40 metres distance from the nearest adjacent unit with the possibility to expand on units displaying high density assemblages to 1 m^2 in accordance with the *Code of Practice*.

Up to eleven (11) test excavation units will be placed in the test excavation area to ensure the areas is adequately assessed.

The test excavation methodology which will apply to each testing area is outlined below:

6.3.3 Stage 1 test pits

- The test pits will be excavated by hand (inclusive of trowels, spades and other hand tools) and placed on a systematic grid appropriate to the scale of the area being investigated e.g., 10 m intervals, 20 m intervals, or other justifiable and regular spacing.
- The first test pit within a landform or PAD area will be excavated in 5 cm spits; the subsequent test pits conducted within the landform or PAD area can then be excavated in either 10 cm spits or stratigraphic units (whichever is smaller) to the base of Aboriginal object-bearing units being the removal of the A-horizon soil deposit down to the sterile clay layer (B-horizon).
- Depending on the depth and in order to achieve this, additional adjacent 50 cm x 50 cm test pits may be excavated (for example expanding the test pit to 50 cm x 1 m) to reach the sterile clay layer.

6.3.4 Stage 2 expansion pits

- If five or more stone artefacts or formal tools are located within a 50 cm x 50 cm test pit, or suspected features such as heat treatment pits, hearths, or evidence of knapping events are identified, the test pit may be expanded into a 1 m x 1 m square at the discretion of the

Excavation Director. The additional pits would be excavated in 50 cm x 50 cm test pit units in order to further understand the archaeological resource.

- Alternately, if five or more artefacts or formal tools are located within a 50 cm x 50 cm test pit, up to four 50 cm x 50 cm test pits may be placed at an interval of 5, 10, or 20 m (or other justifiable and regular spacing appropriate to the scale of the area being tested) from the test pit to test further the immediate area for artefact concentrations and/or archaeological features, or to define a site boundary. These additional test pits will be excavated until clay, or culturally sterile soils are reached.
- Expansion test pits may be combined and excavated as necessary in 50 cm x 50 cm units for the purposes of further understanding site characteristics. Note that under the Code of Practice, the maximum area that can be excavated in any one continuous area is 3 m^2.

6.3.5 General procedures

- The Code of Practice dictates that the maximum surface area of all test excavation units must be no greater than 0.5% of the PAD or area being investigated.
- All excavated soil will be sieved in 5 mm sieves. Artefacts will be collected and bagged according to test pit location and spit or context number.
- Wet or dry sieving may be employed depending on the nature of the soils. For example, dry sieving may be used for sandy soils.
- Each test pit will be recorded using standardised recording forms, coordinates collected using a GPS, and photographed using a range pole.
- The stratigraphic / soil profile for each test pit will be recorded in scale drawings as required by Heritage NSW Code of Archaeological Practice recording requirements.
- Test excavation units will be backfilled as soon as practicable, to be organised by the proponent.
- An AHIMS site card will be prepared and submitted to the AHIMS Registrar for any new sites identified during test excavations.
- An AHIMS Site Impact Recording form will be completed and submitted to the AHIMS Registrar for any sites impacted during test excavations.
- In the unlikely event that suspected human remains are identified works will immediately cease and the NSW Police and OEH will be notified.
- Test excavations will cease when enough information* has been recovered to adequately characterise the objects present with regard to their nature and significance.

*Enough information is defined by Heritage NSW as meaning “that the sample of excavated material clearly and self-evidently demonstrates the deposit’s nature and significance. This may include things like locally or regionally high object density: presence of rare or representative objects: presence of archaeological features: or locally or regionally significant deposits stratified or not.” (DECCW 2010a).

6.3.6 Lithic Analysis

Collected materials are temporarily held at the ELA office, where they have been analysed and catalogued by Jennifer Norfolk, ELA Archaeologist. Any artefacts that were particularly interesting or representative are photographed and included in the report. The collection was analysed using *A Record in Stone* (Holdaway & Stern 2004).

6.4 Test excavation results

Archaeological excavations within the study area identified that there has been heavy disturbance from previous land use and vegetation clearance as identified through the archaeological assessment.

No Aboriginal objects were recovered from test excavation area 3 (AHIMS ID 45-5-5371) and eleven lithic pieces were recovered from test excavation area 4 (AHIMS ID (45-5-5370). Enough information has been gathered to understand the nature of the study area and the following section presents a summary of the test excavation results.

TEST EXCAVATION AREA 3

Area 3 is located at the eastern extent of the study area, within the curtilage of the area of PAD that was identified by ELA during the archaeological survey. The PAD was identified as being on a relatively flat landform adjacent to AHIMS ID 45-5-5371, a PAD identified by GML 2020. The gentle sloping landform runs west-east towards a second-order tributary. The area had been partially cleared of native vegetation and surface disturbance included minor fencing.

The excavation area was covered in a layer of redeposited clay loams, either by alluvial processes or from the erosion from the earth movement of the study area. Soils across the testing area were generally very shallow and consisted of a friable, brownish silty loam, with a clear horizon over compact, medium clay layer. Depths varied from 50-200mm, and there were ironstone gravel inclusions (less than 10%) throughout. The test excavation units were saturated during excavation from the heavy rainfall, several test excavation units were abandoned from the flooding and from high disturbance witnessed during excavations. The soils were similar to South Creek soil landscape rather than Blacktown soil Landscape. Representative sections and a summary of the soil profiles of test excavation units are presented and described below.

Table 9: Soil summaries for test pits 1-24 across Area 2

Stratigraphy	Description	
A Horizon	Depth	0 – 200 mm
	pH	7
	Munsell	10YR 5/6
	Friable, yellow brown clay loams. Some roots and grass inclusions, charcoal flecks, small ironstone gravels (<10%) throughout.	
B Horizon	Depth	050– 500 mm
	pH	5.5-7
	Munsell	10YR 2/2
	Friable, moist brown silty loams. Some roots and grass inclusions, charcoal flecks, small ironstone gravels (<10%) throughout.	
C Horizon	Depth	550 – 600 mm
	pH	6.5
	Munsell	10YR 3/2
	Orange medium clay at base, moist and compact.	

Figure 32: View north over the testing area adjacent to minor drainage line.

Figure 33: North profile of test pit 1 showing a mixed clay loam over brown friable silty loams and a medium yellow brown clay base.

TEST EXCAVATION AREA 4

Area 4 is located at the north western extent of the study area, within the registered PAD (AHIMS ID 45-5-5370). A low density background scatter of lithic material was identified. The area was situated on a raised flat landform immediately adjacent to Badgerys Creek. There were trees but none of great age to predate vegetation clearance.

Soils across the testing area were generally shallow and consisted of a mixed brownish loam/ clay loam over an orange-brown to red medium clay. Depths varied from 200-300mm, and there were gravel inclusions (up to 70%) throughout. The test excavation units were saturated during excavation from the heavy rainfall. This excavation area appeared to be intact, however soils have exhibited mixing and is likely from vegetation clearance. Representative sections and a summary of the soil profiles of test excavation units are presented and described below.

Table 10: Soil summaries for test pits 3-18 in Area 1

Stratigraphy	Description	
A Horizon	Depth	0 – 200 mm
	pH	5.5 - 7
	Munsell	10YR 2/2
	Friable brownish loam, root and grass inclusions throughout with minor gravel inclusions.	
B horizon	Depth	200 – 300 mm
	pH	4.5-6.5
	Munsell	2.5YR 3/3
	Transition to yellow brown medium clay and red medium clay between 200-300mm, gravel inclusions (up to 70%).	

Figure 34: Area 4–View north west from test area towards Badgerys Creek

Figure 35: Test pit 7 – North profile – mixed brown clay loams, clear horizon orange medium clay

Figure 36: Area 4 test pit 9 – View across transect (TP 5-6)

Figure 37: Test pit 12 – North profile of test pit 12, mixed brown clay loams, clear horizon orange medium clay

6.4.1 Lithics

Eleven (11) lithic pieces were recovered artefacts were recovered from 8 of the 20 test pits within area identified as having moderate potential for archaeological deposits, north west corner of study area.

The majority of lithic material found during the test excavations was a red silcrete (90% n=10). Chert lithic material were 10% of the artefact assemblage recovered (Chert n=1). The predictive model identified through previous archaeological assessment that silcrete was the most predominant stone utilised in the region. Silcrete sources have been identified within the surrounding environment and is the most dominant lithic material associated with creek systems of the Hawkesbury catchment.

The reduction types recovered were broken flakes angular fragments and the level of reduction is secondary and tertiary with less than 4% primary reduction which indicates distance from lithic source. The majority of the lithic material was generally small in size, with the most common size being between 10-34mm (89%). The assemblage recovered is of good quality silcrete that has been totally or partially heat treated which is evident in its waxy lustre, few had rough texture inclusions and rough surfaces that had been flaked prior to heat treatment. The visible cortex was terrestrial, none had smooth riverine cortex which means the stone source was not from the two major watercourses but from local exposed source of naturally occurring silcrete.

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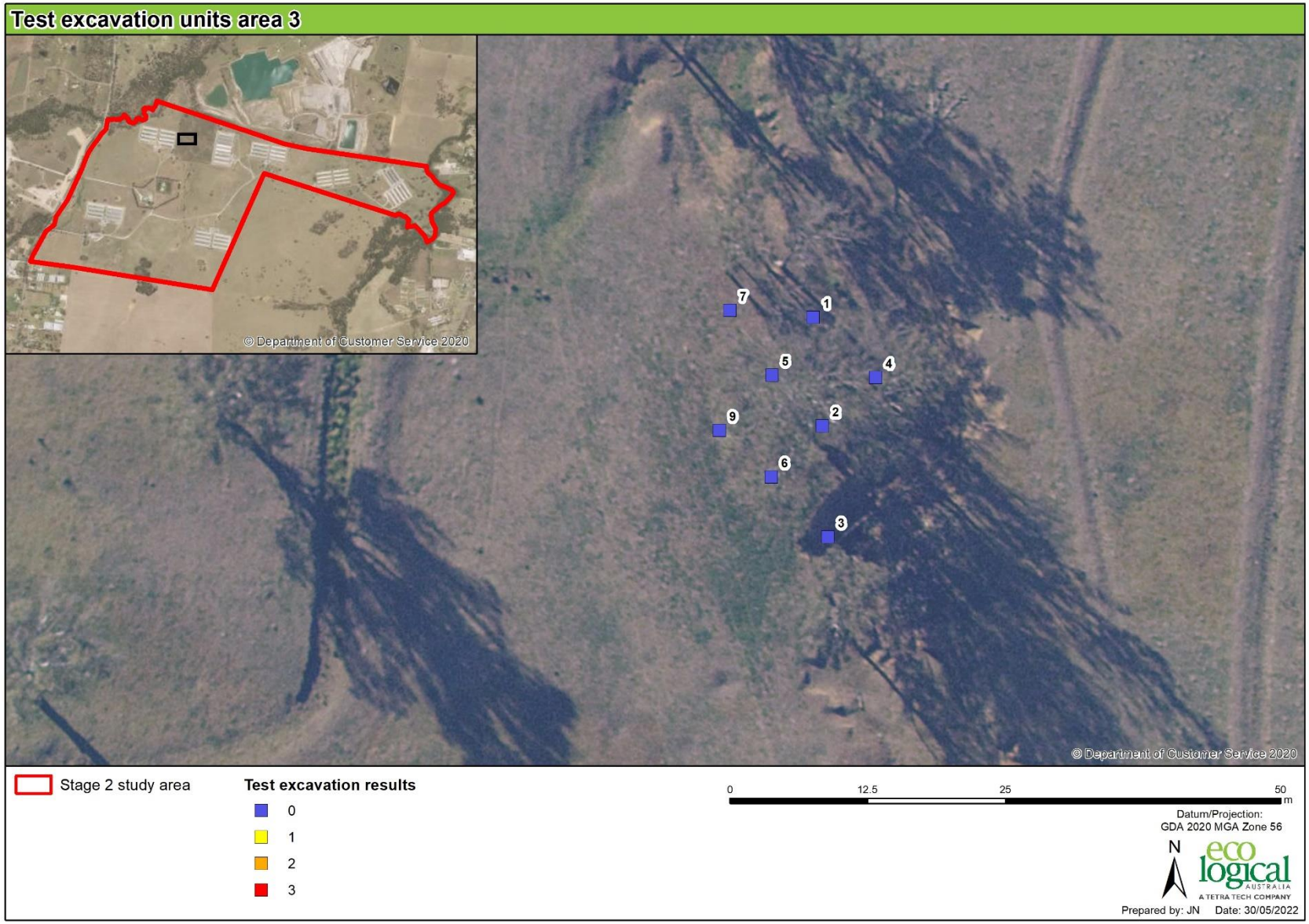

Figure 38: Excavation results for AHIMS ID 45-5-5371

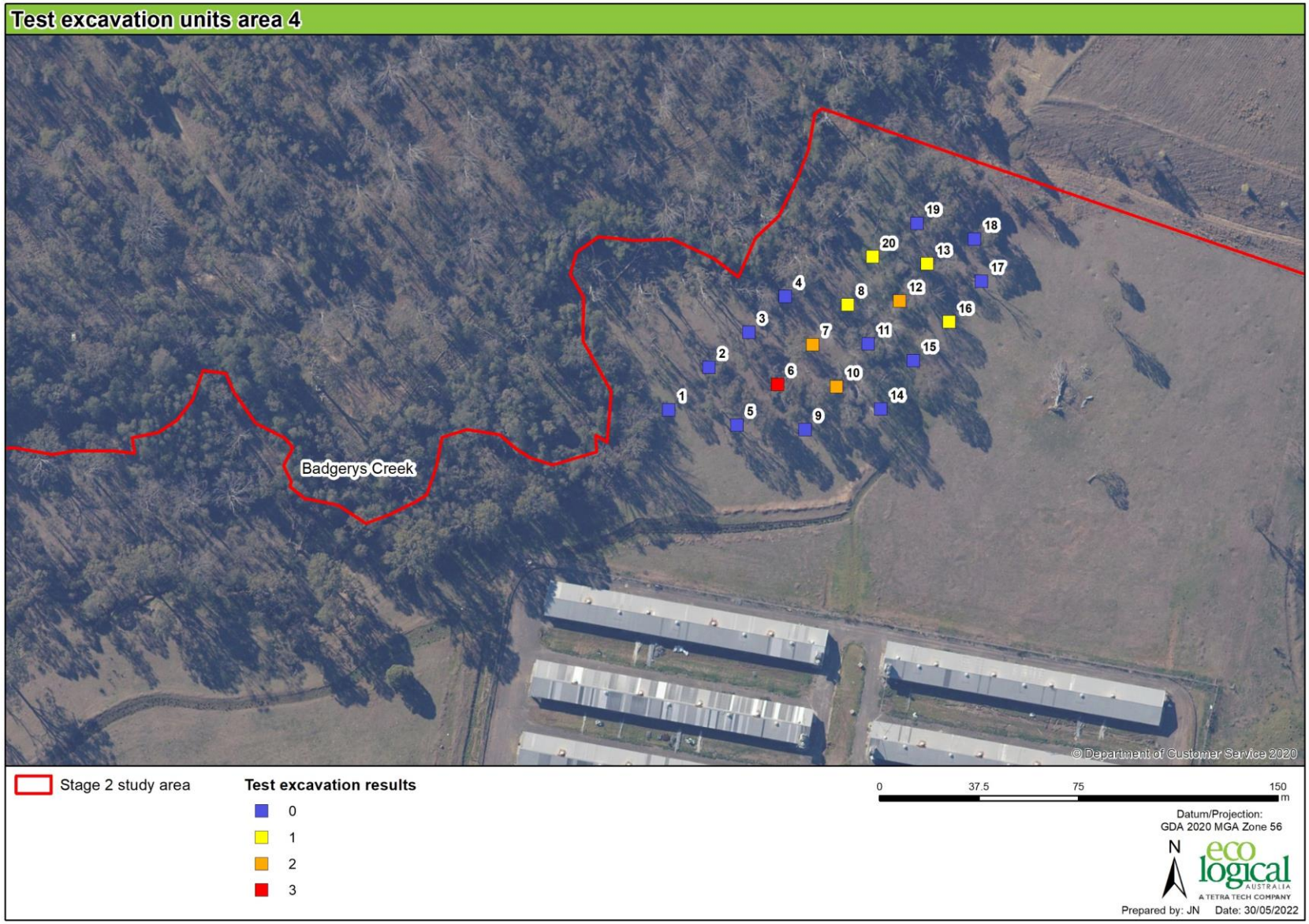

Figure 39: Excavation results for AHIMS ID 45-5-5370

7. Analysis and discussion

WHAT IS THE DISTRIBUTION OF EVIDENCE OF PAST ABORIGINAL PEOPLES USE AND OCCUPATION WITHIN THE STUDY AREA

Limited evidence of Aboriginal occupation or utilisation was identified within the Stage 2 portion of the wider study area of 475 Badgerys Creek Road. The majority of identified Aboriginal sites within the wider study area have been located in close proximity to the water sources. Isolated artefacts have been recorded on the minor crest and in highly disturbed contexts along the vehicle access tracks and the former chicken shed locations.

WHAT TYPES OF RAW MATERIALS, ARTEFACT TYPES AND TOOL TYPES ARE PRESENT WITHIN THE ASSEMBLAGE?

Red silcrete was the majority of lithic material identified (90%) and one of chert (10%) were identified within the stage 2 study area. All lithic pieces are broken flakes and or cortex material (rough). No tool types were present.

The lithic material present is typical of background scatter and is of low scientific value.

WHAT TYPES OF STONE TOOL TECHNOLOGY ARE PRESENT WITHIN THE SITES?

No stone tool technology was present within the stage 2 study area.

HAVE THE TEST EXCAVATIONS REVEALED OTHER SITE TYPES SUCH AS HEARTHS, HEATING OVENS, KNAPPING FLOORS OR OTHER FOCI OR ACTIVITIES AREAS?

The test excavation program did not reveal any hearths or heating ovens, knapping floors or other foci or activities areas.

DO THE RESULTS OF THE TEST EXCAVATION DEMONSTRATE ANY EVIDENCE OF DISTURBANCE WITHIN THE STUDY AREA?

Evidence of previous land disturbance was visible during the survey, the study area had been mostly cleared, and affected by agricultural and pastoral practices.

The majority of test excavations units exhibited mixed brown loams to clay loams with a homogenous structure and a clear horizon with the medium to heavy clay loam typical of Blacktown soil landscapes

Test excavation unit in area 4 was the only test excavation area that retrieved any type of evidence for Aboriginal occupation. Very shallow soils, likely result of a combination of disturbances of land clearance, pastoral and agricultural processes, increased erosion and the degree of slope.

WHAT CAN THE ARTEFACT ASSEMBLAGE (OR LACK THEREOF) INDICATE ABOUT PREVIOUS LAND USE BY ABORIGINAL PEOPLE?

The result of the archaeological investigations is not a true indication about the previous land use by Aboriginal people in the past. The lack of tangible evidence is likely due to Aboriginal people primarily working with organic materials such as wood, bark, resin, leaves, reeds, shell, and bone (Holdaway and Stern 2008:1-2). The durability of lithic material is the reason the artefact scatters or isolated finds are the dominant site type represented in the archaeological record of Aboriginal culture. Hence,

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interpretations regarding the significance of certain sites and assemblages must be considered as based on incomplete data.

The study area has a long history of disturbance of varying degrees which could be a reason for the absence of evidence of Aboriginal occupation. Aboriginal objects are often located within highly disturbed contexts so the lack of artefacts could indicate the unsuitable nature of the test excavation area. Open artefact sites and artefact scatters are the most common site types identified within landforms associated with permanent water sources, such as river banks and alluvial flats (White and McDonald 2010). The study area may not have supported a permanent water source, rather a seasonal source. During the dry season or drought drainage line would The current weather conditions have highlighted the flooding implications of the landform and the lack of drainage on the gentle slope created swamp like conditions. This could indicate that the upper slope or crest may have been the location of Aboriginal occupation. The crest was not investigated due to the heavy disturbance from residential buildings and agricultural practices.

HOW DOES THE PATTERN OF LANDSCAPE USE COMPARE TO PREVIOUS STUDIES IN THE REGION?

Low density assemblages of artefacts have been identified in close proximity to reliable water sources. Whilst these sites can represent smaller or less frequent instances of occupation, disturbances from historic land use and erosion can also affect artefact count (Niche 2020).

Artefact Heritage 2020 undertook test excavations to the north east of the study area adjacent Boral Bricks and South Creek. The results of their excavations also identified the lack of artefactual material in the low lying areas adjacent to the water sources. The artefactual material was however located on the higher elevations or raised areas in the vicinity of South Creek.

AECOM 2010 undertook excavations as a result of the proposed Boral Bricks expansion directly north of 475 Badgerys Creek Road. A series of transect were placed adjacent to Badgerys Creek to investigate the presence and distribution of Aboriginal objects. The result was a very low density background scatter identified, with no formal tools or technology evidence. It was identified that the Aboriginal heritage values of the assessment area pertained to low density artefact scatters or ‘background scatter’ occurring throughout the assessment are, which are considered to be of low archaeological (scientific) significance.

The lack of artefactual material retrieved could indicate the unsuitability of the landscape for Aboriginal occupation but also it could represent a very low density artefact scatter or background scatter that was missed by the excavation methodology. This low density artefact site type is of low significance and impact on this site type would not affect the overall cultural significance of the Aboriginal cultural heritage of the Badgerys Creek area.

8. Scientific values and significance assessment

8.1 Assessment Criteria

This significance assessment has been undertaken in accordance with the Guide to Investigating Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales (OEH 2011). Archaeological significance refers to the archaeological or scientific importance of a landscape or area. This is characterised by using the archaeological criteria such as archaeological research potential, representativeness and rarity of the archaeological resource and potential for educational values. These are outlined below:

- Research potential: does the evidence suggest any potential to contribute to an understanding of the area and/or region and/ or states natural and cultural history?
- Representativeness: how much variability (outside and/or inside the study area) exists, what is already conserved, how much connectivity is there?
- Rarity: is the study area important to demonstrating a distinctive way of life, custom, process, land-use, function or design no longer practised? Is it in danger of being lost or of exceptional interest?
- Education potential: does the study area contain teaching sites or sites that might have teaching potential?

8.2 Scientific Significance

The test excavation program within the study area identified nine new sites. Assessment of the scientific significance of the artefact site locations considers the following aspects of the test excavation results:

- Presence of artefact types and raw materials
- Levels of disturbance across the study area
- Low density scatters in isolated areas adjacent to tributaries and the scatters were in concentrated clusters

A summary of the archaeological significance of sites identified during test excavation is presented in Table 11.

Table 11: Scientific significance assessment

Site name (AHIMS ID)	Research potential	Representative	Rarity	Education potential	Significance assessment
B63 (AHIMS ID 45-5-2661)	Low	Low	Low	Low	Low
B61 (AHIMS ID 45-5-2660)	Low	Low	Low	Low	Low
B96 (AHIMS ID 45-5-2669)	Low	Low	Low	Low	Low
B97 (AHIMS ID 45-5-2672)	Low	Low	Low	Low	Low
B100 (AHIMS ID 45-5-2674)	Low	Low	Low	Low	Low
B73 (AHIMS ID 45-5-2684)	Low	Low	Low	Low	Low
B65 (AHIMS ID 45-5-2780)	Low	Low	Low	Low	Low
B109 (AHIMS ID 45-5-2786)	Low	Low	Low	Low	Low

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Site name (AHIMS ID)	Research potential	Representative	Rarity	Education potential	Significance assessment
B110 (AHIMS ID 45-5-2787)	Low	Low	Low	Low	Low
BCLL PAD03 (AHIMS ID 45-5-5370)	Low	Low	Low	Low	Low
BCLL PAD02 (AHIMS ID 45-5-5371)	Low	Low	Low	Low	Low
BCLL PAD01 (AHIMS ID 45-5-5372)	Low	Low	Low	Low	Low
BCLL IF 01 (AHIMS ID 45-5-5373)	Low	Low	Low	Low	Low
BCLL ST 01 (AHIMS ID 45-5-5374)	Nil	Nil	Nil	Nil	Nil
BCLL RT01 (AHIMS ID 45-5-5375)	Nil	Nil	Nil	Nil	Nil
BCLL RT02 (AHIMS ID 45-5-5376)	Nil	Nil	Nil	Nil	Nil

9. Impact assessment

9.1 Impacts of the proposed works

The current archaeological assessment and test excavation programme has provided evidence for the presence of Aboriginal objects in distinct areas of the study area. It is mostly likely that most of the artefact sites will be impacted by the proposed works, all sites within the riparian corridor will be avoided and have been recommended for conservation.

An Aboriginal Cultural Heritage Assessment will need to be undertaken to assess the potential impacts to the Aboriginal site and the cultural heritage values for the study area.

10. Mitigation and management

10.1 Guiding principles

The overall guiding principle for cultural heritage management is that where possible Aboriginal sites should be conserved. If conservation is not practicable, measures should be taken to mitigate against impacts to Aboriginal sites.

The nature of the mitigation measures recommended is based on the assessed significance of the sites. The final recommendations would also be informed by cultural significance, which will be discussed by the Aboriginal community in their responses during the next stage of consultation.

A detailed list of recommended mitigation and management measures for the sites will be outlined in the ACHAR.

10.1.1 Aboriginal Heritage Impact Permit

A total of thirteen Aboriginal sites have been identified within the study area over the course of the current archaeological investigations and from previous investigations.

A targeted AHIP should be sought for sites identified within the study area that will be impacted by the proposed works. In accordance with the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH 2011), an ACHAR will need to accompany the AHIP application process.

10.1.2 Long term management of test excavation artefact assemblage

Further information on the long-term care and management of the retrieved artefact assemblage is included in the ACHAR.

11. Recommendations

The following recommendations are based on consideration of:

- Statutory requirements under the *National Parks and Wildlife Act 1974* as amended
- The results of the Aboriginal technical report
- The interests of the Aboriginal stakeholder groups
- The likely impacts of the proposed works

It was found that:

- Desktop assessment identified (13) AHIMS sites located within the study area, AHIMS ID 45-5-2660, AHIMS ID 45-5-2661, AHIMS ID 45-5-2669, AHIMS ID 45-5-2672 AHIMS ID 45-5-2674, AHIMS ID 45-5-2684, AHIMS ID 45-5-2780, AHIMS ID 45-5-2786 AHIMS ID 45-5-2787, AHIMS ID 45-5- 5373, 45-5-5370, AHIMS ID 45-5-5371 ad AHIMS ID 45-5-5372.
- Three modified trees had been registered with AHIMS and are located within the study area (AHIMS ID 45-5-5374, AHIMS ID 45-5-5375, and AHIMS ID 45-5-5376). Assessment by an Arborist and in consultation the Cubbitch Barta, AHIMS ID 45-5-5374 has been identified as a European star and AHIMS ID 45-5-5375 and AHIMS ID45-5-5376 are naturally occurring trees. No Culturally modified trees are localised with the study are.
- Archaeological investigations of AHIMS ID 45-5-5370 and AIMS ID 45-5-5371 have identified the majority of the site as being of low archaeological potential.

It is therefore recommended that:

RECOMMENDATION 1 - ABORIGINAL CULTURAL HERITAGE ASSESSMENT

Prior to proposed subdivision and development, an Aboriginal Cultural Heritage Assessment will need to be prepared to identify the intangible cultural heritage values of the study area and to assess the potential impacts to these cultural values and to support the application for an AHIP.

The Aboriginal Cultural Heritage Assessment will develop management and mitigation measures for Aboriginal cultural values within the study area and will be undertaken in accordance with the *Guide to investigating, assessing, and reporting on Aboriginal cultural heritage in NSW* (OEH 2011).

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Appendix A AHIMS Search Results

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 19853
Client Service ID : 615973

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
45-5-2583	B 30	AGD	56	292370	6244490	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	Mr.Kelvin Officer					Permits		
45-5-2586	B3	AGD	56	290240	6247220	Open site	Valid	Artefact : -	Isolated Find	
	Contact	Recorders	Mr.Kelvin Officer					Permits		
45-5-0213	South Creek;	AGD	56	293700	6247000	Open site	Valid	Artefact : -	Open Camp Site	104106
	Contact	Recorders	Ms.Laila Haglund					Permits		
45-5-0517	Badgery's Creek / Longleys Road Badgery's Creek	AGD	56	291940	6247650	Open site	Valid	Artefact : -	Open Camp Site	1018
	Contact	Recorders	Mr.Allan Lance					Permits		
45-5-2658	B67	AGD	56	290150	6246700	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2659	B66	AGD	56	289990	6246750	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2660	B64	AGD	56	291300	6246000	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2661	B63	AGD	56	291450	6245880	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2662	B61	AGD	56	291100	6245450	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2666	B85	AGD	56	290000	6244893	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2669	B96	AGD	56	291270	6245670	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2672	B97	AGD	56	291270	6245510	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2673	B101	AGD	56	290320	6246980	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2674	B100	AGD	56	290870	6245740	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2675	B99	AGD	56	291950	6246080	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2676	B98	AGD	56	291840	6245800	Open site	Destroyed	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Hilton Naden					Permits		
45-5-2677	B16	AGD	56	291830	6244780	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2682	B75	AGD	56	291640	6247700	Open site	Valid	Artefact : -		102196

Report generated by AHIMS Web Service on 23/08/2021 for Kate Storan for the following area at Datum :GDA, Zone : 56, Eastings : 289875.0 - 293875.0, Northings : 6244469.0 - 6248469.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 76

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 19853
Client Service ID : 615973

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2616	B 28	AGD	56	291700	6244980	Open site	Valid	Artefact : -		
	Contact Gandangara LALC	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2683	B76	AGD	56	291860	6247720	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2684	B73	AGD	56	291080	6246280	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2686	B72	AGD	56	290800	6246500	Open site	Valid	Artefact : -		102196
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2656	B102	AGD	56	290400	6247070	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2690	B59	AGD	56	291550	6247420	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2691	B60	AGD	56	290900	6245480	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2693	B55	AGD	56	290310	6246680	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2694	B52	AGD	56	290550	6246580	Open site	Not a Site	Modified Tree (Carved or Scarred) : -		103124
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd,Mr.James Hammond					Permits		
45-5-2695	B51	AGD	56	290150	6246420	Open site	Not a Site	Artefact : -		103124
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd,Mr.James Hammond					Permits		
45-5-2703	B12	AGD	56	289840	6246320	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2704	B13	AGD	56	291370	6246850	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2705	B15	AGD	56	291000	6248120	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2798	B27	AGD	56	291650	6245090	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2779	B17	AGD	56	291060	6244300	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2780	B65	AGD	56	291310	6246110	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2619	B 29	AGD	56	291970	6244700	Open site	Valid	Artefact : -		
	Contact Gandangara LALC	Recorders	Kerry Navin					Permits		

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Extensive search - Site list report

Your Ref/PO Number : 19853
Client Service ID : 615973

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
45-5-2623	B 68	AGD	56	289800	6246810	Open site	Valid	Artefact : -		
	Contact Gandangara LALC	Recorders	Kerry Navin					Permits		
45-5-2624	B 34	AGD	56	291750	6244890	Open site	Valid	Artefact : -		
	Contact Gandangara LALC	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2625	B 35	AGD	56	291550	6244330	Open site	Valid	Artefact : -		
	Contact Gandangara LALC	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2626	B 36	AGD	56	291060	6244350	Open site	Valid	Artefact : -		
	Contact Gandangara LALC	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2627	B 37	AGD	56	290500	6244900	Open site	Valid	Artefact : -		
	Contact Gandangara LALC	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2630	B 40	AGD	56	291900	6247660	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact Gandangara LALC	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2644	B 26	AGD	56	291550	6245110	Open site	Valid	Artefact : -		
	Contact Gandangara LALC	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2785	B 107	AGD	56	291550	6245560	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2786	B 109	AGD	56	291360	6246530	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2787	B 110	AGD	56	291250	6246230	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2766	B108	AGD	56	292300	6246010	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2767	B53	AGD	56	292070	6247620	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2769	B-14	AGD	56	292070	6247700	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2772	B33	AGD	56	290480	6244800	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2812	b105	AGD	56	289920	6245360	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2813	B104	AGD	56	290300	6247520	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2814	B103	AGD	56	290250	6247270	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-3096	B58	AGD	56	290530	6246180	Open site	Destroyed	Artefact : 2		

Report generated by AHIMS Web Service on 23/08/2021 for Kate Storan for the following area at Datum :GDA, Zone : 56, Eastings : 289875.0 - 293875.0, Northings : 6244469.0 - 6248469.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 76

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Extensive search - Site list report

Your Ref/PO Number : 19853
Client Service ID : 615973

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
	Contact T Russell	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits	3752	
45-5-2685	B74	AGD	56	291520	6247320	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-4098	BC-01-09	GDA	56	292062	6247272	Open site	Valid	Artefact : 1		
	Contact	Recorders	Mr.Geordie Oakes.AECOM Australia Pty Ltd - Sydney					Permits		
45-5-4099	BC-EX01-11	GDA	56	291932	6247569	Open site	Valid	Artefact : 11		
	Contact	Recorders	Mr.Geordie Oakes.AECOM Australia Pty Ltd - Sydney					Permits		
45-5-5067	B130	GDA	56	290085	6246717	Open site	Valid	Artefact : 1		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd,Mrs.Jo Dibden					Permits		
45-5-5090	B158	GDA	56	291916	6247879	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd,Miss.Jasmine Fenyvesi					Permits		
45-5-5081	B157	GDA	56	292146	6248243	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd,Miss.Jasmine Fenyvesi					Permits		
45-5-5083	B160	GDA	56	291510	6247663	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd,Miss.Jasmine Fenyvesi					Permits		
45-5-5084	B161	GDA	56	290387	6246994	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd,Miss.Jasmine Fenyvesi					Permits		
45-5-5085	B162	GDA	56	291157	6248456	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd,Miss.Jasmine Fenyvesi					Permits		
45-5-5162	BCBW18 AS 01	GDA	56	293069	6247136	Open site	Valid	Artefact : -		
	Contact	Recorders	Artefact - Cultural Heritage Management - Pyrmont,Mr.Ryan Taddeucci					Permits		
45-5-5163	BCBW18 AS 03	GDA	56	293557	6247292	Open site	Valid	Artefact : -		
	Contact	Recorders	Artefact - Cultural Heritage Management - Pyrmont,Mr.Ryan Taddeucci					Permits		
45-5-5164	BCBW18 AS 02	GDA	56	293128	6246842	Open site	Valid	Artefact : -		
	Contact	Recorders	Artefact - Cultural Heritage Management - Pyrmont,Mr.Ryan Taddeucci					Permits		
45-5-5165	BCBW18 IF 01	GDA	56	293014	6246939	Open site	Valid	Artefact : -		
	Contact	Recorders	Artefact - Cultural Heritage Management - Pyrmont,Mr.Ryan Taddeucci					Permits		
45-5-5175	B167	GDA	56	291064	6248281	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd,Miss.Jasmine Fenyvesi					Permits		
45-5-5055	B118	GDA	56	290118	6246822	Open site	Valid	Artefact : 1		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd,Mrs.Jo Dibden					Permits		
45-5-5057	B120	GDA	56	290162	6246756	Open site	Valid	Grinding Groove : 1		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd,Mrs.Jo Dibden					Permits		
45-5-5370	BCLL PAD03	GDA	56	290804	6246398	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	GML Heritage Pty Ltd - Surry Hills,Miss.Hannah Morris					Permits		

Report generated by AHIMS Web Service on 23/08/2021 for Kate Storan for the following area at Datum :GDA, Zone : 56, Eastings : 289875.0 - 293875.0, Northings : 6244469.0 - 6248469.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 76

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 19853
Client Service ID : 615973

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
45-5-5371	BCLL PAD02	GDA	56	291476	6246047	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	GML Heritage Pty Ltd - Surry Hills,Miss.Hannah Morris					Permits		
45-5-5372	BCLL PAD01	GDA	56	293117	6246205	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	GML Heritage Pty Ltd - Surry Hills,Miss.Hannah Morris					Permits		
45-5-5373	BCLL IF01	GDA	56	292819	6246192	Open site	Valid	Artefact : -		
	Contact	Recorders	GML Heritage Pty Ltd - Surry Hills,Miss.Hannah Morris					Permits		
45-5-5374	BCLL ST01	GDA	56	292766	6246163	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	GML Heritage Pty Ltd - Surry Hills,Miss.Hannah Morris					Permits		
45-5-5375	BCLL RT01	GDA	56	293109	6246170	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	GML Heritage Pty Ltd - Surry Hills,Miss.Hannah Morris					Permits		
45-5-5376	BCLL RT02	GDA	56	293065	6246202	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	GML Heritage Pty Ltd - Surry Hills,Miss.Hannah Morris					Permits		

** Site Status
Valid - The site has been recorded and accepted onto the system as valid
Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.
Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground
Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

Report generated by AHIMS Web Service on 23/08/2021 for Kate Storan for the following area at Datum :GDA, Zone : 56, Eastings : 289875.0 - 293875.0, Northings : 6244469.0 - 6248469.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 76

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Historical Heritage Assessment

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Template 2.8.1

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Abbreviations

Abbreviation	Description
AHD	Australian Heritage Database
CHL	Commonwealth Heritage List
CMP	Conservation Management Plan
DCP	Development Control Plan
DPE	Department of Planning & Environment
ELA	Ecological Australia Pty Ltd
HHA	Historical Heritage Assessment
LEP	Local Environment Plan
LGA	Local Government Area
LPI	Land and Property Information
SHI	State Heritage Inventory
SEPP	State Environmental Planning Policy
SEPP [WSA] 2020	State Environmental Planning Policy (Western Sydney Aerotropolis) 2020
SHR	State Heritage Register

1. Introduction

1.1. Background

Eco logical Australia (ELA) has been commissioned by Ingham Property to prepare a Historical Heritage Assessment (HHA) to support a Master Plan Application to the Department of Planning and Environment for 475 Badgerys Creek Road, Bradfield NSW (the study area; Figure 1). The assessment will outline any historic heritage constraints in regard to potential future development of the study area.

The study area is not a listed heritage item, nor is it located within a conservation area. The closest heritage items are located within 1 kilometre and listed on the State Heritage Register and Schedule 2 of the State Environmental Planning Policy (Western Sydney Aerotropolis) 2020 (SEPP [WSA] 2020) and will not be impacted by proposed development within the study area (Figure 15).

This report will provide a historical context of the study area, review of listings, legislative requirements, and previous heritage studies. Mapping and the archaeological potential and significance of the site will be included. Where necessary, mitigative measures and recommendations for the long-term conservation of heritage values will be provided.

1.2. Study area location

The study area is located at 475 Badgerys Creek Road, Bradfield NSW (Lots 99 and 100 in DP1287207). It is located within the Local Government Area (LGA) of Liverpool, Parish of Claremont, and County of Cumberland. The study area comprises a total area of 184 ha along Badgerys Creek Road, centrally located within Western Parkland City, approximately 55 kilometres west of Sydney CBD and 30 kilometres south of Penrith. It is surrounded by agricultural land, with Longleys Road and PGH Brickworks to the north, the Northern Road to the south, South Creek to the east and Badgerys Creek to the west. Lot 99 comprises the zone substation and Lot 100 comprises the remainder of the site.

1.3. Proposal

The subject land comprises a total area of 184 ha along Badgerys Creek Road, strategically located within the heart of the Western Parkland City. The majority of the site is under the ownership of IPG, with a small portion of land earmarked for the North Bradfield Zone Substation owned by Endeavour Energy. The site is largely grass land and is largely clear of vegetation as it is currently used for agricultural purposes. There is an internal road network within the site which had previously connected the now demolished sheds and ancillary structures dispersed across the site.

The subject land is situated within the Western Sydney Aerotropolis, with a direct interface with the Western Sydney International Airport (WSI). It is bound by two significant riparian corridors which define Western Sydney, with South Creek to the east and Badgerys Creek to the north-west. The immediate surroundings of the site are characterised by large rural landholdings used predominately for agricultural and light manufacturing purposes, all of which will redeveloped in accordance with the Aerotropolis Precinct Plan vision.

The IPG Master Plan was informed by a detailed assessment of the site-specific considerations through preliminary site investigations. The Master Plan breaks down the general application of the Enterprise zone across the site and provides a more granular approach to land use planning with considerations

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made to the opportunities and constraints of the site. The structure plan is made up of four key land uses which include enterprise and light industry, business and enterprise, and employment zone centres.

1.4. Methodology

This Heritage Assessment has been prepared in accordance with the NSW Heritage Manual *Statements of Heritage Impact* (2002) and *Assessing Heritage Significance* (2001) guidelines. The philosophy and process adopted is that guided by the *Australia ICOMOS Burra Charter* 1999. The State Environmental Planning Policy (western Sydney Aerotropolis) 2020, Liverpool Local Environmental Plan 2008 and the Liverpool Development Control Plan 2008 have been considered in this assessment.

1.5. Author identification

This report has been prepared by ELA Senior Heritage Consultant, Jessica Horton (BA [Archaeology & History] and MA [Heritage Conservation], University of Sydney), with input and review by Karyn McLeod, ELA Principal Heritage Consultant, (BA Hons [Archaeology] University of Sydney, MA [Cultural Heritage] Deakin University).

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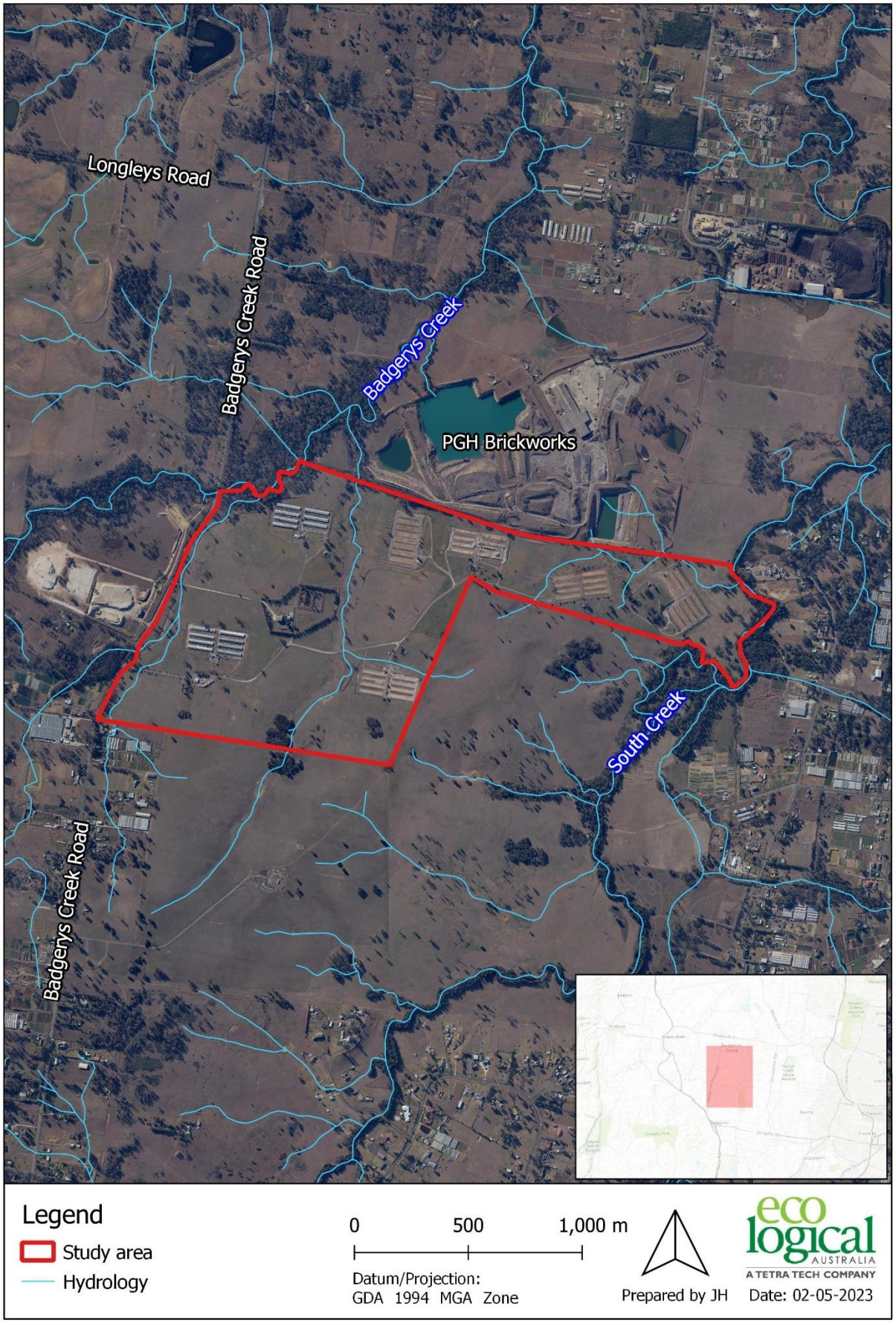

Figure 1: Location of the study area (Sixmaps imagery, 2018)

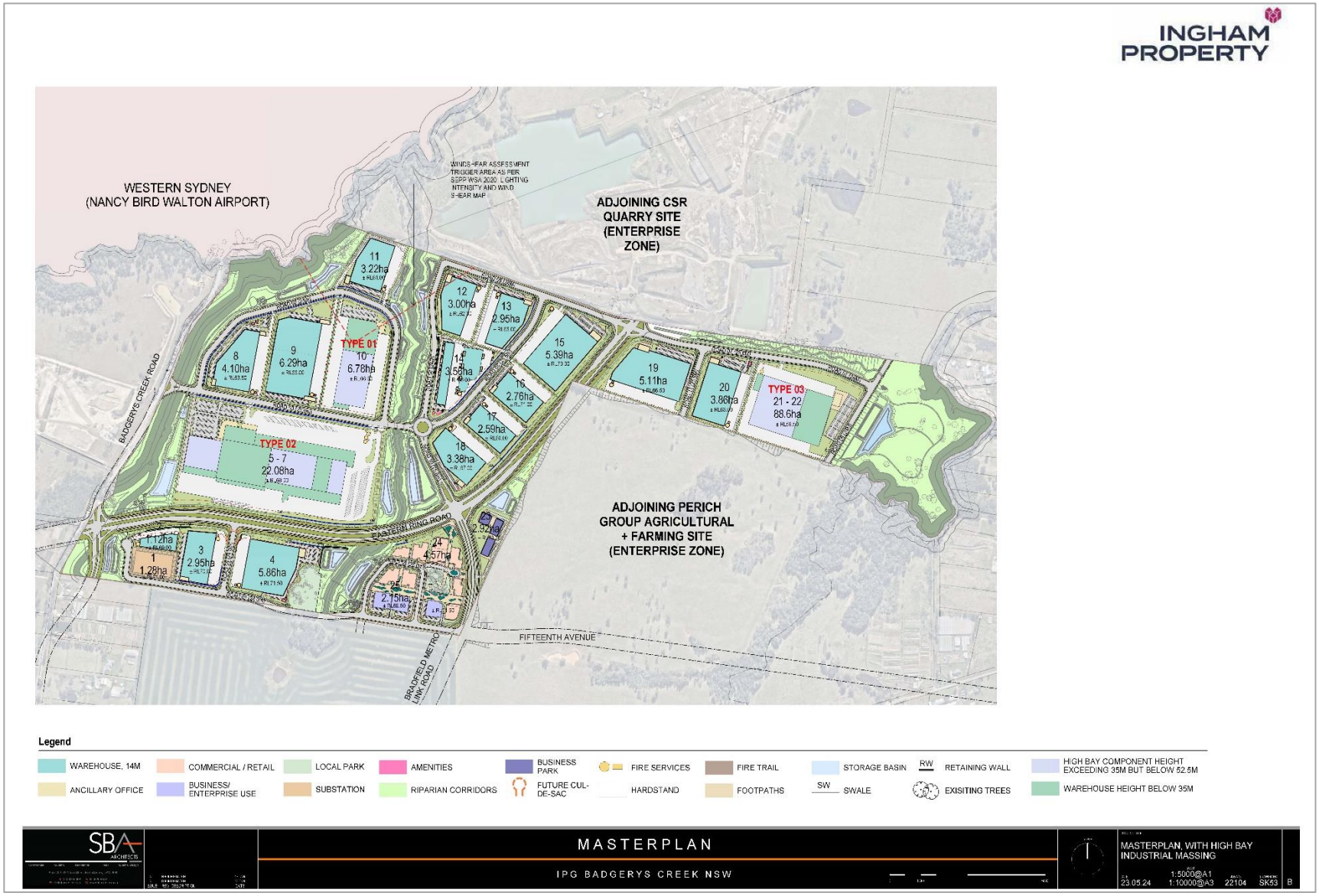

Figure 2: 475 Badgerys Creek Road structure plan (Site Image 2025)

2. Site history

2.1. Traditional ownership

Aboriginal people have continuously occupied Australia for at least 65,000 years (Clarkson et al 2017), utilising the land and available resources. Dates of the earliest occupation of the continent by Aboriginal people are subject to continued revision as more research is undertaken. The earliest undisputed radiocarbon date from the Sydney region comes from a rock shelter site north of Penrith, Shaw's Creek, dated to around 14,700 BP (Attenbrow 2010). Alternate artefactual evidence found on the Nepean River suggests Aboriginal people have occupied the Sydney region for at least 40,000 years (Stockton & Holland 1974).

Badgerys Creek lies within a transitional area between the tribal boundaries of the Dharug, Dharawal and Gundungurra language groups (Attenbrow 2010). The precise geographical boundaries between these three groups cannot be clearly defined due to the limitations of historical records (Kohen and Lampert 1987), however the study area (present-day Penrith and Liverpool LGAs) is now generally considered to have been occupied by Darug-speaking clans (Attenbrow 2010). Anthropologist R.H. Matthews writes:

> *"The Dharukk speaking people adjoined the Thurrawal on the north, extending along the coast to the Hawkesbury River, and inland to what are now Windsor, Penrith, Campbelltown, and intervening towns."* (Matthew, 1901d: 55 in Attenbrow 2010: 32)

The Darug people were semi-nomadic hunter gatherers who utilised available resources, including the various animals and plants in the region. Aboriginal people hunted wallabies, kangaroos, possums, flying foxes, birds, and fish and collected wild honey and yams, which also served as important food sources. Family groups belonged to clans who were united by languages and cultural affinities and had ties to specific areas of land.

Aboriginal people used a wide variety of natural materials for medicinal purposes, social conventions, the manufacture of tools and ceremonial events. These materials were usually sourced locally but rarer items were also traded between groups, items that may have included tools made from organic materials such as paddles and spears, tools made from stone such as hammerstones, personal decorative items and shelters (Boot 2002).

The arrival of European settlers severely impacted the lives of the local Aboriginal populations as it led to a smallpox epidemic which spread to neighbouring regions and killed over half of the Aboriginal population in the Sydney Basin region (Organ, 1990) and led to significant social restructuring. In the Cumberland Plains region, European graziers slowly took over the traditional Aboriginal land, creating a competition for resources, widespread social disruption to traditional ways of life and ultimately led to a disconnection of local Aboriginal people from their traditional lands. Some Aboriginal people remained and continued to live a semi-traditional life on the peripheries of European settlements until at least the mid-1800s, despite the impacts to their traditional ways of being (Attenbrow 2010).

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2.2. Development of Badgerys Creek

European exploration into Badgerys Creek occurred as early as 1803, when George Caley led an expedition through the Mulgoa Valley. Formal surveys of Castlereagh Road and the surrounding area were commissioned in 1803, whilst surveys of the Mulgoa Valley occurred from 1809 (AMBS 2014, 17).

At point of European settlement, the Cumberland Plain was densely forested and comprised highly clayey soil, suitable for stock-grazing and wheat growing (AMBS 2014, 17). To ensure the betterment of the colony, large parcels of land, were granted to settlers to establish substantial rural estates, supported by convict labour. Substantial grants within Bringelly and Badgerys Creek initially went to James Badgery, Robert Lowe, and John Blaxland, with smaller grants made to Edward Powell, Thomas Pitt, and Sarah Howe (AMBS 2014, 17).

Subdivision of the large estates occurred during the mid-nineteenth century, ultimately changing the pattern of land settlement within Badgerys Creek. The original estates were reduced to small farming lots, interspersed with roadways on a grid system (AMBS 2014, 23). Notable subdivisions were the Luddenham and Regentville subdivisions, representing over 10,000 acres, offered for sale from 1859. James Badgery's estate (Exeter Farm) was subdivided and sold during the 1880s. Public services including a Methodist School, post office, Uniting Church and Commonwealth Bank were established at Luddenham by 1914. Whilst a butcher's shop, public school, post office, Badgerys Creek Uniting (Methodist) Church and St John's Anglican Church had been constructed by the early 1900s (AMBS 2014, 26-27).

Further settlement at Badgerys Creek occurred from the 1920s as additional portions of the Exeter Estate were provided under the *Solider Settlement Act 1919.* During the 1950s, Government-funded research stations were established within Badgerys Creek, and an Overseas Telecommunications Commission station and Royal Australian Air Force Radio Receiving Station were constructed in the area (AMBS 2014, 28). Badgerys Creek has retained its rural character from the 1960s, with dairy and poultry farming, bee keeping, horse and dog training, and market gardening as the main local industries (AMBS 2014, 28).

Propositions for the development of an airport at Badgerys Creek occurred from 1985, with the proposed airport site approved in 2014. Construction began in 2018, with an estimated completion date of 2026.

2.3. The study area

The study area straddles original land grants made to Matthew Robinson ('St Aubyns Estate,' 500 acres), Gustavus A. Low ('Low Brook Estate,' 100 acres), Matthew Hughes (65 acres) and William Hayes ('Bally-Hayes Estate,' 100 acres) between 1816 – 1818 (Figure 3). There is limited documentary evidence available concerning these original land holders and the uses of their land grants. In the Badgerys Creek and Bringelly districts, smaller grants (100 – 600 acres) generally maintained river frontages and remained largely undeveloped, eventually being incorporated into larger estates (AMBS 2014, 23).

The 1950 aerial imagery shows the study area mostly cleared yet undeveloped, apart from a single small structure located centrally within the site (Figure 4). The land surrounding this shed was likely utilised for grazing purposes and is known to have been a deer farm prior to Inghams' purchase (*Energy Source & Distribution* 2022). Inghams purchased the study area in 1960, establishing a chicken breeding complex

on the site. Aerial imagery would indicate that the complex had been established by the mid-1960s (Figure 5).

The site has been utilised for poultry raising purposes since the 1960s. The poultry farm operation at the study area was relocated by 2018, whilst the poultry sheds and central buildings were demolished by Inghams in 2018, in preparation for future development (Figure 1). The site has remained undeveloped since this point (Figure 6).

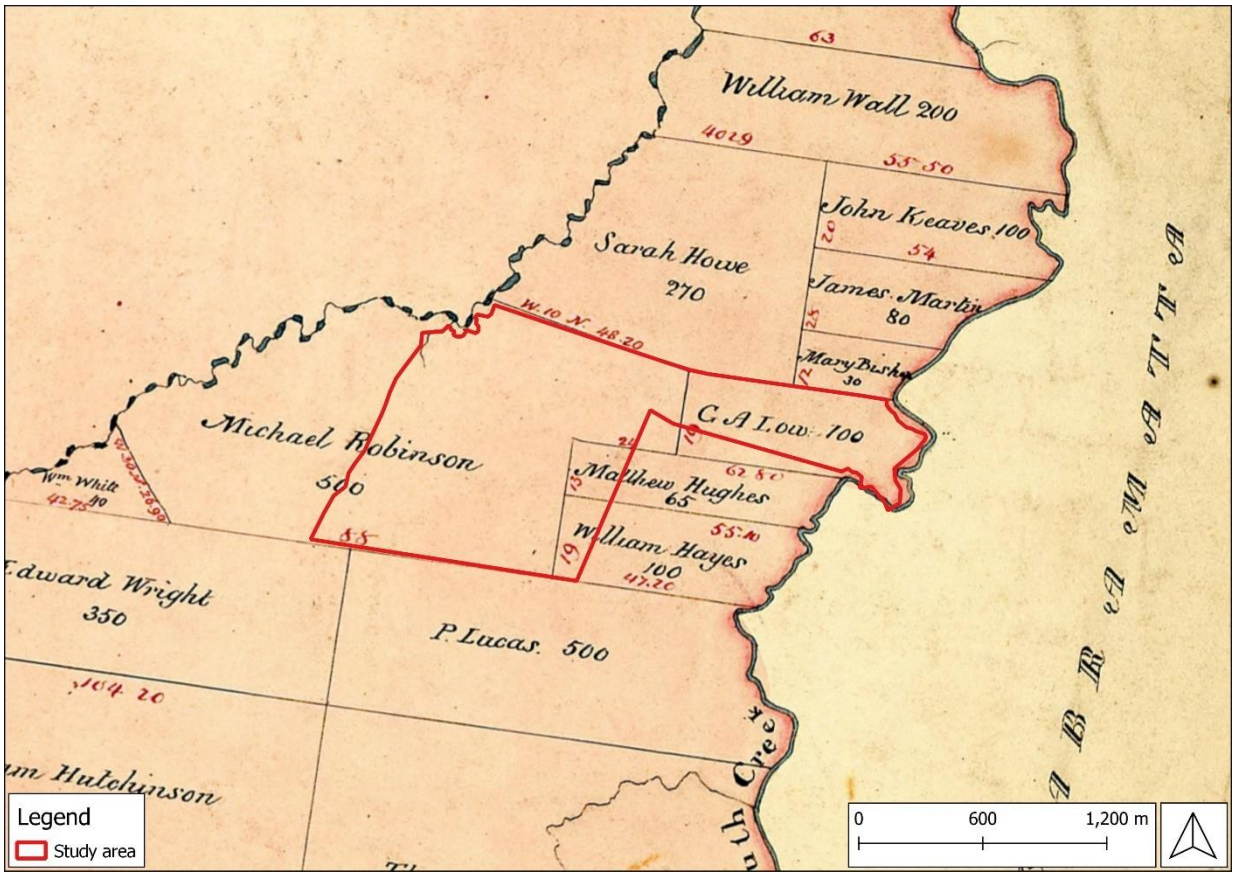

Figure 3: Bringelly parish map, n.d. (Source: HLRV)

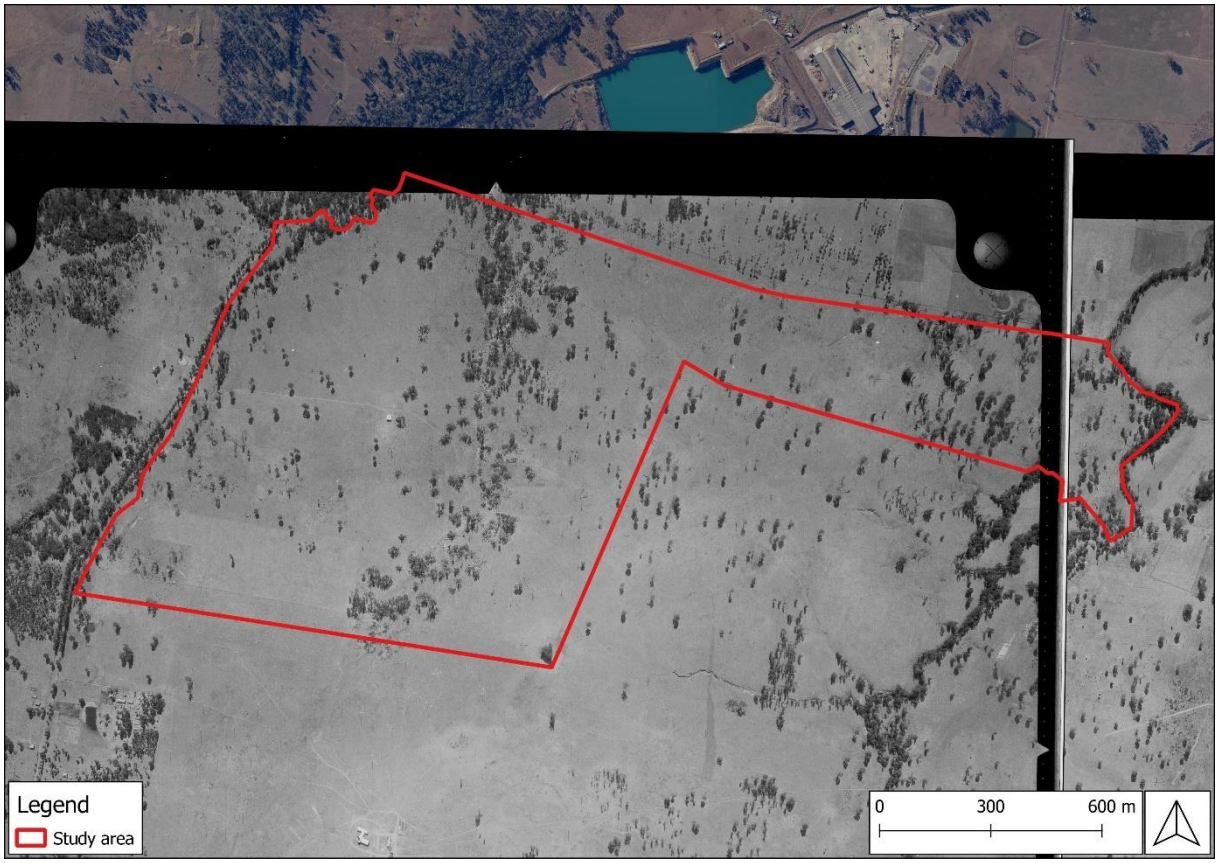

Figure 4: 1950 aerial imagery showing the study area (Source: Spatial Portal)

Figure 5: 1969 aerial imagery showing the study area (Source: Spatial Portal)

Figure 6: 2022 aerial imagery showing the study area (Source: Google Earth)

3. Site description

A site visit was conducted by ELA Senior Heritage Consultant Jennifer Norfolk on 19 November 2021 and 4-5 April 2022. The inspection was undertaken on foot with the use of camera, GPS, and physical maps. The site inspection did not reveal any potential unlisted heritage items within or in the vicinity of the proposed works area, or any potential surface level archaeological resources.

The project area comprises a gently undulating landform, cleared of native vegetation, with open grassland and pockets of regrowth vegetation (Figure 7 – Figure 14) along the creek line. The project area has historically been utilised for poultry farm operations; however, most structures had been demolished at the time of the inspection and the project area is currently being utilised for cattle grazing (Figure 9). There is evidence of landscape modification and past land use across the project area in the form of drainage culverts (Figure 7, Figure 12), fence lines and posts (Figure 8, Figure 9,) remnants of chicken sheds and the existing formed gravel road connecting the former chicken sheds (Figure 10).

The foundations of the former, demolished structures were not observed during the site inspection. Evidence of gardens, fence lines and the locations of the former chicken sheds was still visible.

Figure 7: View of the landscape showing open grassland for grazing and drainage culvert alongside existing road

Figure 8: View of the gently undulating landscape showing open grasslands, regrowth vegetation and existing fences

Figure 9: View of the landscape, showing open grasslands and existing fence posts

Figure 10: View of the landscape showing existing formed gravel road, fences and sheds

Figure 11: View of the landscape within the project area, showing open grassland, flat open landform and regrowth vegetation

Figure 12: View of the landscape within the project area, showing drainage culvert, flat open grassed landform and regrowth vegetation

Figure 13: View within the project area showing old fence post and open grassed landform

Figure 14: View within the project area showing moderate south-north orientated sloping landform

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4. Historic archaeological potential

The study area falls within original land grants made to Matthew Robinson, Gustavus A. Low, Matthew Hughes, and William Hayes made between 1816 – 1818 (Figure 3). There is limited documentary evidence available concerning these original land holders and the uses of their land grants. However, smaller grants made within the Badgerys Creek and Bringelly districts are known to have generally maintained river frontages and remained largely undeveloped or utilised for stock grazing. There is no evidence to suggest substantial development within the study area took place during these early phases.

1950 aerial imagery shows the study area mostly cleared yet undeveloped, apart from a single small structure located centrally within the site and a track connecting it to Badgerys Creek Road (Figure 4). The land surrounding this building was likely utilised for grazing purposes and is known to have been utilised as a deer farm.

Inghams purchased the study area in 1960, establishing a chicken breeding complex here by the mid-1960s (Figure 5). By 1969 the central building had been considerably expanded, the chicken sheds constructed, multiple sheds and small dwellings were constructed in association with each group of sheds and roads were constructed linking them. Inghams poultry farm operation at the study area was relocated by 2018 and the poultry sheds and central buildings were demolished in the same year in preparation for future development (Figure 1). The site has remained undeveloped since this point (Figure 6).

The site inspection did not reveal any evidence of surface level archaeological remains apart from evidence of previous fence lines and gardens associated with the post 1950 dwellings. The operation and development of the site has been substantial, with structures built and demolished over time. The majority of the structures on the property post-date the 1950s and therefore will not have significant archaeological resources associated with them. Substantial development of the central structure is likely to have removed any potential resources from previous phases of activity.

The study area has low archaeological potential, and if an archaeological resource is present, it would not meet the heritage criteria to be considered locally significant, nor would it be considered ‘relics’ under the *Heritage Act 1977.*

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5. Significance Assessment

Before making decisions to change a heritage item, it is important to understand its values. This leads to decisions that will retain these values in the future. Statements of heritage significance summarise a place's heritage values – why it is important, why a statutory listing was made to protect these values.

The Heritage Council of NSW has developed a set of seven criteria for assessing heritage significance, which can be used to make decisions about the heritage value of a place or item. These include historical, associative, aesthetic, social, research potential, rarity and representative. There are two levels of heritage significance used in NSW: State and local.

5.1. Listing

The subject property is not listed as a heritage item listed under Schedule 5 of the Liverpool Local Environmental Plan 2008 or Schedule 2 of the State Environmental Planning Policy (Western Sydney Aerotropolis) 2020, nor is it located within a Conservation Area.

A search of all relevant heritage databases, including the Australian Heritage Database, was undertaken as part of the assessment, the study area is not listed on the State Heritage Register (SHR), National Heritage List (NHL), Commonwealth Heritage List (CHL) or World Heritage List (WHL).

There are two heritage items located within 1 kilometre of the study area, these are listed below and provided within Figure 15.

Table 1: Heritage listings within the vicinity of the study area

Item	Listing	Address	Significance
'Kelvin'	SHR Listing No. 00046 State Environmental Planning Policy (Western Sydney Aerotropolis) 2020 Item No. I3	30 Retreat Road, Bringelly NSW 2556	State
'Mount Pleasant Homestead'	State Environmental Planning Policy (Western Sydney Aerotropolis) 2020 Item No. I4	3 Shannon Road, Bringelly NSW 2556	Local

Due to the significant distance of these heritage items (1 kilometre), development within the study area would not directly (physically) impact their signficant heritage values, and is unlikely to impact them indirectly (visually). The Statements of Significance for each item listed in Table 1 are provided in Appendix A.

Figure 15: Heritage items in the vicinity of the study area

5.2. Significance Assessment

The Heritage Council of NSW has developed a set of seven criteria for assessing heritage significance, which can be used to make decisions about the heritage value of a place or item. These include historical, associative, aesthetic, social, research potential, rarity and representative. There are two levels of heritage significance used in NSW: State and local.

The following assessment of heritage significance for the study area has been prepared in accordance with the 'Assessing Heritage Significance' guidelines (2001).

CRITERIA	SIGNIFICANCE ASSESSMENT
A – Historical Significance *An item is important in the course or pattern of the local area's cultural or natural history.*	The study area falls within original land grants made to Matthew Robinson, Gustavus A. Low, Matthew Hughes, and William Hayes between 1816 – 1818. Early land use was likely for agricultural purposes, whilst livestock grazing was common within the area. There is no evidence of substantial development taking place within the study area during this early ownership, nor are there extant built or potential archaeological remains within the study area that could be certainly linked with this early land use. **The study area does not reach the threshold for Local or State significance under this criterion.**
B – Associative Significance *An item has strong or special associations with the life or works of a person, or group of persons, of importance in the local area's cultural or natural history.*	The study area has been utilised for agricultural and farming purposes since point of European settlement / land grant (1816-1818). Whilst Inghams has been in ownership of the property for poultry farming since the 1960s. This ownership is of dubious historical importance, whilst the study area is not considered to maintain strong associations with a particular event, theme, person, or philosophy. **The study area does not reach the threshold for Local or State significance under this criterion.**
C – Aesthetic Significance *An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in the local area.*	The study area is not considered aesthetically distinctive, it does not provide positive visual or sensory appeal or landmark and scenic qualities. The site has undergone significant development during the establishment and subsequent demolition of Inghams poultry farm. **The study area does not reach the threshold for Local or State significance under this criterion.**
D – Social Significance *An item has strong or special association with a particular community or cultural group in the local area for social, cultural or spiritual reasons.*	A social assessment was not undertaken as part of this heritage assessment; however, documentary evidence would suggest that the study area is not associated with a particular community or cultural group in the local area. The site has been utilised as a poultry farm since the 1960s, however a place of work constructed during the twentieth century is not considered to reach the threshold for significance.

CRITERIA	SIGNIFICANCE ASSESSMENT
	The study area does not reach the threshold for Local or State significance under this criterion.
E – Research Potential *An item has potential to yield information that will contribute to an understanding of the local area's cultural or natural history.*	The study area maintains information readily available from other sources. In addition, documentary evidence would suggest that the site was limited to agricultural grazing land and farming since point of original land grant to present-day. Occupation of the site primarily post-dates the 1950s.As such, the site is not considered to contain any significant archaeological resources. **The study area does not reach the threshold for Local or State significance under this criterion.**
F – Rarity *An item possesses uncommon, rare or endangered aspects of the local area's cultural or natural history.*	The study area has been utilised as agricultural grazing land and farming since point of original land grant to present-day. At present, the site is cleared agricultural land. The site is not considered rare, nor is its type under threat. **The study area does not reach the threshold for Local or State significance under this criterion.**
G – Representative *An item is important in demonstrating the principal characteristics of a class of NSWs (or the local area's):* • *cultural or natural places; or* • *cultural or natural environments.*	The study area has been utilised as agricultural grazing land and farming since point of original land grant to present-day. At present, the site is cleared agricultural land. The site is not considered representative, nor is its type under threat. The place is not held in high esteem by the people who use it. **The study area does not reach the threshold for Local or State significance under this criterion.**

5.3. Statement of significance

The study area does not reach the threshold for Local or State significance under the heritage criteria for historic, associative, social, aesthetic, research potential, rarity, or representativeness.

6. Legislative and conservation requirements

6.1. Statutory Controls

6.1.1. ***Heritage Act*** *1977* (New South Wales**)**

The *Heritage Act 1977* (NSW) provides protection of the environmental heritage of the State which includes places, buildings, works, relics, movable objects or precincts that are of State or local heritage significance.

The NSW State Heritage Register (SHR) is the statutory register under Part 3A of the NSW Heritage Act. Listing on the SHR means that any proposed works or alterations (unless exempted) to listed items must be approved by the Heritage Council or its delegates under section 60.

Section 57(2) of the Heritage Act provides for a number of potential exemptions to Section 57(1) approval requirements to reduce the need for approval of minor or regular works such as maintenance. Exempted development does not require prior Heritage Council approval. Standard exemptions do not apply to the disturbance, destruction, removal or exposure of archaeological relics.

Archaeological features and deposits are afforded statutory protection by the 'relics provision'. Section 4(1) of the Heritage Act (as amended 2009) defines 'relic' as *any deposit, artefact, object or material that relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and is of State or Local heritage significance.* The 'relics provision' requires that no archaeological relics be disturbed or destroyed without prior consent from the Heritage Council of NSW.

Archaeological sites that are not located within a state heritage curtilage are protected under Section 139-140 of the *Heritage Act 1977* (Heritage Act). A person must not disturb or excavate any land knowing or having reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damage or destroyed unless the disturbance or excavation is carried out in accordance with an excavation permit.

The Heritage Council must be notified on the discovery of a relic under Section 146 of the Heritage Act.

- The site is not State listed nor are there any known archaeological sites. No approvals are required from the Heritage Council.

6.1.2. **Environmental Planning and Assessment Act 1979 (New South Wales)**

The *Environmental Planning and Assessment Act 1979* (EP&A Act) requires that consideration is given to environmental impacts as part of the land use planning process. In New South Wales, environmental impacts are interpreted as including cultural heritage impact. Proposed activities and development are considered under different parts of the EP&A Act, including:

- Major projects (State Significant Development under Part 4.1 and State Significant Infrastructure under Part 5.1) require the approval of the Minister for Planning;
- Minor or routine developments requiring local council consent are usually undertaken under Part 4 activities which, in limited circumstances, may require the Minister's consent; and

- Part 5 activities which do not require development consent. These are often infrastructure projects approved by local councils or the State agency undertaking the project.

Notwithstanding this, under Section 5.5 of the EP&A Act, a determining authority has the duty to fully consider the environmental impact of an activity and is required to "take into account to the fullest extent possible all matters affecting, or likely to affect the environment" arising from the proposal. This is facilitated through the current assessment, the purpose of which is to identify, assess, and determine the significance of potential heritage impacts, as well as mitigating actions and responsibilities that can be taken to minimise potential impacts.

7. Conclusion and Recommendations

The study area is considered to have no local or State heritage significance. There are two heritage items located within 1 kilometre of the study area. Due to the considerable distance of these heritage items, it is unlikely that development within the study area would result in a direct (physical) or indirect (visual) impact to their significant heritage values. As such, the preparation of a Statement of Heritage Impact (SoHI), or additional historic heritage reporting, would not be required for proposed future development within the study area.

Whilst the study area has been assessed as having no archaeological potential, it is best practice to adopt an unexpected finds procedure for sites within NSW, it is recommended that the following procedure be adopted during future development of the site.

Unexpected finds procedure

An 'unexpected heritage find' can be defined as any unanticipated archaeological discovery, that has not been previously assessed or is not covered by an existing approval under the *Heritage Act 1977* (Heritage Act) or *National Parks and Wildlife Act 1974* (NPW Act). These discoveries are categorised as either:

- Aboriginal objects (archaeological remains i.e.: stone tools),
- Historic (non-Aboriginal) heritage items (archaeological remains (I.e., artefacts) or movable objects),
- Human skeletal remains.

Should any unexpected historical archaeology be uncovered during any future excavation works, the following procedure must be adhered to:

- Stop all work in the immediate area of the item and notify the Project Manager.
- Establish a 'no-go zone' around the item. Use high visibility fencing, where practical. Inform all site personnel about the no-go zone.
- No work is to be undertaken within this zone until further investigations are completed.
- Engage a suitably qualified and experienced Archaeologist to assess the finds.
- If the item is assessed as not a 'relic', a 'heritage item' or an 'Aboriginal object' by the Archaeologist, work can proceed with advice provided in writing.
- The Heritage Council must be notified if the finds are of local or state significance. Additional approvals will be required from Heritage NSW and additional recording or salvage before works can recommence on site.

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Appendix A: Statements of Significance

'Kelvin' (SHR Listing No. 00046; SEPP [WSA] 2020 Item No. I3)

The following Statement of Significance has been taken, and amended where necessary, from the State Heritage Inventory (SHI) listing for 'Kelvin':

'Kelvin Park, including the homestead complex and remnant of farmland is considered significant at local, regional, State, and National levels. All areas of the site are considered equally significant.

Kelvin Park, formerly known as Cottageville or Retreat Farm, demonstrates the pastoral development of Bringelly from 1818. Although there is only a remnant (9.784 ha) of the original 1200-acre site (486 ha), the homestead and farm buildings in their current setting with extensive views over rural land, is still able to demonstrate the principles of nineteenth century farm estate architecture, planning and design.

Kelvin Park is significant for its association with several people and organisations of importance in NSW's cultural history, including Thomas Laycock Jnr. who established the farm at Bringelly, and later owners, John Thomas Campbell and Alfred Kennerley. The lease of the property by the Australian Agricultural Company, the country's oldest agricultural and pastoral development company established in 1824, is of particular significance.

The homestead at Kelvin Park retains its colonial Georgian single-storey form and planning and is representative of a gentleman's rural residence of the 1820s. Despite some modifications it retains the architectural elements and character that make it a good example of its type. The kitchen wing and servants' quarters are modest examples of early colonial Georgian style architecture but similarly retain their original form and planning. All these buildings are evidence of the establishment of a home and farm by Thomas Laycock.

The brick coach house at Kelvin Park retains its picturesque, early Victorian form, planning and much of its original detailing. It is evidence of the development of the property in the 1850s by Alfred Kennerley, who later become Premier of Tasmania.

The two slab barns are evidence of Kelvin Park as a working farm from 1818 until, at least the mid-twentieth century. The structures demonstrate nineteenth century building methods and farm practice. The buildings at Kelvin Park belong to an important and rare group of colonial Georgian and early Victorian farm buildings that contribute to the historic rural landscape. They are evidence of continuity of land use for farming for 187 years (to 2005).

The form of, and elements within, the garden, courtyard areas and entry to the property are evidence of the planning of the homestead complex by Laycock and subsequent owners and express the status they hoped to convey.

The homestead of Kelvin Park retains important historic views to the east to Thompson's Creek and beyond to South Creek. The site also retains views of other historically related rural landscapes beyond the current boundaries such as the pasture and stands of trees to the north. Both views contribute to the site's significance and maintain the context of the homestead group.

The Kelvin Park site landscaping is a significant component of the Kelvin Park group. The early numerous tree plantings contribute to making the site a notable landmark in the area. The remaining details of driveways, fencing and entrances also contribute to the historic and social evidence provided by the site of its original patterns of occupation and use. The site is part of an intact early nineteenth century farm complex that is now rare within the wider urbanised environs of Liverpool. There is the potential to gain more information on the site from further archaeological and documentary research.

The setting of the house on a knoll above a creek, its remnant layout of early buildings and garden, and its fine, mature trees, particularly its variety of old pines, add greatly to the character and significance of the property. The garden and setting are considered to have regional significance. Built by Thomas Laycock junior, 1820, having received the Bringelly grant in 1818. He returned to Australia in 1817 after fighting for England in the American War of 1812. An early house of quality and rich historical associations being one of the charming country houses of the 1820s. It is well sited above Thompson's Creek and is surrounded by a beautifully landscaped garden.'

'Mount Pleasant Homestead' (SEPP [WSA] 2020 Item No. I4)

The following Statement of Significance has been taken, and amended where necessary, from the SHI listing for 'Mount Pleasant Homestead':

'Mount Pleasant is an intact example of a Federation farm cottage in the western districts of Liverpool. The form and shape of the original house are representative of a typical Australian country house with the main roof extending at a lower pitch over open verandahs. Much original fabric and detailing has been retained. There is the potential to gain more information on the site from further architectural, archaeological, and documentary research.'

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Appendix F

RCC Environmental Policy Statement

Geosyntec consultants

ENVIRONMENTAL
POLICY

Richard Crookes Constructions Pty Limited promotes and encourages a sustainable environment throughout our business activities and sources our supplies and services in ways that prevent pollution and promote compliance with legal and other requirements.

The company implements Environmental Management System to aid us in meeting our corporate responsibilities. The System is certified by Global-Mark as meeting the requirements of AS/NZS ISO 14001:2015 Environmental Management Systems.

These form part of the company's Project Management Plans and are supported by company procedures and guidelines.

Management intends that all employees of our company, relevant subcontractors and suppliers, are made aware of their environmental responsibilities and the environmental impacts associated with their activities, products and services.

Our company objectives for continual improvement in environmental management include:

- Reducing the number of environmental notices issued on the projects by implementing a program of inductions, training and monitoring.
- Minimising the impacts to the community through the development of project specific Environmental, Traffic management plans, stakeholder consultation plans and by timely and appropriate response to complaints.
- Minimising impacts on the environment using dust, soil and water, waste and chemical management practices that are regularly inspected and maintained.
- Achieve a waste minimisation figure of 85% through monthly reporting

The Continual improvement of the project environmental management plans and progress with achieving the company's objectives will be reviewed during management meetings, project reviews and following the results of internal and external audits.

The Policy will be made available to the public and interested parties on request. This Policy will be reviewed every two years.

Jamie Crookes
Managing Director
26th February 2018

RICHARD CROOKES
CONSTRUCTIONS

Document Number-
ENV-003

March 2018

Document Title
Environmental System Overview

March 2018	Review conducted for 14001 compliance
April 2015	Review conducted
June 2012	Minor updates WHS reference added
DATE	REVISION DESCRIPTION

Approved CR

Title BSM

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1 Scope of the Environmental Management System

The Environmental management system covers the provision of the ISO 14001 standards and the building contracting sectors including Health, Education, Industrial, Aged care,Commercial and Residential works this establishes the guidelines and controls for all RCC operations at may impact the surrounding environment, in which RCC operates being RCC Head office in Sydnay and the Satellite offices in Canberra, Newcastle and Tamworth, this includes establishing project specific procedures to control and manage air, water, land, natural resources, flora, fauna, humans, and their interrelation.

2 Policy Statements

RCC,s Environmental Policy reflects the commitment of senior management to prevent pollution, protect the environment and continually improve its environmental performance.

This policy forms the basis upon which RCC sets its objective and targets. It is circulated to all employees and is posted on the RCC Intranet and on the projects Notice Boards.

A copy of the current Environmental Policy is available on Crookesnet.

3 Organisation Chart

Refer to the company's organisation chart in the RCC Management System

4 Environmental Management System

4.1 General Requirements

This document provides an overview of how the requirements of ISO 14001 are met.

4.2 Environmental Policy

Environmental Policy –- shall be communicated to all staff. This is normally done at time of employment through the induction process and via the distribution of the RCC Management system documentation.
The Environmental Policy shall be reviewed every two years in consultation with senior management and endorsed by the Managing Director
The Environmental policy shall be made available to interested parties upon request.

4.3 Understanding the needs and expectations of interested parties

Understand the requirements both external and internal of the client and stakeholders needs including EPA, Councils, Heritage, General public

4.4 Planning

4.4.1 Planning Identification of Hazards, Hazard/Risk Assessment and Control of Hazards/Risks

All activities, products and services carried out by or on behalf of RCC in connection with the Project are identified and an Environmental Aspect Matrix is completed.
For each activity the environmental aspects and associated actual and potential environmental impacts are identified for normal operations,uncommon events and incidents.
The environmental impacts are then assessed for significance by using the Risk Assessment Score sheet and calculating the rating score.

Refer to the Project Startup procedure QAP-7.5-001, Risk Assessment & Control procedure QAP-7.5-007 and the Project Management Plan

4.4.2 Legal and Other Requirements

A procedure QAP-4.2-006 has been developed to identify legal and other requirements that are applicable to RCC operations, and to ensure the accessibility of the information.
A register which summarises applicable legislation and associated regulations and contractual requirements relevant to the environmental issues is maintained The register is reviewed and updated as required personnel have access to this Legal and Other Requirements register and it provides information how to access the legislation and other requirements listed in the register.

4.4.3 Objectives & Targets

Environmental objectives and targets are established to allow the monitoring of environmental performance.
These objectives and targets are reviewed annually, and reflect:

- The commitments made in the Environmental Policy;
- Legislative ,Legal and other requirements;
- The identified significant environmental impacts;
- Operational requirements;
- Views of stakeholders.

5 Implementation

5.1 Structure & Responsibility

5.1.1 Resources

The resources required to implement, maintain and improve the RCC management system are determined through the business planning processes and at Company Meetings.

5.1.2 Responsibility & Accountability

Top management views the RCC Management System as an integral part of its overall management practices.
The responsibility and accountability of personnel, including contractors, are defined in the procedures
The role of Management Representative is held by the Business Systems Manager who is responsible to maintain the Company's Environmental Management System responsibilities include:

- Ensuring that the processes needed for Environmental management are established implemented and maintained

- Communicating the effectiveness of the Environmental Management System within the organisation
- Ensuring that Environmental Management System requirements are established, implemented and maintained in accordance with ISO 14001
- Reporting on the performance of the Environmental Management System to top management for review and as a basis for improvement of the Environmental Management System.

5.1.3 Training & Competency

Environmental Training will be conduced across all levels of the companies operation and records documented as part of the overall competency and training programme controlled by the Human Resources Department.

Refer to the Training and Performance Reviews procedure QAP-6.2-001 Consultation, communication and reporting

5.1.3.1 Communication

RCC will liase closely with its employees, contractors, suppliers, clients the community and external authorities to develop, implement and agreed environmental initiatives that affect and impact on the Environment. RCC will communicate via

- Email;
- Site notice boards;
- Intranet; Newsletters;
- Regular meetings Head office and Project

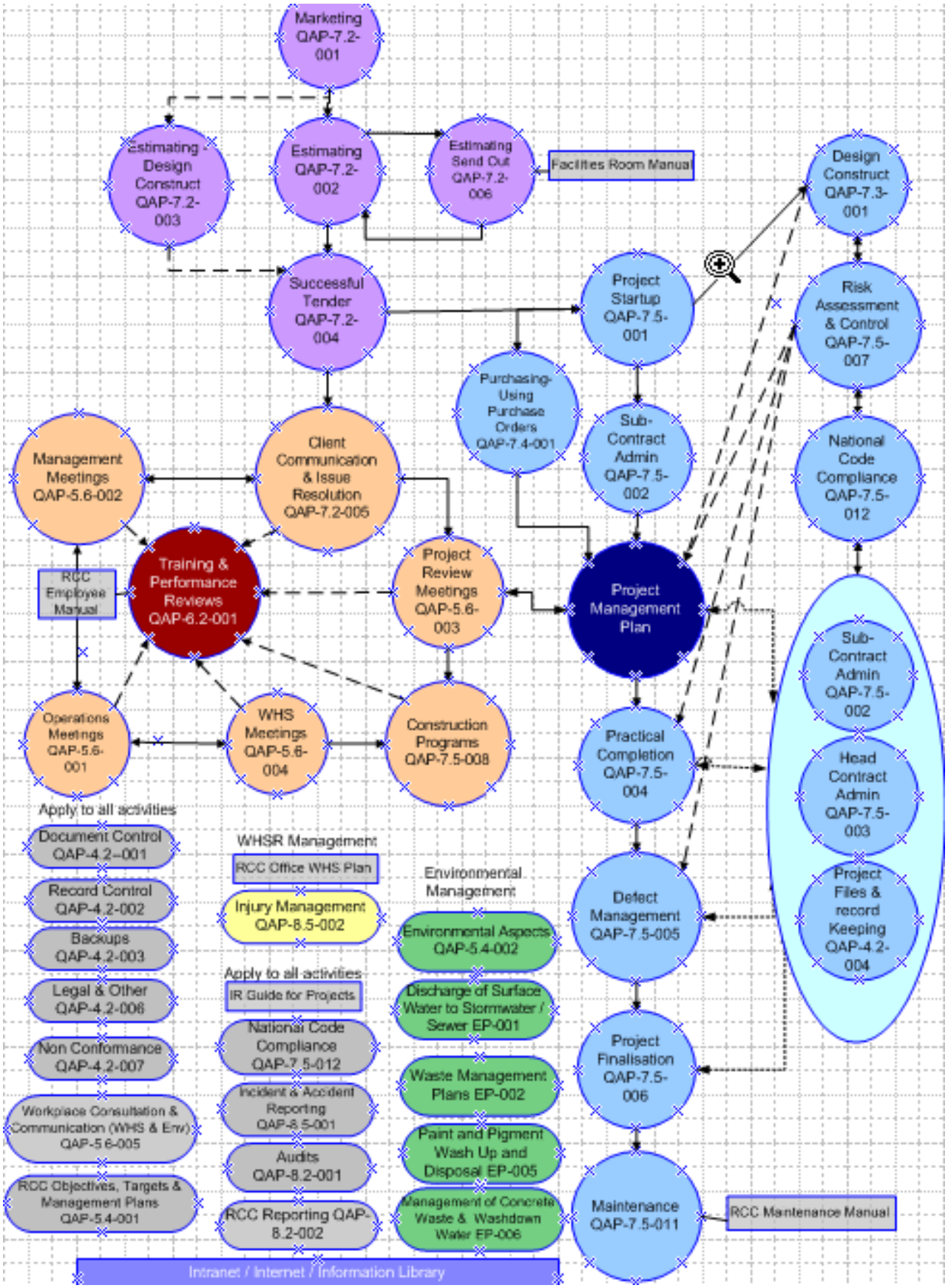
5.1.3.2 Reporting

Reporting on environmental issues, incidents and general operations will be documented at project level through the Project Management Plan and Monthly reports. Client and Head Office The Risk Assessment & Control procedure QAP-7.5-007, the Audit Procedure QAP-8.2-002 and the Incident & Accident Reporting procedure QAP-8.5-001

5.1.4 Documentation

The RCC Management System is made up of this document plus policies, procedures and records referenced directly, indirectly or contained within this document.
The interaction between processes is described in the referenced procedures and in the diagram below

a) Interaction of processes:



5.1.5 Document & Data Control

RCC has a procedure to identify and specify the method of collection, retention and disposition of its EMP records. Records are filed in accordance with the Standard File Register.

An appropriate process is implemented for the approval, storing and disposing of Environmental documents, data and records for the project. Refer to the Document Control procedure QAP-4.2-001, the Updating of RCC Management System procedure QAP-4.2-005, Records Control procedure QAP-4.2-002, Project Files & Record Keeping procedure QAP-4.2-004 and the Backup procedure QAP-4.2-003

5.1.6 Hazard Identification, Hazard/Risk Assessment and Control of Hazards/Risks

Refer to the Project Startup procedure QAP-7.5-001, Risk Assessment & Control procedure QAP-7.5-007, Design Construct procedure QAP-7.3-001, Purchasing Goods & Services QAP-7.4-001, Sub-contract Administration procedure QAP-7.5-002 and the Project Management Plan

5.1.7 Emergency Preparedness and Response

Refer to the Project Specific Management Plan
Emergency preparedness and response procedures shall be reviewed, particularly after the occurrence of injuries or emergencies.
Refer to the Workplace Consultation procedure QAP-5.6-005 and the WHS Meeting procedure QAP-5.6-004
Emergency preparedness shall be tested where practicable in conjunction with the companies Emergency Management Plan.

5.2 Measurement and evaluation

5.2.1 Monitoring and measurement

Refer to the WHS Reporting procedure QAP-8.2-002, the Project Management Plan, the Legal & Other Requirements procedure QAP-4.2-006 and the WHS Objectives & Management Plans procedure QAP-5.4-001
The decision to monitor health of employees and sub-contractors is determined project by project. In general terms RCC is not required to conduct surveillance of workers health.

5.2.2 Incident investigation, corrective and preventive action

Refer to the Injury & Accident reporting procedure QAP-8.5-001, the Injury Management procedure QAP-8.5-002, the Operations Meeting procedure QAP-5.6-001, the Management Meeting procedure QAP-5.6-002, the WHS Meetings procedure QAP-5.6-004 and the Project Management Plan.

5.2.3 Records and records management

An appropriate process is implemented for the approval, storing and disposing of Environmental documents, data and records for the project. Refer to the Document Control procedure
Refer to Records Control procedure QAP-4.2-002, Project Files & Record Keeping procedure QAP-4.2-004 and the Backup procedure QAP-4.2-003. RCC has a procedure to identify and specify the method of collection, retention and disposition of its EMP records. Records are filed in accordance with the Standard File Register.

5.2.4 Environmental audits

The Business Systems Manager shall prepare and maintain an Annual Audit Schedule to address each and every procedure that forms part of the companies EMS.
Prior to performing an audit, the auditor internal or external shall ensure that an Audit Checklist/Report is available, detailing the criteria to be addressed by the audit, and the persons responsible for the activity to be audited are notified of the pending Audit.
Refer to the Audits procedure QAP-8.2-001

5.2.5 Non Conformances

When required Non Conformances will be raised and will document the control procedure for corrective and preventative action for:

- environmental-related problems,
- complaints from persons affected by RCC,s environmental performance; and
- preventing their occurrence or recurrence.

Managers and Senior Managers are responsible for managing the corrective and preventative actions require to control and prevent recurrence in their areas of operation.

5.3 Management Review

Management Review will take place to ensure that the Environmental Management System and Plans, suitable and effective in meeting the specified statutory legislation, policies, objectives and procedures within the corporate and project levels is achieved.
Refer to the Operations Meeting procedure QAP-5.6-001, the Management Meetings procedure QAP-5.6-002 and the WHS Meeting procedure QAP-5.6-004

6 Continual improvement

Refer to the Operations Meeting procedure QAP-5.6-001, Management Meetings procedure QAP-5.6-002 and the Project Review meeting procedure QAP-5.6-003

Appendix G
Environmental Inspection

Geosyntec consultants

Nic
DASHBOARD
EMPLOYERS
PERSONNEL
PERMITS
BOOKINGS
SWMS
SDS
SAFETY PLAN
MEETINGS
INJURY
INCIDENTS
EQUIPMENT
BULLETINS
INSPECTIONS
OBSERVATIONS
PROGRESS
REGISTERS
SITE DIARY
INSIGHTS
REPORTS
PROJECT SETTINGS
DOCUMENTS
MY ACCOUNT
SUPPORT
LOG OUT

Inspections / 18.3 Environmental Inspection

Download | Options

Inspection Details

Reference	ISP-575472
Inspection Category	02.0 - Environmental
Inspection Type	18.3 Environmental Inspection
Created By	Nic Sirry
Inspection Description	

Checklists

Environmental Safeguard — Checklist Incomplete — [0 of 28 complete, 0 observations raised]

Is this inspection as a result of a rain event? * ○ Yes ○ No

Have RCC staff been briefed in the requirements and responsibility of ENV of the PMP (EMP)?
○ Yes ○ No

Have key subcontractors been briefed on project environmental issues and their responsibilities as part of the daily pre-start?
○ Yes ○ No

Have you held/distributed any environmental based tool box talks?
○ Yes ○ No ○ N/A

Have you received complaints, have they been recorded (F 18.5) and a response provided to complainant this week?
○ Yes ○ No ○ N/A

Are retained trees fenced, and the drip zone free of stored materials, parked cars etc
○ Yes ○ No ○ N/A

Are stockpiles battered and contained by a silt fence, away from waterways?
○ Yes ○ No ○ N/A

Have you checked the silt fences, other sediment control measures?
○ Yes ○ No ○ N/A

Do they require maintenance? ○ Yes ○ No

Have silt fences been installed around constructed drainage pits / or are they covered with geofabric?
○ Yes ○ No ○ N/A

Has refuelling been undertaken by mobile refuelling providers?
○ Yes ○ No ○ N/A

Has there been any dust management issues? ○ Yes ○ No

If yes, how were they rectified?

Has work been undertaken within approved operating hours?
○ Yes ○ No

Have you had excessive noise or vibration levels from equipment? Consider heritage structures, residents
○ Yes ○ No

Have trucks leaving site carting spoil, demolition wastes, general wastes etc been tarped?
○ Yes ○ No ○ N/A

Are project entries/exits adequate ballast or grid in working order

Yes No N/A

Are roads / gutters clean socks in good order Yes No

Are chemicals / fuels stored in a bunded, roofed and secure area? (not a shipping container)

Yes No N/A

Are concrete wastes/washouts contained? Yes No N/A

Is a paint wash up system established? Yes No N/A

Are there enough bins onsite? Does litter require tidying up inside/outside the site

Yes No

Have you or the subcontractor tracked waste off site (F 18.4)?.

Yes No

Do you have all the waste dockets, completed the waste register (F 18.1) and the monthly waste reports from the contractor?

Yes No

Do you have records for any imported fill? Yes No N/A

Do weeds need spraying or grass cutting? Do you need a licenced contractor?

Yes No N/A

Are there enough spill kits onsite and are they fully stocked?

Yes No

Have heritage requirements been complied with? Yes No N/A

Did you have to stop any works due to rain, high winds, noise or vibration, traffic issues?

Yes No

Note site specific items

Attach any photo evidence as required to this Inspection

Choose File No file chosen

Other Observations (0)

Attendees

Add Attendee

Name	Email	Position	Company	Signature
Nic Sirry	sirryn@richardcrookes.com.au	Cadet	Richard Crookes Constructions	

Additional Recipients

Add Recipient

Name	Email	Position	Company
Craig Richmond	richmondc@richardcrookes.com.au	Business Systems Manager	Richard Crookes Constructions

Additional Information

Focus for Next 18.3 Environmental Inspection

Submit Inspection

Your 18.3 Environmental Inspection is automatically saved as a draft, and you can resume at any time from the inspections screen.

Appendix H
Environmental Controls

Geosyntec consultants

ENVIRONMENTAL ACTIONS AND MONITORING TABLE DATE: APRIL 2026

ENVIRONMENTAL ASPECT (to be read in conjunction with, Environmental Risk Matrix)		ENVIRONMENTAL ACTIONS, CONTROLS AND CRITERIA	OPERATIONAL CONTROLS				EFFECTIVENESS OF CONTROLS			CHECKING, CORRECTIVE & PREVENTATIVE ACTION		RESPONSIBILITY
			INDUCTION AND/OR TOOLBOX	RCC	SUBCONT SWMS & CONTRACTS	CONSULT REPORTS	VISUAL	ENVIRONMENTAL INSPECTION CHECKLIST	SWMS COMPLIANCE	NCR/SITE NOTICE REFER PMP SECTION 4	CHECK RECORDS DURING AUDIT	
1	Dust Generation Particulate Emissions (General)	• Install shade cloth on perimeter fencing • Vehicle corridors will be clearly identified and restricted to control vehicle access onsite. • Limit vehicle speed onsite to 20km/hr • Fixed and mobile (water tanker) water sprays • Reduce work activities /stop work during moderate to high wind velocity periods. • Maintain equipment. Smokey plant to be stopped until repair works completed. • Turn off vehicle engines whilst not in use (no long periods of idling)	✓	✓	✓		Daily	Weekly		As required		Site team
1	Dust Generation Regular Liaison Meetings (General)	• Consult with other high risk construction sites within 250m of the site boundary to understand dust generation activities and align dust mitigation measures to avoid impacts on direct and arterial road network and the potential impact on construction activities and/or neighbours.		✓			Daily	Weekly		As required		Site team
1	Dust Generation (Demolition)	• Breakers and crushing equipment to be fitted with dust filtration equipment or water sprays to control dust emissions.			✓		Daily	Weekly during works	✓	As required		Site team
1	Dust Generation (Construction)	• Minimise areas of site disturbed, and stage works where possible. • Dust suppression strategies to be used, i.e. water sprays, soil binders, hydromulching, controlled speed onsite, roadbase + shaker grids. • Stockpiled topsoils and rubble will be restricted to 4m high. Stabilise if insitu for >4-6months. • On site drilling or coring operations will be undertaken by equipment fitted with air filtration equipment.	✓	✓			Daily	Weekly		As required		Site team
2	Odour	• If odorous materials uncovered, recover immediately. • Seek advice from consultant regarding soil /materials management.		✓		✓	Daily	Weekly		As required		Site team
3	Greenhouse	• Ensure purchased electrical products/whitegoods products comply with specification for CFCS & energy ratings • Low solvent paints to be used as a priority • Building to conform to AGBR or GreenStar performance criteria • Deliveries / transport from site effectively planned to limit inefficient transport, assist back loading etc		✓						As required		CA Site team
4	Stormwater (Discharge from sedimentation basins, flooding)	• Water quality to meet ANZECC Water Quality Guidelines. → Conduct water quality test (external test company) NTU and TSS to determine the best treatment and acceptable levels – (Generally) PH 6.5- 8.5, Turbidity <50NTU, No visible oil & grease	✓	EP-001		✓	Daily during discharge	Weekly		As required	✓	Site team

ENVIRONMENTAL ASPECT (to be read in conjunction with, Environmental Risk Matrix)		ENVIRONMENTAL ACTIONS, CONTROLS AND CRITERIA	OPERATIONAL CONTROLS				EFFECTIVENESS OF CONTROLS			CHECKING, CORRECTIVE & PREVENTATIVE ACTION		RESPONSIBILITY
			INDUCTION AND/OR TOOLBOX	RCC	SUBCONT SWMS & CONTRACTS	CONSULT REPORTS	VISUAL	ENVIRONMENTAL INSPECTION CHECKLIST	SWMS COMPLIANCE	NCR/SITE NOTICE REFER PMP SECTION 4	CHECK RECORDS DURING AUDIT	
		• Obtain advice for use of flocculants to settle sediment from water. • Sedimentation pond to be maintained at low levels to ensure capacity during rainfall event. • DO NOT DISCHARGE IF CONTAMINANTS SUSPECTED. Obtain advice.										
5	Adjoining waterways (dewatering, soil erosion & runoff)	• Temporary drainage systems will be established to divert clean waters around the land development areas as appropriate. • Erect silt fences, bunds and construct swale drains. • Concrete Bunded washouts plastic lined • Inspect at least weekly & after rainfall. • Maintain and/or replace as required. • Refer NSW Department of Housing's Managing Urban Stormwater (2004). • Street sweepers will be employed on regular basis		EP-001		✓	Daily during discharge	Weekly		As required	✓	Site team
6	Sewer (Trade waste)	• No paints or other chemical to be poured down drains. • If required, obtain trade waste licence for discharge or local council approval.		EP-001		✓				As required	✓	Site team
7	Land (Acid sulphate soils, contaminated soils, imported fill)	• Stop work if unexpected potentially contaminated soils are encountered. • Obtain waste classification from consultant in accordance with EPA guidelines Environmental Guidelines: Assessment, Classification & Management of Liquid & Non-Liquid Wastes (June 2004)	✓		✓	✓	Daily	Weekly	✓	As required	✓	Site team
7	Land	• Where required a Remediation Action Plan will be developed and implemented. • Sign off by Site Auditor may be required to validate cleanup. • Any groundwater or ponded rainwater will be tested and classified by consultants prior to disposal. • Check Geotech requirements. Ensure soil classification suitable for land use i.e. Schools, residential, commercial etc. • Potential for acid sulphate soils will be assessed based on the sites proximity to low-lying coastal areas eg. coastal plains, wetlands and mangroves where the surface elevation is less than five metres above mean sea level. • If odorous soils (rotten egg gas) or grey/yellowed mottled soils encountered, stop work. • If suspected, consultant to prepare Acid Sulphate Soil management Plan (ASSMP). • Excavation and neutralisation to be supervised by consultants as per ASSMP.	✓	EP-002	✓	✓	Daily	Weekly	✓	As required	✓	Site team

ENVIRONMENTAL ASPECT (to be read in conjunction with, Environmental Risk Matrix)		ENVIRONMENTAL ACTIONS, CONTROLS AND CRITERIA	OPERATIONAL CONTROLS				EFFECTIVENESS OF CONTROLS			CHECKING, CORRECTIVE & PREVENTATIVE ACTION		RESPONSIBILITY
			INDUCTION AND/OR TOOLBOX	RCC	SUBCONT SWMS & CONTRACTS	CONSULT REPORTS	VISUAL	ENVIRONMENTAL INSPECTION CHECKLIST	SWMS COMPLIANCE	NCR/SITE NOTICE REFER PMP SECTION 4	CHECK RECORDS DURING AUDIT	
		• The requirements to import fill will be minimised by utilising on site cut material wherever possible. • All analysis certificates shall be handed over as part of the completion documents to the client. • Record all imported fill on Form 25.08 - Product Identification & Traceability. • Mark up locations where fill compacted in site plan. Survey if required.										
8	Resources - water, materials, energy	• For design and construct jobs, refer to the design specification for ESD requirements and product choices. • Buy local wherever possible to reduce impacts of transport on environment.		✓		✓					✓	PM
9	Noise	• Refer to CVNMP • Refer to DA for noise restrictions and working hours. • Use hoarding or acoustic mats as required. • Situate generators and plant away from sensitive receivers. • Turn off machinery. Maintain equipment and stop noisy plant until repaired. • No early deliveries.	✓	✓	✓	✓	Daily	Weekly	✓	As required	✓	Site team
10	Vibration	• Conduct dilapidation report prior to work starting. • Limit the use of vibratory rollers, rock breakers, impact piling etc adjacent to buildings (>7m). • Regenerated noise may also transfer through bedrock and building structures. • Obtain advice if required.	✓		✓	✓	Daily	Weekly	✓	As required	✓	Site team
11	Community Concerns	• Provide information (e.g. Signage, letterbox drops) to community on programmed works • Provide contact name for inquires. • Advice locals of “noisy” work. • If required in noise sensitive areas and/or in response to complaints, engage consultants to undertake monitoring at nominated receivers. • Vehicles will not be permitted to queue outside the site or in residential areas unless a defined area is established which does not adversely impact on neighbours.	✓	✓			Daily	Weekly		As required		PM Site team
12	Flora	• Review planning documentation to determine the presence of any protected, threatened or significant flora. Obtain approvals as required. • Engage arborist to develop tree management plan or refer DA and arborist reports.	✓	✓		✓	Daily	Weekly		As required	✓	Site team

ENVIRONMENTAL ASPECT (to be read in conjunction with, Environmental Risk Matrix)		ENVIRONMENTAL ACTIONS, CONTROLS AND CRITERIA	OPERATIONAL CONTROLS				EFFECTIVENESS OF CONTROLS			CHECKING, CORRECTIVE & PREVENTATIVE ACTION		RESPONSIBILITY
			INDUCTION AND/OR TOOLBOX	RCC	SUBCONT SWMS & CONTRACTS	CONSULT REPORTS	VISUAL	ENVIRONMENTAL INSPECTION CHECKLIST	SWMS COMPLIANCE	NCR/SITE NOTICE REFER PMP SECTION 4	CHECK RECORDS DURING AUDIT	
		• Education and training at site toolbox meetings and induction. • Report all sightings to the site manager. • Fence or barricade protected flora at the drip zone. Erect Keep Out signage. • Do not stack materials under/against trees. • The potential for reuse of vegetative wastes by mulching, chipping or on-site placement of trunks or limbs shall be reviewed for each project.										
13	Fauna	• All native animals protected. • Review planning documentation to determine the presence of any protected, threatened or significant fauna. Obtain approvals as required. • Site rules/induction to include information regarding of the • For injured animals, to relocate call WIRES	✓	✓		✓	Daily	Weekly	✓	As required	✓	Site team
14 15	Waste Litter	• Hazardous materials surveys to be completed. • Materials to be removed prior to demolition • Registers and waste disposal requirements as per Safework and EPA requirements for removal, storage, transport and disposal. • General site wastes –use one bin system and sort in contractors' yard to produce quantities of material for recycling, reuse, disposal etc. • Empty drums are to be taken off-site for disposal. • Empty drums shall be crushed prior to recycling/disposal. • Do not overfill skip bins. Provide plenty for use. Cover where potential for windblown litter.	✓	EP-002	✓	✓	Daily	Weekly	✓	As required	✓	Site team
16	Landfilling	• Reduce, reuse and then dispose • Landfill space scare leading to increased tipping costs • Dispose of hard construction wastes for recycled gravels and sands • Do not send soil to landfill until alternatives for beneficial reuse have been explored as per consultants' advice. • Consideration should be given to chipping of the vegetation and reuse • Reuse packaging to protect works		EP-002			Daily	Weekly		As required	✓	Site team
17	Chemicals	• Chemicals to be stored in bunded areas (impervious + 110% of largest container) away from stormwater drains & pits. • Refer Workcover Code of Practice for Storage & Handling of Dangerous Goods, EPA Guidelines for Bunding & Spill Management. Appropriate chemicals storage is in conformance with:	✓	EP-002 EP-005 EP-006	✓		Daily	Weekly	✓	As required		Site team

ENVIRONMENTAL ASPECT (to be read in conjunction with, Environmental Risk Matrix)		ENVIRONMENTAL ACTIONS, CONTROLS AND CRITERIA	OPERATIONAL CONTROLS				EFFECTIVENESS OF CONTROLS			CHECKING, CORRECTIVE & PREVENTATIVE ACTION		RESPONSIBILITY
			INDUCTION AND/OR TOOLBOX	RCC	SUBCONT SWMS & CONTRACTS	CONSULT REPORTS	VISUAL	ENVIRONMENTAL INSPECTION CHECKLIST	SWMS COMPLIANCE	NCR/SITE NOTICE REFER PMP SECTION 4	CHECK RECORDS DURING AUDIT	
		→ AS 1940 The Storage and Handling of Flammable and Combustible Liquids → Storage and Handling of Dangerous Goods WorkCover Code of Practice 2005– refer p. 86 • EPA requirements http://www.environment.nsw.gov.au/mao/bundingspill.htm • Ponded water within bunds will not be discharged to stormwater. • Fuel and hydraulic leaks to be cleaned up immediately. • Drilling muds to be contained within bunds and reused. • Liquid paints NOT to be poured down drains. Spread on waste cardboard or similar and leave to dry. Paint brushes to be rinsed and paint solids allowed to settle. Container of paint solids to be disposed to liquid waste facility. • Construct concrete washout pit for washout, away from stormwater drains. Send back to batch plant where possible. • Concrete cuttings to be contained and wetvac to prevent runoff into stormwater drains. • Storage of bulk fuels (>200L) on site is prohibited. All refuelling shall be undertaken by a mobile facility with appropriate spill control and containment control equipment. • MSDS's must be provided to the Site supervisor prior to a chemical being received on site and by subcontractors using chemicals/products.										
18	Traffic	• Develop and implement traffic management plans. Submit to local council as required. • Signage and notices regarding disruptions. • Use crushed concrete, mulches etc along site access roads. • Install shakers and wheel wash as required. • Organise regular street sweeping. • Haulage routes and rules will be provided to subcontractors prior to commencing on site. • All loads of soil, demolition wastes, general wastes etc are to be tarped.	✓	TMPs		✓	Daily	Weekly		As required		Site team
19	Aboriginal heritage	• Education and training at site toolbox meetings and induction. • It is illegal to destroy heritage items. • Review local or regional environmental plans, or on the State Heritage Register is to be consulted prior to work starting onsite. • Obtain excavation permit issued by the Heritage Council of NSW if required. • Any heritage relics or sites discovered during construction shall be reported to the NSW Heritage Office. • Work in the subject area to cease until specialist advice is obtained.	✓	✓		✓	Daily	Weekly		As required	✓	Site team

ENVIRONMENTAL ASPECT (to be read in conjunction with, Environmental Risk Matrix)		ENVIRONMENTAL ACTIONS, CONTROLS AND CRITERIA	OPERATIONAL CONTROLS				EFFECTIVENESS OF CONTROLS			CHECKING, CORRECTIVE & PREVENTATIVE ACTION		RESPONSIBILITY
			INDUCTION AND/OR TOOLBOX	RCC	SUBCONT SWMS & CONTRACTS	CONSULT REPORTS	VISUAL	ENVIRONMENTAL INSPECTION CHECKLIST	SWMS COMPLIANCE	NCR/SITE NOTICE REFER PMP SECTION 4	CHECK RECORDS DURING AUDIT	
		• The area will be fenced and signs erected to restrict access. • Heritage consultants may be required to provide advice on demolition/construction processes and finishes.										
20	European heritage	• Education and training at site toolbox meetings and induction. • It is illegal to destroy heritage items. • Check the Aboriginal Heritage Information Management System (AHIMS). • Also check the register of the National Estate. • Obtain approval from NPWS (Section 90 consent).	✓	✓		✓	Daily	Weekly		As required	✓	Site team
21	European heritage	• Any evidence of Aboriginal relics discovered during construction shall be reported to the National Parks and Wildlife Service. • Local land Land Council representatives may be required to monitor stripping/excavation. • Work in the subject area to cease until specialist advice is obtained. • The area will be fenced and signs erected to restrict access.	✓	✓		✓	Daily	Weekly		As required	✓	Site team
22	Climate change	• Extreme weather events (storms flood wind) • Temperature change • Green house gas emission	✓	✓	✓		Daily	Weekly		As required		Site team
23	Aeronautical Impacts	• Airport Safegguarding – Wildlife Hazards – Monitoring to be completed for site and neighbouring activities. Dependant on impacts, deterrent techniques to be established. • Airport Safeguard – FOD - Monitoring to be completed for site and neighbouring activities – covering of bins, waste and site cleanliness to be closely monitored • Airport Safeguard – 111m AHD Construction Limits. Anything that exceeds this heights (such as cranes) must obtain WSA / CASA approval and follow the necessary guidelines prior to commencement of activities.	✓	✓	✓		Daily	Weekly		As required		Site team
24	Bushfire	• Building to be designed in accordance with the Bushfire Risk assessment report. • Bushfire Management for Construction activities to be monitored and managed in accordance with recommendations as listed by Blackash	✓	✓	✓		Daily	Weekly		As required		Site team
	Emergency Preparedness:	• Spill kit onsite. • Refer to the MSDS for advice and procedures. • All spills must be reported to the SM & cleaned up. Complete RCC Accident /Incident report. • Sed pond pumped out regularly to maintain capacity in case of emergency	✓	✓			Daily	Weekly		As required		Site team

ENVIRONMENTAL ASPECT (to be read in conjunction with, Environmental Risk Matrix)		ENVIRONMENTAL ACTIONS, CONTROLS AND CRITERIA	OPERATIONAL CONTROLS				EFFECTIVENESS OF CONTROLS			CHECKING, CORRECTIVE & PREVENTATIVE ACTION		RESPONSIBILITY
			INDUCTION AND/OR TOOLBOX	RCC	SUBCONT SWMS & CONTRACTS	CONSULT REPORTS	VISUAL	ENVIRONMENTAL INSPECTION CHECKLIST	SWMS COMPLIANCE	NCR/SITE NOTICE REFER PMP SECTION 4	CHECK RECORDS DURING AUDIT	
		• Ensure you know where stormwater drains are and have materials to block them in case of a fire.										

Appendix I

Erosion and Sediment Control Plan

Geosyntec consultants

NOTES

Administration & General

1. This progressive plan is to be read in conjunction with the CEMP, relevant specifications, and procedures.
2. All necessary licences, permits and approvals required by legislation will be obtained prior to works commencing.
3. All works and site activities will comply with the explicit requirements of any relevant licence, permit or approval.
4. Erosion and sediment control planning is required prior to the commencement of works. The approved CEMP is supplemented by the concept Progressive Erosion & Sediment Control Plans (PESCP's).
5. All erosion and sediment controls generally to be constructed in accordance with `Blue Book' specifications & standard drawings, Guidelines and specifications being:
   - 'Managing Urban Stormwater – Soils & Construction – 4th Edition' - Landcom - March 2004,
   - 'Managing Urban Stormwater – Soils & Construction – Volume 2a – "Installation of Services' – NSW DEC 2008.
   - Best Practice Erosion and Sediment Control (IECA 2008);
   - 'Western Sydney Aerotropolis Development Control Plan 2022' - NSW DPHIE 2022;
   - 'Technical guidance for achieving Wianamatta–South Creek stormwater management targets' - NSW DPHIE 2022;
6. The CEMP & 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.

Personnel & Training

7. The induction of employees and contractors to include a component promoting environmental awareness, legislative requirements & penalties, and basic erosion and sediment control tasks.
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.
9. Personnel constructing controls to have demonstrated competence and experience.

Planning & preparation

10. The controls specified in this ESCP must be installed, inspected, and approved by a CPESC before construction commences.
11. 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.
12. Promote planning for seasonal restrictions for high-risk areas and/or activities (i.e., risk of late summer/autumn rainfall events for in-stream works or cold winter temperatures affecting revegetation).
13. 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.**
14. 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 hazards exist.

Clearing, site establishment, topsoil stripping & stockpiling

15. All existing vegetated or undisturbed areas outside of the works area to be regarded as Exclusion zones and to be delineated with fencing, tape, or other markers, as required. All site personnel to be instructed to avoid Exclusion zones or damaging installed controls.
16. Temporary fencing or barricading such as parawebbing or perimeter tape is to be utilised on the cleared perimeter with accompanying signage as required. Site inductions and toolbox meetings should include the importance of observing exclusion zones, particularly in areas near any identified sensitive area.
17. 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.
18. 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.
19. The extent of earthworks and formation stripping will be demarcated to the footprint necessary for the proposed works. Disturbance outside the earthwork's footprint will be limited to necessary operations such as stockpiling, lay downs, etc.
20. Early establishment of suitable stockpiling and processing areas will be prioritised to reduce unnecessary soil disturbance from double handling of soil by machinery in the early works phase.
21. Appropriate sediment tracking controls such as an aggregate/geotextile apron, shaker grid, etc. with a minimum length of 15m will be installed at exit points from the site. Personnel to monitor roadways & tracked sediments to be removed as required.
22. Construct erosion resistant access routes, site access/egress points, and compounds. Access 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.
23. Design and construction of site exit gates and temporary watercourse crossings as per Blue Book 2D as a minimum requirement.
24. Vegetation will be progressively cleared to minimise disturbance by area and duration. Cleared vegetation to be windrowed parallel to the contour until mulching/removal to control flows across cleared areas

Clearing, site establishment, topsoil stripping & stockpiling

25. Where feasible, the soils should not be handled & stockpiled when they are very wet or dried, preferably being sufficiently moist to avoid damage to the soil structure.
26. During grubbing and topsoil stripping provide short term, temporary topsoil windrows as upper and mid-slope controls to control 'clean' flows until stabilised 'clean' water berms or drains are installed.
27. Where practicable, cut stump clearing will be undertaken to retain tree stumps in situ when clearing vegetation on steep embankments and near waterways.
28. Where beneficial, topsoil testing and vegetation assessment may be conducted prior to stripping to allow for targeted stripping and subsequent re-use in landscaping and stabilisation.
29. Temporary drains, banks or diversions are to be formed and stabilised to divert concentrated 'clean' flows around disturbed works areas.
30. The installation of preliminary sediment controls such as perimeter sediment fencing, compacted topsoil berms, windrowed vegetation/mulch, excavated sediment traps, check dams, coir log/straw bale filters, etc, will be implemented prior to soil surface disturbance within the catchment.
31. Strip any viable topsoil in the required locations and stockpile locally where possible. The topsoil will be handled and stored in the correct manner necessary for successful rehabilitation.
32. Any viable stripped topsoil to be stored in stockpiles less than two metres in height where possible. The stockpile locations are to avoid concentrated surface flows or areas subject to inundation during wet weather.
33. The long-term soil stockpile locations are to be located 5 metres away from concentrated water flows and at least 10m from any waterway. The stockpiles will not be established in areas subject to concentrated surface flows, waterlogging or prolonged inundation during wet weather.
34. Short term on-site stockpiles (<5 days) to be located away from drains and flow lines and be controlled with sediment fence. Storm covers to be deployed prior to the onset of significant rainfall evets of periods of strong & gusty winds. Plastic covers should only be utilised for short term cover for wind or storm protection for topsoil stockpiles.
35. 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.
36. The use of existing, available materials on-site (i.e., soils, rock, etc) to be salvaged and stored where it can be utilised for temporary or permanent works (where practical) to reduce import requirements.

Earthworks

37. Prioritise planning for early and rapid cut-to-fill earthworks in periods of seasonal risk and/or other high-risk areas.
38. Where practical, cut earthworks should be staged from the upslope approaches to control dirty water within the excavation (i.e., the excavation proceeds downslope whilst maintaining unexcavated remnant earth as a control bund).
39. Subgrade excavations and engineered fill formations at risk of temporary inundation during rain events may be stabilised with moisture-repelling soil binders.
40. As the earthworks progress, areas of fill should generally be graded to shed flows away from the edges of fill batters to sediment controls where possible.
41. Progressively form and maintain lip berms and batter chutes with velocity dams on fill formations.
42. Maintain minor benches or contour berms on fill batter formations until profiling for topsoiling is imminent.
43. Any significant (long & steep) cut/fill batters should be progressively overlaid with geotextile, RECPs, 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.
44. Temporary scour protection lining should be installed for major 'dirty' drains, or for steep or long drains to sediment basins or other controls.
45. 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.
46. Earthworks and hauling, and vehicular movements to be limited in wet conditions.
47. Appropriate sediment tracking controls such as an aggregate/geotextile apron, shaker grid, wheel washes, etc will be installed at exit points from the site.
48. The adjoining local road network to be regularly monitored for tracked sediments with affected areas cleaned as soon as possible in a safe manner.
49. 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.
50. Imported quarry product and fill materials required for construction are to be clean, and free of contaminants (i.e.. weeds, waste, liquids, etc).
51. Water carts are to regularly spray access tracks, works areas, & temporary stockpiles, during dry weather conditions.
52. Bunded or controlled areas for refuelling, material stockpiling, (and contaminated soil treatment area if required) are to be formed prior to commencement of those works in the relevant risk areas.
53. The progress of earthworks will minimise slope lengths and gradients where practical utilising contour berms, batter berms, diversion banks, etc.

NOTES

Earthworks (Cont'd)

54. Due to the potential for the occurrence of dispersible soils, earthworks should be scheduled to minimise the disturbance duration and soil surfaces should be temporarily stabilised for extended site shutdown or where significant wet weather is anticipated.
55. Personnel to ensure visual dust monitoring is maintained during works, and dust suppression is undertaken regularly
56. Minimise earthworks, soil handling and general disturbance during periods of strong and/or gusty winds.
57. Apply water sprays for dust suppression where works, soil handling and/or potentially contaminated soils are generating dust.

Drainage and construction

58. Works in high-risk zones are to be conducted in low rainfall periods, supported by positive 3-day weather forecasts for the anticipated scope of works.
59. Construct diversion drains or banks upslope of proposed works to direct off-site water flows to existing drainage, adequately stabilised areas, or vegetated areas.
60. 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.
61. The formation and stabilisation of permanent drains will be prioritised to minimise the requirement for temporary drains. Any temporary drain designs to ensure adequate capacity and cross-sectional volumes are achieved.
62. Permanent storm water drains, and outlet structures will be stabilised as soon as possible following completion.
63. Immediately line any constructed 'clean' 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.
64. Temporary 'dirty' water drainage will be adjusted progressively to maximise flows to sediment control devices.
65. Check dams are to be constructed from geotextile/aggregate bags, sandbags, staked coir logs/straw bales or loose 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.
66. 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.
67. Trenching works on grade will be controlled with methods detailed in the 'Blue Book' – Volume 2A' - Section 6

Water management

(For further specific information please refer to the 'Sediment Basin Management & Dewatering Procedure at 'Appendix A')

68. Flooded excavations, ponded water, etc will be extracted as required and utilised for construction purposes or treated to achieve acceptable water quality prior to discharge.
69. The use of reclaimed water will be prioritised for construction uses where possible to minimise potable water usage. The use of reclaimed water will comply with the requirements of TfNSW 'Environmental Direction 19: Use of Reclaimed Water'.
70. Flooded excavations and groundwater encountered in ASS areas or potentially contaminated areas will be pH tested and visually assessed and extracted for treatment, & subsequent discharge, or conveyed to a licensed liquid waste facility.
71. Accumulated water in sediment traps/sumps cannot be pumped, discharged, or released from site without completing a dewatering checklist.
72. Site water that is to be discharged directly to a flow line, drain, watercourse, etc, will be tested, treated, and where acceptable water quality parameters achieved, the testing results recorded prior to discharge.
73. Water quality should meet the following minimum criteria prior to discharge:
    - 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
74. Accumulated water in sediment traps/sumps cannot be pumped, discharged, or released from site without completing a dewatering checklist
75. 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.
76. 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.
77. Adequately designed and constructed concrete washout facilities will be constructed in a suitable location away from drainage lines. Concrete wash down to occur directly into lined receptacles or formed washouts.

Sediment Control

78. Commonly used sediment control devices have construction detail described in the Standard Drawings included in this PESCP. 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' & 'White Book'.
79. Sediment fencing, non-woven geotextile, or compacted mulch bunds, etc, will be installed on down slope work boundaries, down slope of stockpiles, cut/fill batters, access tracks, etc, to filter sheet flows.

Sediment Control (Cont'd)

80. Sediment filters will be formed from straw bales, aggregate & geotextile filter bags, coir logs, etc, to control concentrated on-site water flows as required.
81. Excavated sediment traps may be utilised at critical locations at the toe of the contributing catchment. They will be desilted at 40% capacity and are to be dewatered prior to the onset of further rainfall.
82. The excavated sediment traps should be regarded as a secondary control, relying on retention of coarse sediment in upslope controls within the construction area.
83. Aggregate filter bags or sandbag inlet traps are to be deployed on roadside pit inlets or other inlets to the drainage system.
84. Where possible, provide sandbag or other bunding controls at on-site collection points & pit inlets to prevent flows bypassing controls to downslope areas.
85. Gully pit inlets will be protected with filter inlet controls formed from sediment fence, filter bags, straw bales & geotextile, coir logs, etc
86. In-stream works to be controlled with turbidity curtain, installed parallel to the embankment. Installation across the watercourse streambed is acceptable in circumstances that entail the use of in-stream coffer dams.
87. Hydrocarbon booms to be deployed on the surface of watercourses at an appropriate distance from the works to capture leaks or pressurised release of liquid contaminants.
88. 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.

Contamination

89. 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.
90. 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.
91. 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 '*Waste Classification Guidelines: Parts 1 and 2* (DECC 2008)'.
92. 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.
93. Vehicles transporting potentially contaminated soils both on internal access tracks and public roads will correctly cover loads to mitigate dust generation or spillage.
94. Ground disturbance and machinery/vehicle movements in potentially contaminated areas will be minimised to essential works.
95. Earthworks, soil handling and general disturbance in potentially contaminated areas are to be avoided during periods of strong and/or gusty winds.
96. Water sprays are to be utilised to mitigate dust from contaminated soils in works areas, contaminated soil handling or temporary stockpile areas.

Soil & Water pollution control

97. All waste will be handled, stored, and disposed of in accordance with the '*Waste Classification Guidelines: Parts 1 and 2* (DECC 2008)'.
98. 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.
99. 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 at least a weekly basis.
100. The effluent from concrete wash down is to be captured by an excavated wash out pit lined with an impervious membrane at least 50 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.
101. 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.
102. The site machinery 'lay-up' area, refuelling areas and chemical storage areas are to be located outside the dripline of retained trees, at least 5 meters from native vegetation and, and 20 metres away from any waterway or major drainage lines.
103. The refuelling 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.
104. Vehicle wash down will be preferably undertaken at an appropriate area offsite, or otherwise at a designated and controlled area onsite.
105. Mobile plant, machinery and vehicles are to be regularly inspected and maintained to manufacturer's specifications.
106. 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.

NOTES

Soil & Water pollution control (Cont'd)

107. 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.
108. 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. Storage areas to be at least 50 metres from creeks and other waterways, and on slopes with a gradient of less than 10 per cent.
109. Containment bunds are to be monitored regularly, and captured materials removed as required to ensure bund capacity is maintained.
110. Bunded areas will satisfy requirements of the relevant Australian Standards and 'Bunding and Spill Management (DEC, 1997)'.
111. 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.
112. 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.
113. A MSDS register and will be maintained and be readily accessible on site for all hazardous chemicals transported, handled, or applied.
114. An adequate record or log of all environmentally hazardous chemicals received, used and/or disposed of will be maintained.
115. Substitution of less hazardous materials or chemicals or modifying methods of use/storage etc. will be implemented where possible.
116. The quantities of hazardous materials and chemicals stored or used will be minimised as far as practical.
117. The application methods and dilution ratios specified in manufacturer's directions and/or associated MSDS will be observed by personnel.

Stabilisation

118. Promote efficient staging planning for early stabilisation of perimeter or completed areas. (i.e., stabilisation of permanent drains, culvert outlets, diffusers, and decommissioning of temporary controls).
119. Stabilisation of areas is to occur progressively in conjunction with the completion of earthworks.
120. Suitable design and construction techniques are to be selected for stabilisation of relevant areas such as drain linings, batter treatments, allotments, etc.
121. 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.
122. Compounds, lay down areas and other areas of heavy construction impact to be restored to an acceptable condition. Destocking, waste removal & cleaning to be followed by scarification, topsoiling and stabilisation.
123. 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.
124. Any areas subject to heavy compaction and disturbance from vehicle movements and machinery will be subject to surface roughening and scarification (up to 300mm) to reduce compaction of the upper layer of soil.
125. Topsoil to be re-used locally within the precincts, with batters prioritised for topsoil application and timely application of soil stabilisers where applicable.
126. The remaining stored topsoil should be utilised to topsoil disturbed areas, rehabilitate compounds, and haul roads, or be spread to a uniform depth over the disturbed non-structural areas that are of low gradients.
127. Determine the cover crop mix seed blend suitable to the site & seasonal conditions to provide adequate protection until final landscaping commences.
128. Lands recently stabilised with cover crops will not be regularly watered except for initial germination or during prolonged hot & dry conditions. During milder seasons the cover crop will be monitored as received precipitation should be adequate.
129. Further application of seed may be necessary in latter stages in areas of inadequate vegetation establishment. Pedestrian and vehicular traffic will be restricted from all recently stabilised areas.
130. Construction sediment basins are to remain functional and runoff water quality managed from the contributing catchment until the calculated average annual soil loss is less than 150m3/ha/year for the entire catchment area.
131. All site 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' requirements. The 'Blue Book' requirements equate to a requirement of >75% soil surface cover over a minimum of >90% of the total Project area. Localised erosion and sediment controls are to be maintained on any remaining undisturbed areas until the area is stabilised, re-vegetated, or adequately sealed.

Inspection and Maintenance

132. 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
- Following rainfall events greater than 10 mm over 24 hours, or prolonged rainfall events:
  - as soon as practicable but within 3 hours (during normal work hours and days)
  - or within 24 hours (outside normal work hours and days, including industry rostered days off and public holidays).

Inspection and Maintenance (Cont'd)

133. 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.
134. Recordings and data from site inspections, testing, audits, and monitoring will be retained, with associated documentation maintained to demonstrate remedial action/s have occurred.
135. Monthly audit inspections of erosion and sediment controls on the site will be undertaken by a CPESC appointed under condition B11(a), and monthly audit report will be submitted to the Planning Secretary within 7 days of completing the audit;

Wet Weather Contingency & Management

136. Training sessions will be conducted with Supervisors, Foreman, Environmental Work Crew, and relevant personnel. The training will address
    - Weather forecast monitoring procedures and interpretation of forecasting by Bureau of Meteorology (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.
137. The daily BOM forecast for the Project area is issued each morning and late afternoon. The forecasts will be monitored daily, at the start of the shift and prior to shutdown. The BOM five-day forecast outlook will be reviewed daily.
138. 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.
139. 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.
140. 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.
141. The high-risk work areas that are identified will be managed by:
    - 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:
      - 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.
142. The site sediment controls, and sediment basins are to be inspected, and any necessary rectification works undertaken such as;
    - 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 40% 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.
143. 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.
144. 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 is to focus on high-risk areas to review the function and status of the installed erosion and sediment controls.
145. A Post Rainfall Inspection will be conducted in accordance with Note 131 above. The identified high-risk areas will be prioritised for any rectification or maintenance works, followed by areas with lower risk.
146. Records detailing the necessary works to reinstate the controls will be conducted in accordance with Note 132 above.
147. High risk work areas that are inundated will be prioritised for dewatering by:
    - Dewatering to a sediment basin where sufficient capacity is available,
    - Flocculated in-situ and discharged at a licensed discharge point when NSW EPA water quality parameters are attained,
    - Dewatered by water cart and utilised for construction purposes.
148. 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.

Document Authorship Information

Project	Aldi Sydney Automated Distribution Centre – 475 Badgerys Creek Road - Bradfield NSW 2178
Document Type	Technical Drawing
Document	Progressive Erosion and Sediment Control Plan
Document Author	Andrew Littlewood – Senior Soil Conservationist
Qualification	• Certified Professional in Erosion and Sediment Control (CPESC No. 5988). • Certified Erosion, Sediment and Storm Water Inspector (CESSWI No. 12101)
Relevant Training	• 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	26 years (2000 – 2026)
Current Employment	Director & Principal - Rubicon Enviro Pty Ltd (2016-2021)
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)

Appendices

- Appendix A **-** Sediment Basin Management & Dewatering Procedure
- Appendix B - Wet weather contingency procedure

Statement of Compliance

Statement of Compliance
This plan has been developed, and is certified by, an appropriately qualified and experienced professional in erosion and sediment control. The plan and associated documents, calculations, and drawings, have been prepared to a standard which if implemented correctly, will achieve the water quality objectives in compliance with: Conditions B11 & B12 of the Development Consent for SSDA 76913969 – NSW DPHI, '*Technical guidance for achieving Wianamatta–South Creek stormwater management targets'* - NSW DPHIE 2022, and '*Managing Urban Stormwater – Soils & Construction*' Volumes 1 & 2 – NSW Landcom 2006 & NSW DECC 2008. All erosion and sediment control measures are designed to be in accordance with the requirements of the aforementioned documents, and the ''*Western Sydney Aerotropolis DCP 2022* – NSW DPHI, specifically '*Section 2.5.5. – Erosion & Sediment Control*'. Signed: _____ Andrew Littlewood - CPESC No. 5988 Date: 5th March 2026

Document Control History

Version	Drawn by	Date	Signed	Reviewed by	Date
01	A. Littlewood	05/03/2026			
02	A. Littlewood	12/03/2026			
03	A. Littlewood	19/03/2026			
04	A. Littlewood	10/04/2026			

Management measures required for the SSD 6913969 Conditions of Consent relevant to construction soil and water management.

Issue	SSDA Condition No.	Draft SSD Conditions of Consent requirement	ESCP Management Measures
Erosion and Sediment Control	B11	Prior to the commencement of construction of the development, the Applicant must design and detail the erosion and sediment control measures for the site to ensure the construction phase waterway health targets and controls in the Aerotropolis DCP are achieved. Detailed Erosion and Sediment Control Plans (ESCP) and drawings must:	• See below.
Erosion and Sediment Control	B11(a)	• be prepared by a CPESC specialist whose appointment has been approved by the Planning Secretary;	• See Document Authorship Information above – Page 4.
Erosion and Sediment Control	B11 (b)	• be prepared in consultation with CPHR and include written evidence of the outcomes of the consultation process and how the recommendations have been incorporated into the ESCP;	• CPHR comments have been received, reviewed, and the relevant portions of the ESCP have been revised in accordance with the CPHR comments.
Erosion and Sediment Control	B11 (c)	• comply with the detailed technical specifications in the Technical guidance for achieving Wianamatta South Creek stormwater management targets (DPE 2022) (the Technical Guidance) or its latest version and the 'Blue Book - Managing Urban Stormwater: Soils and Construction' (Landcom 2004);	• See Statement of Compliance above– Page 4. • See AT&L's 'CDC 2 - Stage 1 - Earthworks Package' No. 22-1002-C10-147 – IFC Dated 21/11/2025 • Sediment Basin Design Parameter Summary – Extracted from AT&L's 'CDC 2 - Stage 1 - Earthworks Package' No. 22-1002-C10_152 – IFC Dated 31/07/2025 – and reproduced on Page 8 of this ESCP
Erosion and Sediment Control	B11 (d)	• be consistent with section 2.3.2 of the Aerotropolis DCP;	• See Notes – Pages 1-3 • See '*Preliminary Progressive Erosion & Sediment Control Plan: Phase 2 – Stage 1 – Bulk Earthworks and Services*' – Page 7. • See Appendix A – '*Sediment Basin Management & Dewatering Procedure*' • See Appendix B – '*Wet weather contingency procedure*'
Erosion and Sediment Control	B11 (e)	• be consistent with the Erosion and Sediment Control Plan, Drawing Nos. C015146.01-SSDA200, Issue P4 dated 18 December 2025 and C015146.01-SSDA250, Issue P3 dated 30 September 2025 in the Civil Engineering Report prepared by Costin Roe Consulting Pty Ltd for the development dated 18 December 2025 (submitted with the Additional Information dated 19 December 2025 prepared by Urbis.	• See 'Preliminary Progressive Erosion & Sediment Control Plan: Phase 2 – Stage 1 – Bulk Earthworks and Services' – Page 7.
Erosion and Sediment Control	B11 (g)	• detail measures to protect passively irrigated street trees during construction works, if these are installed before construction is completed;	• Project area is currently accessed by a temporary construction access road. Condition not relevant as street trees are not present.
Erosion and Sediment Control	B11(h)	• detail the construction approach, order and timing to demonstrate how the construction phase stormwater quality targets can be met; and	• See Notes – Pages 1-3 • See '*Preliminary Progressive Erosion & Sediment Control Plan: Phase 2 – Stage 1 – Bulk Earthworks and Services*' – Page 7. • See Appendix A – '*Sediment Basin Management & Dewatering Procedure*' • See Appendix B – '*Wet weather contingency procedure*'
Erosion and Sediment Control	B11(i)	• be included in the CEMP required by Condition C2.	• See CEMP prepared by Richard Crookes Constructions
Erosion and Sediment Control	B12 (a)	• ensure delivery and operation of all construction phase erosion and sediment controls on the site is supervised and certified by a CPESC appointed under condition B11(a);	• See Document Authorship Information above – Page 4. • Notification of supervising CPESC supplied to NSW Department of Planning, Housing and Infrastructure by RCC (To be confirmed.) • Rubicon Enviro Pty Ltd engaged by RCC for ongoing planning and regular monthly audit inspections & reporting.
Erosion and Sediment Control	B12 (b)	• ensure monthly audit reports are submitted to the Planning Secretary within 7 days of completing the audit;	• Rubicon Enviro Pty Ltd to undertake regular audit inspections & provide a report within 7 days of completing the audit.
Erosion and Sediment Control	B12 (c)	• maintain the erosion and sediment control measures installed on-site in accordance with condition B11 for the duration of construction of the development	• See Notes – Page 3 – Note 121 • Rubicon Enviro Pty Ltd to undertake regular audit inspections & provide a report within 7 days of completing the audit.
Discharge Limits	B18	• The development must comply with section 120 of the POEO Act, which prohibits the pollution of waters, except as expressly provided for in an EPL.	• See Notes – Page 2 – Specifically*: 'Drainage and construction', 'Water management', 'Sediment Control', 'Contamination'* and *'Soil & Water pollution control'*. • See Appendix A – '*Sediment Basin Management & Dewatering Procedure*'
Air Quality - Dust Minimisation	B34	• The Applicant must take all reasonable steps to minimise dust generated during all works authorised by this consent.	• See Notes – Page 1 – Notes 33 & 34, Notes 44, 47, 48 & 50. • See Notes – Page 2 – Notes 54, 55 & 56. Notes 92, 94 & 95.
Air Quality - Dust Minimisation	B35 (a)	During construction of the development, the Applicant must ensure that: • (a) exposed surfaces and stockpiles are suppressed by regular watering or other alternative suppression methods;	• See Notes – Page 1 – Notes 33, 34 & 50 • See Notes – Page 2 – Notes 54, 55 & 56

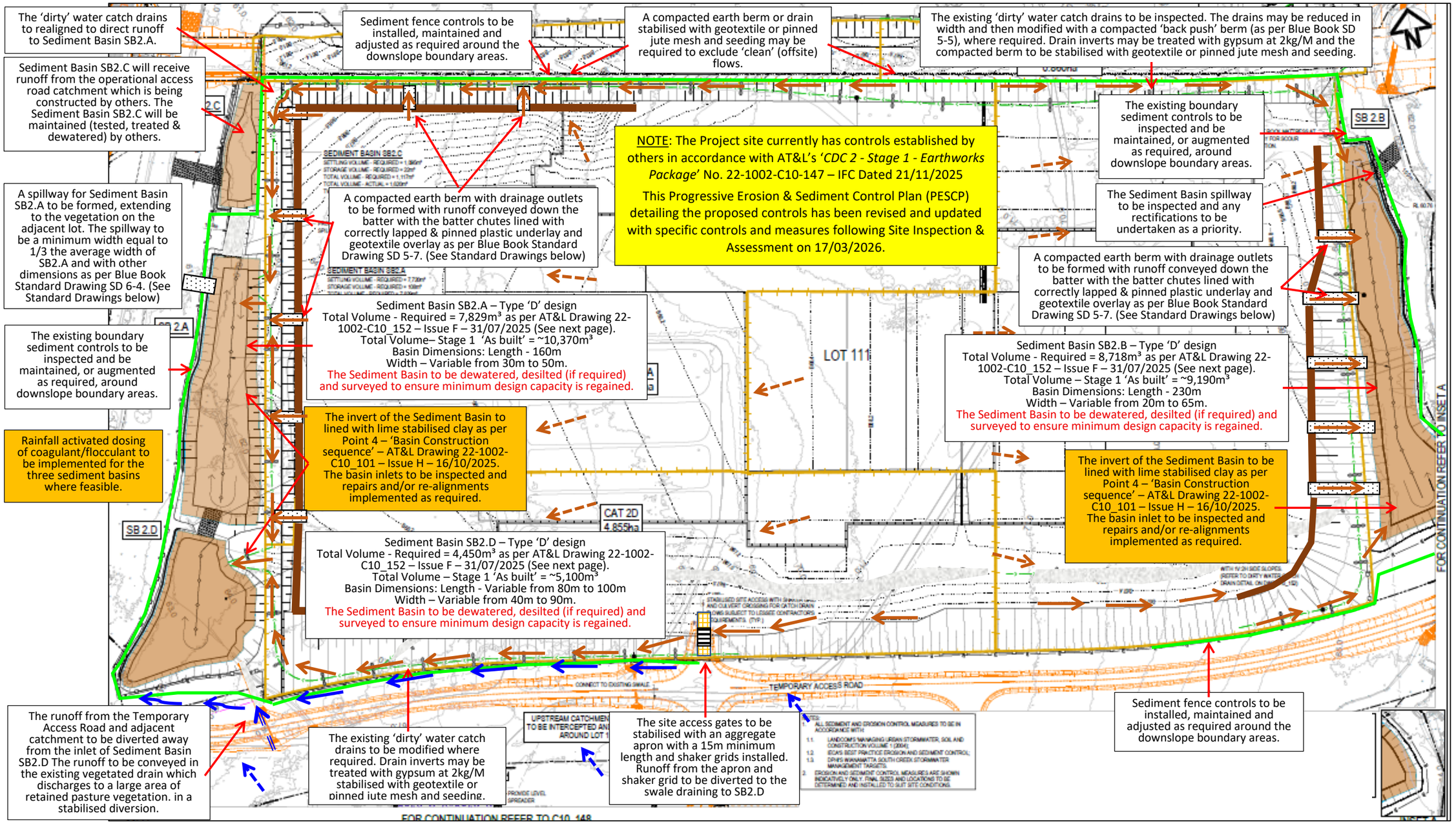
Management measures required for the SSD 6913969 Conditions of Consent relevant to construction soil and water management.

Issue	SSDA Condition No.	Draft SSD Conditions of Consent requirement	ESCP Management Measures
Air Quality - Dust Minimisation	B35 (b)	• (b) all trucks entering or leaving the site with loads have their loads covered;	• See Notes – Page 1 – Note 48. • See Notes – Page 2 – Note 92.
Air Quality - Dust Minimisation	B35 (c)	• (c) trucks associated with the development do not track dirt onto the public road network;	• See Notes – Page 1 – Notes 44, 47, 46, 47, 48 & 50.
Air Quality - Dust Minimisation	B35 (d)	• (d) public roads used by these trucks are kept clean; and	• See Notes – Page 1 – Note 46 & 47
Air Quality - Dust Minimisation	B35 (e)	• (e) land stabilisation works are carried out progressively on site to minimise exposed surfaces.	• See Notes – Page 3 – Note 46 & 47 – '*Stabilisation'* – Notes 117 to 129.

RICHARD CROOKES CONSTRUCTIONS

Aldi Sydney Automated Distribution Centre – 475 Badgerys Creek Road - Bradfield NSW 2178

Progressive Erosion & Sediment Control Plan: Phase 2 – Stage 1 – Bulk Earthworks and Services.



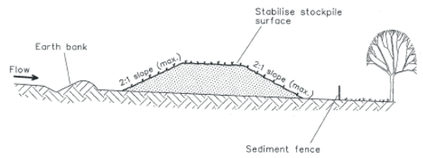
Legend														
Clean Water – Sheet Flows		Piped Drainage		Coffer Dam / Compacted Earth Bund		Stabilised Topsoil Berm (geotextile/jute/seed)		Sediment Fence		Filter bag / rock & shade cloth sediment filter		Vegetated Filter	
Clean Water – Concentrated Flow/Drain		Geotextile lined drain/ spillway		Drainage Line / Waterway Crossing		Topsoil berm - sump & filter outlet		Geotextile Apron		Filter bag / coir log kerb inlet pit sediment filter		Stabilised access/shaker grid	
Dirty Water - Concentrated Flow/Drain		Vegetated drain Rock lined drain		Coarse rock / sandbag check dam		Sediment basin / large sump		Geotextile covered rock or compacted topsoil sediment trap		Coir Log/s Straw bale or coir log filter		Stabilised Haul Road/Compound/Access Track	
Dirty Water – Sheet Flows		'Clean' and 'dirty' water cross-over		Level Spreader / Diffuser		Excavated sediment trap		Compacted mulch bund		Drop inlet filter (Filter bags, coir logs, sed fence, etc)		Catchment Boundary	

Sediment Basin Design Summary – Extracted from AT&L's 'CDC 2 - Stage 1 - Earthworks Package' No. 22-1002-C10_152 – IFC Dated 31/07/2025

SEDIMENT BASIN DESIGN PARAMATER SUMMARY

			MINIMUM BASIN DIMENSIONS			
BASIN ID	CATCHMENT AREA (ha)	ADOPTED DEEMED TO COMPLY BASIN VOLUME (900m3/ha) (m3)	MIN. LENGTH (m)	MIN. WIDTH (m)	TOTAL DEPTH (m)	MIN. TOTAL VOLUME (SETTLING VOL + STORAGE VOL.) (m3)
PHASE 1						
SB1.A	8.99	8087	STORAGE WITHIN PROPOSED ULTIMATE BASIN		VARIES	8209
SB1.B	9.61	8646	STORAGE WITHIN PROPOSED ULTIMATE BASIN		VARIES	8888
SB1.C	0.91	821	STORAGE WITHIN PROPOSED ULTIMATE BASIN		VARIES	843
SB1.D	4.29	3860	STORAGE WITHIN PROPOSED ULTIMATE BASIN		VARIES	3918
SB1.E	3.51	3162	N/A		2.0m	3384
PHASE 2						
SB2.A	8.56	7706	Length – 160m	Width – Variable from 30m to 50m.	VARIES	7829
SB2.B	9.53	8580	Length – Variable from 80m to 100m	Width – Variable from 40m to 90m.	VARIES	8718
SB2.C	1.26	1137			VARIES	1117
SB2.D	4.79	4315	Length – 230m	Width – Variable from 20m to 65m.	VARIES	4450
SB2.E	3.51	3162	N/A		2.0m	3351
NOTES:						
HIGHLIGHTED CELLS DENOTE BASINS WITH NON-UNIFORM GEOMETRY, REFER TO PLANS FOR ARRANGEMENT AND DIMENSIONS						
UNLESS NOTED OTHERWISE, THE FOLLOWING GEOMETRIC PROPERTIES APPLY TO ALL PROPOSED SEDIMENT BASINS						
	LENGTH TO WIDTH RATIO	VARIES (MEASURED AT TOP OF BASIN)				
	INTERNAL BATTER SLOPE	VARIES				
	SEDIMENT STORAGE DEPTH	VARIES				
	SETTLING ZONE DEPTH	VARIES				
	SPILLWAY WIDTH	10m				
	SPILLWAY FREEBOARD	0.30m				
INTERNAL BAFFLES TO BE INSTALLED TO INCREASE THE EFFECTIVE LENGTH TO WIDTH RATIO, NOTING MULTIPLE INLETS WILL BE PRESENT IN MOST OF THE BASINS						

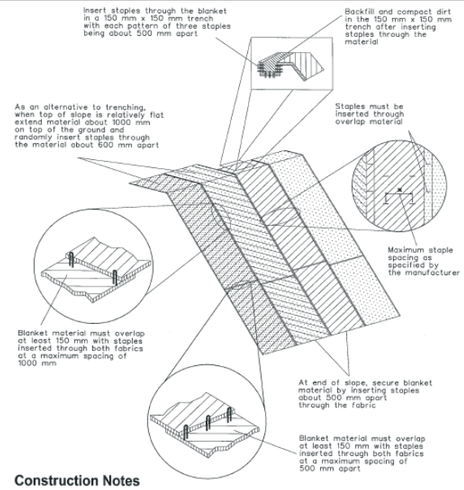
Standard Drawings



Construction Notes

1. Place stockpiles more than 2 (preferably 5) metres from existing vegetation, concentrated water flow, roads and hazard areas.
2. Construct on the contour as low, flat, elongated mounds.
3. Where there is sufficient area, topsoil stockpiles shall be less than 2 metres in height.
4. 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.
5. 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.

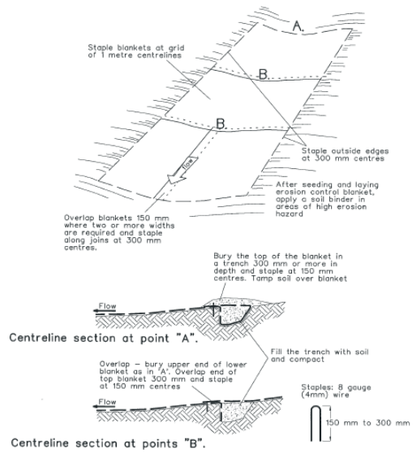
STOCKPILES **SD 4-1**



Construction Notes

1. Remove any rocks, clods, sticks or grass from the ground surface before laying the matting.
2. Spread topsoil to at least 75 mm depth.
3. Where appropriate, complete fertilising and seeding on a properly prepared seedbed (Standard Drawing 7-1) before laying the matting.
4. Ensure the fabric can be continuously in contact with the soil by grading the surface carefully first.
5. Lay the matting in "shingle-fashion" with the ends of each upstream roll overlapping the next roll downslope.
6. Ensure sufficient staples are used to maintain a good contact between the soil and the matting.

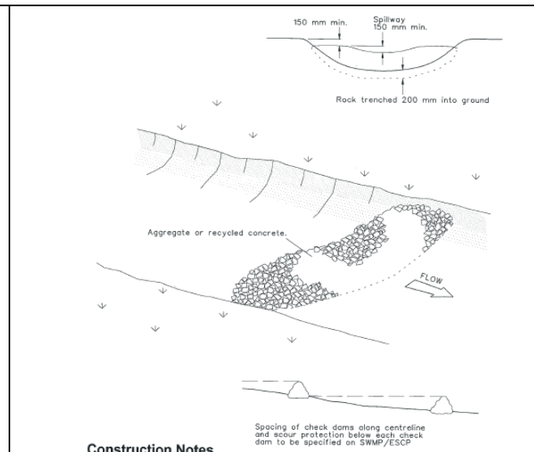
RECP : SHEET FLOW **SD 5-2**



Construction Notes

1. Remove any rocks, clods, sticks or grass from the surface before laying matting
2. Ensure that topsoil is at least 75 mm deep.
3. Complete fertilising and seeding before laying the matting.
4. Ensure fabric will be continuously in contact with the soil by grading the surface carefully first.
5. Lay the fabric in "shingle-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).
6. 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.
7. Divert water from the structure until vegetation is stabilised properly.

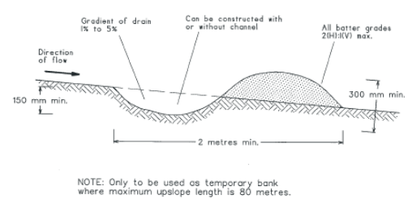
RECP : CONCENTRATED FLOW **SD 5-7**



Construction Notes

1. 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.
2. 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.
3. Normally, their maximum height should not exceed 600 mm above the gully floor. The centre should act as a spillway, being at least 150 mm lower than the outer edges.
4. Space the dams so the toe of the upstream dam is level with the spillway of the next downstream dam.

ROCK CHECK DAM **SD 5-4**

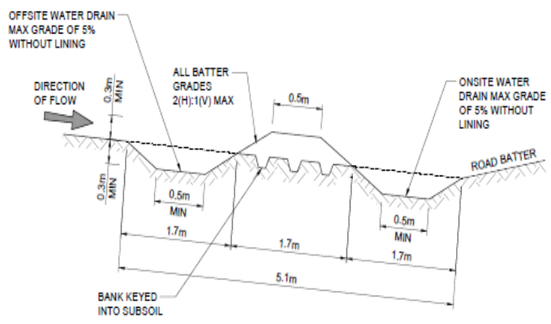


NOTE: Only to be used as temporary bank where maximum upslope length is 80 metres.

Construction Notes

1. Build with gradients between 1 percent and 5 percent.
2. Avoid removing trees and shrubs if possible - work around them.
3. Ensure the structures are free of projections or other irregularities that could impede water flow.
4. Build the drains with circular, parabolic or trapezoidal cross sections, not V shaped.
5. Ensure the banks are properly compacted to prevent failure.
6. Complete permanent or temporary stabilisation within 10 days of construction.

EARTH BANK (LOW FLOW) **SD 5-5**

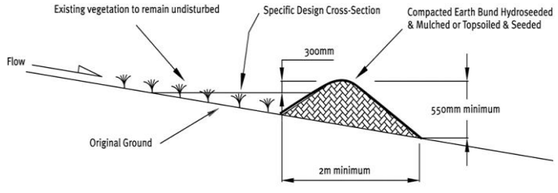


EARTH BANK (ONSITE & OFFSITE COMBINED)
N.T.S.

GENERAL CONSTRUCTION NOTES

1. CONSTRUCT WITH GRADIENT OF 1% TO 5%.
2. AVOID REMOVING TREES AND SHRUBS IF POSSIBLE - WORK AROUND THEM
3. DRAINS TO BE CIRCULAR, PARABOLIC OR TRAPEZOIDAL CROSS SECTION NOT V-SHAPED.
4. EARTH BANK TO BE ADEQUATELY COMPACTED IN ORDER TO PREVENT FAILURE.
5. PERMANENT OR TEMPORARY STABILISATION OF THE EARTH BANK TO BE COMPLETED WITHIN 10 DAYS OF CONSTRUCTION.
6. ALL OUTLETS FROM DISTURBED LANDS ARE TO BE FED INTO A SEDIMENT BASIN OR SIMILAR.
7. 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.
8. COMPACT BANK WITH A SUITABLE IMPLEMENT IN SITUATIONS WHERE THEY ARE REQUIRED TO FUNCTION FOR MORE THAN FIVE DAYS,
9. EARTH BANK TO BE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT WILL IMPEDE NORMAL FLOW.

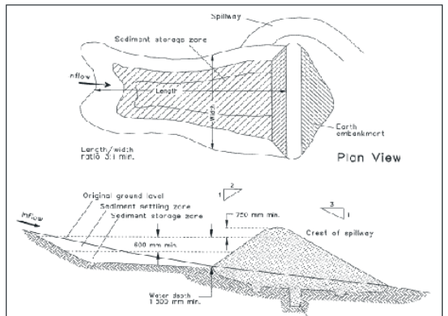
Stabilised topsoil diversion bank



Cross Section

Example photo of a stabilised topsoil berm on low grades.

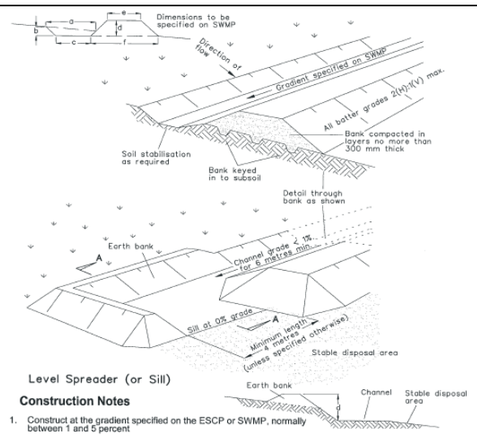
Standard Drawings



Construction Notes

1. Remove all vegetation and topsoil from under the dam wall and from within the storage area.
2. Construct a cut off trench 500 mm deep and 1 200 mm wide along the centreline of the embankment extending to a point on the gully wall level with the riser crest.
3. Maintain the trench free of water and recompact the materials with equipment as specified in the SWMP to 95 per cent Standard Proctor Density.
4. Select fill following the SWMP that is free of roots, wood, rock, large stone or foreign material.
5. Prepare the site under the embankment by ripping to at least 100 mm to help bond compacted fill to the existing substrate.
6. Spread the fill in 100 mm to 150 mm layers and compact it at optimum moisture content following the SWMP.
7. Construct the emergency spillway.
8. Rehabilitate the structure following the SWMP.

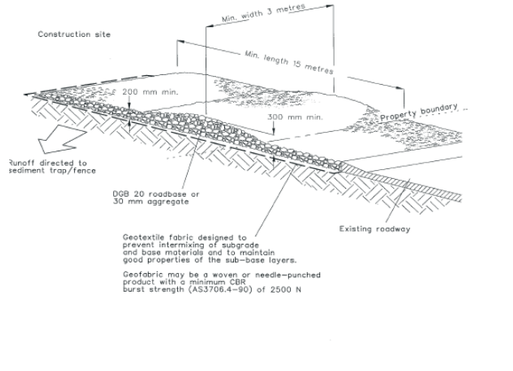
EARTH BASIN - WET (APPLIES TO TYPE D AND TYPE F SOILS ONLY) **SD 6-4**



Construction Notes

1. Construct at the gradient specified on the ESCP or SWMP, normally between 1 and 5 percent
2. Avoid removing trees and shrubs if possible - work around them.
3. Ensure the structures are free of projections or other irregularities that could impede water flow.
4. Build the drains with circular, parabolic or trapezoidal cross sections, not V-shaped, at the dimensions shown on the SWMP.
5. Ensure the banks are properly compacted to prevent failure.
6. Complete permanent or temporary stabilisation within 10 days of construction following Table 5.2 in Landcom (2004).
7. Where discharging to erodible lands, ensure they outlet through a properly constructed level spreader.
8. Construct the level spreader at the gradient specified on the ESCP or SWMP, normally less than 1 percent or level.
9. 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**

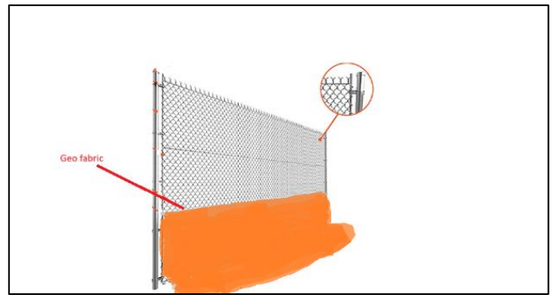


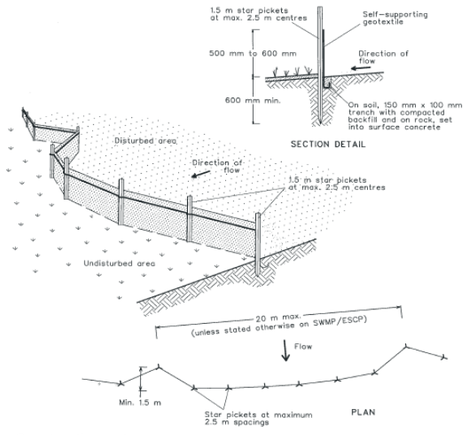
Construction Notes

1. Strip the topsoil, level the site and compact the subgrade.
2. Cover the area with needle-punched geotextile.
3. Construct a 200-mm thick pad over the geotextile using road base or 30-mm aggregate.
4. Ensure the structure is at least 15 metres long or to building alignment and at least 3 metres wide.
5. 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**

Geotextile apron secured to boundary fencing and trenched or weighted at the toe

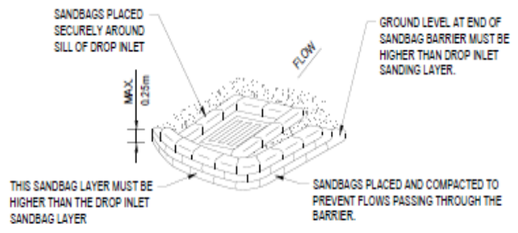




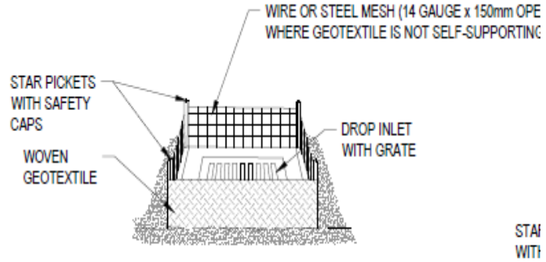
Construction Notes

1. 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.
2. Cut a 150-mm deep trench along the upslope line of the fence for the bottom of the fabric to be entrenched.
3. 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.
4. 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.
5. Join sections of fabric at a support post with a 150-mm overlap.
6. Backfill the trench over the base of the fabric and compact it thoroughly over the geotextile.

SEDIMENT FENCE **SD 6-8**

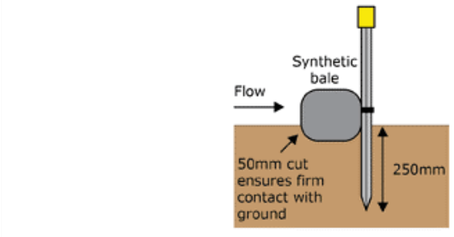


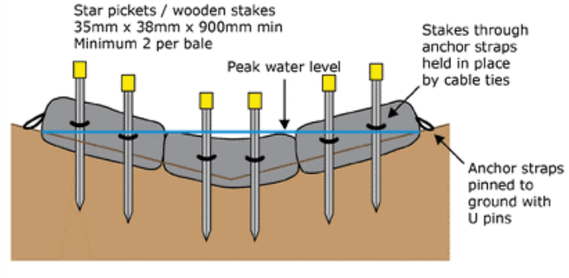
SEDIMENT BARRIER (SD 5-4) DETAIL



GEOTEXTILE INLET FILTER (SD 6-12) - PERSPECTIVE
NTS

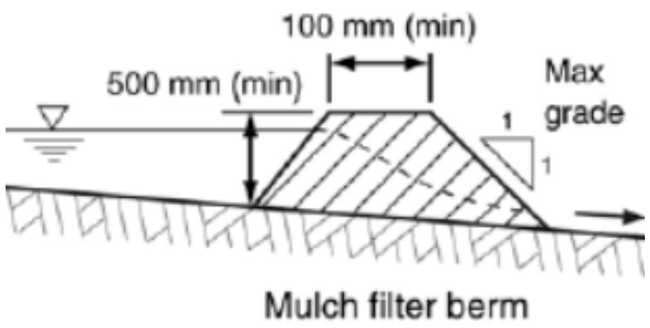
Coir Log Filter





Standard Drawings

Mulch filter berm

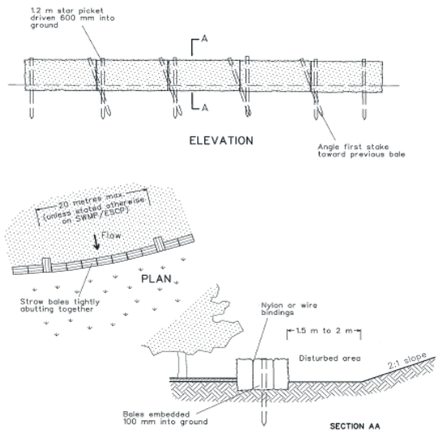


Example photo of a compacted mulch berm on low grades.

Example photo of a compacted mulch berm on steeper grade with an upslope facing groyne

Example photo of an excavated sediment trap with mulch filter berm.

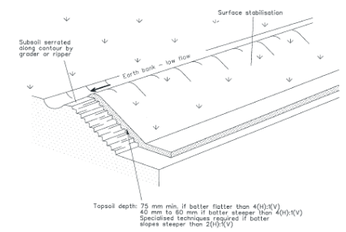
Example photo of a shade cloth and rock sediment filter.



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 in 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.

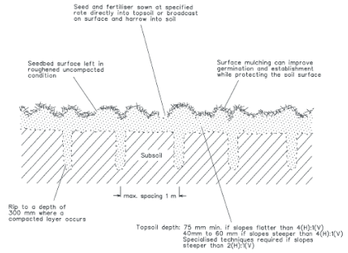
STRAW BALE FILTER **SD 6-7**



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**

Appendix A

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 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	Supervisor / Environmental Site Representative	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.	Supervisor / Environmental Site Representative	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 Environmental Site Representative. This will be completed prior to the initial use of equipment or as new equipment arrives on site.	Environmental Site Representative	Site Establishment / Duration
Training sessions will be conducted with Supervisors, Foreman, and Environmental Work Crew and relevant personnel. The training will address • 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	Supervisor / Environmental Site Representative	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.	Supervisor / Environmental Site Representative	Site Establishment / Duration
Construction of Sediment Basins		
Refer to the relevant PESCPs for the location of the sediment basin/s.	Supervisor / Environmental Site Representative	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: • 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.	Supervisor / Environmental Site Representative	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.	Supervisor / Environmental Site Representative	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.	Supervisor / Environmental Site Representative	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.	Supervisor / Environmental Site Representative	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.	Supervisor / Environmental Site Representative	Site Establishment / Duration
Water Quality Testing, Treatment & Criteria for Discharge		
Captured water to be discharged from sediment basins must meet the following criteria: • pH between 6.5 – 8.5 • TSS < 50mg/L and • Oil and grease - no visible trace.	Supervisor / Environmental Site Representative	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/ Environmental Site Representative	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.	Supervisor / Environmental Site Representative	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	Supervisor / Environmental Site Representative	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.	Supervisor / Environmental Site Representative	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.	Supervisor / Environmental Site Representative	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.	Supervisor / Environmental Site Representative	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.	Supervisor / Environmental Site Representative	Duration
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: • pH between 6.5 – 8.5 • TSS < 50mg/L ; and • Oil and grease < 10mg/L (and no visible trace). Treatment should commence as soon as practical following cessation of a rain to allow enough time for settlement of suspended solids.	Supervisor / Environmental Site Representative	Duration
Records of water quality management must be maintained and the required records include: • 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.	Supervisor / Environmental Site Representative	Duration
pH Treatment should be undertaken as follows: • 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.	Supervisor / Environmental Site Representative	Duration
Total Suspended Solids • 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.	Supervisor / Environmental Site Representative	Duration

Environmental Management Controls	Person Responsible	Timing / Frequency
Total Suspended Solids • 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. Methods of application to include: • 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. **Oil and Grease** • 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.	Supervisor / Environmental Site Representative	Duration

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.	Supervisor / Environmental Site Representative	Duration
Discharging Water		
Where possible ponded water and sediment basin water will be reused on site for compaction, dust suppression, and irrigation.	Supervisor / Environmental Site Representative	Duration
The whole process of water quality management in sediment basins will be completed within 5 days of cessation of a rain period.	Supervisor / Environmental Site Representative	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.	Supervisor / Environmental Site Representative	Duration
The Supervisor is to ensure that treated water has been re-tested for pH and turbidity (NTU) in-situ immediately prior to discharge.	Supervisor / Environmental Site Representative	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 not within the basin spillway.	Supervisor / Environmental Site Representative	Duration
Where sediment basins are to be dewatered by pump, 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.	Supervisor / Environmental Site Representative	Duration
Only personnel who have undertaken the relevant training and been approved by the Supervisor may operate pumps and discharge sediment basins. During dewatering pumps 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.	Supervisor / Environmental Site Representative	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.	Supervisor / Environmental Site Representative	Duration
Maintenance		
Maintenance of the sediment basins will be ongoing for the duration of the Project and will comprise the following: • 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.	Supervisor / Environmental Site Representative	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	Supervisor / Environmental Site Representative	Duration
Assessment and use of Coagulants & Flocculants		
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. The following procedure will be implemented to determine the suitability and effectiveness of the various water treatment products. • 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.	Supervisor / Environmental Site Representative	Duration
The range and type of suitable flocculants/coagulants (including typical dosing rates described as product required to water volume)) that may be utilised include; • 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)	Supervisor / Environmental Site Representative	Duration
Storage and Handling of Flocculants		
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.	Supervisor / Environmental Site Representative	Duration
All treatment chemicals particularly acids and basics will be stored in appropriately bunded and covered locations that are locked to prevent unauthorised access.	Supervisor / Environmental Site Representative	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.	Supervisor / Environmental Site Representative	Duration
Requirements of the Material Safety Data Sheets (MSDSs) will be met to ensure compatible storage with other chemicals to ensure safety.	Supervisor / Environmental Site Representative	Duration

Monitoring and Record Keeping		
Environmental Management Controls	**Person Responsible**	**Timing / Frequency**
All sediment basins will be inspected on a weekly basis as a minimum, with any defects or maintenance requirements reported immediately. Sediment basins will be inspected immediately after rainfall events to assess: • 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.	Supervisor / Environmental Site Representative	Duration
Records to be kept of the rainfall events, inspections undertaken, field tests undertaken, dosage rates and when basin water is released etc.	Supervisor / Environmental Site Representative	Duration
The results of all inspections, including inspection reports will be retained in the site environmental inspection register	Supervisor / Environmental Site Representative	Duration
All discharges will be recorded on a discharge permit which will include: • 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	Supervisor / Environmental Site Representative	Duration
Pumped discharge of any water off site will be monitored regularly to ensure that tested water quality meets all applicable criteria.	Supervisor / Environmental Site Representative	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	Supervisor / Environmental Site Representative	Duration
All operational sediment basins will be desilted and reformed as per design requirements prior to completion of major works within the catchment.	Supervisor / Environmental Site Representative	Duration
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: • 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.	Supervisor / Environmental Site Representative	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 Environmental Site Representative will modify the procedure where improvements are identified.

RUBICON ENVIRO PTY LTD
ABN: 75 616 518 211

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
Supervisor 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 B

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 the 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	Supervisor / Environmental Site Representative	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.	Supervisor / Environmental Site Representative	Site Establishment / Duration
Training and Awareness		
Training & instruction of site personnel will be the responsibility of the Environment Manager/ Environmental Site Representative.	Environmental Site Representative	Site Establishment / Duration
Training sessions will be conducted with Supervisors, Foreman, Environmental Work Crew, and relevant personnel. The training will address • 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.	Supervisor / Environmental Site Representative	Site Establishment / Duration
Identification of significant rainfall events		
The daily BOM forecast for the local area is issued each morning and late afternoon. The forecasts will be monitored daily, at the start of the shift and prior to shutdown. The BOM three-day forecast outlook will be reviewed daily.	Supervisor / Environmental Site Representative	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.	Supervisor / Environmental Site Representative	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.	Supervisor / Environmental Site Representative	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 / Supervisors / Environmental Site Representative	Duration

Environmental Management Controls	Person Responsible	Timing / Frequency
Wet Weather Management Procedures		

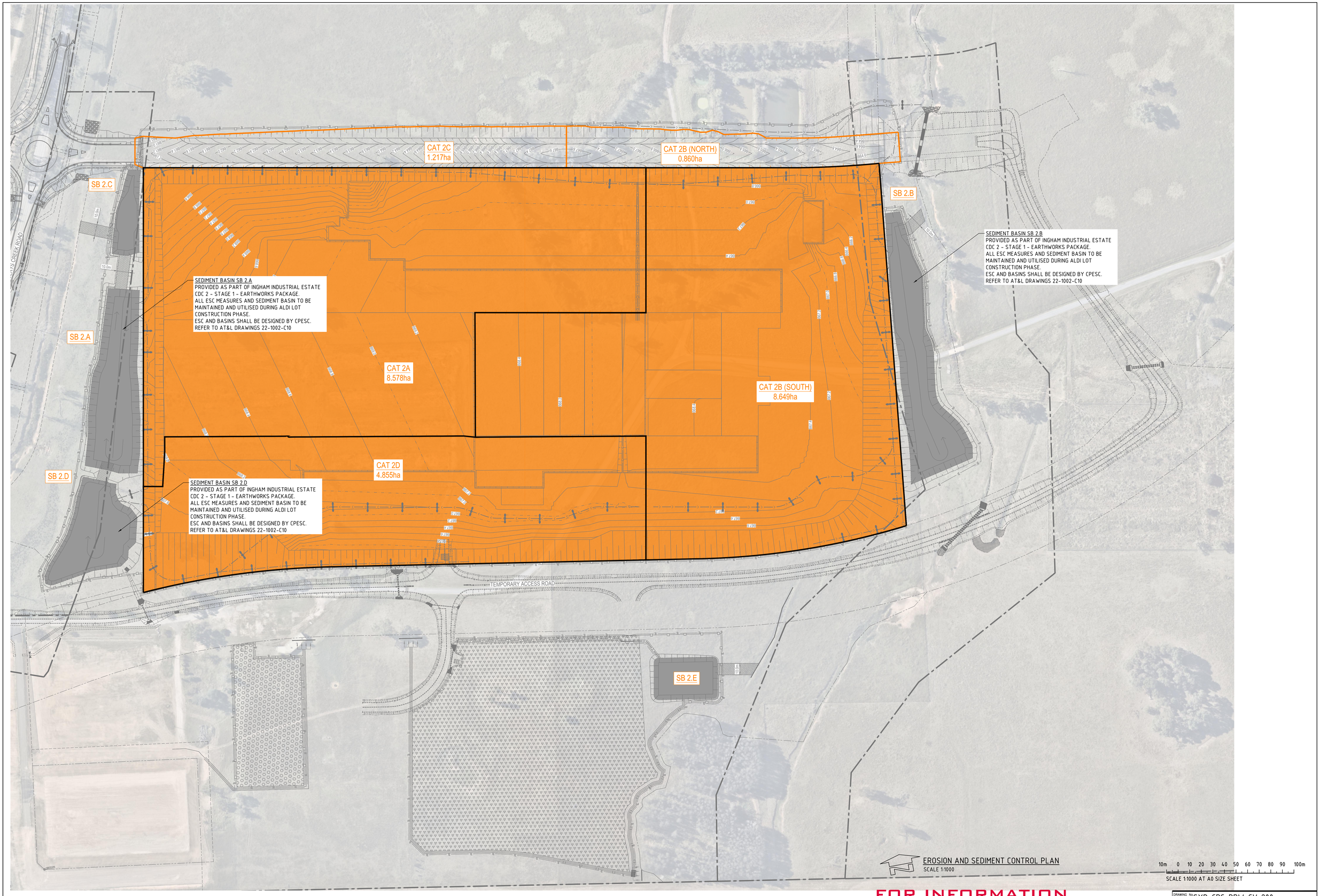
The high-risk work areas that are identified will be managed by:
• Completion and temporary/permanent stabilisation of the high-risk work areas where time & resource constraints allow, prior to the onset of the potential rainfall event.
• Re-allocating resources from low-risk activities to assist with 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:
  ○ 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 / Supervisors / Environmental Site Representative	Duration

The site sediment controls, and sediment basins are to be inspected and any necessary rectification works undertaken such as; • 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 40% 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.	Supervisor / Environmental Site Representative	Duration
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.	Supervisor / Environmental Site Representative	Duration
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.	Supervisor / Environmental Site Representative	Duration
In the event that a potential flood event is anticipated, the Flood Management Procedure would be enacted for removing plant, equipment and materials from the site prior to a minimum 1 in 20-year flood event.	Project Manager / Senior Engineer / Supervisors / Environmental Site Representative	Duration
Post-Rainfall/Storm Procedure		
The Post Rainfall Inspection will be conducted in accordance with Section 7.7 of this ESCP. The identified high-risk areas will be prioritised for any rectification or maintenance works, followed by areas with lower risk.	Supervisor / Environmental Site Representative	Duration
Records detailing the necessary works to reinstate the controls will be conducted in accordance with Section 7.7 of this ESCP.	Supervisor / Environmental Site Representative	Duration

Environmental Management Controls	Person Responsible	Timing / Frequency
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.	Supervisor / Environmental Site Representative	Duration
High risk work areas that are inundated will be prioritised for dewatering by: • Dewatering to a sediment basin where sufficient capacity is available, • Flocculated in-situ and discharged at a licensed discharge point when NSW EPA water quality parameters are attained, • Dewatered by water cart and utilised for construction purposes.	Supervisor / Environmental Site Representative	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.	Supervisor / Environmental Site Representative	Duration

3. Procedure Review

The procedure will be regularly reviewed as part of the PMP audit requirements. This document will be updated when needed in response to audit findings or changes to site conditions. The Environmental Representative in consultation with the relevant Stakeholders will modify the procedure where improvements are identified.



EROSION AND SEDIMENT CONTROL PLAN
SCALE 1:1000

10m 0 10 20 30 40 50 60 70 80 90 100m
SCALE 1:1000 AT A0 SIZE SHEET

FOR INFORMATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR INFORMATION - 80% DESIGN	19.12.25	P6
ISSUED FOR TENDER	08.05.25	P5
ISSUED FOR PRELIMINARY ONLY	17.04.25	P4
ISSUED 50% DESIGN REVIEW	18.02.25	P3
ISSUED FOR SSDA APPROVAL	13.12.24	P2
ISSUED FOR INFORMATION	28.11.24	P1

AMENDMENTS	DATE	ISSUE

BUILDER
RICHARD CROOKES CONSTRUCTIONS

ARCHITECT
SBA ARCHITECTS

CLIENT
RP INFRASTRUCTURE
Converting visions to reality

PROJECT
ALDI SYDNEY DISTRIBUTION CENTRE
475 BADGERY'S CREEK ROAD, BRADFIELD NSW 2555

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
XC	JB	AUG '24	-	A0	AS SHOWN	C015146.01-C200

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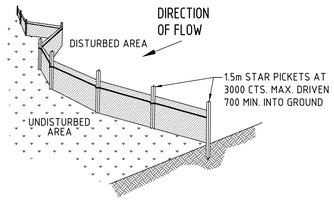
COSTIN ROE CONSULTING
CIVIL & STRUCTURAL ENGINEERS

DRAWING NO: SYD-CRC-DRW-CV-200

DRAWING TITLE
EROSION AND SEDIMENT CONTROL PLAN

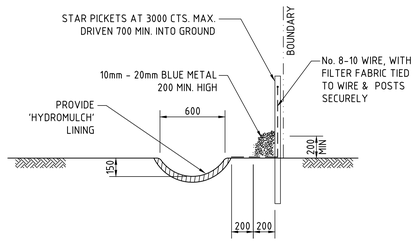
COSTIN ROE DRAWING No: C015146.01-C 200
ISSUE: P6



TYPICAL SILT FENCE DETAIL

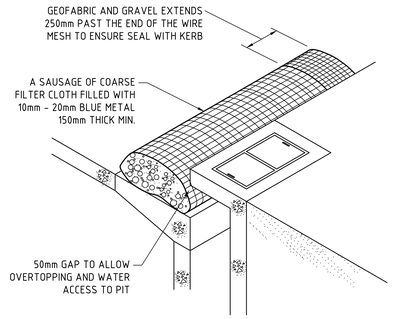
N.T.S

NOTE: PROVIDE 1m RETURNS AT 30m INTERVALS. TYPICAL



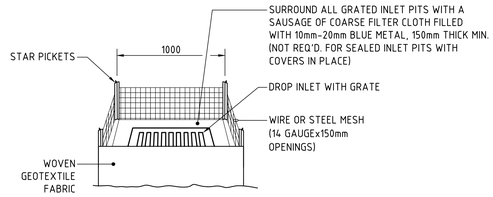
TYPICAL OPEN DRAIN & SILT FENCE

SCALE 1:20



KERB INLET CONTROL

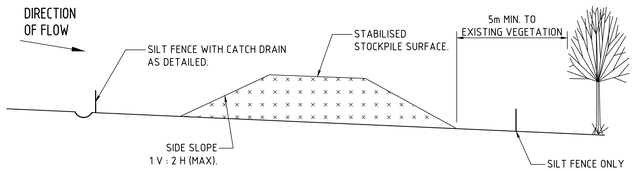
N.T.S



GRATED INLET PIT FILTER DETAIL

N.T.S

NOTE :
ADOPT ABOVE DETAILS AROUND ALL PITS WITHIN AREA ENCOMPASSED BY SILT FENCE & TO PITS ON THE ROAD ADJACENT TO SITE BOUNDARY.

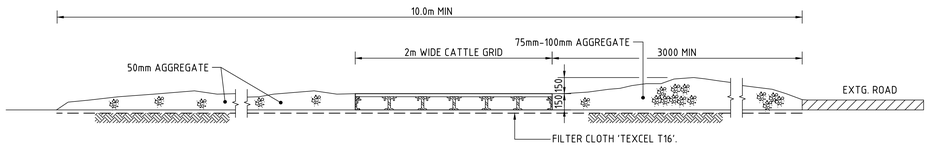


TYPICAL STOCKPILE DETAIL

N.T.S

STOCKPILE NOTES

1. PLACE ALL STOCKPILES IN LOCATIONS MORE THAN 5m FROM EXISTING VEGETATION, ROADS & HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT ELONGATED MOUNDS. SIDE SLOPE TO BE 1 V: 2 H MAX.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2m IN HEIGHT.
4. WHERE STOCKPILES ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE USING WOOD CHIP MULCH - 16 TONNE/Ha.
5. CONSTRUCT SILT FENCE WITH CATCH DRAIN ON UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES & SILT FENCE ONLY 1 TO 2m DOWNSLOPE AS SHOWN.



SECTION 1:20 (1/200) : STABILISED CONSTRUCTION ENTRANCE 'TRUCK SHAKER'

NOTES:

ALL EROSION & SEDIMENT CONTROL MEASURES TO BE INSPECTED & MAINTAINED DAILY BY SITE MANAGER.

MINIMISE DISTURBED AREAS.

ROADS & FOOTPATHS TO BE SWEPT DAILY.

DUST MINIMISATION CONTROL BY WATERING TO BE IMPLEMENTED BY SITE MANAGER AS REQUIRED OR AS DIRECTED BY THE EPA.

2m 0 5 10 15 20 25m
SCALE 1:250 AT A0 SIZE SHEET

500mm 0 1 2 3 4 5m
SCALE 1:50 AT A0 SIZE SHEET

200mm 0 500 1000 1500 2000mm
SCALE 1:20 AT A0 SIZE SHEET

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DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
XC	JB	AUG '24	-	A0	AS SHOWN	C015146.01-C250

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CRC COSTIN ROE CONSULTING | CIVIL & STRUCTURAL ENGINEERS

DRAWING No: SYD-CRC-DRW-CV- 250

DRAWING TITLE: EROSION AND SEDIMENT CONTROL DETAILS

COSTIN ROE DRAWING No: C015146.01-C250 ISSUE: P6

Department of Climate Change, Energy, the Environment and Water

Your ref: SSD-76913969
Our ref: DOC26/174177

Vesna Kocovic
Design Manager
Richard Crookes Constructions

9 April 2026

Subject: Post Approval – Condition B11 Erosion and Sediment Control Plan – ALDI Automated Distribution Centre (SSD-76913969)

Dear Ms Kocovic,

Thank you for your email received on 13 March 2026 requesting consultation with the Conservation Programs, Heritage and Regulation (CPHR) Group of the NSW Department of Climate Change, Energy, the Environment and Water on the Erosion and Sediment Control Plan (Rubicon Environ, 12 March 2026) (ESCP) for the above project.

CPHR has reviewed the ESCP submitted in accordance with Condition B11 and recommends that it be updated to include the following:

- type and dimensions of the basins
- timing for implementation and decommissioning of controls
- hold points for each phase of stage 1.

Should you have any queries regarding this matter, please contact Rachel Walker, Senior Conservation Planning Officer via rachel.j.walker@dcceew.nsw.gov.au.

Yours sincerely

Marnie Stewart
Acting Senior Team Leader, Central Metropolitan
Conservation Planning and Assessments
Conservation Programs, Heritage and Regulation

RUBICON ENVIRO PTY LTD
ABN: 75 616 518 211

MEMO

TO: Mitchell Kay – Senior Project Manager

CC: Andre Kisso, Maruthi Dhurjati

FROM: Andrew Littlewood

DATE: 13/04/2026

RE: Post Approval – Condition B11 Erosion and Sediment Control Plan – ALDI Automated Distribution Centre (SSD-76913969)

Mitchell,

I refer to the above and to the recent correspondence received from NSW DCCEEW Conservation Programs, Heritage and Regulation (CPHR) office.

CPHR has reviewed the Rubicon ESCP submitted in accordance with Condition B11 and made several recommendations that it be updated. The revisions recommended by CPHR for the PESCP are reproduced below, together with our responses and the corresponding revisions of the ESCP.

Recommended revision 1: *'Type and dimensions of the basins'*.

- The sediment basin design type and dimensions have been included on the 'Progressive Erosion & Sediment Control Plan' – Page 7.
- The sediment basin dimensions have been included on the 'Sediment Basin Design Summary' – Page 7, which was extracted from AT&L's 'CDC 2 - Stage 1 - Earthworks Package

Recommended revision 2: '*Timing for implementation and decommissioning of controls*'

- The scheduled timing for implementation of controls is described at Page 1 – Note No. 10
- The scheduled timing for decommissioning of controls is described at Page 3 – Note No. 131

Recommended revision 3: '*Hold points for each phase of stage 1*'

- The hold point for certification of the satisfactory implementation of controls by a CPESC is described at Page 1 – Note No. 10
- The hold point for the certification of adequate stabilisation prior to the decommissioning of controls Page 3 – Note No. 131.
- The hold point for the Monthly Audit Inspection and associated reporting is described at Page 3 – Note No. 135.

I trust the information above is of assistance to you and please contact me if you have any enquiries.

Kind Regards,

Andrew Littlewood – Senior Soil Conservationist - CPESC & CESSWI

Rubicon Enviro Pty Ltd

Appendix J
Incidents Reporting

Geosyntec consultants

WHSM = WHS Manager
BSM = Business Systems Manager
RTWC = Return to Work Coordinator

*Definition of a **serious accident** is one of the following:*

Fatality, serious injury, serious incident such as a trench collapse, damage to plant / equipment / buildings, structures, use of a weapon, electric shock, robbery, uncontrolled explosion or fire, gas release, spill that involves a carcinogenic substance that may results risk of serious injury or illness etc., Health Surveillance will be provided for all persons exposed to hazardous substances pre & post construction

Also refer to RCC Emergency Management Plan at the Time of a Serious Incident

Project Management Plan

Copies of Accident/ Incident Report (F01.1) Report forwarded to H/O SS within 24 Hrs who will pass on to WHSM/BSM

WHSM /BSM
Receive Accident/ Incident Report form

RTWC
Receive Accident/ Incident Report form

First Aid | Medical Treatment | Lost Time Injury

Injury Management QAP-8.5-002

Serious incident or accidents must be reported to WHS, ENV, Construction Manager & Directors immediately to implement BCP if required

All incidents and accidents to be reported by within 24hrs.

WHSM / BSM
Review report & log in Accident Register

Is it a reportable incident? Refer Page 2

Yes → Page 2

No → WHSM /BSM
File Accident Report form In office Project Files

No → Is it a significant incident or has a trend / hazard/ non comformance been identified?

Yes → Risk Assessment & Control QAP-7.5-007

WHSM / BSM
Review Incident Investigation Report F01.01

WHSM /BSM
Investigate incident, determine cause & develop an action plan to prevent re-occurance

An investigation report must be completed by the Site Safety or Environmental Officer, Site Manager/Foreman or Project Manager for all accidents/incidents where:

- A person requires treatment for an injury by professional medical personnel, an ambulance is called to attend or the injury results in the person being off work for any period of time.
- Any incident involving plant which has caused injury or damage to people, property, plant or the environment.
- Health Surveillance issue where reported post project completion
- Any site visits by Unions
- Any incident involving Electrocution
- Any fines or penalty notice issued by Work Cover, EPA or Local Council.
- Any potential or actual environmental incidents reported to the EPA Pollution Line or notified by other stakeholders eg. client, community action group, consultant.

The incident had the potential for any of the above.

Formal investigation required?

Yes → WHSM /BSM
Conduct formal investigation

WHSM/ BSM
Report on findings

No → WHSM BSM
Implement preventive action

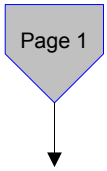
WHSM / BSM
Verify preventive action was effective. Record findings on form, Minutes of Meetings

Operations Meetings QAP-5.6-001

WHS Meetings QAP-5.6-004

Reporting Procedure QAP-8.2-001

Project Review Meetings QAP-5.6-003



For WHS Incidents:

In consultation with the WHS manager

The *Work Health and Safety Act 2011*

Part 3 of the WHS Act requires the regulator to be notified of serious workplace incidents and for the site of these incidents to be preserved until an inspector arrives or directs otherwise (subject to some exceptions). Failing to notify is a criminal offence and penalties apply.

on summary part 3 of the **WHS Act requires:**

immediate notification of a 'notifiable incident' to the regulator after becoming aware of it

if the regulator asks – written notification within 48 hours of the request

preservation of the incident site until an inspector arrives or directs otherwise.

What is a 'notifiable incident'

A 'notifiable incident' as outlined in the WHS Act is: **(A)** the death of a person **(B)** a 'serious injury or illness', or **(C)** a 'dangerous incident'

arising out of work carried out by a business or undertaking or a workplace.

'Notifiable incidents' may relate to any person – whether an employee, contractor or member of the public.

Only the most serious safety incidents are intended to be notifiable, and they trigger requirements to preserve the incident site pending further direction from the regulator.

Reporting notifiable incidents

Where a notifiable incident occurs in your workplace:

- call WorkCover immediately on 13 10 50 as an urgent investigation may be needed and
- notify your Scheme Agent or insurer within 48 hours.
- written notice can be given by facsimile, email or other electronic means.

Sec 39 Duty to preserve incident sites

(1) The person with management or control of a workplace at which a notifiable incident has occurred must ensure so far as is reasonably practicable, that the site where the incident occurred

is not disturbed until an inspector arrives at the site or any earlier time that an inspector directs.

(2) In subsection (1) a reference to a site includes any plant, substance, structure or thing associated with the notifiable incident.

(3) Subsection (1) does not prevent any action:

(a) to assist an injured person, or

(b) to remove a deceased person, or

(c) that is essential to make the site safe or to minimise the risk of a further notifiable incident, or

(d) that is associated with a police investigation, or

(e) for which an inspector or the regulator has given permission.

For Environmental Incidents:

In consultation with the Environmental Manager (BSM)

- **Duty to notify pollution incidents**

-There is a duty to report pollution incidents under section 148 of the Protection of the Environment Operations Act 1997 (POEO Act).

- if the **actual or potential harm** to the health or safety of human beings or ecosystems is not trivial,

- if actual or potential loss or property damage (including clean-up costs) associated with a pollution incident **may exceed $10,000.**

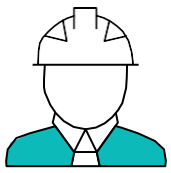
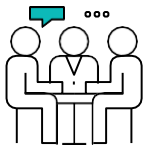
- **Definition of 'pollution incident'**

Pollution incident means an incident or set of circumstances during or as a consequence of which there is or is likely to be a leak, spill or other escape or deposit of a substance, as a result of which pollution has occurred, is occurring or is likely to occur. It includes an incident or set of circumstances in which a substance has been placed or disposed of on premises, but it does not include an incident or set of circumstances involving only the emission of any noise.

- **RCC must notify**
- the EPA Pollution Line on telephone 131 555 in the following circumstances:
- appropriate regulatory authority (ARA)
- Environment Protection Authority (EPA) if they are not the ARA
- Ministry of Health
- WorkCover NSW
- local authority, if they are not the ARA
- Fire and Rescue NSW.

Record Name	Location	Indexing Method	Access	Maintenance Responsibility	Period
Accident - Incident Report	Office Project files, Project files	Date	All	WHSM, PM	30 yrs
RCC Employee Accident - Incident Report	Personnel File	Date	HRM,WHSM, RTWC	RTWC	30 yrs

RCC GROUP SAFETY NOTIFIABLE INCIDENT REPORTING PROCEDURE

TIMEFRAME	ACTIONS & WHO
REPORT  **Immediately** **SafeWork NSW** **13 10 50** **WorkSafe QLD** **1300 362 128** **WorkSafe ACT** **620 730 00** **0419 120 028** (after hours)	**IF A POTENTIAL NOTIFIABLE INCIDENT OCCURS** Work will cease immediately in the area where the incident occurred. The area will be made safe and a call will be made to the Group Head of Safety/Group Safety Manager to confirm if it is a *'Notifiable Incident'.* **YES** **PM/SM/WHS** to contact the regulator and provide details of the incident. The regulator will confirm whether they will be attending site and issue a reference number. **NO** Project team to confirm whether HPI/ Incident and start an investigation **(form 06.0/01.1).** **A NOTIFIABLE INCIDENT IS:** • The death of a person • A 'serious injury or illness' • A dangerous incident **Injury/incidents that require notification to the regulatory are:** • Immediate treatment as an in-patient in a hospital • Immediate treatment for the amputation of any part of the body • Immediate treatment for a serious head injury • Immediate treatment for a serious eye injury • Immediate treatment for a serious burn • Immediate treatment for the separation of skin from an underlying tissue e.g. gloving or scalping • Immediate treatment for a spinal injury • Immediate treatment for the loss of a bodily function • Immediate treatment for a serious laceration • Medical treatment within 48 hours of exposure to a substance Confirm notifiable incident ***Verbal report / Status to*** Project Manager/GM/CM
INVESTIGATION **Within 24 hours**	***1. Incident review held by PM, Site Manager, General Foreman, & other involved person(s) - supported by Safety Manager, Project Safety Advisor.*** • Investigation report along with SafeWork reference number and any notices (if issued) to be sent through to the Group Head of Safety & Group Safety Manager.
SHARE THE LEARNINGS  **Within 12 hours**	***4. Brief overview of incident, key findings & learnings will be shared by the Group Head of Safety/Group Safety Manger on the HPI WhatsApp.*** ***5. Lessons learnt shared in monthly 'Lessons Learnt Toolbox' and communicated to all project teams and subcontractors.***
EXTERNAL REPORTING	***DPHI / Client (Applicant)*** *All incident notifications and reports must be submitted via the NSW planning portal (Major Projects).* *a) The Applicant must notify the Department within 24 hours of becoming aware of an incident. The notification must be made via the NSW planning portal (Major Projects) and address details of the incident including:* *i. date, time and location;*

	ii. *a brief description of what occurred and why it has been classified as an incident;* iii. *a description of what immediate steps were taken in relation to the incident; and* iv. *identifying a contact person for further communication regarding the incident.* b) *Within 7 days (or as otherwise agreed by the Planning Secretary) of the Applicant making the immediate incident notification (in accordance with condition C9 and appendix 4), the Applicant is required to submit a subsequent incident report that:* i. *identifies how the incident was detected;* ii. *identifies when the Applicant became aware of the incident;* iii. *identifies any actual or potential non-compliance with conditions of consent;* iv. *identifies further action(s) that will be taken in relation to the incident;* v. *a summary of the incident;* vi. *outcomes of an incident investigation, including identification of the cause of the incident;* vii. *details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence, including the period for implementing any corrective and/or preventative actions; and* viii. *details of any communication with other stakeholders regarding the incident.* c) *The Applicant must submit any further reports as directed by the Planning Secretary.* ***INCIDENT REPORT REQUIREMENTS*** a) *If requested by the Planning Secretary, within 30 days of the date on which the incident occurred or as otherwise agreed to by the Planning Secretary, the Applicant must provide the Planning Secretary and any relevant public authorities (as determined by the Planning Secretary) with a detailed report on the incident addressing all requirements below, and such further reports as may be requested.* d) *The Incident Report must include:* i. *a summary of the incident;* ii. *outcomes of an incident investigation, including identification of the cause of the incident;* iii. *details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and* iv. *details of any communication with other stakeholders regarding the incident.*

Macgyver
DASHBOARD
EMPLOYERS
PERSONNEL
PERMITS
BOOKINGS
SWMS
SDS
SAFETY PLAN
MEETINGS
INJURY
INCIDENTS
EQUIPMENT
BULLETINS
INSPECTIONS
OBSERVATIONS
PROGRESS

Incidents / INC-118751 /Edit

Incident Summary

Reference	INC-118751
Date Added	15/10/2025 12:20 PM

Reported By

Person's Name	Macgyver Yin
Position / Title	Project Manager
Phone	0435 639 456

Identified By

Person's Name	
Position / Title	
Phone	

Incident Classification

Incident Type * : Injury / Illness

HPI (High Potential Incident): An incident that has caused or has the potential to cause death or permanent disablement.

Actual / Potential Incident * : Actual

Injury Details

Note: MEND will be automatically notified via email of all new Injuries raised.

Use the BLUE PLUS button on the right to record the person injured and details of the injury. Repeat for each injured person.

Injuries (0)

Have you verbally notified MEND of all injuries for this event? *

Yes No

Incident Details

Date & Time of Event * : 15/10/2025 12:20 PM

Employer * : No Employers Selected

Location where event occurred *

Description of Event *

Immediate action taken *

Was there equipment or plant involved in the incident? *

Yes No

Were statements gathered from injured / involved persons or witnesses? *

Yes No

Notifiable Event

IMPORTANT: Contact the Group Safety Team to determine if the incident is notifiable

Needs to be reported to relevant authority * ○ Yes ◉ No

Police notified? * ○ Yes ○ No ○ N/A

Client notified? * ○ Yes ○ No ○ N/A

NOTE: In some contracts, it is a requirement to notify the Client's Representative immediately e.g., GC21 Contracts. In addition, LTI will be reported to external bodies (including OFSC) within 24 hours of RCC being made aware of the classification.

Incident Photos

All images should be uploaded here, clearly showing the incident area. Check all photos are clear and in focus'

Photos / Images ⊕

Photo / Image	Description	Action

Documents / Attachments ⊕

Document / Attachment	Description	Action

Root Cause Analysis

Root Cause *

Contributing Factors * None selected

Lessons Learned *

Corrective / Preventative Actions

All immediate actions and corrective / preventative actions must be closed out before the incident can be reviewed and signed off by the Project Manager

Immediate Fix / Stop (Corrective Actions to be raised as Observations below)

Use the BLUE PLUS button on the right to raise and assign Corrective / Preventative Actions

Observations (0) ⊕

Project Manager Sign Off

☐ I confirm that I have reviewed the Incident Investigation, photos provided and will ensure any assigned Corrective Actions have been closed out within the appropriate time frame.

Incident Close Out

Group Safety Team Review

To close out the incident once all actions have been closed out:

- Ensure the status below is ACTIVE below, then save changes

• Select the OPTIONS button in the top-right > select CLOSE OUT to close out the incident

Additional Attachments

New Attachment — Choose file — No file chosen

Add Another Attachment

Save As

- (•) Draft
- ( ) Active (Open)

Update Details

CANCEL SAVE CHANGES

Appendix K
Site Shutdown Procedure

Geosyntec consultants

26.1 Holiday Period – Site Shutdown Checklist

RICHARD CROOKES CONSTRUCTIONS

Project Name	SPB-Bosch Rexroth Project, Marsden Park

Site clean as far as practical	Yes ☐	N/a ☐
Perimeter footpaths and gutters adjacent land clear of any building materials and debris	Yes ☐	N/a ☐
External traffic control signs covered or removed	Yes ☐	N/a ☐
Gates are locked, perimeter fence intact (bolts tight), not damaged, shade cloth secure (where used) to prevent unauthorised access far as practical "B" class hoardings presentable night lights working	Yes ☐	N/a ☐
Signage is displayed on gates, construction site, no unauthorised access etc check RCC contact name over the holiday period	Yes ☐	N/a ☐
Environmental controls in good order	Yes ☐	N/a ☐
Any water drums or detention ponds are empty and secure	Yes ☐	N/a ☐
Ladder ways removed, scaffold access secure	Yes ☐	N/a ☐
All non essential machinery is removed from site and or/off hired	Yes ☐	N/a ☐
Machinery left on site is secure, keys removed, power isolated	Yes ☐	N/a ☐
Hoists /Tower cranes are isolated, power source removed	Yes ☐	N/a ☐
Scaffolds are complete and inspected for edge protection complete on all open edges, roofs, suspended slabs etc top & mid rail and kicker or mesh panel, stairs secure	Yes ☐	N/a ☐
All materials neatly stacked and secured	Yes ☐	N/a ☐
Penetrations are covered and secured	Yes ☐	N/a ☐
Excavations are barricaded and covered	Yes ☐	N/a ☐
Star pickets & exposed rebar are capped	Yes ☐	N/a ☐
Minimise water ingress through penetrations, temp gutter connections, check subsoil pump operates	Yes ☐	N/a ☐
Windows are taped, glass doorways marked	Yes ☐	N/a ☐
Brick walls are braced, where required	Yes ☐	N/a ☐
Debris and waste (Wet & Dry) removed, bins are empty	Yes ☐	N/a ☐
Sheds are secured, computers and screens out of site , security arranged (where required) discuss with the PM risk of break-in	Yes ☐	N/a ☐
Roof construction material secured, debris removed from roof, gutter clean	Yes ☐	N/a ☐
Generators secured in containers or removed off site	Yes ☐	N/a ☐
All sources of electricity isolated or removed, DBs locked, leads removed etc	Yes ☐	N/a ☐
Fuel containers secured in hazchem shed or removed off site	Yes ☐	N/a ☐
Containers locked and or barricaded	Yes ☐	N/a ☐
Building doorways locked (where possible)	Yes ☐	N/a ☐
Reinforce to the subcontractors that they are responsible for material and equipment left on site	Yes ☐	N/a ☐
List other:		

Site supervisor: _____ Signature_____ Date

Appendix L

Asbestos Management Plan

Geosyntec consultants

senversa

Asbestos Management Plan

475 Badgerys Creek Road, Badgerys Creek NSW

9 November 2023

Document Information

Badgerys Creek Asbestos Management Plan
475 Badgerys Creek Road, Badgerys Creek NSW

Prepared by:
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Prepared for:
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Alexandria NSW 2015

Revision	Date	Author	Reviewed	Approved	Detail
0	21 September 2023	Christopher Redford	Naomi Lukeman	Jason Clay	-
1	27 September 2023	Christopher Redford	Naomi Lukeman	Jason Clay	-
2	9 November 2023	Christopher Redford	Ben Farmer	Naomi Lukeman	Final

Project Manager: Naomi Lukeman

Project Director: Jason Clay

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Senversa prepared this document in a manner consistent with the level of care and skill ordinarily exercised by members of Senversa's profession practising in the same locality under similar circumstances at the time the services were performed.

Permission should be sought before any reference (written or otherwise) is made public that identifies any people, person, address or location named within or involved in the preparation of this report. Senversa requires that this document be considered only in its entirety and reserves the right to amend this report if further information becomes available. This document is issued subject to the technical principles, limitations and assumptions provided herein in **Section 5.0.**

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Senversa acknowledges the traditional custodians of the land on which this work was created and pay our respect to Elders past and present.

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List of Acronyms

Acronym	Definition
ACM	Asbestos Containing Material
AMP	Asbestos Management Plan
ARCP	Asbestos Removal Control Plan
DP	Deposited Plan
DSI	Detailed Site Investigation
EC	Environmental Consultant
EMP	Environmental Management Plan
ENT	Enterprise (zoning)
ENZ	Environment and Recreation (zoning)
EPA	Environment Protection Authority (NSW)
IPG	Ingham Property Group
NEPM	National Environment Protection Measure
NOHSC	National Occupational Health and Safety Commission
NSW	New South Wales
PCBU	Person Conducting Business or Undertaking
PPE	Personal Protective Equipment
SEPP	State Environmental Planning Policy
SP2	Infrastructure (zoning)
TBC	To be confirmed
UF	Unexpected Find
UFP	Unexpected Find Protocol
WHS	Workplace Health and Safety

1.0 Introduction and Objectives

1.1 Introduction

Senversa Pty Ltd (Senversa) was engaged by Ingham Property Group Pty Ltd (IPG) to prepare an Asbestos Management Plan (AMP) for the site located at 475 Badgerys Creek Road, Badgerys Creek, NSW (the site). The site is indicated on **Figure 1.** The site is legally described as Lot 100 in Deposited Plan (DP) 1287207 and encompasses approximately 180 hectares.

The site is located within the Western Sydney Aerotropolis precinct and as such has recently been rezoned under the Western Parkland City State Environmental Planning Policy (SEPP), which repealed the previously applicable SEPP (Western Sydney Aerotropolis) and consolidated a number of other Western Sydney precinct SEPPs. The current zoning includes:

- 'ENT – Enterprise' which covers the majority of the site;
- 'ENZ - Environment and Recreation' which includes small areas of the site surrounding creek lines, mainly in the east; and
- 'SP2 – Infrastructure' which includes road easements.

The site has been the subject of several contaminated site assessments, targeted remediation and validation since 2019. The site has been validated as suitable for ongoing commercial/industrial use; however, residual asbestos has the potential to be present based on the site history.

As a person conducting a business or undertaking (PCBU), IPG has a responsibility under the *NSW Work Health and Safety Act 2011* and WHS Regulation to prepare an AMP that sets out the identification and location (if known) of the asbestos, and the workplace management controls put in place to manage any ongoing potential risk to site users.

1.2 Objective

The objective of this AMP is to briefly summarise the occurrence of asbestos at the site and to outline the procedures and controls for management of the asbestos should it be encountered during development works.

1.3 Regulatory Information

This AMP is provided to assist with the management of potential risks posed by asbestos in accordance with recommendations from Badgerys Creek Environmental Report (Senversa, 2023)[1].

Senversa notes that the site has been validated (Senversa (2023) as suitable for the intended use, i.e., commercial/industrial use; however, there is the possibility that residual asbestos may be encountered during sub-surface works at the site. This AMP relates to the measures required should asbestos impacted materials be discovered at the site.

1.4 Site Understanding

The former site layout and property boundary is indicated on **Figure 2.**

[1] Senversa (2023) Badgerys Creek Environmental Report, 475 Badgerys Creek Road, Badgerys Creek NSW

The site consists of large areas of grassland, wooded bushland, farm dams and formerly included seven individual chicken farms. Each 'farm' comprised a series of broiler sheds and smaller buildings and a homestead with associated garden areas and parking. Several industrial buildings were located at the west of the site, and a rendering plant was formerly located in the centre of the site. A main access road bisects the site, with access to each former area being from farm tracks leading off the main road. South Creek runs along the eastern site boundary and flows north.

The surrounding land use is a mixture of agricultural, industrial, and rural residential properties, but is currently undergoing extensive development as part of the new airport precinct.

In 2019 and 2020, a soil assessment as part of a DSI[12] was undertaken by Senversa and identified the following:

- Asbestos was identified at multiple locations on Farm 1, Farm 2, and Farm 5; in both initial testing in 2019 (laboratory and gravimetric), and further visual assessment in 2020.
- Farms 3, 4, 6, 7 were largely free from widespread asbestos impacts based on the locations assessed in the DSI.
- Asbestos was identified at a former factory area on the site (rendering plant) as an unexpected find (UF01).

As a result of the asbestos finds, the following remediation and validation works were conducted between 2019 and 2021:

- At Farm 1 and Farm 2, approximately 1,300 m^3 of soil material impacted with asbestos containing material (ACM) was emu-picked, validated through visual clearances, and the material lawfully disposed of to a landfill.
- Impacted areas of Farm 5 was emu picked and validated without material being excavated due to the nature of the occurrences of asbestos being surficial only.
- At UF01, at the rendering plant, approximately 1,110 m^3 of soil material impacted with ACM was excavated from within the footprint of the former factory area and lawfully disposed of to a landfill.

Following remediation and validation, results indicated the following:

- At one location a validation sample contained a concentration of asbestos fines/fibrous asbestos (AF/FA) above the validation criteria; however, the result indicated that the exceedance was anomalous and unrepresentative of the site.
- Removal of asbestos was successful at Farm 1, Farm 2, and Farm 5, and the areas were deemed suitable for the proposed commercial/industrial use.

It was concluded that remediation and validation efforts between 2019 and 2021 addressed asbestos-contaminated areas, confirming successful removal and the suitability of the whole site for the proposed commercial/industrial use.

1.5 Responsibilities and Communications

The site owner or their representative shall be responsible for providing this AMP to the person(s) with control of the site. The person(s) with control of the site shall be responsible for the implementation and update of this AMP. All on site personnel, subcontractors, and consultants involved in relevant work activities at the site shall be made aware of and receive training in the AMP.

This AMP should be read in conjunction with any Asbestos Removal Control Plan (ARCP) for the site, which is required to be prepared by a licensed asbestos removalist if asbestos is found and is to be removed from site. The Principal Contractor, or any subcontractor, completing intrusive works at the site is also required to prepare a Safe Work Method Statement (SWMS) prior to the works commencing.

[2] Senversa (2023) Badgerys Creek Environmental Report, 475 Badgerys Creek Road, Badgerys Creek NSW

The following table indicates the roles and responsibilities for the management of asbestos impacted soils at the site.

Table 1-1: Roles and Responsibilities

Company	Role	Responsibilities
IPG	Site owner/Principal Contractor	• Overall responsibility for workplace health and safety (WHS) and informing site users of the applicability of any plans relating to the site. • Preparation of safe work method statements (SWMS) (or delegation of such). • Managing risks associated with engaged subcontracts or subconsultants
Site Users	Agistment	• To have been made aware of the AMP and its contents.
TBC[1]	Licensed Asbestos Removalist[2]	• Ensuring an asbestos removalist supervisor is readily available or present should asbestos removal work be carried out. • Providing appropriate training and ensuring the asbestos removal worker has undertaken the relevant units of competency associated with the asbestos removal. • Informing relevant parties about the asbestos removal and providing them with appropriate information. • Obtaining the workplace's asbestos register. • Preparing an asbestos removal control plan. • Notifying the regulator about the work before it starts. • Displaying signs and installing barricades in the asbestos work area. • Limiting access to the asbestos work area. • Ensuring appropriate decontamination facilities are in place. • Ensuring waste containment and disposal procedures are in place.
Senversa	Environmental Consultant (EC)	• Soil sampling for validation and/or off-site disposal. • Provision of visual clearance certificates for non-friable asbestos removal work.
TBC[1]	Occupational Hygienist	• Daily air monitoring during excavation and material movement days. • Provision of visual clearance certificates for friable removal work.

Notes:
1. TBC – To be Confirmed, none engaged at time of AMP preparation.
2. See Section 1.5.1.

1.5.1 Licensing Requirements

It is noted that the site owner or their representative is required to ensure that any asbestos removalist engaged to undertake works at the site holds the appropriate licence to undertake the planned work. Licences can be verified using the link: https://verify.licence.nsw.gov.au/home.

The impacted material at the site contained largely non-friable (bonded) asbestos but also contained limited friable asbestos, and as such the licensee should hold a current Class A asbestos removal licence.

1.6 Guiding Documents

- *Work Health and Safety Act 2011* (NSW) and associated regulations.
- Managing Asbestos in or on soils (WorkCover NSW, 2014).

- How to Safely Remove Asbestos Code of Practice (Safe Work Australia 2011).
- Code of Practice How to Manage and Control Asbestos in the Workplace [Safework Australia] (July 2020).

2.0 Summary of Identified Asbestos Issues

2.1 Definitions of Asbestos

The SafeWork Australia *Code of Practice How to Manage and Control Asbestos in the Workplace* contains the following definitions of forms of asbestos:

- Friable asbestos - 'material that is in a powder form or that can be crumbled, pulverised or reduced to a powder by hand pressure when dry, and contains asbestos.
- Non-friable asbestos as 'material containing asbestos that is not friable asbestos. Including materials containing asbestos fibres reinforced with a bonding compound', which therefore includes bonded fibre cement products.

2.2 Site Specific Details

Following site remediation undertaken between 2019 and 2021, Farms 1 to Farms 7 have been remediated and it is understood that no known residual asbestos contamination is present in these areas. Areas outside remediated areas were assessed as part of the wider DSI and were not considered to require further assessment or remediation based on the approved commercial/industrial land use.

The site as a whole is considered suitable for the ongoing commercial/industrial use; however, it is possible that residual asbestos may remain in unexpected areas across the site.

In the event that residual asbestos is found, the unexpected finds protocol included as **Appendix A** should be enacted, and the controls listed within this document should be adopted.

3.0 Management Controls

3.1 Identification of Asbestos

The surface soils at the site, if impacted by asbestos are most likely to be impacted by non-friable (bonded) ACM. However, soils have the potential to contain both:

- non-friable (bonded) ACM, which can generally be identified by persons who have been trained in visually identifying ACM; and
- friable asbestos, which is generally unable to be easily visually identified due to its size being <7 mm.

Fill material should be assumed to also contain friable asbestos if ACM is observed and the below mitigation and control measures should be applied.

If further asbestos remediation or removal works is completed, records of activities completed, inspections, air monitoring, sampling, and laboratory analysis should be kept by the Principal Contractor, and the EC.

3.2 Mitigation and Management Requirements

The following management and mitigation measures shall be initiated if ACM is observed.

Table 3-1: Mitigation and Management Requirements

Activity	Management and Mitigation Measures
General	The primary asbestos management measure is to avoid ground disturbance.
Excavation and stockpiling of soils	Where excavation is unavoidable, adherence to the controls listed herein and within the ARCP (to be prepared by the Licensed Asbestos Removalist) is mandatory. The Class A licensed asbestos assessor must be in control of the designated asbestos areas. Inspection of excavations and excavated materials to identify suspected asbestos shall be conducted in accordance with the monitoring requirements and indicators detailed in **Section 3.3.** Excavated materials should be stockpiled on a sealed surface, or on plastic sheeting to prevent contamination of the underlying surface. Once the stockpile is formed, material should be securely covered with plastic sheeting if it is to remain in place for more than 24 hours and surrounded by sediment controls to prevent sediment egress from area. All fill material shall be visually inspected by both the licenced asbestos assessor and Environmental Consultant (EC). Photographic records and soil logs / records will be collected by the EC for inclusion in a validation report.
On-site reuse of excavated materials	Reuse of material confirmed to contain asbestos is not permitted in the upper 1 m of the site (including directly at the surface) due to the inherent risk of fibre release; however, material may be suitable for use at depth (following remediation and validation) if it is appropriately managed under an environmental management plan (EMP), e.g., beneath an engineered cap. Material may be disposed of off-site to a licensed landfill following appropriate waste classification by the EC.

Activity	Management and Mitigation Measures
Waste management	All waste excavated materials must be classified in accordance with the NSW EPA *Waste Classification Guidelines* (2014) if disposed off-site. All waste materials must be transported and disposed lawfully to an appropriately licensed facility – noting that not all landfills may be licensed to dispose of material classified as 'Special waste – asbestos waste'.
Unexpected Finds	Refer to the unexpected finds protocol attached as **Appendix A.**
Reporting	Records of activities completed, inspections, air monitoring, sampling, waste classification, waste disposal documentation, field screening and laboratory analyses should be kept. Appropriate notification to SafeWork should be made for any removal work, the licensed asbestos removalist is responsible for notifying SafeWork of the planned work.

3.3 Specific Requirements

It is noted that asbestos may be encountered throughout the site as an unexpected find. Material in which asbestos is not identified (see **Section 3.1**) can be excluded from the AMP. Any work involving identified asbestos impacted material should be undertaken in accordance with the relevant WHS regulations and will require the following:

- An ARCP prepared by the Licensed Asbestos Removalist.
- Safework NSW permit for friable asbestos removal works.
- Supervision by a Class A Licensed Asbestos Removalist.
- Monitoring by a Licensed Asbestos Assessor.

It is noted that asbestos on the site to date has been largely bonded in nature, however friable asbestos has been identified and bonded ACM has the potential to degrade and become friable. For this reason, controls stated in this AMP cover friable material, but are also relevant to bonded ACM.

The following site-specific procedures should be adhered to at all times during work with asbestos impacted material. These controls are not intended to supersede those listed in an ARCP, developed for specific asbestos removal activities.

- All site personnel involved with asbestos related works should have completed asbestos awareness training.
- All site personnel will be made aware of the bonded and friable asbestos contamination during site inductions and tool box meetings. The work area must be clearly defined, and barricaded at the perimeter and only authorised people shall enter the area.
- Warning signs for asbestos must be clearly displayed on the perimeter fencing.
- Personal protective equipment (PPE) requirements for personnel within the asbestos area shall consist of:
  - P2 (or higher) class half face respirators (i.e. dust masks are not considered appropriate due to the risk of friable ACM).
  - Disposable gloves and coveralls made from materials which provide adequate protection against fibre penetration.
- An appropriate exclusion zone shall be established around the perimeter of the asbestos work area. The dimensions of the exclusion zone are to be determined by the Class A licensed asbestos contractor.

- All workers and plant in the asbestos area will be required to use the decontamination unit before leaving the asbestos work area. Decontamination should be undertaken in accordance with the codes of practice and the ARCP and be appropriate for the type of asbestos encountered.
- Personal decontamination must be undertaken each time a site worker leaves the asbestos works area and at the completion of the works.
- All disposable PPE shall be disposed of as asbestos waste.
- Clearance air monitoring is required to be undertaken in the work area in accordance with the *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC: 3003(2005)] for the duration of the work. The results of daily monitoring must be available on site for the reference of site personnel at all times.
- Dust suppression and dust minimisation is required during all intrusive works, in particular in the south of Farm 2, where the stockpiles are located. A water cart or hoses are required on site at all times when intrusive works are being completed, and works should not be undertaken when windy conditions are forecast (wind speeds greater than 20 kmh). The site ARCP will detail dust suppression requirements for each specific work sites.
- At the completion of works, a clearance certificate must be provided documenting that the site has been returned to a condition safe for re-occupation without ongoing asbestos related controls.

4.0 Incident Reporting and Notification

4.1 Incident Reporting

An incident reporting register is required to be kept on site at all times and is the responsibility of the Principal Contractor to maintain.

If a notifiable incident occurs in connection with any asbestos removal, it is expected that the works will have been undertaken under an asbestos removal control plan (ARCP), in which case the licensed asbestos removalist must keep the plan for at least two years after the incident occurs.

4.2 Notification

As per WHS Regulation clause 466, Safework NSW (the regulator) must be notified in writing of the intention to carry out asbestos removal work at least five days in advance of any works. It is the responsibility of the licensed asbestos removalist to notify the regulator prior to the works commencing.

Notification can be undertaken at the following link: https://www.safework.nsw.gov.au/notify-safework/asbestos-notifications.

5.0 Principles and Limitations of Investigation

The following principles are an integral part of site contamination assessment practices and are intended to be referred to in resolving any ambiguity or exercising such discretion as is accorded the user or site assessor.

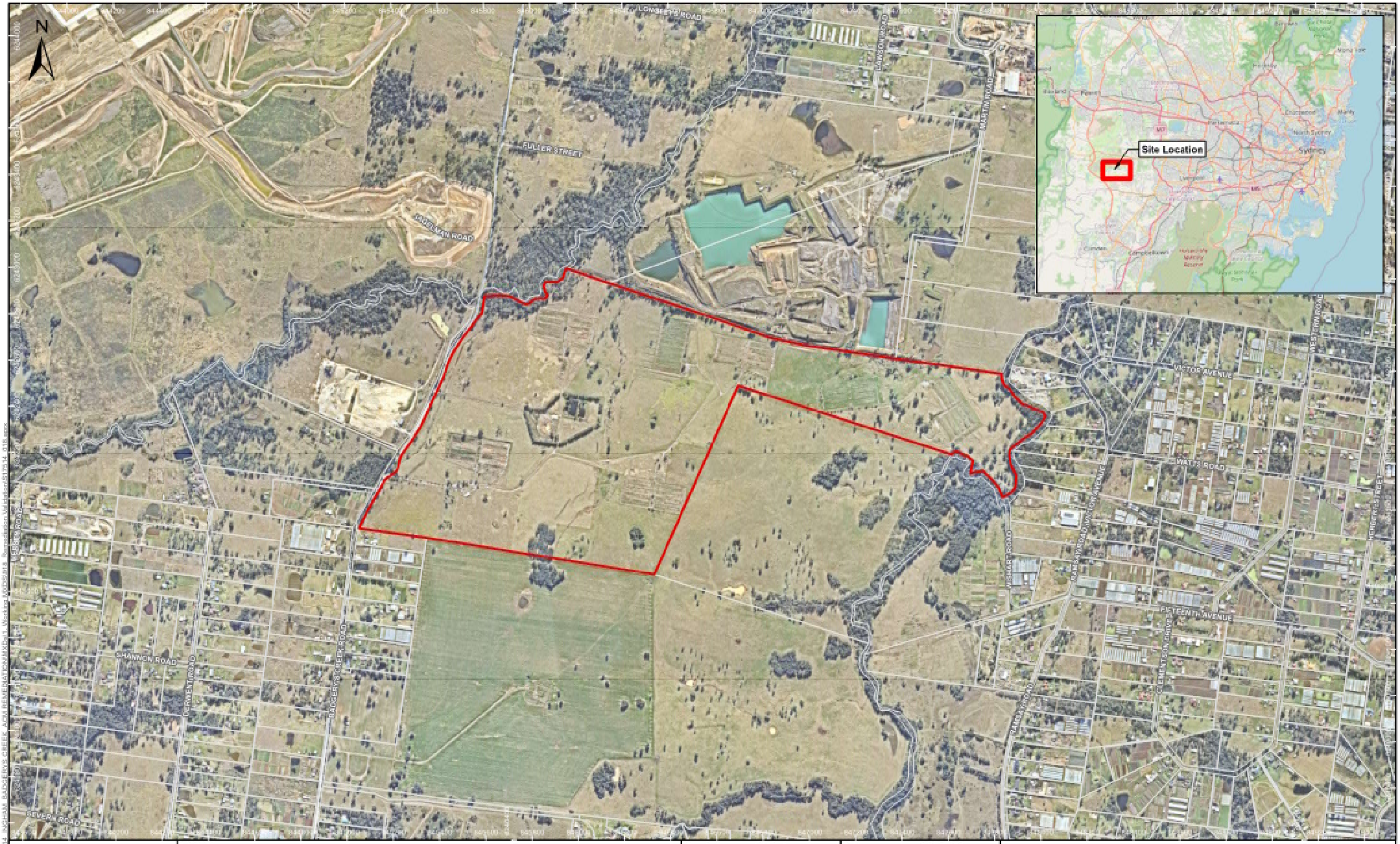
Table 5-1: Project Specific Uncertainties

Area	Field Observations and Analytical Results
Elimination of Uncertainty	Some uncertainty is inherent in all site investigations. Furthermore, any sample, either surface or subsurface, taken for chemical testing may or may not be representative of a larger population or area. Professional judgment and interpretation are inherent in the process, and even when exercised in accordance with objective scientific principles, uncertainty is inevitable. Additional assessment beyond that which was reasonably undertaken may reduce the uncertainty.
Failure to Detect	Even when site investigation work is executed competently and in accordance with the appropriate Australian guidance, such as the National Environment Protection (Assessment of Site Contamination) Amendment Measure ('the NEPM'), it must be recognised that certain conditions present especially difficult target analyte detection problems. Such conditions may include, but are not limited to, complex geological settings, unusual or generally poorly understood behaviour and fate characteristics of certain substances, complex, discontinuous, random, or heterogeneous distributions of existing target analytes, physical impediments to investigation imposed by the location of services, structures and other man-made objects, and the inherent limitations of assessment technologies.
Limitations of Information	The effectiveness of any site investigation may be compromised by limitations or defects in the information used to define the objectives and scope of the investigation, including inability to obtain information concerning historic site uses or prior site assessment activities despite the efforts of the user and assessor to obtain such information.
Chemical Analysis Error	Chemical testing methods have inherent uncertainties and limitations. Senversa routinely seeks to require the laboratory to report any potential or actual problems experienced, or non-routine events which may have occurred during the testing, so that such problems can be considered in evaluating the data.
Level of Assessment	The investigation herein should not be considered to be an exhaustive assessment of environmental conditions on a property. There is a point at which the effort of information obtained and the time required to obtain it outweigh the benefit of the information gained and, in the context of private transactions and contractual responsibilities, may become a material detriment to the orderly conduct of business. If the presence of target analytes is confirmed on a property, the extent of further assessment is a function of the degree of confidence required and the degree of uncertainty acceptable in relation to the objectives of the assessment.
Comparison with Subsequent Inquiry	The justification and adequacy of the investigation findings in light of the findings of a subsequent inquiry should be evaluated based on the reasonableness of judgments made at the time and under the circumstances in which they were made.
Data Useability	Investigation data generally only represent the site conditions at the time the data were generated. Therefore, the usability of data collected as part of this investigation may have a finite lifetime depending on the application and use being made of the data. In all respects, a future reader of this report should evaluate whether previously generated data are appropriate for any subsequent use beyond the original purpose for which they were collected, or are otherwise subject to lifetime limits imposed by other laws, regulations or regulatory policies.
Nature of Advice	The investigation works herein are intended to develop and present sound, scientifically valid data concerning actual site conditions. Senversa does not seek or purport to provide legal or business advice.

Figures

Figure 1: Site Location

Figure 2: Site Layout



senversa

Legend

- Cadastre
- Site Boundary

Notes:
Aerial Imagery © Nearmap

Created:	E. Marha	Date:	7/11/2023
Reviewed:	L. Wadsworth	Revision:	0
Approved:	N. Lukeman	Scale:	1:15,000 (A3)
File:	S17514_018_F001		

0 75 150 300 450 600 750
Metres

Coordinate System: GDA 1994 MGA Zone 56

Figure No: 1

Title: Site Location

Project: Environmental Report

Location: 475 Badgerys Creek Road, Badgerys Creek, NSW 2555

Client: Ingham Rural Property Group

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Legend

- Approximate Farm Extent
- Stockpiles
- Cadastre
- Site Boundary

Notes:
Aerial Imagery © Nearmap

Created:	E. Marha	Date:	7/11/2023
Reviewed:	L. Wadsworth	Revision:	0
Approved:	N. Lukeman	Scale:	1:8,000 (A3)
File:	S17514_018_F002		

0 50 100 200 300 400 Metres

Coordinate System: GDA 1994 MGA Zone 56

Figure No: 2

Title: Site Layout Plan

Project: Environmental Report

Location: 475 Badgerys Creek Road, Badgerys Creek, NSW 2555

Client: Ingham Rural Property Group

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Appendix A: Unexpected Finds Procedure

Appendix A: Unexpected Finds Protocol

This unexpected find procedure (UFP) is provided to manage potential risks posed by unexpected finds (considered most likely to comprise asbestos containing material) in accordance with recommendations presented in the Asbestos Management Plan (AMP) for the property located at 475 Badgerys Creek Road, Bradfield NSW 2556 (the site), also identified as Lot 100 in Deposited Plan (DP)1287207.

Unexpected finds may become an issue if disturbed. This plan relates to the measures required should impacted materials be discovered.

Insert 1: Site Layout

Responsible Persons

Table 1: Roles and Responsibilities

Company	Role	Responsibilities
IPG	**Site Owner**	Overall responsibility for workplace health and safety (WHS) and informing site users of the applicability of any plans relating to the site (note this may be delegated to Superintendent or others as required). Responsible for reporting issues/incidents to relevant authority as necessary (e.g. NSW EPA, LGA, SafeWork)
TBC	**Principal Contractor**	Principal Contractor for civil and earthworks. Responsible for ensuring all site workers are trained in the application of the UFP and able to confidently implement the procedures within.
Senversa	**Environmental Consultant (EC)**	Point of contact for unexpected finds. Soil sampling for validation and/or off-site disposal. Provision of visual clearance certificates for non-friable asbestos removal work.

Definitions of Unexpected Finds

An unexpected find may include:

- Buried asbestos containing material (ACM) or ACM found at the surface of the site.
- ACM may be **bonded** or **friable** and may take many forms (e.g., concrete tiles, vinyl tiles, lagging, pipes, roof tiles, etc.).
- **Bonded** asbestos is defined as 'material containing asbestos that is not friable asbestos. Including materials containing asbestos fibres reinforced with a bonding compound', which therefore includes bonded fibre cement products.
- **Friable** asbestos is defined as 'material that is in a powder form or that can be crumbled, pulverised or reduced to a powder by hand pressure when dry, and contains asbestos.
- Discoloured and/or odorous soils.
- Discoloured and/or odorous groundwater/liquid seepage.
- Buried waste materials e.g., general refuse, animal waste (carcasses, eggs), contaminated waste, etc.
- Septic tanks.
- Underground fuel storage tanks and associated fill points, pipes.
- Any unanticipated archaeological discovery e.g., aboriginal relicts or items of significance.
- Chicken or animal burial pits.

Examples of items which may be encountered are displayed below:

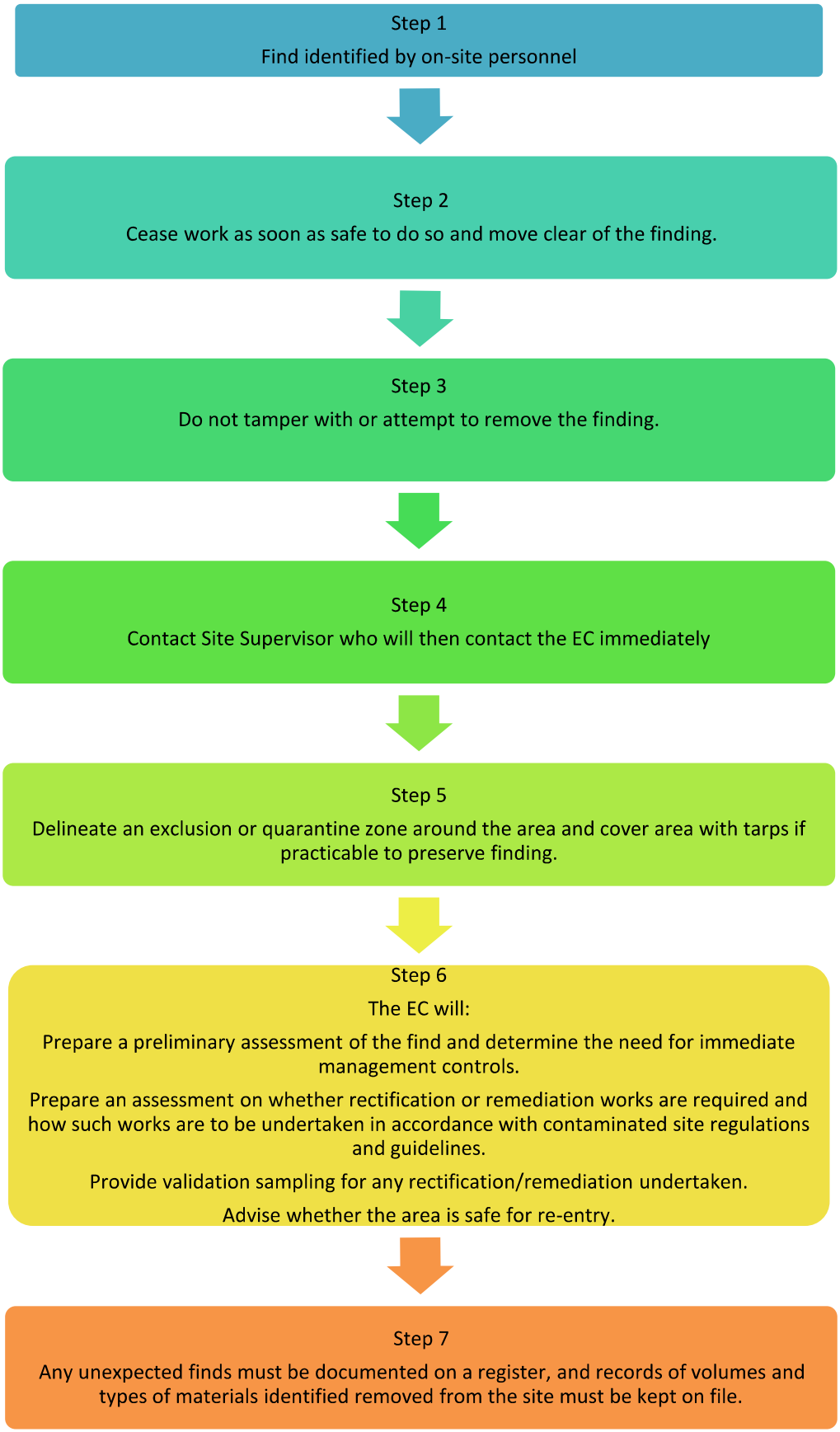
Asbestos Fragment	Asbestos Fragments	Stained Soil
Underground Fuel Tank	Fuel Lines	Asbestos pipes

Procedure to be followed in case of an Unexpected Find

Should an unexpected find be encountered during the works, the following procedure (Steps 1-7) should be followed:

1. Find identified by on-site personnel.
2. Cease work as soon as safe to do so and move clear of the finding.
3. Do not tamper or attempt to remove the finding.
4. Contact Site Supervisor who will then contact the EC immediately.
5. Delineate an exclusion or quarantine zone around the area and cover area with tarps if practicable to preserve finding.
6. The EC will:
    - Prepare a preliminary assessment of the find and determine the need for immediate management controls.
    - Prepare an assessment on whether rectification or remediation works are required and how such works are to be undertaken in accordance with contaminated site regulations and guidelines.
    - Provide validation sampling for any rectification/remediation undertaken.
    - Advise whether the area is safe for re-entry.
7. Any unexpected finds must be documented on a register, and records of volumes and types of materials identified removed from the site must be kept on file.

Unexpected Find Procedure Flowchart



Example Unexpected Finds Register

Unexpected Find Number	Date encountered	Location	Type	EC Contacted
UF01			Spill/excavation of suspect material/underground tank/other	Yes/No

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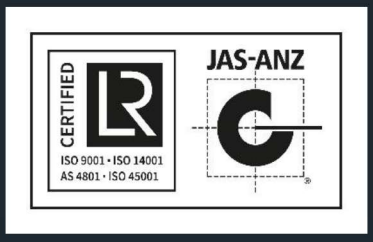

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Appendix M
Construction Waste Management Plan

Geosyntec consultants

ALDI Sydney Automated Distribution Centre

Waste Management Plan

ALDI Foods Pty Ltd

Level 9, 20 Bond Street
Sydney NSW 2000

Prepared by:

SLR Consulting Australia

SLR Project No.: 610.032148.00001

12 September 2025

Revision: 3.0

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
3.0	12 September 2025	Andrew Quinn	Chris Hambling	Andrew Quinn

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 ALDI Foods 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

RP Infrastructure is managing the proposed development of ALDI Foods Pty Ltd's (ALDI) Sydney Automated Distribution Centre (ADC) located at 475 Badgerys Creek Road, Bradfield, NSW. The development is in Liverpool City Council area, although the application is to be submitted to the Department of Planning, Housing and Infrastructure (DPHI) for approval as state significant development (SSD) 76913969.

The Planning Secretary's Environmental Assessment Requirements (SEARs) for this application have been issued. In this waste management plan the relevant requirements of the SEARs have been addressed using the Western Sydney Aerotropolis Development Control Plan 2022 and the Liverpool Development Control Plan 2008 (LDCP)[1] as guides.

The SEARs requirements for waste management are shown in Table 1 below.

Table 1 SEARs

Description of requirement	Section reference (this report)
Waste – a waste management report that provides details of: the quantities and classification of all waste streams to be generated on site during the development	For construction and site preparation waste please refer to: • Section 7.3 Site Preparation Waste • Section 7.4 Construction Waste Quantities • Table 3 Potential site preparation and construction waste types, classifications and their management methods • Table 5 Estimated types and quantities of construction waste For operational waste please refer to: • Section 8.2 Waste Streams and Classifications • Section 8.3 Waste Quantities • Table 7 Potential operational waste types, classifications and management methods • Table 9 Estimated operational waste and recycling quantities
waste storage, handling and disposal during the development	For construction and site preparation waste please refer to: • Section 7.5 Waste Avoidance • Section 7.6 Reuse, Recycling and Disposal • Section 7.7 Waste Storage and Servicing For operational waste please refer to: • Section 8.4 Waste Storage Area Size • Section 8.5 Waste Vehicle Access
the measures that would be implemented to ensure the development is consistent with the aims, objectives and guidance in the NSW Waste and Sustainable Materials Strategy 2041.	For construction and site preparation waste please refer to: • Section 7.1 Targets for Resource Recovery • Section 8.1 Targets for Resource Recovery

[1] https://www.liverpool.nsw.gov.au/development/liverpools-planning-controls/liverpool-development-control-plan

2.0 Project Description

ALDI intends to construct and operate a new ADC on the site to supply ALDI stores in NSW with daily goods and have capacity to service future expansion of the store network. Although the broader site covers about 184 ha, the site proposed to accommodate the ADC is about 220,827 m^2.

The proposed ADC will include a combination of temperature zones, including ambient, chilled and freezer zones, for the safe storage and distribution of goods. The facility will be highly automated with about 80% of the internal processes undertaken unstaffed. The facility will have a footprint of about 90,827 m^2 and at the highest point will have a height of about 42 m.

Figure 1 below shows the proposed site plan

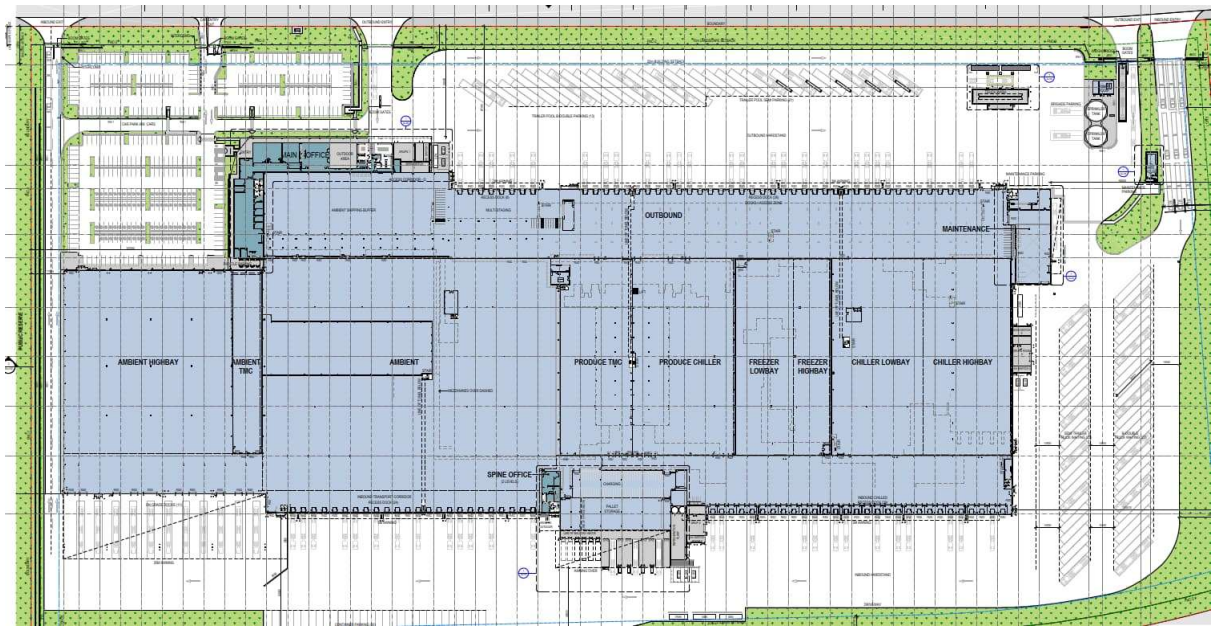


Figure 1 Proposed site plan

3.0 Objectives

The principal objective of this WMP is to identify all potential wastes likely to be generated at the Development during operation, including a description of how waste would be handled, processed and disposed of, or re-used or recycled.

The specific objectives of this WMP are:

- To encourage the minimisation of waste production and maximisation of resource recovery.
- To assist in ensuring that any environmental impacts during the operational life of the Development comply with development consent conditions and other relevant regulatory authorities.

4.0 Review of WMP

This WMP will be reviewed and updated:

- To remain consistent with waste and landfill regulations and guidelines
- If changes are made to site waste and recycling management, or
- To take advantage of new technologies, innovations and methodologies for waste or recycling management.

Copies of the original WMP and its future versions should be retained by the building manager. Changes made to the WMP, as well as the reasons for the changes made, should be documented by the building manager as part of the review process.

5.0 Better Practice for Waste Management and Recycling

5.1 Waste Management Hierarchy

This WMP has been prepared in line with the waste management hierarchy shown in Figure 2. The hierarchy 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.

Figure 2 Waste Management Hierarchy

5.2 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.

6.0 Waste Legislation and Guidance

While the WMP will directly address the SEARs, the *Western Sydney Aerotropolis DCP 2022* (including Aerotropolis DCP 2022 – Appendices. November 2022), *Aviation Safeguarding Guidelines – Western Sydney Aerotropolis and surrounding areas. November* 2022 and Liverpool Development Control Plan 2008 are all used as guides for the proposed waste management system. The Western Sydney Aerotropolis Precinct Plan has also been referenced, although this provides little practical assistance to guide waste management facilities at the development.

6.1 Western Sydney Aerotropolis DCP 2022

Western Sydney Aerotropolis DCP makes a number of references to waste management. Only those most relevant are detailed below, for example, references to residential developments are omitted. Where necessary, commentary is also provided on their application in this development.

2.7 Parking design and access

PO7 Vehicle access arrangements and queuing areas on a site shall minimise any adverse impact on infrastructure, road networks, safety, adjoining properties, amenity, and street trees.

5. Where the entry to a parking space is also the entry to a waste collection area, access should be possible via a PIN pad and code, to avoid the need for waste truck drivers to carry keys or access cards/fobs with them.

2.9 Service and loading design

PO1 Provide on-site loading and servicing that meets the demand generated by the development.

2. All servicing, including waste and recycling collection, to be carried out wholly within the site with collection points at convenient locations.

This is the case for this development.

2.10.3 Wildlife Hazards

PO1 Development does not attract wildlife which would create a safety hazard to the operations of the Airport.

1. All waste bins are designed and installed with fixed lids.

2. Any bulk waste receptacle or communal waste storage area is contained within enclosures that cannot be accessed by birds or flying foxes.

The bins proposed have fixed lids and suitable enclosures are proposed for waste storage.

2.11 Services and Utilities

PO5 Infrastructure allows for co-location of compatible similar uses.

1. Allow for the installation of the following within the utility corridor:

b. Vacuum waste collection system.

This is not relevant in this particular development.

2.16 Waste Management and Circular Economy

Objectives

O1. Incorporate well-designed and innovative waste and recycling facilities in the building design stage.

O3. Minimise the amount of waste generated and going to landfill.

O4. Maximise waste separation and resource recovery.

O5. Provide innovative and best practice waste management collection systems and technologies for reuse, recycling, organics collection and product stewardship.

O6. Provide waste and recycling facilities that do not impact on amenity for residents, neighbours and the public, such as visually unpleasant areas, noise, traffic and odours from waste collection services, while also ensuring facilities are accessible, integrated wholly within the built form and easy to use.

The aim of the waste system at this development is to achieve these requirements.

PO1 Waste management measures are implemented at lot and neighbourhood scale to support circular economy activities.

1. Submit a waste management plan to support circular economy activities that also details the quantity and type of waste generated and how this will be managed, reused and recycled. Where possible, incorporate technologies such as vacuum extraction or on-site food processing.

A vacuum waste system is not proposed for this development. On-site food processing, whether composting, worm farms, dehydrators or small-scale anaerobic digestion, is not proposed for the development at this stage as the quantities of food are not known. The viability of an on-site food processing unit will depend on available quantities and types of food and the particular use for the development. Space is available should tenants wish to install an on-site food processing system in the future.

2. Co-locate and integrate waste infrastructure on sites with multiple uses by providing a single collection point for waste and recycling.

This is the case for this development.

3. Demonstrate that organic waste can be managed in the building through measures such as:

a. Multiple options for on-site organic waste to maximise recovery (e.g. communal composting, worm farms, individual composting, dehydrators);

c. Energy generation from organic waste (anaerobic digestion) at lot and precinct scale.

Please refer to the previous comment about on-site food processing

PO2 Waste and recycling facilities promote waste separation and reduce contamination. Materials are separated at source to achieve higher value recovery.

Source separation is proposed according to Penrith Council's documentation.

1. Collection points (including but not limited to reverse vending machines and e-waste drop-off) must be located with adequate space for servicing, ease of use and to encourage the separation of waste material. Collection points are documented in the waste management plan and are easily accessible.

This is the case for this development.

2. Provide separate and enclosed storage for liquid, chemicals, and hazardous waste.

Space has been allowed for these waste streams should they be generated during the operational stage.

4. Consolidated organic waste drop off points are designed to minimise any potential odour and vermin risks. This includes the provision of rooms that are temperature controlled and suitably ventilated.

Specialised storage for organics waste is not proposed and its future installation will depend on the tenant and the particular operations at the development.

PO3 The location of waste management is clearly indicated for each site and neighbourhood.

1. Provide uniform waste management design and colour coding in accordance with AS 4123 across residential and commercial developments.

This is the case for this development.

2. Waste management systems and rooms are located inside buildings to support a heightened amenity and urban design outcome. Waste must not be left outside (excluding during collection) to avoid attracting animals.

Screened waste areas are proposed to be adjacent to buildings.

PO4 Waste bins are provided to a level commensurate with waste produced for each development as outlined in Council's waste and recycling service.

1. Waste storage areas are designed to:

a. Accommodate the required number and size of waste bins;

b. Provide space for the bins to be accessed, rotated and manoeuvred for emptying;

c. Allow for future waste separation practices; and

d. Account for different uses in mixed use development through the provision of separate and enclosed collection rooms for both residential and commercial uses.

This is the case for this development.

PO5 Implement innovative waste management storage systems that are safe, healthy, and efficient.

1. Waste storage areas are to:

a. Be well-lit and ventilated;

b. Include water and drainage facilities for cleaning the bins and bin storage area;

c. Be easily and conveniently accessible for all users and collection contractors;

e. Comply with Local Council Policy and contractual service provisions.

2. Collection and loading points are to be:

a. Level;

b. Free of obstructions;

c. Easily accessible from the nominated waste and recycling storage area;

d. Be integrated wholly within the built form to support a heightened amenity outcome;

e. Be accessible by heavy rigid collection vehicles to permit entry and exit of the site in a forward direction;

f. Comply with the Building Code of Australia and Relevant Australian Standards; and

g. Comply with Local Council Policy and contractual service provisions.

3. Provide safe and easy access to waste and resource recovery areas for residents, building managers and collection contractors.

4. Ensure waste and recycling areas flexibly adapt to other types of waste and materials storage over time.

5. Design waste and recycling facilities to prevent litter and contamination of the stormwater drainage system.

This is the case for this development.

PO6 Waste management storage systems minimise negative impacts on the streetscape, public domain, building presentation or amenity of pedestrians, occupants, and neighbouring sites.

1. Waste storage and collection areas are to:

a. Where possible, be integrated wholly within the developments built form;

b. Not be visible from the street or public domain;

c. Not adjoin private open space, windows, habitable rooms, or clothes drying areas;

d. Not be located within front setbacks; and

e. Comply with Local Council Policy and contractual service provisions.

2. Collection points and systems are designed to minimise noise for occupants and neighbours during operation and collection.

This is the case for this development.

PO7 Recognise waste types, generation rates and separation needs may change during the useful life of a building.

1. Waste and resource recovery facilities are sited to enable possible future expanded floor area.

2. Design waste and resource recovery facilities to enable installation of new, potentially larger equipment

This is the case for this development.

3.2 Parking and travel management

PO2 To promote efficient and safe vehicle circulation, manoeuvring and parking (including service vehicles and bicycles).

6. All loading and unloading areas are to be:

b. Separated from car parking and waste storage and collection areas.

This is the case for this development.

6.2 Aerotropolis DCP 2022 – Appendices. November 2022

This document makes a number of references to waste management. The most relevant are detailed below.

D.7 Aviation Safeguarding Assessment

Wildlife Hazards (Wildlife Hazard Assessment and Wildlife Management Plan)

A waste management plan for the operation of the use must be submitted for the following uses within the 3km, 8km and 13km buffer:

a. Agriculture;

b. Agricultural produce industry;

c. Aquaculture;

d. Camping Grounds;

e. Eco-tourist facility;

f. Food and Drink Premises;

g. Garden Centre;

h. Hotel;

i. Intensive plant agriculture;

j. Intensive livestock agriculture;

k. Kiosk;

l. Livestock processing industry;*

m. Plant Nursery;

n. Recreation facility (outdoor); and

o. Recreation facility (major).

'Warehouse' is not among the listed uses.

D.46 Waste Management Plan

A Waste Management Plan details the volumes and types of waste that will be generated by the development. It also details where waste containers will be stored, size of bin rooms, location of any planned equipment for treating waste, or systems for transferring waste (such as chutes), location of collection points and the ongoing management of collection of waste and recycling during operation. A waste management plan is also required for demolition and construction stage of the development.

All new commercial, mixed use and residential flat buildings or additions to these development types are to prepare a waste management plan.

Refer to the Better practice guide for resource recovery in residential developments for more information on how to prepare a waste management plan and for calculating commercial and industrial waste and residential waste and recycling generation rates.

The waste management plan will comply with these requirements.

6.3 Aviation Safeguarding Guidelines – Western Sydney Aerotropolis and surrounding areas. November 2022

This documents states that:

Under the Western Parkland City SEPP and the Aerotropolis DCP:

3. development applications for specified uses on land within the 13 km buffer zone must be accompanied by a waste management plan for the operation of the use of the land.[2]

6.4 Western Sydney Aerotropolis Precinct Plan

The Western Sydney Aerotropolis Precinct Plan September 2024 has been prepared by DPHI. It *provides the place-based objectives and requirements to guide development in the Aerotropolis in a consistent and sustainable manner over time. This Plan sets out the finer grain detail to support the land use zoning and other provisions of the Aerotropolis SEPP.*[3]

The Plan makes a number of references to waste, which are detailed below, although these are general in nature and do not assist with the design of waste facilities at the development.

2.1 Precinct Plan objectives

The following objectives apply to all land to which this Precinct Plan applies.

[2] Page 17

[3] Page 5

015 Facilitate the establishment of circular economy industries to reduce waste, leverage synergies between industries and circulate resources within and beyond the industrial supply and materials chains of the Aerotropolis.

4.7 Sustainability and Resilience

Objectives

SRO1 Development is to support the transitioning to a net zero or net positive outcome over the medium to long term. This will be measured around performance regarding waste management, water management and carbon consumption benchmarks that are provided in the DCP or other relevant legislation.

SRO5 Facilitate the design, construction and operation of environmentally sustainable buildings and precincts, including energy efficiency, renewable energy, efficient resource and energy use and reduced emissions and waste.

SRO6 Effectively uses waste as a resource through its collection, transport and recycling in a manner that is safe, efficient, cost effective and does provide a positive impact on liveability and the environment.

Requirements

SR1 Energy, water and waste systems are to use a circular economy approach to improve efficiency and result in low-carbon developments.

SR3 Plan for, and achieve, leading industry targets by 2025 and from 2026 beyond to achieve sustainable regenerative targets:

Description	*Leading industry practice*	*Sustainable regenerative*
	Target 2020 and 2025	*Target 2026 and beyond*
Non-residential uses (subject to final modelling)	*Green Star Communities – 5+ stars* *Green Star – 5+ stars*	*Green Star Communities – 6+ stars* *Green Star – 6+ stars*
Circular economy targets	*10% reduction of waste generation* *85% reduction in construction waste*	*100% recovery and re-use of organic waste* *90% reduction in construction waste*

SR4 Circular economy activities must be located with consideration of:

e. proximity to major transportation routes, considering safe transportation of extractive and waste materials.

6.5 Liverpool Development Control Plan 2008

Part 1 General Controls for all Development

14. Demolition of Existing Developments

Section 14 of Part 1 of the DCP relates to demolition of existing developments. The relevant sections state that:

Demolition

6. Asbestos, if identified in the building, must be removed and disposed of in accordance with the requirements of Work Cover. Where the amount or type of asbestos materials to be removed requires a licensed asbestos contractor to undertake the removal and disposal, both Council and the Principle Certifying Authority must be advised in writing of the name, address and asbestos license details of the contractor undertaking that work and the name and address of the facility to which the materials will be taken.

11. A Waste Management Plan (WMP) is to be submitted with the Development Application. The WMP must include realistic estimates of the volume or area of all types of waste material to be generated from the demolition and excavation activities. Details of how each of those materials will be re-used, recycled or disposed of is to be provided, including the locations to which the materials will be taken.

12. The waste management plan together with proof of lawful disposal for all waste that is disposed of, or otherwise recycled from the site must be retained on site. Proof is to include a log book with associated receipt/invoices, waste classification, and site validation certificate. All entries must include:

- *Time and Date*
- *Description and size of waste*
- *Waste facility used*
- *Vehicle registration and company name*

Both the log book and the associated receipts must be made available for inspection by authorised Council Officer at any time during site works.

16. All construction and demolition waste must be inspected, graded and sorted in accordance with current EPA standards. Once sorted, it must be either recycled or disposed of according to its classification.

25. Waste Disposal and Re-use Facilities

Section 25 covers waste storage facilities in new developments. The relevant sections state:

This section applies to all applications that propose:

2. Demolition of an existing building.

3. Construction of any development including alterations and additions.

4. Any development that requires a waste bay or the like.

Non-residential development

Note: Council does not provide waste services to non-residential premises. Owners and operators of non-residential premises must engage a private commercial waste contractor to remove and legally dispose of the waste their premises generates.

1. Development applications for all non-residential development must be accompanied by a waste management plan that addresses:

− best practice recycling and reuse of construction and demolition materials,

− use of sustainable building materials that can be reused or recycled at the end of their life,

− handling methods and location of waste storage areas, such that handling and storage has no negative impact on the streetscape, building presentation or amenity of occupants and pedestrians, and

− procedures for the on-going sustainable management of green and putrescible waste, garbage, glass, containers and paper, including estimated volumes, required bin capacity and on-site storage requirements.

Waste Management Facilities

1. Waste management facilities shall be provided for in all new buildings (except dwelling houses, Attached dwellings, Semi-Detached Dwellings and Dual Occupancy). These shall be designed to ensure that the storage and collection of waste and recyclables is user friendly for both the occupant and the waste collection contractor.

- The area must be suitably located on premises in terms of accessibility for both the occupants and the waste and recycling contractor.

3. Provision of ongoing waste management facilities shall include:

- Bin bays are to be well ventilated and screened to a minimum height of 1.5m by a structure and landscaping. Construction materials are to be compatible with the proposed development and adjoining development.

- Bin bays or waste service rooms are to be sufficiently open and well lit to allow safe use after dark

- A hose cock for hosing the garbage bin bay and a sewered drainage point are to be provided in or adjacent to the bin storage area. The drainage point should have a fine grade drain cover sufficient to prevent coarse pollutants from entering the sewer. If the hose cock is located inside the bin storage bay it is not to protrude into the space indicated for the placement of bins. Responsibility for cleaning of all waste storage areas should be determined when designing the system and clearly stated in the waste management plan.

Access to waste and recycling storage

4. Waste service rooms or compartments where provided, shall be enclosed and of design compatible with the proposed development. Adequate ventilation shall be provided for the room or compartment. Suitable arrangements for transfer of any interim storage to the main bin bay are to be indicated in the WMP.

5. Waste and recycling collection vehicles should be able to service the development efficiently and effectively and with no need to reverse.

Other Waste Considerations

4. Signage should be in English, and consideration given to other languages reflective of the most recent demographics of Liverpool LGA. Illustrative graphics will form a minimum 50% of the area of the signage. Council can provide appropriate bin bay usage signs if required. Signage is to be prominently posted in each bin bay, or waste service room indicating that:

- Garbage is to be placed wholly within the garbage bins provided.

- The area is to be kept tidy.

Part 7 Development in Industrial Areas

6. Building Design, Streetscape and Layout

Service Areas

Service areas including waste, recycling areas and external storage areas are to be located away from principal street frontages and screened from view.

10. Site Services

Waste management

Owners are to provide their own waste management services. These facilities will vary depending on the needs of the site. Any waste management equipment must not be visible from the street. Waste bins must be provided in a designated area that is easily and safely accessible for workers.

6.6 Other Legislation and Guidance

The waste legislation and guidance outlined in Table 2 below should be referred to during the operation of the Development.

Table 2 Waste legislation and guidance relevant to this report

Legislation and Guidance	Objectives
Building Code of Australia (BCA) and relevant Australian Standards	The BCA has the aim of achieving nationally consistent, minimum necessary standards of relevant health and safety, amenity and sustainability objectives efficiently.
Council of Australian Governments National Construction Code 2019	The National Construction Code 2019 sets the minimum requirements for the design, construction and performance of buildings throughout Australia.
NSW EPA's Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities 2012	These better practice guidelines present information on waste minimisation and resource recovery as well as information on commonly used waste management provisions. The guidelines also provide benchmarks for assessing waste production rates in Australia.
NSW Waste and Sustainable Materials Strategy 2041: Stage 1 – 2021-2027	Replacing the *NSW Waste Avoidance and Resource Recovery Strategy (2014-21)*, 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.

Legislation and Guidance	Objectives
NSW EPA Resource Recovery Orders and Resource Recovery Exemptions	The NSW EPA has issued a number of resource recovery orders and resource recovery exemptions under the POEO (Waste) Regulation 2014 for a range of wastes that may be recovered for beneficial re-use. These wastes typically include those from demolition and construction works, as well as ongoing wastes such as food waste. • Resource recovery orders present conditions which generators and processors of waste must meet to supply the waste material for beneficial re-use. • Resource recovery exemptions contain the conditions which consumers must meet to use waste for beneficial re-use.
NSW EPA's Waste Classification Guidelines 2014	The NSW EPA Waste Classification Guidelines assists waste generators to effectively manage, treat and dispose of waste to ensure the environmental and human health risks associated with waste are managed appropriately and in accordance with the *POEO Act 1997* and is associated regulations.
Protection of the Environment Operations Act (POEO) 1997 and *Amendment Act 2011*	The POEO Act 1997 and POEO Amendment Act 2011 are administered by the NSW EPA to enable the NSW Government to establish instruments for setting environmental standards, goals, protocols and guidelines. They outline the regulatory requirements for lawful disposal of wastes generated during the demolition, construction and operational phases of a development, as well as the system for licencing waste transport and disposal.
The Work Health and Safety Regulation 2017	The Work Health and Safety Regulation 2017 provides detailed actions and guidance associated with the topics discussed in the Work Health and Safety Act 2011. The primary aim of the regulation is to protect the health and safety of workers and ensure that risks are minimised in work environments. Workplaces are to ensure that they are compliant with the requirements specified in the regulations. The regulations discuss items such as actions that are prohibited or obligated in work environments, the requirements for obtaining licences and registrations, and the roles and responsibilities of staff in workplaces.
Waste Avoidance and Resource Recovery Act 2001	The *Waste Avoidance and Resource Recovery Act 2001* aims to promote waste avoidance and resource recovery and repeals the *Waste Minimisation and Management Act 1995*. Specific objectives of the *Waste Avoidance and Resource Recovery Act 2001* include: • encouraging efficient use of resources • minimising the consumption of natural resources and the final disposal of waste by encouraging the avoidance of waste and the reuse and recycling of waste • ensuring industry and the community share responsibility in reducing/dealing with waste, and • efficiently funding of waste and resource management planning, programs and service delivery. As of 2016, the addition to the Act of Part 5 defines the legislative framework for the 'Return and Earn Container Deposit Scheme' whereby selected beverage containers can be returned to State Government authorities for a monetary refund.

7.0 Site preparation and Construction Waste and Recycling Management

7.1 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 (2023-2024) indicates that construction and demolition waste recovery rates in 2023-2024 were 78%.

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 and construction stages of The Development.

7.2 Waste Streams and Classifications

The site preparation and construction of the Development is likely to generate the following broad waste streams:

- Site preparation waste
- 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 3.

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 website[5].

Table 3 Potential site preparation and construction waste types, classifications and their management methods

Waste Types	NSW EPA Waste Classification	Proposed Management Method
Site preparation and 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

[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

Waste Types	NSW EPA Waste Classification	Proposed Management Method
Timber – treated	General solid waste (non-putrescible)	Reused for formwork, bridging, blocking, propping or second-hand supplier
Timber - untreated		Off-site recycling, chip for landscaping, sell for firewood, reused for floorboards, fencing, furniture, mulched secondhand supplier and remainder to landscape supplies.
Doors, windows, fittings	General solid waste (non-putrescible)	Off-site recycling at secondhand 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	Special waste	Off-site disposal to a licensed landfill facility.
Fluorescent light fittings and bulbs	General solid waste (non-putrescible)	Off-site recycling or disposal, contact *FluoroCycle* for more information[6]
Paint	Liquid waste	Off-site recycling, Paintback collection[7] or disposal
Synthetic rubber or carpet underlay	General solid waste (non-putrescible)	Off-site recycling, reprocessed for other uses
Ceramics including tiles	General solid waste (non-putrescible)	Off-site recycling
Carpet	General solid waste (non-putrescible)	Off-site recycling, disposal or reuse
Packaging		
Packaging materials, including wood, plastic, including stretch wrap or LDPE, cardboard and metals	General solid waste (non-putrescible)	Off-site recycling
Wooden or plastic crates and pallets	General solid waste (non-putrescible)	Reused for similar projects, returned to suppliers, or off-site recycling. Contact *Business Recycling* for more information[8]
Work Compound and Associated Offices		
Food Waste	General solid (putrescible) waste	Dispose to landfill with general garbage
Recyclable beverage containers, such as glass and plastic bottles, aluminium cans and steel cans	General solid waste (non-putrescible)	Recycling at off-site licensed facility or at NSW container deposit scheme 'Return and Earn' facility[9]
Clean paper and cardboard	General solid waste (non-putrescible)	Paper and cardboard recycling at off-site licensed facility
General domestic waste generated by workers such as soiled paper and cardboard, food and polystyrene	General solid waste (non-putrescible) mixed with putrescible waste	Disposal at landfill

[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/

[8] Available online from https://businessrecycling.com.au/

[9] Available online from http://returnandearn.org.au/

7.3 Site Preparation Waste Quantities

Images from Google Earth and Six Maps show that the site is currently substantially cleared. One small shed is the only structure on the site. The site is grassed and features some trees and several dirt tracks. These are shown in Figure 3 below.

Figure 3 Approximate site location and site features

Site clearance will have already been undertaken and ALDI will be provided with a benched and serviced site. ALDI will only undertake detailed excavation. All soil excavated will be reused on site.

7.4 Construction Waste Quantities

The LDCP does not provide waste generation rates for construction activities. In the absence of readily available construction waste generation rates from Council, SLR has adopted the 'Office' waste generation rates from The Hills Development Control Plan (Hills DCP) 2012 for estimating the type and quantities of waste generated from construction of the Development.

The waste generation rates are shown in Table 4.

Table 4 Construction waste generation rates

Rate Type	Floor Area (m^2)	Waste types and quantities (m^3)						
		Timber	Concrete	Bricks	Gyprock	Sand or Soil	Metal	Other
Office	1,000	5.1	18.8	8.5	8.6	8.8	2.75	5
Factory		0.25	2.1	1.65	0.45	4.8	0.6	0.5

These waste generation rates are used to estimate the waste generated from the construction of the Development. The anticipated construction waste quantities for the Development are shown in Table 5 below and are based on the areas shown in drawing *SYD-SBA-DRW-DA-100-P15-SITE PLAN.pdf*.

The construction waste quantities anticipated are shown in Table 5 below.

Table 5 Estimated types and quantities of construction waste

Level	GFA (m^2)	Waste types and quantities (m^3)								
		Timber	Asphalt	Concrete	Granular Base	Bricks	Gyprock	Sand or Soil	Metal	Other
Warehouse	103,241	25.8	-	216.8	-	170.3	46.5	495.6	61.9	51.6
Office	2,888	14.7	-	54.3	-	24.6	24.8	25.4	7.9	14.4
Hardstand	83,083	-	-	174	-	-	-	399	50	42
Carparks	11,925	-	0.3	0.3	1.2	-	-	-	-	-
Total	**201,138**	**41**	**0.3**	**446**	**1.2**	**195**	**71**	**920**	**120**	**108**

7.5 Waste Avoidance

In accordance with better practice waste management, the Building Contractor, Building Designer and/or equivalent roles should:

- Develop a purchasing policy based on the approximate quantities 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 Development 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.

7.6 Reuse, Recycling and Disposal

Effective management of construction materials and construction and demolition waste, including options for reuse and recycling where applicable and practicable, will be conducted. Only wastes that cannot be cost effectively reused or recycled are to be sent to landfill or appropriate disposal facilities.

Refer to Table 3 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 best practice waste management, the following specific procedures should be implemented:

- Ensure 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.

7.7 Waste Storage and Servicing

7.7.1 Waste Segregation and Storage

Waste materials produced from site preparation and construction activities should 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, should consult with the waste and recycling collection contractor to confirm which waste types may be co-mingled prior to removal from the site.

7.7.2 Waste Storage Areas

Waste storage areas will be accessible and allow enough space for storage and servicing requirements. The storage areas will also be flexible in order to cater for change of use throughout the 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.

Areas designated for waste storage should:

- Allow unimpeded access by site personnel and waste disposal contractors

- Consider environmental factors which could potentially cause an impact to the waste storage, such as slope, drainage and the location of watercourses and native vegetation
- Allow enough space for the storage of garden waste and other waste materials on-site
- Employ adequate environmental management controls to prevent off-site migration of waste materials and contamination from the waste. For example, consideration of slope, drainage, proximity relative to waterways, stormwater outlets and vegetation
- Consider visual amenity, safety, accessibility and convenience in their selection, and
- Not present hazards to human health or the environment.

7.7.3 Waste Servicing and Record Keeping

The Site Manager or equivalent role is to:

- Arrange for suitable waste collection contractors to remove any construction waste from site
- Ensure waste bins are not filled beyond recommended filling levels
- Ensure that all bins and loads of waste materials leaving site are covered
- Maintain waste disposal documentation detailing, at a minimum:
  - Descriptions and estimated amounts of all waste materials removed from site
  - Details of the waste and recycling collection contractors and facilities receiving the waste and recyclables
  - Records of waste and recycling collection vehicle movements, for example, date and time of loads removed, licence plate of collection vehicles, tip dockets from receiving facility, and
  - Waste classification documentation for materials disposed to off-site recycling or landfill facilities.
- Ensure lawful waste disposal records are readily accessible for inspection by regulatory authorities such as Council, SafeWork NSW or NSW EPA, and
- Remove waste during hours approved by Council.

If skips and bins are reaching capacity, removal and replacement should be organised as soon as possible. All site generated building waste collected in the skips and bins will leave the site and be deposited in the approved site lawfully able to accept them.

7.8 Site Inductions

All staff, including sub-contractors and labourers, employed during the site preparation and construction phases of the Development must undergo induction training regarding waste management for the Site.

Induction training is to cover, as a minimum, an outline of the WMP including:

- Legal obligations and targets
- Emergency response procedures on-site

- Waste priorities and opportunities for reduction, reuse and recycling
- Waste storage locations and separation of waste
- Procedures for suspected contaminated and hazardous wastes
- Waste related signage
- The implications of poor waste management practices, and
- Responsibilities and reporting, including identification of personnel responsible for waste management and individual responsibilities.

It is the responsibility of the Site Manager or Building Contractor to notify Council of the appointment of waste removal, transport or disposal contractors.

7.9 Signage

Standard signage is to be posted in all waste storage and collection areas. All waste containers should be labelled correctly and clearly to identify stored materials.

Signs approved by the NSW EPA for labelling of waste materials are available online[10] and should be used where applicable. A selection of signs prepared by NSW EPA is provided in Figure 4.

Figure 4 Examples of NSW EPA labels for waste skips and bins

7.10 Monitoring and Reporting

The following monitoring practices are to be undertaken to improve site preparation and construction waste management and to obtain accurate waste generation figures:

- Conduct waste audits of current projects where feasible.
- Note waste generated and disposal methods.

[10] NSW EPA approved waste materials signage https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/business-government-recycling/standard-recycling-signs

- 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 Resource Recovery Management Plans.

Records of waste quantities recycled, reused or contractor removed should be maintained. This can include dockets or receipts verifying recycling and disposal in accordance with this WMP. This evidence should also be presented to regulatory bodies when required.

Daily visual inspections of waste storage areas will be undertaken by site personnel and inspection checklists and logs recorded for reporting to the Site Manager on a weekly basis or as required. These inspections will be used to identify and rectify any resource and waste management issues.

Waste audits are to be carried out by the Building Contractor to gauge the effectiveness and efficiency of waste segregation procedures and recycling and reuse initiatives. Where audits show that the above procedures are not carried out effectively, additional staff training will be undertaken and signage re-examined.

7.11 Roles and Responsibilities

All personnel have a responsibility for their own environmental performance and compliance with all legislation. It will be the responsibility of the Building Contractor to implement the WMP, and an employee and subcontractor responsibility to ensure that they always comply with the WMP.

Where possible, an Environmental Management Representative should be appointed for the Development. Suggested roles and responsibilities are provided in Table 6.

Table 6 Suggested site preparation and construction waste management roles and responsibilities

Responsible Person	General Tasks
Construction Site Manager	Ensuring plant and equipment are well maintained.
	Ordering only the required amounts of materials.
	Keeping materials segregated to maximise reuse and recycling.
	Ultimately responsible for routinely checking waste sorting and storage areas for cleanliness, hygiene and safety issues, contaminated waste materials, and also ensuring that all monitoring and audit results are well documented and carried out as specified in the WMP.
Construction Environmental Manager or equivalent	Approaching and establishing the local commercial reuse of materials where reuse on-site is not practical.
	Establishing separate skips and recycling bins for effective waste segregation and recycling purposes.
	Ensuring staff and contractors are aware of site requirements.
	Provision of training of the requirements of the WMP and specific waste management strategies adopted for the Development.
	Contaminated waste management and approval of off-site waste transport, disposal locations and checking licensing requirements.

Responsible Person	General Tasks
	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.

8.0 Operational Waste

8.1 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 (2023) indicates that the commercial and industrial waste recovery rate in 2022-2023 was 51%.[11]

It is anticipated that the waste minimisation measures in the following sections will assist the Development to achieve this recycling rate. Waste reporting and audits can be used to determine the actual percentage of wastes that are being or have been recycled during operation.

8.2 Waste Streams and Classifications

The operation of the Development generates, and is likely to generate in the future, the following broad waste streams:

- Domestic type waste generated by tenants, staff and visitors
- Office waste
- Bulky waste such as cardboard, plastic film and polystyrene
- Garden organic waste from landscaped areas
- Other waste items such as furniture and e-waste.

Potential waste types, their associated waste classifications, and management methods are provided in Table 7 below.

Table 7 Potential operational waste types, classifications and management methods

Waste Types	NSW EPA Waste Classification	Proposed Management Method
General Operations		
Clean office paper	General solid (non-putrescible) waste	Paper recycling at off-site licensed facility

[11] https://www.epa.nsw.gov.au/your-environment/waste/waste-overview/waste-performance-data

Waste Types	NSW EPA Waste Classification	Proposed Management Method
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	Compost on or off-site or dispose to landfill with general garbage
Fork lift batteries	Hazardous waste	Managed by fork lift suppliers
Lead-acid or nickel-cadmium batteries		Off-site recycling, Contact the Australian Battery Recycling Initiative12 for more information
Other batteries	General solid waste (non-putrescible)	
Mobile Phones	General solid waste (non-putrescible)	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	General solid waste (non-putrescible)	Off-site recycling
Printer toners and ink cartridges	General solid waste (non-putrescible)	Off-site recycling, free disposal box or bags and pickup service exists for printer toners and ink cartridges
General garbage, including non-recyclable plastics	General solid (putrescible and non-putrescible) waste	Disposal at landfill
Maintenance		
Spent smoke detectors[13] - some commercial varieties	Hazardous waste	Disposal to landfill, or off-site disposal at licensed facility
Spent smoke detectors - others	General solid (non-putrescible) waste,	
Glass, other than containers	General solid (non-putrescible) waste	Off-site recycling
Light bulbs and fluorescent tubes	General solid (non-putrescible) waste	Off-site recycling or disposal, contact FluoroCycle[14] or Lamp Recyclers[15] for more information
Empty oil and other drums or containers, such as fuel, chemicals, paints, spill clean ups that were previously used to store Dangerous Goods (Class 1, 3, 4, 5 or 8) and residues have not been removed by washing or vacuuming.	Hazardous waste	Transport to comply with the transport of Dangerous Goods Code applies in preparation for off-site recycling or disposal at licensed facility

[12] http://www.batteryrecycling.org.au/home

[13] The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) require that when more than 10 smoke alarms (particularly americium-241 sources) are collected for bulk disposal they must be treated as radioactive waste and the requirements of the National Health and Medical Research Council's Code of practice for the near-surface disposal of radioactive waste in Australia (1992) must be met.

[14] https://www.fluorocycle.org.au/

[15] https://www.lamprecyclers.com.au/

Waste Types	NSW EPA Waste Classification	Proposed Management Method
Empty oil and other drums or containers, such as fuel, chemicals, paints, spill clean ups that have been cleaned by washing or vacuuming.	General solid waste (non-putrescible)	
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

For further information on how to determine a waste's classification refer to the NSW EPA (2014) Waste Classification Guidelines. Recycling drop-off locations and contacts can be found on https://businessrecycling.com.au/ for each waste type.

8.3 Waste Quantities

In the absence of any waste generation rates in the LDCP, SLR has adopted the 'Offices' and 'Warehouse' waste generation rates from the EPA's C&I Guidelines and the Penrith 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 8 below.

Table 8 Operational waste generation rates

Development Use	Source	Source Category	Litres per 100 m^2 per day	
			General Waste	Recycling
Office	NSW EPA C&I Guidelines	Offices	8	6
Warehouse	Penrith Guidelines	Warehouse (office)	10	10

Using the waste generation rates in Table 8 above, the approximate weekly waste quantities for the development have been calculated based on the assumptions below:

- The floor areas as detailed on the architectural drawings shown in *SYD-SBA-DRW-DA-100-P15-SITE PLAN.pdf*.
- A week comprising seven days of operation.

The estimated quantities of operational waste generated by the development are shown in Table 9.

Table 9 Estimated operational waste and recycling quantities

Type	Area m^2	Generation Rate Source	Total per Day (L)		Total per Week (L)	
			Garbage	Recycling	Garbage	Recycling
Warehouse	103,241	Penrith City Council	10,324	10,324	72,269	72,269
Office	2,888	NSW EPA C&I Guidelines	231	173	1,618	1,213
Total	**106,130**		**10,555**	**10,497**	**73,886**	**73,482**

8.4 Waste Storage Area Size

8.4.1 Garbage and Recycling Bins

The waste storage areas 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, compactors and a front lift waste collection service are the most likely to be used by a contractor.

The most common front lift bin capacity is 3 m^3 and these have been assumed when calculating bin numbers and storage space for all four warehouses and offices. To allow for ready movement of 3 m^3 bins into and out of the bin storage areas, at least 200% of the total minimum bin storage area has been allowed for. Compactors are also available in a range of capacities, so 30 m^3, a typically common capacity, has been assumed.

The proposed bin dimensions are those Table 10 below. Bin dimensions may differ slight between manufacturers.

Table 10 Bin dimensions

Bin Capacity	Height (mm)	Depth (mm)	Width (mm)	Footprint (m2)
3 m^3	1590	2040	1650	3.37
30 m^3	2500	6500	2400	15.60

To facilitate safe and easy movement of bins into and out of the bin storage areas, 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. The LDCP makes no particular specification for bulky waste storage for this kind of development and the capacity and nature of the proposed compactors and bins allows for the disposal of bulky waste.

8.4.2 Total Waste Storage Area

The estimated number of compactors and bins required for weekly storage of operational waste and recycling generated by the development are shown in Table 11 and are based on:

- The estimated quantities of operational waste and recycling shown in Table 9
- The bin dimensions shown in Table 10.

Table 11 Recommended number of bins and storage areas

Location	Capacity (m^3)	Compaction	Collection Frequency per Week	Number	Footprint (m^2)	Area Required (m^2)
Garbage Compactor	30	3:1	1	1	15.6	118.8
Cardboard Compactor	30	3:1	1	1	15.6	
Garbage bins	3	-	1	1	9.4	
Bins for other recyclables	3	-	1	1	9.4	

8.4.3 Space allowed for waste storage

The drawings show the locations for compactors and waste and recycling bins. These are shown in Figure 5 below.

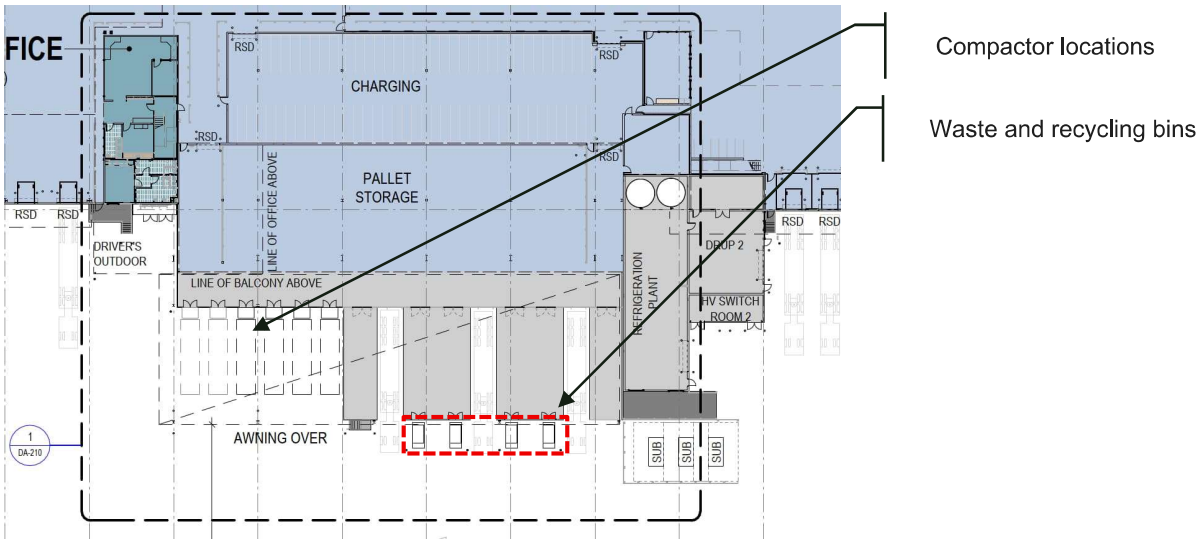


Figure 5 Waste storage areas

8.5 Waste Vehicle Access

The following access provisions will apply for collections:

- Collection vehicles will be able to enter and exit the site in a forward direction
- Unobstructed access, adequate driveways and ramps of sufficient strength to support waste collection vehicle have been allowed for.

Waste collection contractors will collect bins and compactors from the Refuse Area where they will be emptied into, or hauled onto, the collection vehicle.

The collection frequency is that proposed in Table 9 but may be subject to change depending on negotiations between the facility operators and the waste contractor.

8.6 Waste Avoidance, Reuse and Recycling

8.6.1 Waste avoidance

Other waste avoidance measures that could be investigated include:

- Returning packaging materials like cardboard to the suppliers through the services of the supplier delivery trucks, allowing the reduction of waste further along the supply chain
- Providing ceramic cups, mugs, crockery and cutlery rather than disposable items
- Bulk purchasing and the purchasing of items that use minimal packaging
- Presenting all waste reduction initiatives to staff and tenants as part of their induction program, and
- Leasing equipment and machinery rather than outright purchase and disposal.

8.6.2 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.

8.6.3 Recycling

Recycling opportunities include:

- Collecting and recycling e-waste
- Printer toners and ink cartridges, if purchased, are collected in allocated bins for appropriate contractor recycling
- Paper recycling trays provided in communal and staff areas for scrap paper collection and recycling and
- Development of 'buy recycled' purchasing policy.

8.7 Communication Strategies

The following communications strategies should be implemented:

- Use consistent signage and colour coding throughout the Development
- Ensure all staff are informed of correct waste separation and management procedures
- Provide directional signage to show locations and routes to waste storage areas
- Repair signs and labels promptly to avoid a breakdown in communication
- Clearly label bins to ensure no cross contamination and to identify the types of waste that may be disposed of in each bin, and
- Educate all staff and contractors associated with the Development, ensuring they adhere to this WMP.

8.8 Signage

Signs which clearly identify waste management procedures and provisions to contractors, staff and visitors should be posted at the Development as appropriate.

Colour-coded and labelled bin lids are necessary for identifying bins and the Australian Standard *AS 4123.7-2006 (R2017) Mobile waste containers Part 7: Colours, markings, and designation requirements* provides recommendations for the designated colours for waste bins depending on the type of waste the bins are to receive. The colours that will apply to ongoing waste generated by the Development are:

- Blue: Paper and cardboard
- Yellow: Recyclables (other than paper and cardboard)
- Red: General waste.

All bin signage should also follow the NSW EPA's standard signage.[16]

Other key signage considerations include:

- 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 6.
- 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 that complies with AS 4123, and a system for signs throughout the Development, and
- Emergency contact information for reporting issues associated with waste or recycling management.

Figure 6 Example NSW EPA labels for operational waste

8.9 Roles and Responsibilities

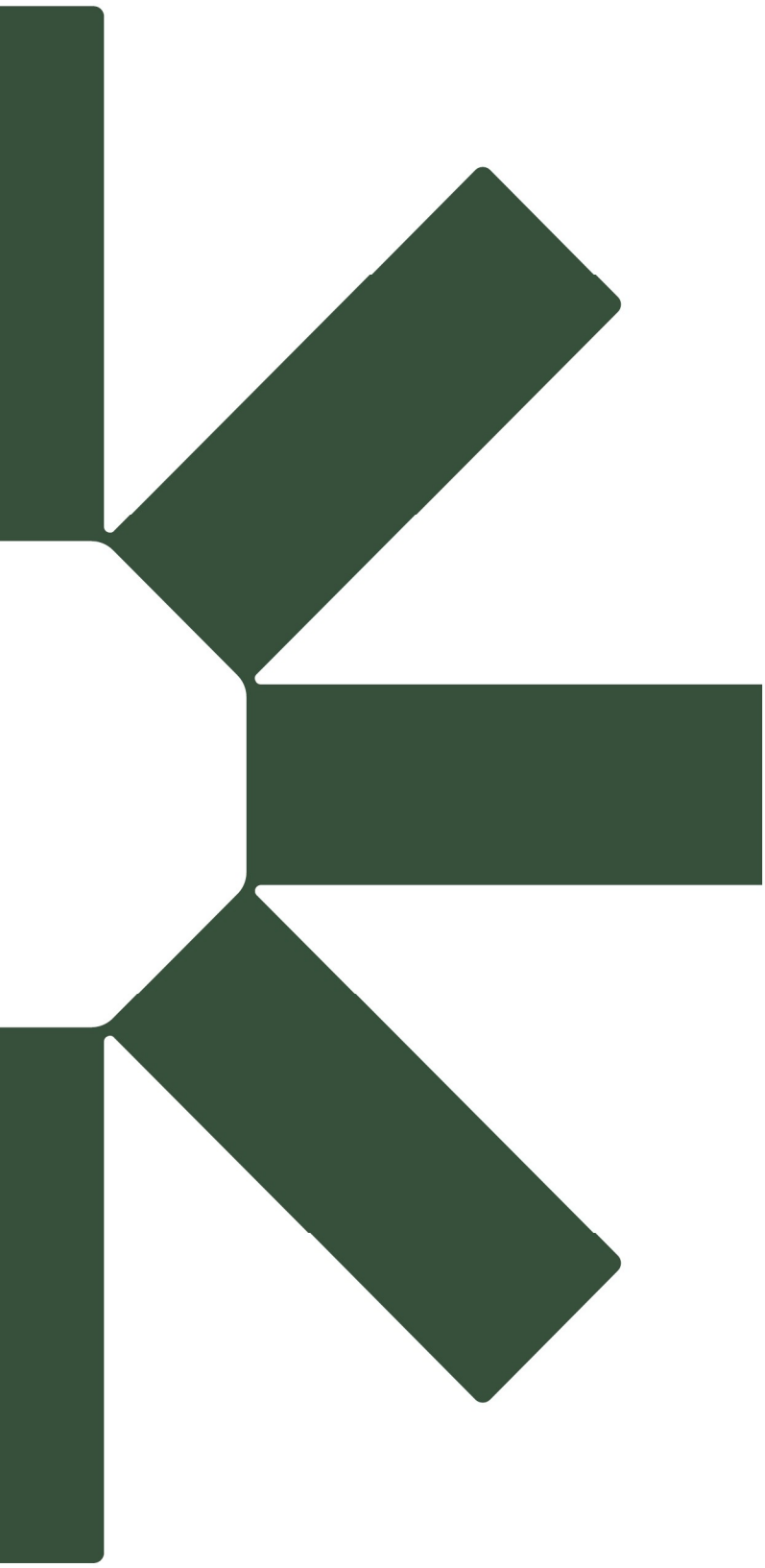
It is the responsibility of the Facilities Manager, or equivalent role, to implement this WMP and a responsibility of all tenants and staff to follow the waste management procedures set out by the WMP. SLR recommends that all subcontractors have the roles and responsibilities of all waste management personnel identified and The Development's waste management system clearly explained. A summary of recommended roles and responsibilities are provided in Table 12 below.

Table 12 Suggested operational waste-related roles and responsibilities

Responsible Person	General Tasks
Facilities Manager or equivalent role	Ensure the WMP is implemented throughout the life of the operation.
	Update the WMP as needed to ensure the plan remains applicable to the site.

[16] NSW EPA waste signs/posters http://www.epa.nsw.gov.au/wastetools/signs-posters-symbols.htm

Responsible Person	General Tasks
	Regularly conduct waste audits to review system performance and identify any additional materials that could be recovered.
	Manage any complaints and non-compliances reported through waste audits and other sources.
	Ensure all monitoring and audit results are well documented and conducted as specified in this WMP.
	Collect waste from landscaping and facilities such as fluorescent lights and garden organics
Cleaners and caretakers	Transfer general waste, recyclables, cardboard waste and hazardous waste from public spaces to the waste and recycling storage areas on a daily basis or as required.
	Maintain and operate compactors and balers, if obtained, and ensure no overfilling occurs.
	Cleaning of all bins and waste and recycling rooms as per the direction of the site manager, or equivalent role.
	Monitor bins to ensure no overfilling occurs.
	Ensure bins and waste storage areas are kept tidy and clean.
	Compliance with the provisions of this WMP.
Tenants	Transfer general waste, recyclables, cardboard waste and hazardous waste to allocated waste and recycling storage areas in the loading docks.
	Adhere to all waste management directions and comply with the Development's waste management provisions as outlined by the Facilities Manager.
	Ensure effective signage, communication and education is provided to alert visitors, employees, site management staff 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.
	Manage ongoing education on correct source separation and waste management at least every three months.
	Ensure that regular cleaning and daily transfer of bins is correctly being undertaken by the cleaners.
	Ensure all waste compactors and balers are maintained and operational.
	Ultimately responsible for the management of all waste management equipment, cleaning requirements, waste transfer and collection arrangements.



Making Sustainability Happen

Appendix N

Air Quality Management Plan

Geosyntec consultants

Construction Air Quality Management Plan

ALDI Badgerys Creek

Richard Cookes Constructions

Level 14, 558 Pacific Highway
St Leonards NSW 2065

Prepared by:

SLR Consulting Australia Pty Ltd

SLR Project No.: 610.033791.00001

13 March 2026

Revision: V0.1

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
V0.1	13 March 2026	K Barker F Jafarigol	J A Cox	J A Cox

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 Richard Cookes Constructions (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

SLR Consulting Australia Pty Ltd (SLR) has been engaged by Richard Cookes Constructions to prepare a Construction Air Quality Management Plan (CAQMP) for approved ALDI Foods Pty Ltd (ALDI) development at 475 Badgerys Creek Road, Bradfield.

1.1 Project Description

The ALDI Sydney Automated Distribution Centre (SYD ADC) is located on the Ingham Property Group (IPG) Badgerys Creek Estate. The development is located on lots which are not yet formally registered, located within a broader parcel of land known as 475 Badgerys Creek Road, Bradfield.

The IPG Badgerys Creek Estate comprises approximately 184 hectares, however the SYD ADC project site (the Site) proposed to accommodate the SYD ADC is approximately 220,827 m^2.

The local setting and regional context of the Site is shown **Figure 1**.

Figure 1 Site Location

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Project Number:	610.033791
Location:	Badgerys Creek, NSW
Source:	Nearmap
Projection:	UTM Zone 56S
Date:	13/11/2024

Richard Cookes Constructions

ALDI Badgerys Creek CAQMP

Site Location

1.2 CAQMP Scope

The State Significant Development Application (SSDA) for the Project (SSD-76913969) was approved on 26 February 2026 for the construction and operation of a large-format high-bay automated warehouse and distribution centre. The Clause B36 of the development consent requires that:

> *"Prior to the commencement of construction of the development, the Applicant must prepare a Construction Air Quality Management Plan (CAQMP) to the satisfaction of the Planning Secretary. The CAQMP must form part of the CEMP required by condition C2."*

Under Condition B36 of the development consent, the CAQMP must:

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

b) detail and rank all emissions from all sources of the development, including particulate emissions;

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

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

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

   i. key performance indicator;

   ii. monitoring method;

   iii. location, frequency and duration of monitoring;

f) outline procedures that will be implemented in relation to:

   i. record keeping;

   ii. complaints register;

   iii. response procedures;

   iv. compliance monitoring; and

g) detail contingency measures to be implemented to reduce any exceedances of relevant performance indicators or criteria and include a timetable for implementation.

2.0 Project Overview

2.1 Potential Sources of Air Emissions

During the construction works, fugitive dust emissions are considered to be the primary emission type, which could give rise to nuisance and/or health impacts for the surrounding sensitive areas. The key potential sources of dust associated with construction of the Project have been identified as:

- Dust emissions from earthworks activities (e.g. excavation and loading of soils to trucks)
- Wind-generated dust from disturbed surfaces and stockpiles
- Wheel-generated dust and particulate matter emissions in diesel exhaust emissions from on-site plant and equipment and construction traffic movements; and
- Particulate matter associated with exhaust emissions from increased/congested traffic emissions on the local road network due to road closures or diversions (if any).

In addition to the construction activities being carried out at any point in time, a number of other environmental factors may also affect the generation and dispersion of dust emissions, including:

- Wind direction – determines whether dust and suspended particles are transported in the direction of the sensitive receptors
- Wind speed – governs the potential suspension and drift resistance of particles
- Surface type – more erodible surface material types have an increased soil or dust erosion potential
- Surface material moisture – increased surface material moisture reduces soil or dust erosion potential
- Other external factors such as current works being undertaken by others outside of the defined Project boundaries and current climatic (dry) weather conditions; and
- Rainfall or dew – rainfall or heavy dew that wets the surface of the soil reduces the risk of dust generation.

2.2 Pollutants of Concern

The key air pollutants of interest are considered to be particulate matter and products of fuel combustion.

2.2.1 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 “particulate matter” refers to a category of airborne particles, typically less than 30 microns (µm) in diameter and ranging down to 0.1 µm and is termed total suspended particulate (TSP). Particulate matter with an aerodynamic diameter of 10 microns or less is

referred to as PM_{10}. The PM_{10} size fraction is sufficiently small to penetrate the large airways of the lungs, while $PM_{2.5}$ (2.5 microns or less) particulates are generally small enough to be drawn in and deposited into the deepest portions of the lungs. Potential adverse health impacts associated with exposure to PM_{10} and $PM_{2.5}$ include increased mortality from cardiovascular and respiratory diseases, chronic obstructive pulmonary disease and heart disease, and reduced lung capacity in asthmatic children.

2.2.2 Nuisance Dust

In addition to the health effects of suspended particulate matter, nuisance impacts also need 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.

2.2.3 Products of Combustion

Emissions associated with light and heavy vehicles and the combustion of fossil fuels (diesel, petrol, AVGAS etc.) will include CO, NO_x, particulate matter, SO_2 and VOCs.

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 (NO_2). 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 NO_2 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 NO_2 after being emitted from engine exhausts.

Engine exhausts can contain emissions of SO_2 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.

2.3 Priority Emission Sources

Condition B36 of the development consent requires the CAQMP to detail and rank all emissions from all sources of the development, however a detailed emissions inventory was not within the scope of the AQIA prepared for the SYD ADC development application (SLR Consulting Pty Ltd 2024).

In SLR's experience, generally the highest ranked sources of emissions from detailed assessments of construction works are as follows:

- Material handling
- Wind erosion of exposed areas/stockpiles
- Wheel generated dust from unpaved roads.

Mitigation and control measures to minimise impacts of these construction activities are captured within **Section 5.0**.

2.4 Construction Hours

Construction hours are outlined in condition B21 of the development consent. Construction hours must comply with the hours detailed in **Table 2**.

Table 1 Construction hours

Day	Time
Monday – Friday	7:00 am and 6:00 pm
Saturday	8:00 am and 1:00 pm

Under condition B22 of the development consent, works outside of the hours identified in condition B21 may be undertaken in the following circumstances:

> *"(a) works that are inaudible at the nearest sensitive receivers;*
>
> *(b) works agreed to in writing by the Planning Secretary;*
>
> *(c) for the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or*
>
> *(d) where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm."*

2.5 Construction Contact Details

Construction contacts for the Site during Construction are listed in **Table 2**.

Table 2 Key Contacts During Construction.

Role	Name	Contact Details
Construction Manager	Brendan Peera	0433 221 688
Project Manager	Mitchell Kay	0413 611 842
Site Manager	Michael French	0437 637 649
Environmental Representative	Marcello Di Paolo	0418 272 205

3.0 Air Quality Criteria

State air quality guidelines specified by the NSW Environmental Protection Agency (EPA) for the pollutants identified in **Section 2.2** are published in the *Approved Methods* (NSW EPA 2022). 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. The criteria are the defining ambient air quality criteria for NSW, derived from a range of sources, and are considered to be appropriate for the setting. Those relevant to the identified emission sources at the Site are discussed below.

The impact assessment criteria listed in the Approved Methods for the pollutants identified in **Section 2.2** are shown in **Table 3**.

Table 3 NSW EPA Impact Assessment Criteria

Pollutant	Averaging Period	Assessment Criteria	Units
Sulfur dioxide (SO_2)	1 hour	215	µg/m^3
	24 hours	57	µg/m^3
Nitrogen dioxide (NO_2)	1 hour	164	µg/m^3
	Annual	31	µg/m^3
Particulate Matter ($PM_{2.5}$)	24 hours	8	µg/m^3
	Annual	25	µg/m^3
Particulate Matter (PM_{10})	24 hours	25	µg/m^3
	Annual	50	µg/m^3
Total Suspended Particulate (TSP)	Annual	90	µg/m^3
Deposited Dust	Annual	2 a	g/m^2/month
		4 b	g/m^2/month
Carbon monoxide (CO)	1 hour	30	mg/m^3
	8 hours	10	mg/m^3

[a] maximum increase in deposited dust level.
[b] maximum total deposited dust level.

4.0 Existing Environment

4.1 Surrounding Land Zoning and Sensitive Receptors

As shown in **Figure 2**, the immediate surroundings of the Site are zoned for Enterprise use.

There are a number of existing receptors located to the west and southwest of the Site boundary (refer to **Figure 3**). These receptors were identified in the Air Quality Impact Assessment (AQIA) prepared for the SYD ADC development application (SLR Consulting Pty Ltd 2024). They are the closest receptors to the Site, however it is noted that additional receptors may be located in other directions at further distances.

Furthermore, there is potential for future sensitive receptors be developed within the RU4 (Primary Production Small Lots), and MU (Mixed Use) zones located to the southwest, south, and east of the Site.

Figure 2 Surrounding Land Zoning

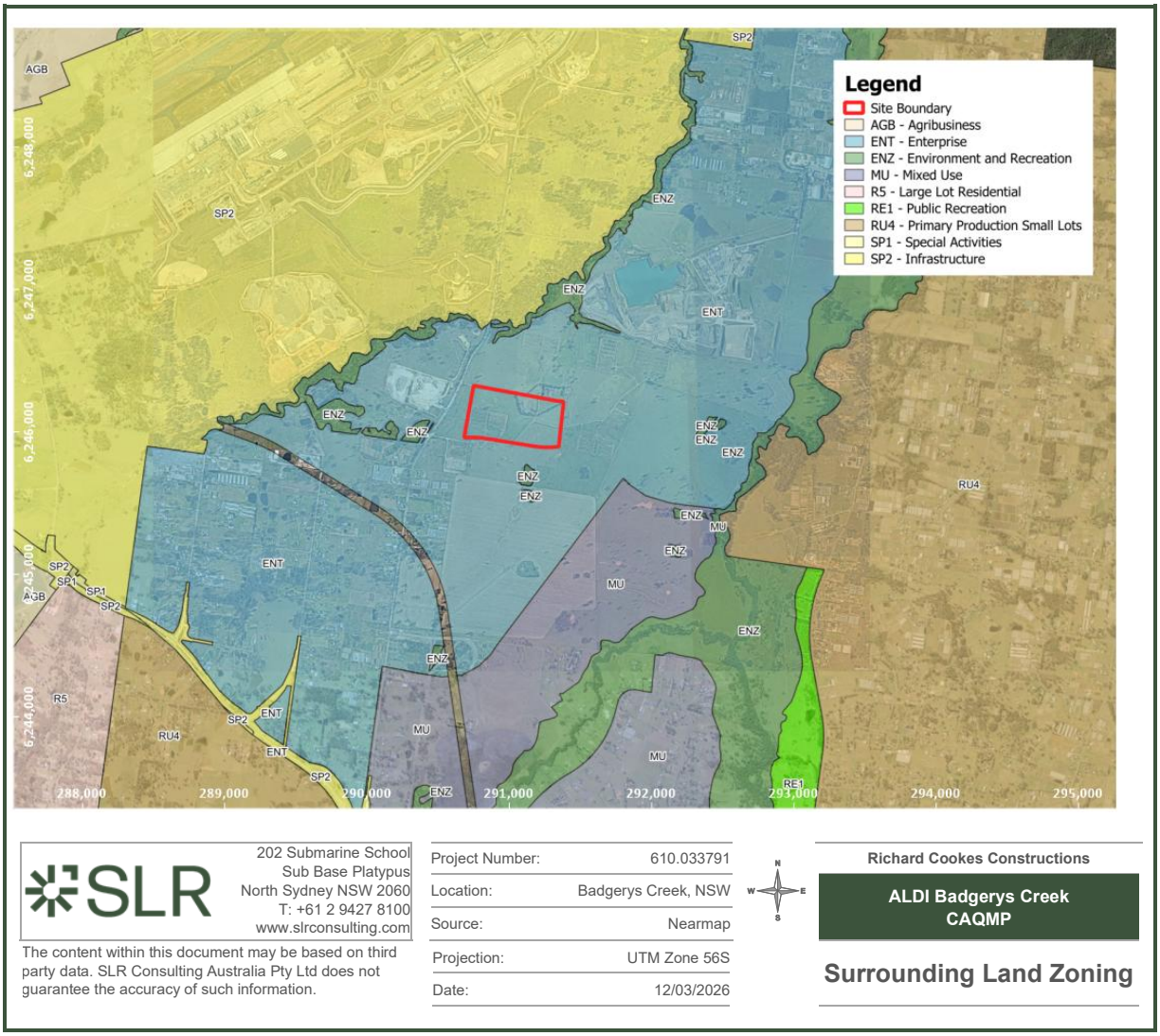

Figure 3 Surrounding Sensitive Receptors

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Project Number:	610.033791
Location:	Badgerys Creek, NSW
Source:	Nearmap
Projection:	UTM Zone 56S
Date:	12/03/2026

Richard Cookes Constructions

ALDI Badgerys Creek CAQMP

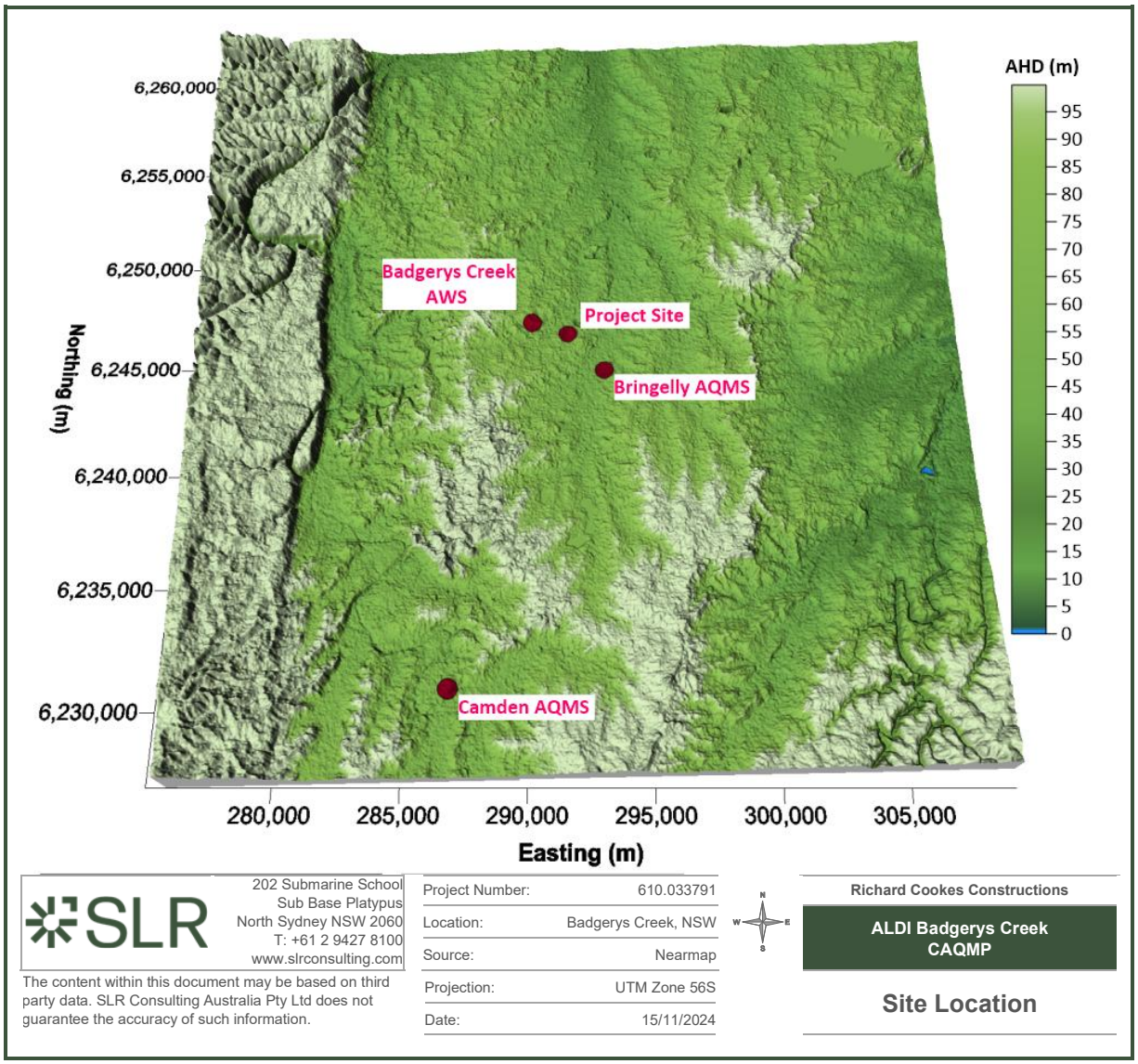
Surrounding Sensitive Receptors

4.2 Local Topographical Features

Local topography is important in air quality studies as local atmospheric dispersion can be influenced by night-time katabatic (downhill) drainage flows from elevated terrain or channelling effects in valleys or gullies.

The elevation of the Site ranges from approximately 60 m to 70 m Australian Height Datum (AHD). As shown in **Figure 4**, there is slightly elevated terrain to the west and northeast of the Site, however no significant topographical features that would be expected to significantly affect local wind patterns etc. The locations of the Badgerys Creek automatic weather station (AWS; refer **Section 4.3**) and the Liverpool and Bringelly air quality monitoring stations (AQMSs; refer **Section 4.4**) are also indicated.

Figure 4 Local Topographical Features



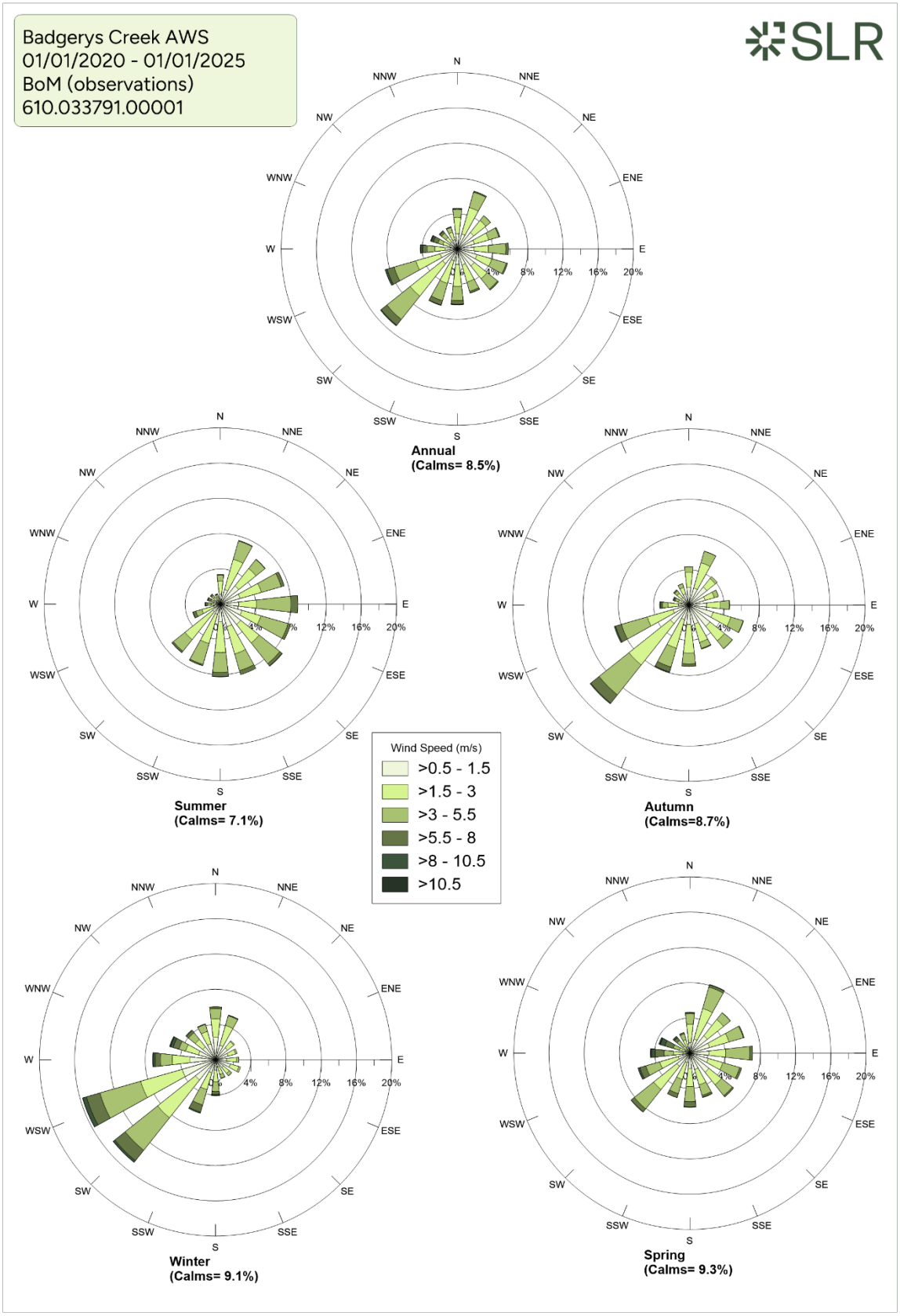
4.3 Local Meteorological Conditions

Annual and seasonal wind roses for the past five years, 2020 to 2024, compiled from data recorded by the Badgerys Creek AWS are presented in **Figure 5**. The average annual wind rose (**Figure 5**) demonstrates that winds occurred from all directions, with the highest frequency originating from the south-western quadrant and the lowest frequency from the north-western quadrant. Calm conditions were observed for 10.2% of the time across the five-year period.

The seasonal wind roses (**Figure 5**) indicate that typically:

- During summer and spring, winds are distributed relatively evenly across most directions, with the exception of the north-western quadrant, from which winds are infrequent. On average, calm conditions occur 8.7% of the time in summer and 10.9% in spring.
- In autumn, winds predominantly blow from the southwestern quadrant, with the lowest frequency of winds from the northwest quadrant. On average, calm winds are experienced 10.3% of the time during autumn.
- In winter, winds predominantly blow from the south-western quadrant, with the lowest frequency of winds from the eastern quadrant. On average, calm winds are experienced 11.0% of the time during winter.

Figure 5 Annual Wind Roses – Badgerys Creek AWS (2020 – 2024)



4.4 Baseline 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 closest station to the Site with data for the last five years is the Bringelly AQMS, located approximately 3 km southeast of the Site. The following air pollutants are monitored at this station:

- NO, NO_2 and NO_x
- SO_2
- $PM_{2.5}$
- PM_{10}

A summary of the monitored pollutant concentrations for the last five years (2020-2024) is presented in **Table 4** and the data are presented graphically in **Figure 6** to **Figure 10**.

Exceedances of the 24-hour average PM_{10} and $PM_{2.5}$ criteria were recorded by the Bringelly AQMS all years except 2022. A review of the available compliance monitoring reports indicates that these exceedances were primarily due to exceptional events such as bushfires, dust storms or hazard reduction burns. Very elevated PM_{10} and $PM_{2.5}$ concentrations were recorded along the east coast of Australia in early 2020 during the 'Black Summer' bushfire event.

Exceedances of the annual average $PM_{2.5}$ criterion were also recorded for year 2020 only; this exceedance was primarily due to the above-mentioned bush fires, which impacted much of the state in late 2019 and early 2020.

Ambient concentrations of the gaseous pollutants SO_2 and NO_2 were all well below the relevant criteria for all years investigated.

Table 4 Summary of Air Quality Monitoring Data at Bringelly AQMS (2020-2024)

Pollutant	PM_{10}		$PM_{2.5}$		NO_2		SO_2	
Averaging Period	Maximum 24-hour	Annual	Maximum 24-hour	Annual	Maximum 1-hour	Annual	Maximum 1-hour	Maximum 24-hour
Units	µg/m³				µg/m³			
2020	241.8 (11)	18.3	78.1 (12)	8.5	56.4	5.8	57.6	7.9
2021	69.0 (1)	15.3	57.4 (3)	7.2	45.1	6.5	23.6	5.2
2022	28.7	12.1	17.8	5.1	41.4	5.4	26.2	5.2
2023	53.2 (1)	16.2	45.4 (3)	7.0	47.0	5.7	23.6	7.9
2024	58.1 (1)	16.4	17.2	6.9	60.2	7.1	31.4	5.2
Criteria	**50**	**25**	**25**	**8**	**164**	**31**	**215**	**57**
numbers in brackets represent number of exceedances of relevant criteria recorded each year								

Figure 6 Measured 24-Hour Average PM_{10} Concentrations at Bringelly AQMS (2020-2024)

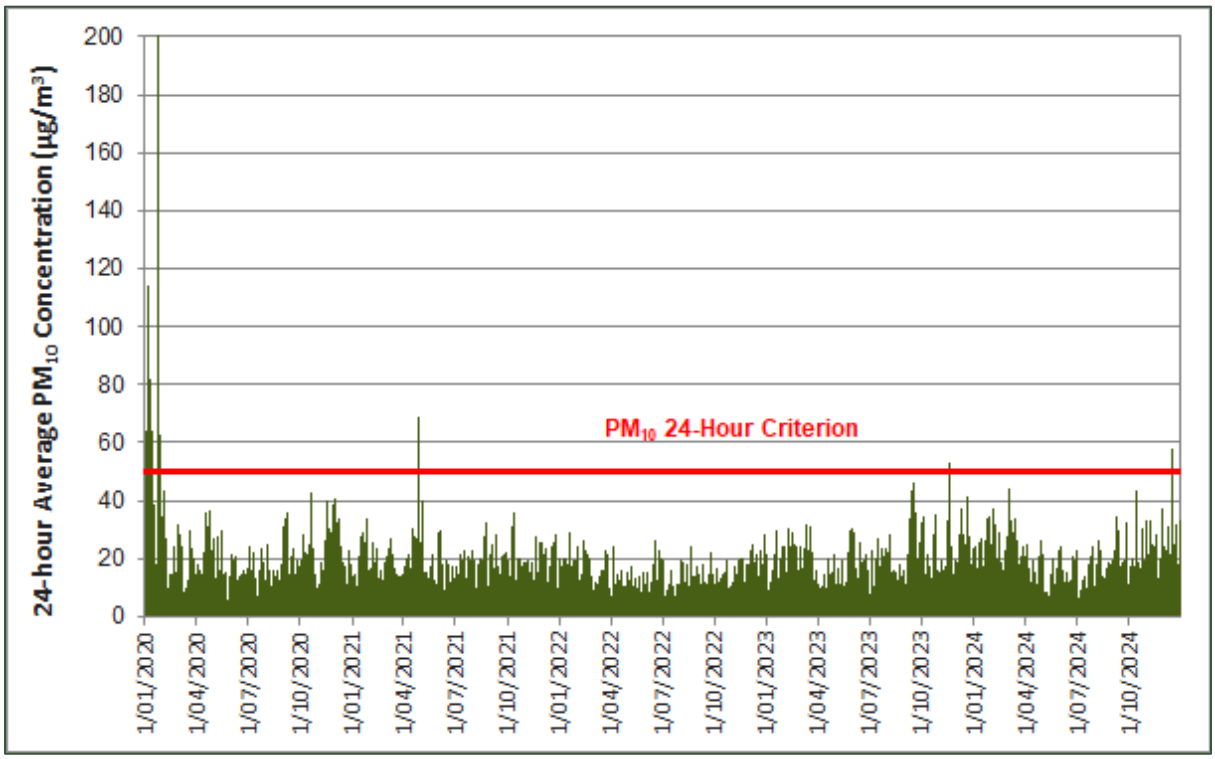


Figure 7 Measured 24-Hour Average $PM_{2.5}$ Concentrations at Bringelly AQMS (2020-2024)

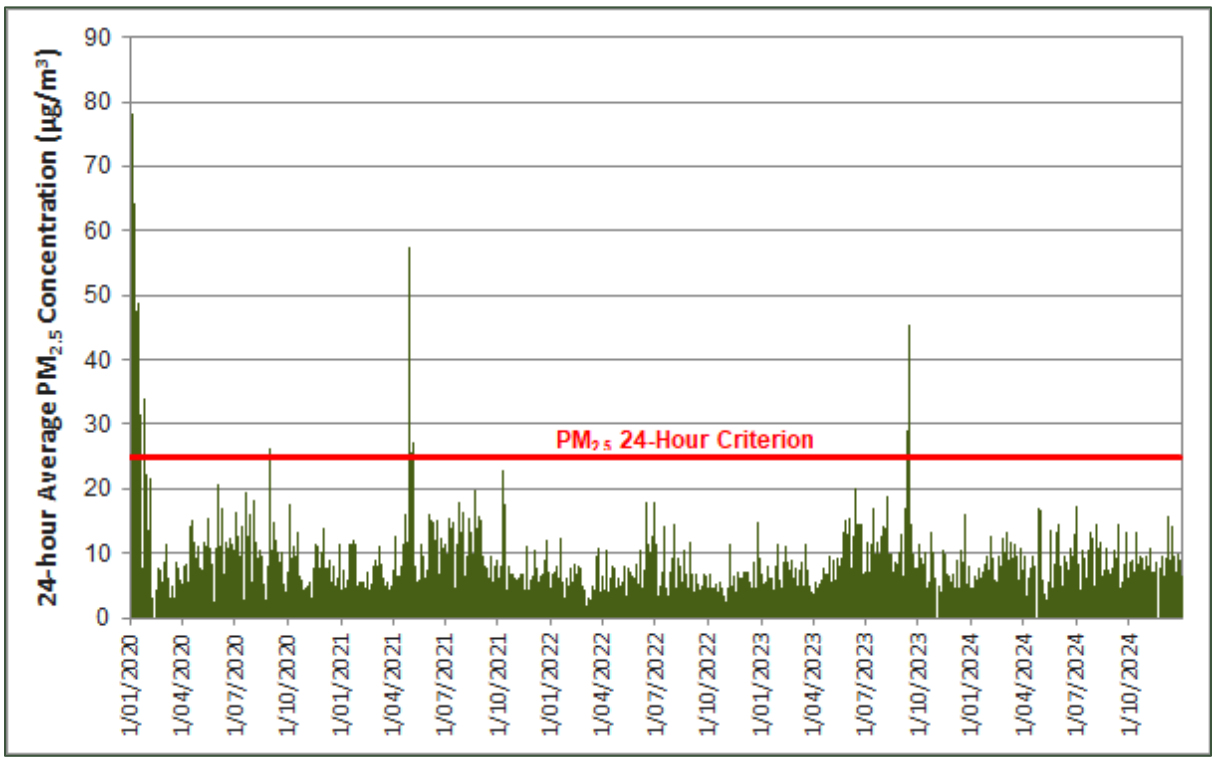


Figure 8 Measured Daily Maximum 1-Hour Average NO_2 Concentrations at Bringelly AQMS (2020-2024)

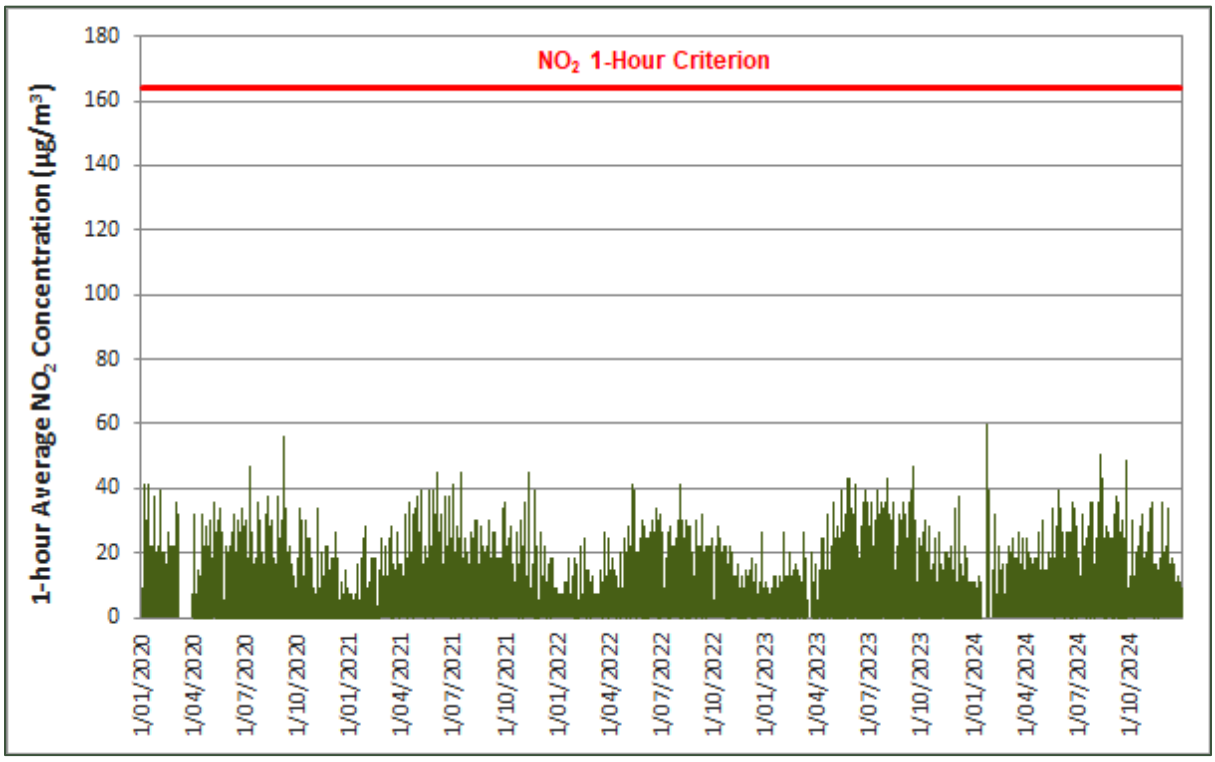


Figure 9 Measured Daily Maximum 1-Hour Average SO_2 Concentrations at Bringelly AQMS (2020-2024)

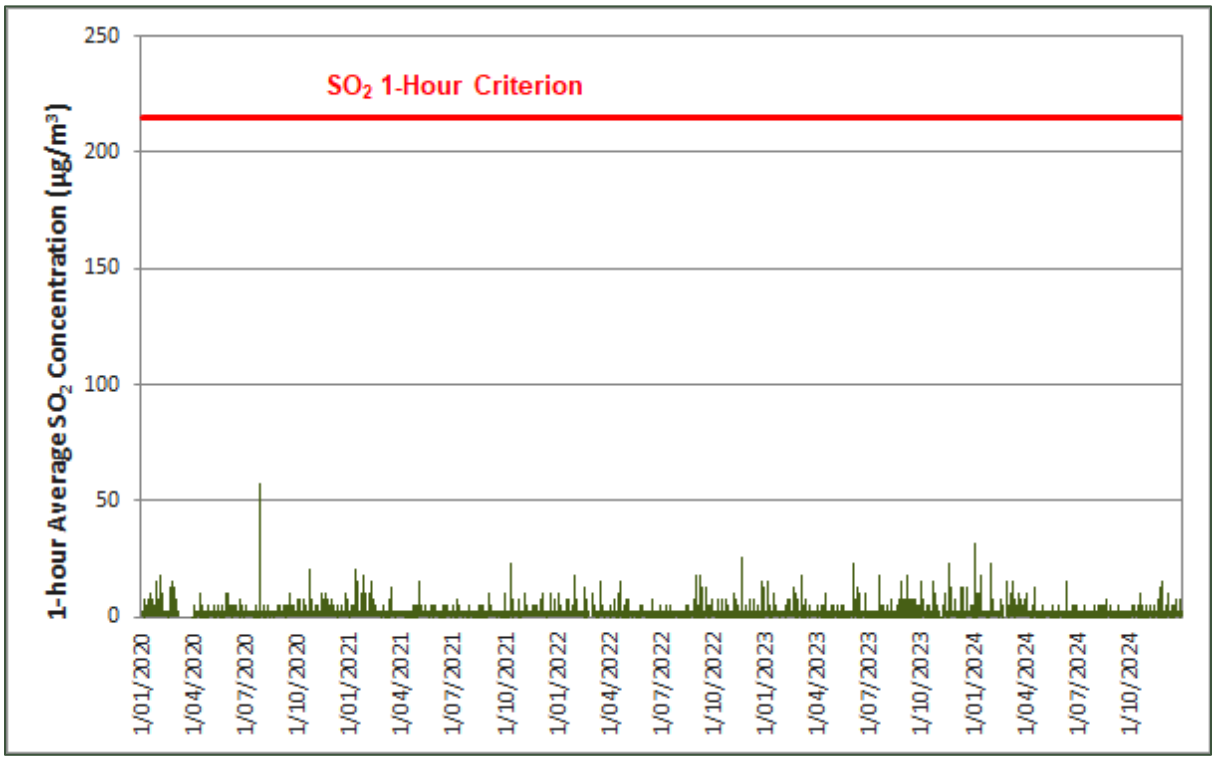
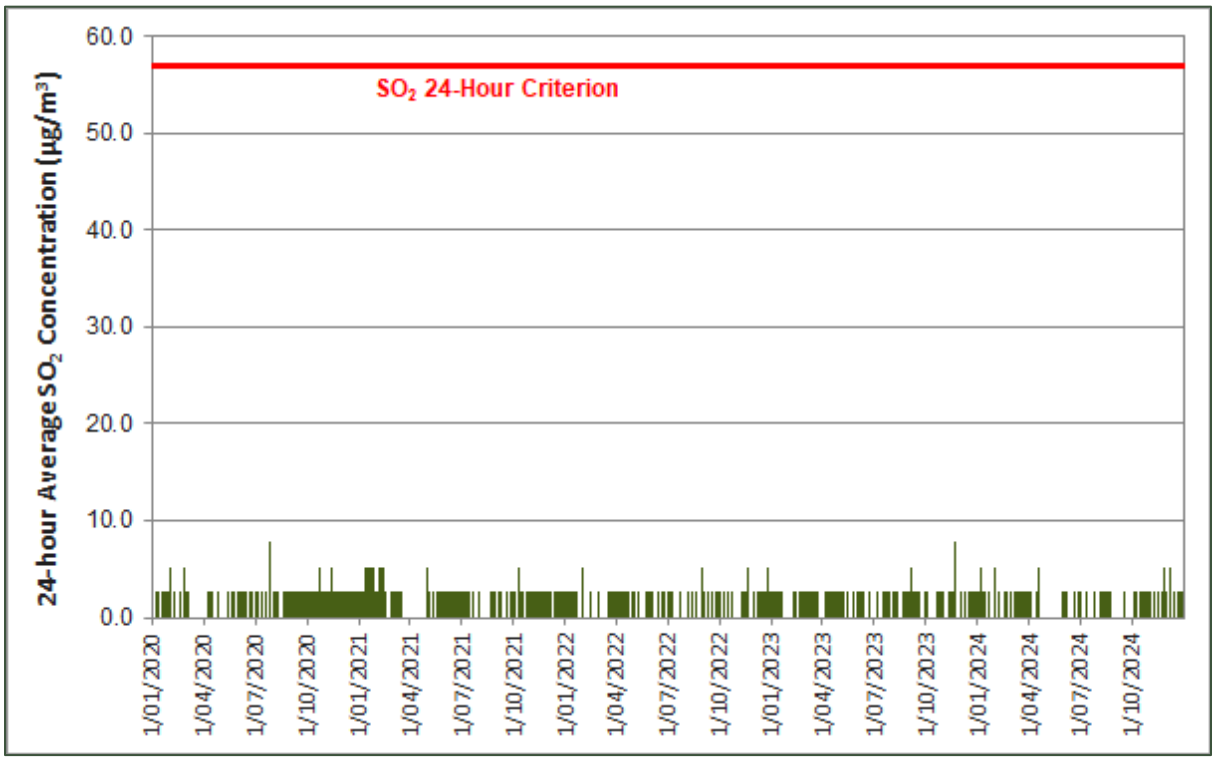


Figure 10 Measured 24-Hour Maximum SO_2 Concentrations at Bringelly AQMS (2020-2024)



5.0 Recommended Mitigation Measures

This plan follows the mitigation framework outlined in the AQIA prepared for the SYD ADC development application (SLR Consulting Pty Ltd 2024) and the *Guidance on the Assessment of Dust from Demolition and Construction* (IAQM 2024). With effective implementation, these controls are anticipated to reduce the level of risk for the surrounding sensitive receptors from high to medium during the construction phase.

Table 5 Recommended Site-Specific Management Measures

Environmental Management Control	Person Responsible	Timing / Frequency
Communications		
Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.	Communications and Community Liaison Representative	Prior to commencing construction and ongoing
Display the name and contact details of person(s) account-able for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.	Construction Contractor	
Display the head or regional office contact information		
Implement a CAQMP, which may include measures to control other emissions, approved by the Local Council or relevant regulatory authority.		
Site Management		
Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken as per **Section 9.0** of this CAQMP.	Construction Contractor	Ongoing
Make the complaints log available to the Local Council when asked.		
Record any exceptional incidents that cause dust and/or air emissions, either on- or off-site, and the action taken to resolve the situation in the logbook.		
Hold regular liaison meetings with other high risk construction sites within 250 m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.		
Monitoring		
Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the Local Council when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100 m of site boundary, with cleaning to be provided if necessary.	Construction Contractor	Ongoing

Environmental Management Control	Person Responsible	Timing / Frequency
Carry out regular site inspections to monitor compliance with the CAQMP, record inspection results, and make an inspection log available to the Local Council when asked.		
Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.		
Agree dust deposition,, or real-time PM continuous monitoring locations with the relevant regulatory authority. Where possible, commence baseline monitoring at least three months before work commences on site or, if it is a large site, before work on a phase commences.		
Preparing and Maintaining the Site		
Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.	Construction Contractor	Ongoing
Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.		
Fully enclose site or specific operations where there is a high potential for dust production and the site is actives for an extensive period.		
Avoid site runoff of water or mud.		
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. If they are being re-used on-site cover as described below.		
Cover, seed or fence stockpiles to prevent wind whipping.		
Operating Vehicle/Machinery and Sustainable Travel		
Ensure all vehicles switch off engines when stationary - no idling vehicles.	Construction Contractor	Ongoing
Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable.		
Impose and signpost a maximum-speed-limit of 24 km/h on surfaced and 16 km/h on un-surfaced haul roads and work areas. If long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the Local Council, where appropriate). Performance indicators are provided to ensure dust generation is minimised at higher speed limits.		
Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.		
Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).		

Environmental Management Control	Person Responsible	Timing / Frequency
Operations		
Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.	Construction Contractor	Ongoing
Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.		
Use enclosed chutes and conveyors and covered skips.		
Minimise drop heights from conveyors, loading shovels, hoppers and other loading or hand ling equipment and use fine water sprays on such equipment wherever appropriate.		
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.		
Waste Management		
Avoid bonfires and burning of waste materials.	Construction Contractor	Ongoing
Demolition		
Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).	Construction Contractor	Ongoing
Ensure effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.		
Avoid explosive blasting, using appropriate manual or mechanical alternatives.		
Bag and remove any biological debris or damp down such material before demolition.		
Earthworks		
Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.	Construction Contractor	Ongoing
Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.		
Only remove the cover in small areas during work and not all at once.		
Land stabilisation works are carried out progressively on site to minimise exposed surfaces.		
Exposed surfaces and stockpiles are suppressed by regular watering or other alternative suppression methods		
Construction		

Environmental Management Control	Person Responsible	Timing / Frequency
Avoid scabbling (roughening of concrete surfaces) if possible.	Construction Contractor	Ongoing
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.		
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.		
For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.		
Trackout		
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.	Construction Contractor	Ongoing
Avoid dry sweeping of large areas.		
Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.		
Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.		
Record all inspections of haul routes and any subsequent action in a site log book.		
Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.		
Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).		
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.		
Access gates to be located at least 10 m from receptors where possible.		
All trucks entering or leaving the site with loads have their loads covered		
Trucks associated with the development do not track dirt onto the public road network.		
Public roads used by trucks are kept clean.		

6.0 Performance Objectives

Table 6 summarises the performance objectives identified to assess the effectiveness of the control measures shown in **Section 5.0**.

Table 6 Summary of the Parameters to Assess the Effectiveness of Control Measures

Parameter	Key performance indicator	Monitoring method	Location, frequency and duration of monitoring	Reporting	Record Keeping	Response procedures
Visible Dust	No visible dust leaving the Site boundary	Visual inspection / observations	Daily onsite inspection	Site inspection log.	Refer to **Section 9.4**	Refer to **Section 8.0**
	Wheel-generated dust below wheel height					
PM_{10}	<50 µg/m^3 as a 24-hour average	Low-cost dust monitoring sensors to assist with on-site management and provide "indicative" and 24-hour average PM_{10} concentrations.	Refer to **Section 7.0**	Weekly summary of PM_{10} monitoring, including 24.hour average concentrations.		
Deposited Dust	4 g/m^2/month as a maximum total deposited dust level	Dust deposition gauge sampling provides compliance monitoring as per AS/NZS 3580.10.1	Refer to **Section 7.0**	Monthly report of Dust Deposition Monitoring		
	2 g/m^2/month maximum increase in deposited dust level					
Products of Combustion	No clearly visible exhaust emissions on any mobile plant or vehicles for a sustained period of 5 seconds when engine is idling [1]	Visual inspection / observations	Daily onsite inspection	Site inspection log.		
Complaints	No complaints related to dust or other air quality issues	Community consultation and complaints register	As required	Complaints register.	Refer to **Section 9.3**	

1. Adopted from https://www.nzta.govt.nz/resources/rules/vehicle-exhaust-emissions-2007/ #4

7.0 Air Quality Monitoring Program

A summary of the proposed on-site air quality monitoring programme at the Site is shown in **Table 7**. The indicative recommended locations of these monitors are shown in **Figure 11**. These locations will be finalised in consultation with various stakeholders, and matters such as land access for installation and monthly change over, siting in accordance with appropriate Australian Standards (including *AS3580.1.1 Methods for sampling and analysis of ambient air. Guide to siting air monitoring equipment*), personnel safety, equipment safety will be taken into consideration when finalising these locations.

Monitoring, including laboratory analysis and record keeping, is to be conducted in accordance with *AS3580.10.1 Methods for sampling and analysis of ambient air. Determination of particulate matter—Deposited matter—Gravimetric method*. All monitoring data will be documented within a logbook and reported in monthly dust monitoring reports reflecting the activities recorded in the logbook.

Daily observations of any identified visible dust emissions from the Site (onsite and offsite on each boundary) will be made by the Site supervisor, or their delegate in a logbook, including the description of the observations, wind speeds and direction (observations from Badgerys Creek AWS), rainfall (observations from Badgerys Creek AWS), any known regional impacts (e.g. bushfires or regional dust events) and any observable triggers of dust emissions from the Site.

Table 7 Summary of on-site Monitoring Programme

Pollutant	Action	Equipment Used	Number of Monitoring Sites	Frequency	Criterion (Averaging Period)
Deposited dust	Conduct monthly compliance Dust Deposition Gauge (DDG) sampling at locations representative of nearest sensitive receptors and prevailing wind directions.	Dust Deposition Gauges (DDGs)	4	Continuously 1 month prior to commencement and monthly continuously during construction.	4 g/m^2/month (annual average)
Particulate matter	Conduct real-time continuous PM_{10} monitoring at locations representative of nearest sensitive receptors & prevailing wind directions.	Indicative PM_{10} monitor (SiteHive Hexanode or similar)	2	Continuously 1 month prior to commencement and monthly continuously during construction.	50 µg/m^3 Indicative criterion (24-hr average)
Visible emissions	Undertake regular on-site inspections to check compliance with dust controls and maintain a log of results.	None	Each boundary	Continuously during construction.	Daily recorded observations of visible dust by the site supervisor (or delegate)
Nuisance Dust	Monitor complaints for occurrences of nuisance dust at receptors.	In consultation with a suitably qualified air quality professional at the complaint location (or as near as practicable)	-	As required.	4 g/m^2/month (annual average)
Meteorological Conditions	Continuously during construction.	Badgerys Creek AWS.	1	Continuously during construction.	=

Figure 11 Indicative Air Quality Monitoring Locations for the Project

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Project Number:	610.033791
Location:	Badgerys Creek, NSW
Source:	Nearmap
Projection:	UTM Zone 56S
Date:	13/03/2026

Richard Cookes Constructions

ALDI Badgerys Creek CAQMP

Monitoring Location

8.0 Contingency Plan

As discussed in **Section 5.0**, a range of standard dust controls will be used to manage and mitigate the effects of fugitive dust during construction of the Project. Additional mitigation may also be required in the event that:

- Monitoring indicates that significant dust emissions are occurring
- Weather conditions are changing such that dust emissions are more likely; and / or
- Complaints are received regarding dust.

If the recommended mitigation measures fail in controlling dust emissions and dust emissions may cause significant adverse effects on the surrounding receptors beyond the Site boundary, the dust generating activities shall be stopped until sufficient mitigation can be put in place.

The air quality contingency management plan for the construction of the Project is shown in **Table 8**.

Table 8 Air Quality Contingency Management Plan for the Project Construction

Key Element	Timeline	Trigger / Response	Condition Green	Condition Amber	Condition Red
Visible dust leaving the site	Immediate	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.
			Daily inspections show that there is no visible dust leaving the Site and wheel-generated dust is below wheel height. Source: (NSW EPA 2024)	Wheel-generated dust is slightly above the wheel height. Source: (NSW EPA 2024)	Wheel-generated dust is well above the wheel height. Source: (NSW EPA 2024)
		Response	Continue monitoring program as normal.	Review and investigate construction activities and respective control measures. Where appropriate, implement additional remedial measures, such as deployment of additional water sprays, water trucks etc	Undertake an investigation of the dust generating activities, and if necessary, temporarily halt the dust generating activities
Particulate Matter (PM_{10} of ≥50 µg/ m^3)	24 hour period	Trigger	PM_{10} rates are less than 50 µg/m^3 as a 24-hour average at all the monitors.	PM_{10} rates are greater than 50 µg/m^3 as a 24-hour average are recorded at any of the monitors	PM_{10} rates are greater than 50 µg/m^3 as a 24-hour average are recorded by two at any of the monitors for two days in a row.
		Response	Continue monitoring program as normal.	Construction contractor's Project Manager to: • Review operations via a visual inspection of dust emissions from current activities to ensure all standard dust mitigation measures are being appropriately implemented. Where appropriate, implement additional remedial measures. • Determine if background concentrations may be the key contributor to high concentrations being recorded (e.g., based on wind direction, information on regional events such as bush fires or dust storms, etc). • Continue to closely monitor PM_{10} concentrations being recorded.	Construction contractor's Project Manager to review and investigate construction activities and respective control measures for the monitoring period and: • Cease any non-critical dust-producing activities or relocate relevant activities where possible away from sensitive receptors, or to less exposed locations. • Continue to closely monitor PM_{10} concentrations being recorded. 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.
Dust deposition reading of >4g/m^2/month	Monthly period	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.	Construction contractor's Project Manager to: • analyse data to try to identify the source(s) of dust • review operations to reduce dust emissions from the identified key source(s); and • Implement any additional mitigation measures as required, such as additional watering.	Construction contractor's Project Manager 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.
Intense Meteorological	Continuous	Trigger	Normal Meteorological Conditions	Forecast winds greater than 5 m/s and dry conditions.	Forecast winds greater than 10 m/s and dry conditions.

Key Element	Timeline	Trigger / Response	Condition Green	Condition Amber	Condition Red
Conditions		Response	Continue monitoring program as normal.	• Limit the activities that generate dust within 200 m of downwind sensitive activities. • Additional visual inspection of exposed areas and activities. • Assess the need for additional controls such as increased water application rates.	Stop activities that generate dust up to 200 m downwind of the construction activities, until wind eases.
Complaints received regarding nuisance dust	As received	Trigger	There are no complaints received during the construction	An air-quality related complaint is received from a nearby resident	Further complaints (more than 2) are received from the same complainant after the additional mitigation measures have been implemented

		Response	Continue monitoring program as normal.	• Report the complaint to the regulator, in line with complaints handling procedure (See **Section 9.0**).
				• Review timing of the complaint compared to known Site activities to identify if particular Site activities (or lack of activity in the case of mitigation measures) are contributing to the complaints.
				• Review and investigate construction activities and increase dust suppression measures (additional watering, covering stockpiles etc), where appropriate.
					• Review monitoring data from the existing monitors to investigate the likelihood of onsite activities contributing.
					• The investigation should take into account (but not limited to) regional dust/particulate data, prevailing wind data on the day/time of complaints, onsite activities at the time of complaints and offsite activities at the time of complaints.
					• Conduct real time air quality monitoring at the complaint location (or as near as practicable) including meteorology if required. This monitoring should be conducted in consultation with a suitably qualified air quality professional.
					• Identify the following from any monitoring conducted:
					  • Monitoring method
					  • Location, frequency and duration of monitoring
					  • Assessment against compliance with criteria identified in **Section 3.0**; and
					  • Recommendations for further mitigation.

Real-time suspended particulate matter monitoring (PM_{10})		Trigger	Running 24-hour average PM_{10} concentrations < 40 µg/m^3	Running 24-hour average PM_{10} concentrations >40 µg/m^3 but <50 µg/m^3	Running 24-hour average PM_{10} concentrations >50 µg/m^3

		Response	Continue monitoring program as normal.	• Site Manager to review and investigate construction activities and respective control measures.
				• Where appropriate, implement additional remedial measures, such as:
				  • Deployment of additional water sprays, water trucks etc
				  • Relocation or modification of dust-generating sources
				  • Record findings of investigations and actions taken to reduce dust levels
				  • Continue to closely monitor dust levels to ensure they are decreasing
				  • If elevated dust levels are due to regional dust event (fire, dust storm etc) – still take action to minimise dust from the Development Site to minimise cumulative impacts, but also record details of the cause of the elevated background levels.
					• Site Manager to review and investigate construction activities and respective control measures for the monitoring period, in an air pollution incident report.
					• If it is concluded that construction activities at the Site 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.

9.0 Complaints Handling and Response Procedure

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

9.1 Performance Objective

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

9.2 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.

9.3 Complaints Handling Procedure

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

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.

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.

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.

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 8.0**, 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 5.0** and/or the air quality monitoring programme outlined in **Section 7.0** is to be reviewed and, the CAQMP updated as appropriate.

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.

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.

Preventative Action

Once the complaint has been suitably handled, proposed improvements will be investigated and implemented to minimise the potential of re-occurrence. The Complaint Enquiry Form will not be closed out until the preventative actions are completed and recorded on the form.

9.3.1 Complaints Register

A Complaints Register will be maintained during construction and will contain the following:

- A copy of the environmental complaint handling procedure
- A separate reference sheet containing the contact details
- Blank hard copies of the Complaint Enquiry Form; and
- Copies of all completed Complaint Enquiry Forms, which are to be maintained for at least five years after the event to which they relate.

9.4 Record Keeping and Reporting

The following records shall be maintained for the duration of the project:

- Air Quality Monitoring Data – results from PM_{10} and Dust Deposition monitoring, and meteorological monitoring.
- Site Inspection logs – routine and ad-hoc inspections, including dust control checks.
- Complaints Register – details of community complaints, investigation findings, and corrective actions taken.
- Incident Reports – documentation of exceedances, equipment failures, or non-compliance events.
- Training Records – attendance logs for inductions, toolbox talks, and refresher training sessions.
- Maintenance Logs – servicing and calibration records for dust suppression systems and monitoring equipment.

Record keeping is to be undertaken in accordance with the CEMP for the Development Site.

Records will be retained for a minimum of 5 years after project completion or as required by environmental approvals, licences, or legislation.

All exceedances or significant incidents will be reported to the relevant regulatory authority, such as the ER, within the required timeframe.

Inspection logs, complaints register, weekly PM10 monitoring summaries and monthly dust deposition monitoring reports may be required by the ER to meet their reporting obligations.

10.0 Roles and Responsibilities

The key responsibilities specifically for dust management are as follows:

10.1 Construction 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 Badgerys Creek AWS)
- Throughout the day, visually assessing the dust levels and the effectiveness of any dust controls that have been implemented, which may include engaging additional resources to reduce or mitigate the risk of dust leaving the Site; and
- Ceasing particular scopes of work 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.).

10.2 Environmental Coordinator

- Undertaking a dust monitoring program; and
- Review that control measures are working in accordance with the CAQMP.

10.3 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; and
- Identifying and reporting dust emission incidents.

11.0 Review and Improvement of the CAQMP

The review of the CAQMP will be undertaken annually and will include participation by Mirvac. The review will comprise, as a minimum, the following:

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

This 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; or
- In the event of a substantiated complaint being received regarding air quality impacts and/or at the request of a relevant regulatory authority.

12.0 References

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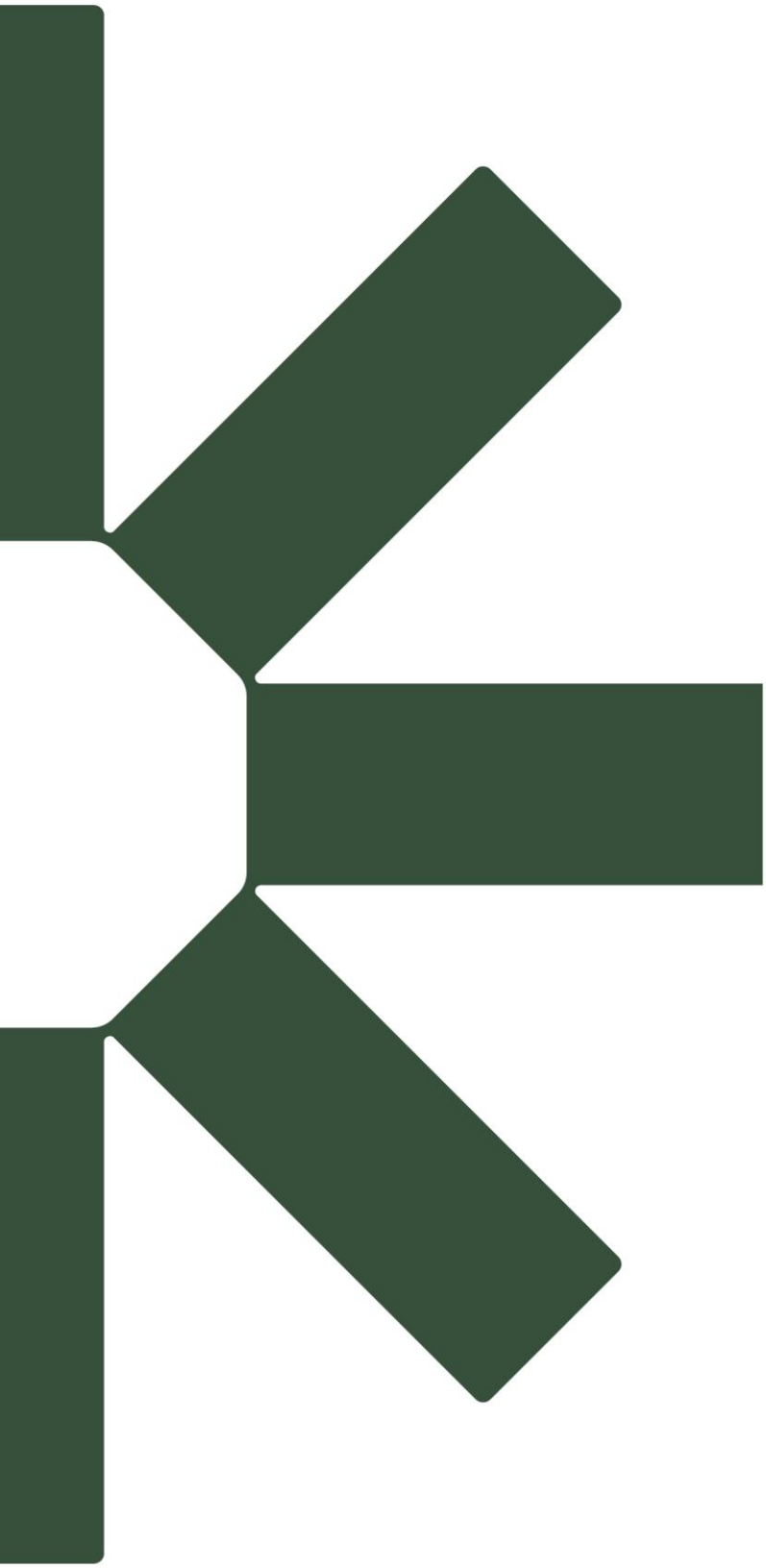

Making Sustainability Happen

Appendix O

Community Consultation and Engagement Plan

Geosyntec consultants

COMMUNITY CONSULTATION AND ENGAGEMENT PLAN

ALDI SYD ADC
1351

10 APRIL 2026

RICHARD CROOKES
CONSTRUCTIONS

THIS PLAN HAS BEEN APPROVED FOR USE BY:

APPROVED BY / DATE

Mitchell Kay, **SENIOR PROJECT MANAGER**

APPROVED BY / DATE

Craig Richmond**, BUSINESS SYSTEM, QA / ENV. MANAGER**

APPROVED BY / DATE

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APPROVED BY / DATE

Claude Concha, **GENERAL MANAGER (INDUSTRIAL)**

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Tina Zhang	RPI	One copy
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REVISION REGISTER

REVISION DATE	REVISION DESCRIPTION	PMS INITIALS (ACCEPTANCE OF CHANGES)
09/01/2026	Initial Issue	PM
10/04/2026	General Amendments – for internal use	PM

PROJECT POSITION	NAME	SIGNATURE	REVISIONS	
			09.01.2026	10.04.2026
GENERAL MANAGER	Claude Concha		CC	CC
SENIOR PROJECT MANAGER	Mitchell Kay		MK	MK
SENIOR SITE MANAGER	Michael French		MF	MF
CONTRACTS MANAGER	Gary Kenny		GK	GK
CONTRACTS MANAGER	Carl Musolino		CM	CM
SENIOR CONTRACTS ADMINISTRATOR	Tommy Nguyen		TN	TN
SENIOR PROJECT ENGINEER	Andre Kisso		AK	AK
DESIGN DIRECTOR	Alex Hovy		AH	AH
SENIOR DESIGN MANAGER	Maruthi Dhurjati		MD	MD
SENIOR DESIGN MANAGER	Paul Cassistatis		PC	PC
SENIOR PROJECT ENGINEER	Shek Yuen		SY	SY
PROJECT ENGINEER	Mei Tang		MT	MT

SITE ENGINEER	David Li	DL	DL
SITE ENGINEER	Mahnoor Shahzad	MS	MS
WHS MANAGER	Marcello Di Paolo	MDP	MDP

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INTRODUCTION

This Community Consultation and Engagement Plan forms part to the Project Management Plan for ALDI Sydney ADC.

1.1 PURPOSE OF THE PLAN

Richard Crookes Constructions (RCC) recognises the importance of trust in relationship building with stakeholders involved with the project. Consequently, being accountable is paramount and we seek to be transparent with our communications and documentation.

Further, in line with our company commitment to continual improvement, we constantly aim for a greater level of engagement and interaction with stakeholders, particularly when our project activities may impact on the communities in which we operate.

The purpose of this plan is to outline processes for:

- Achieving our Objectives and Targets;
- Consultation Strategies;
- Identification of Stakeholders;
- Responsibilities for Implementing the Plan; and
- Stakeholder Grievances and Concerns. Richard Crookes Constructions (RCC) recognises the importance of promoting building design and construction techniques which minimise waste and provides an efficient recycle procedure for all waste material.

2 RCC OBJECTIVES AND TARGETS

RCC's overall objective is to promote an open communications environment that will minimise disruptions and issues for both the project team and the community.

To support this, and in line with commitments made in RCC's Environmental Policy, project level objectives and targets include:

- Community complaints are to be actioned within 24 hours;
- No repeat complaints for the same issue.

3 DESCRIPTION OF PROJECT

3.1 GENERAL

The Project consists of an 85,000m^2 Distribution Centre, of which RCC is the principal contractor. The project is located at 475 Badgerys Creek Road, Bradfield - access to site is off the Eastern Ring Road. The works are the Design and Construction of a High-bay and Low-bay warehouse, incorporating a range of temperature-controlled environments to support the safe storage and distribution of goods.

The facility is divided into multiple chambers including Ambient zones, Chilled zones of approximately 22,300m^2, and Freezer zones of around 5,500m^2. The development also includes a Main Office, Spine Office, Plant Rooms, HV Rooms and a Maintenance Workshop area. It also features Inbound and Outbound loading docks, carparks, landscaping works, concrete hardstand, and site facilities compromising a Gate house, Weighbridge, Truck wash bay and Truck refuelling station.

3.2 HOURS OF OPERATION

The Development Consent hours of operation for the construction project are:

Monday – Friday 7am to 6pm

Saturday – 8am to 1pm

3.3 PROPOSED TIMEFRAMES

The table below provides an overview of the construction activities and the timeframe for the works.

CONSTRUCTION ACTIVITIES		
ACTIVITY	**METHODOLOGY**	**TIMEFRAME**
Site set up including environmental controls	Hiab trucks and Mobile cranes.	04/05/26 – 28/05/26
Bulk earthworks & spoil removal	Earthmoving plants and equipment – Excavators, Bulldozers, Graders, Scrapers, Roller Compactors, Water Trucks, Body Trucks (heavy rigid and truck and dog).	13/05/26 – 23/09/26
In ground services	Excavators	01/06/26 - 07/06/27
Footings, foundations & anchors	Excavators, Concrete pump trucks, Concrete Trucks, CFA rigs, Water trucks, Skid Steers, body trucks.	19/06/26 – 27/11/27
BDR Building Delivery and Installation	Excavators, compactors, Skid Steers, Telehandlers, Boom lifts, Scissor Lifts, Mobile cranes, Telehandlers, body trucks.	30/06/26 – 18/11/27
Fit-out of final finishes & furniture	Boom lifts, Scissor Lifts, body trucks.	23/03/27 - 18/11/27

External works incl. pavements, landscaping	Asphalt Plants, Skid Steers, Excavators, Concrete pump trucks, Concrete Trucks, body trucks, concrete saw cutter.	06/05/26 – 17/09/27

4 SITE MANAGEMENT PROJECT DETAILS

POSITION	NAME	PHONE (W)	PHONE (M)
Senior Project Manager	Mitch Kay	02 9902 4700	0413 611 842
Senior Project Engineer	Andre Kisso	02 9902 4700	0418 175 668
Site Manager	Mike French	02 9902 4700	0437 637 649
WHS Manager	Marcello Di Paolo	02 9902 4700	0418 272 205
	LOCATION	**PHONE**	
Site Management Project Office	475 Badgerys Creek Road, Bradfield	0413 611 842	

5 BALANCING COMMUNITY EXPECTATION AND RCC OBLIGATIONS

Balanced community engagement involves both a commitment from RCC and an expectation from the community, as summarised below.

	INFORM	CONSULT	INVOLVE	COLLABORATE
Community Expectation	To get balanced and objective information about aspects of the project that impact on us	To be asked our opinions and allow us to provide feedback to the company on the matters that concern us	To be involved in the decision making process and the exploration of alternatives regarding those issues that are of concern to us	To create a partnership with us whereby we have faith that our concerns and ideas are integrated into the decision making process
RCC Obligation	We will keep the community well informed	We will listen and acknowledge community concerns and provide evidence that concerns are considered in decision making	We will work with the community to make sure concerns and issues are reflected in any alternatives developed. Provide feedback to the community on how their inputs has influenced outcomes	We will look to the community for advice and innovation in solving issues and concerns and incorporate their advice into the decision making process to the maximum extent possible.

6 CONSULTATION AND STRATEGY/OUR APPROACH TO DIALOGUE

6.1 GENERAL

Community consultation can be involving, meaningful, useful and effective if the following principles are used as a starting point for making consultation work:

- Making it timely: participation should not be so late in the process of an issue that it is tokenistic or merely confirms decisions already made. Give people enough time to express their views.
- Making it inclusive: Participation should be selected in a way that is not open to manipulation, and should include a cross section of the participation.
- Making it community focused: Ask participants not what they personally want but what is appropriate in their role as a citizen.
- Making it interactive: avoid reducing questions to a simplistic response. Allow consideration of the big picture so people can readily become engaged.
- Making it effective: Although decision making can strive for consensus, complete agreement may not be the outcome. Be clear on how the decisions will be made so participants understand the impact of their involvement. Allow enough time for participants to become familiar with the project issues.
- Making it Matter: it is important that a strong likelihood that any recommendations that emerge from the consultative process will be accepted. If they are not, it is important that a public explanation is provided.

6.2 WAYS TO CONSULT

Different community stakeholder groups need different consultation methods at different stages of the project. Some of the processes that may be used are listed below.

CONSULTATION METHOD	INFORM	CONSULT	INVOLVE	COLLABORATE
Tools Meetings	Fact Sheet / flyers Website Project Open days Briefings 24 hrs. contact points Media Direct personal visits Project inductions	Public submissions Focus groups Public meetings Surveys	Community liaison groups Workshops Submissions Community projects / sponsorship Local suppliers preference policy	Advisory groups Decision making Consensus building

6.3 LETTER BOX DROPS AND PUBLIC NOTICES

Letter box drops or public notices will include at least the following (refer to example within section 12):

- Why the works are required;
- When they will occur;
- What mitigation measures are in place to minimise any community or environmental impacts;
- Who will be doing the work and a contact phone number for further information; and
- Emergency Contact number / community complaints line.

6.4 COMMUNICATION PROTOCOLS

The protocols for establishing and continuing community consultation for this project include:

- Communicating clearly;
- Including 3 or 4 main messages, and repeat them in different ways;
- Ensuring information is structured around the same messages i.e. Consistency;
- Ensuring project staff are clear about main messages, so stakeholders receive consistent messages;
- Providing information promptly;
- Establishing timelines and lines of communication: for this project a 2-day response time to deal with community concerns has been determined;
- Making the information accessible to all interested parties; and
- Being open to changes that may result from listening and incorporating innovations or concerns from the community into the project activities and methodologies.

7 IDENTIFICATION OF STAKEHOLDERS FOR THIS PROJECT

7.1 GENERAL

Key stakeholders are generally identified as people who are adversely or positively impacted by our operations, those who have an interest in / influence on what we do.

Our project sites are required to identify their key stakeholders and consider their expectations and concerns during design (where achievable) and operational activities.

These projects key stakeholders are many and varied and may include:

RCC's Employees Client and end users, subcontractors, and suppliers;

- Local and Indigenous communities;
- Customers;
- Surrounding property occupiers or owners;
- Community organisations that represent local and indigenous communities near our projects, particularly in regional areas;
- Unions who are concerned about upholding workers' rights and interests; and
- Governments – local & state;
- The media; and
- Industry associations.

Within these groups, there are stakeholders that may be interested in specific issues or affected by a range of issues.

7.2 COMMUNITY CONSULTATION PLANNING

Section 7.3 summarises the Community and Stakeholders Mapping Guide and overall consultation strategy planned for this project.

7.3 STAKEHOLDERS INDENTIFIED FOR THIS PROJECT & CONSULTATION STRATEGIES

For this project, business, residential and other stakeholders that may be specifically impacted by project works and the corresponding consultation strategy have been listed in the table below:

STAKEHOLDERS AND CONSULTATION STRATEGIES		
PRECINCT	**IMPACTS**	**CONSULTATION STRATEGY**
Businesses	During Construction: extra traffic (concrete trucks)	A construction update advising of progress of current works and advice of commencement of soft ground works will be issue in advance of works commencing. Personal consultation – a visit will be made to update progress on works and inform businesses of upcoming works.

STAKEHOLDERS AND CONSULTATION STRATEGIES		
PRECINCT	**IMPACTS**	**CONSULTATION STRATEGY**
		Community Liaison Group (CLG) – monthly meetings (If required). Ongoing communication with the Client, Property managers and business tenants via regular email flyers and project updates. The agreed complaint handling procedures will be implemented.
Residents	During Construction: Noise, Traffic, Dust	Prior to works starting, notification and consultation will be undertaken with the identified key sensitive receivers. Personal consultation will be undertaken with identified sensitive receivers to make them aware of works. Personal consultation will be undertaken with the residents potentially impacted by regenerated noise and vibration. The agreed complaint handling procedures will be implemented.
Employees & Subcontractors	WHS/Environmental concerns Career progression & learning opportunities For those who live in regional communities where our projects are based – interactions out of work hours, business creation during the life of the project, supporting social infrastructure	Both the Head Office and Project sites, employees and contractors are expected to participate in company improvements, via: Safety committees Performance appraisals Direct communications between employees & management Newsletters & alerts Intranet Monthly reporting & corporate reports IT helpdesk
Local & Indigenous Communities	Disengagement of local & indigenous communities with the project Non – fulfilment of GC21 Contract obligations contained in Aboriginal Participation Plans Miss-alignment of RCC's policies and the NSW Government's commitment to creating outcomes (training, employment, enterprise development) for Aboriginal people, as referred to in the Making It Our Business	Development of Aboriginal Participation Plans to involve the indigenous community Community consultation groups Newsletters and other targeted communications Monthly reporting & corporate reports Community perception surveys

STAKEHOLDERS AND CONSULTATION STRATEGIES		
PRECINCT	**IMPACTS**	**CONSULTATION STRATEGY**
	Strategy and procurement in construction policy. Potential to affirm and respect indigenous and other heritage & cultural values	
Suppliers	Suppliers and subcontractors not aware of RCCs expectations Impacts of RCC's payment terms and conditions on suppliers and subcontractors	Technology exchanges Identification of risks associated with their activities and implementation of controls Seek to utilise local suppliers and support these suppliers
Community Organisations	Assurance that potential impacts (social, environmental, safety etc.) have been considered during RCC's projects and mitigated RCC's community interactions and support are mutually beneficial and sustainable	Community consultation and engagement groups Support local sporting and other groups Corporate programs
Unions	Freedom of our employees to choose to join labour unions	Communicate with unions on specific issues, RCC's EBA etc.
Regulators	Government has mechanisms of regulation that cover a range of aspects within RCC including industrial, safety, environment	RCC's activities required to work within legislative frameworks and local and state levels Meetings with Council, BCA consultant with respect to planning and design issues Onsite meetings with Local Council, DECC, Safework, CCU to ensure RCC works complying with legislation, minimising impacts to stakeholders, minimising industrial relations conflicts etc.

7.4 INDIGENOUS STAKEHOLDERS

RCC recognises and respects the importance of Indigenous peoples' culture, heritage and traditional rights and supports the identification, recording, management and protection of indigenous cultural heritage sites.

Indigenous cultural heritage is broadly defined to include matters that are significant to either Indigenous peoples or under legislation, such as dreaming, ceremonial, sacred and burial sites; archaeological sites where evidence of the past occupation and use by Indigenous peoples can be found; more contemporary historic sites; and traditional knowledge.

We recognise that Indigenous people have a vital role to play in identifying and properly managing cultural heritage, especially where it could be affected by our activities.

Where identified by the planning process, projects will undertake early consultations and assessments with Indigenous peoples to ascertain whether our proposed activities are likely to impact cultural heritage values

and, in conjunction with Indigenous peoples and relevant authorities, determine how best to plan and undertake those activities to avoid or minimise such impacts.

7.5 ABORIGINAL PARTICIPATION PLAN

Aboriginal Participation Plans will be developed for a project in accordance with the Contract requirements or where there is a significant potential to benefit the local community in line with the NSW Government's policies.

8 RESPONSIBILITY FOR IMPLEMENTING THE PLAN

The Senior Project Manager, Mitchell Kay, is responsible for developing and implementing the Community Consultation and Engagement Plan for this project. Where required, specialist consultants will be engaged.

9 STAKEHOLDER GRIEVANCES AND CONCERNS

Project sites are required to maintain a register of concerns, complaints and relevant external communications.

Concerns and complaints are to be investigated as incidents, using RCC's standard investigation processes (Form 01.1), and outcomes and actions are reported back to relevant stakeholders. Example of Form 01.1 is shown below:

1351
ALDI SYD
Dated: 8/04/2026

COMPLAINTS REGISTER

RICHARD CROOKES CONSTRUCTIONS

No.	DATE	TIME	NAME OF COMPLAINANT	ADDRESS	DESCRIPTION OF COMPLAINT	COMMUNICATION METHOD (PHONE, EMAIL, ETC.)	RESPONSE / ACTION PROVIDED	DATE CLOSED	COMMENTS

10 IS THE PLAN EFFECTIVE?

Monitoring public opinion and complaints will identify how successful the project Community Consultation and Engagement Plan is:

- If issues can be resolved by consultation and collaboration, then the program is successful.
- If issues are escalating and resolution is improbable, the program is to working.

A regular review process during the project is also a central requirement of Stakeholder identification, to ensure that all appropriate groups and individuals are effectively identified and suitably engaged.

11 RESOURCES

http://www.vlgaconsultation.org.au/

http://www.communitysolutions.com.au/index.html

Landcom Booklet Stakeholder Consultation Workbook (available on internet).

12 LETTER BOX DROP EXAMPLE

RICHARD CROOKES CONSTRUCTIONS

8 April 2026

ATTENTION: Neighbouring Properties
Badgerys Creek Road,
Bradfield NSW

RE: **475 BADGERYS CREEK ROAD, BRADFIELD – CONSTRUCTION WORKS**

Dear Neighbour,

As part of our approved SSDA Construction works (SSD-76913969), we will be commencing construction works from **Friday 17th of April 2026** at 475 Badgerys Creek Road, Bradfield. Works are scheduled to commence at approximately 7:00am, weather permitting.

During this time, there may be some intermittent noise associated with machinery operation and truck movements to and from the property. These activities will take place during approved working hours and will be managed to reduce impact where possible. All works will be carried out by fully qualified and licensed contractors, in strict accordance with relevant safety, environmental, and local council regulations.

We sincerely appreciate your patience and understanding throughout this period. Every effort will be made to minimise inconvenience to surrounding properties, including limiting noise where possible, maintaining a clean and tidy site, and ensuring that access to neighbouring homes is not affected.

Richard Crookes Constructions Pty Limited

MITCHELL KAY –
Senior Project Manager
kaym@richardcrookes.com.au
0413 611 842

LETTER BOX DROPS AND PUBLIC NOTICES

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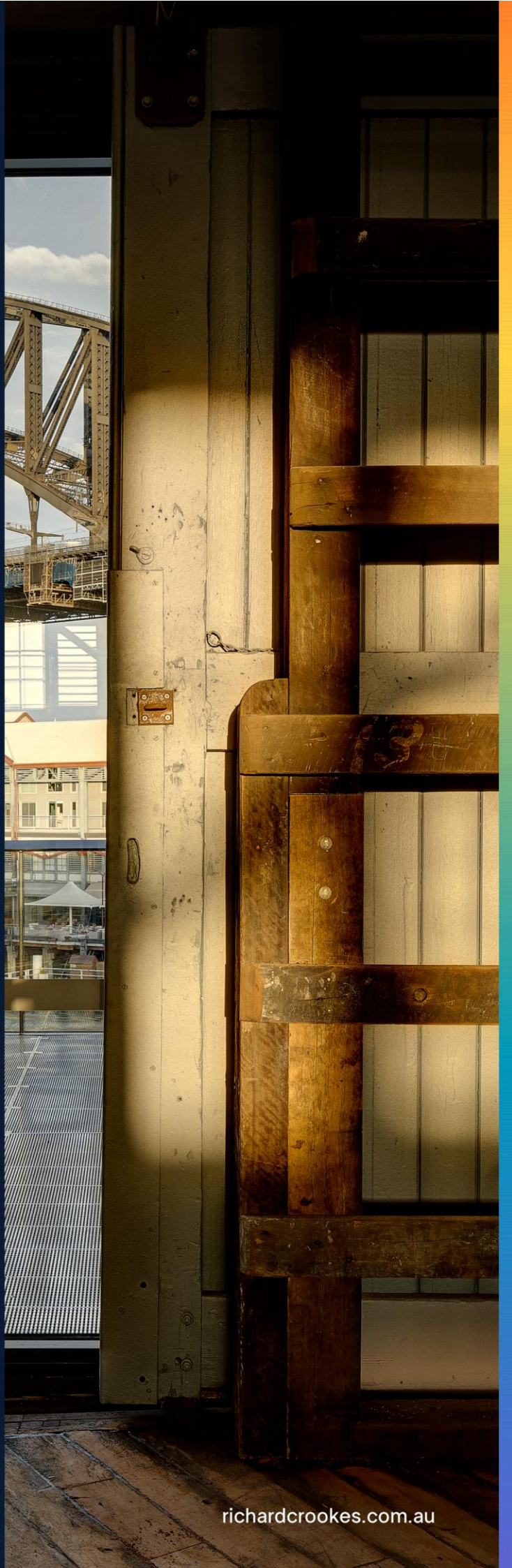
RICHARD CROOKES
CONSTRUCTIONS



richardcrookes.com.au

Appendix P

Construction Traffic Management Plan

Geosyntec consultants

8 April 2026

asongroup.com.au

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ALDI – IPG Badgerys Creek Construction Traffic Management Plan

Richard Crookes Construction

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P1492E

Document control

Project number	P1492E
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Client	Richard Crookes Construction
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V02	8 April 2026	Issue II	Angela Ji	Jae Jeon	James Laidler

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1 Introduction

1.1 Overview

Richard Crookes Construction (RCC) have engaged Ason Group to prepare a Construction Traffic Management Plan (CTMP) to support a State Significant Development Application (SSD-76913969[1]) for ALDI Automated Distribution Centre (ADC). The Site is located within IPG Master Plan (the IPG Estate) at 475 Badgerys Creek Road, Badgerys Creek, and will form Stage 1 of the IPG Estate.

This CTMP details the proposed construction management measures and strategies during construction works to minimise the effects of the works on the surrounding road network and to ensure the safety and efficiency of construction workers, community and road users.

1.1.1 Conditions of Consent

The relevant conditions of consent for SSD-76913969 that have been imposed with respect to construction traffic management have been summarised with corresponding responses in Table 1.

Table 1: Relevant Conditions of Consent

Ref.	Requirement	Response
B1	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 C2 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 and TfNSW	Council and TfNSW will have the opportunity to review this draft CTMP, with evidence of consultation to be provided as part of Appendix B and Appendix C
	(c) Detail the construction program and expected number of vehicles, including any proposed staging	Refer to Section 2
	(d) Consider the development's interaction with other development projects in the area, including infrastructure delivery and road upgrades, and any existing horticultural and agricultural business	Refer to Section 3.3
	(e) Detail the measures that are to be implemented to ensure road safety and network efficiency during construction	Refer to Section 3.4
	(f) Detail access arrangements to the site using existing access to the site	Refer to Section 3.1
	(g) Demonstrate sufficient parking for construction workers within the development site	Refer to Section 3.6
	(h) Detail heavy vehicle routes, access and parking arrangements	Refer to Section 2.4

	(i) Include a Driver Code of Conduct to: i. Minimise the impacts of earthworks and 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	Refer to Appendix A
	(j) Include a program to monitor the effectiveness of these measures; and	Refer to Section 4
	(k) If necessary, detail procedures for notifying residents and the community (including local schools), of any potential disruptions to routes/	Refer to Section 1.4.1

1.1.2 Consultation with Liverpool City Council

This CTMP has been prepared in consultation with Liverpool City Council with a summary of comments and corresponding responses provided in Table 2.

Table 2: Comments from Liverpool City Council

Ref.	Requirement	Response
1	Number of heavy vehicles accessing the site must be reduced during peak hours.	Refer to Table 22 and Table 23 which provides a breakdown between light and heavy vehicles expected during the peak hours.
2	If construction vehicles result in adverse impacts to traffic operations on Badgerys Creek Road, including measurable delays or congestion, the Contractor must implement temporary physical separation treatments. These treatments are to include, as a minimum, a dedicated left-turn slip lane, and a right-turn bay to segregate construction traffic from general through traffic movements.	Refer to Section 3.4 which provides commitment from RCC to investigate any issues raised on the performance of BCR and provide appropriate mitigation measures to ensure that the proposed works do not have an adverse impact on the through movement on BCR.
3	Construction signage must not obstruct pedestrians and cyclists path or commuters sight distance and must comply with TCAWS manual.	Noted. Contractor to ensure that signage is placed outside of pedestrian and cyclist pathway.
4	Road occupancy approval is required for site access construction works / utility connections.	Noted. Contractor to ensure appropriate road occupancy permit application is submitted and approved by Liverpool City Council prior to any site access construction or utility connection works.
5	Driveway Crossing approval is also required for all Driveway works for new Driveway or widening of existing driveways.	Noted.
6	Road Reserve approval is required for works within the public road reserve.	Noted.
7	Application forms for Road Occupancy, Driveway Crossing and Road Reserve permits are available on Council's website. The applications are to include worksite specific traffic control plans.	Noted.

	All application forms are to be submitted online to Council Transport Management Unit for approval.	
8	Mitigation measures are to be implemented to minimise construction traffic impact. Delays or adverse impacts to the road network, particularly during peak period, will not be acceptable at all times during the construction work.	Refer to Section 4
9	Pedestrian and cyclists' access and safety must be maintained at all times.	Noted.
10	Disposal bins should be stored within the development site.	Noted.
11	A notice is to be installed on all site frontages advising a point of contact for the Community to make enquiries regarding work activities. The notice must include a name, position, e-mail and phone number.	Noted.
12	A dilapidated road condition report must be prepared and submitted to Council's Land Development Unity for approval prior obtaining the construction certificate.	Noted.

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,
- 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 a consultant who holds a SafeWork NSW WHS Control Work card, accredited for the 'Prepare a Work Zone Traffic Management Plan. Details of the accredited consultant is provided below:

- James Laidler Ticket No. TCT0031686
- Jae Jeon Ticket No. TCT1055002

This CTMP has been prepared to meet the requirements outlined in Appendix A and Appendix E, Section E.2 of the Transport for NSW (TfNSW) Traffic Control at Work Sites Technical Manual (Issue No. 6.1, 2022).

1.3 Project context

The development is located at 475 Badgerys Creek Road, Badgerys Creek, legally described as Lot 100 in DP 1287207. A State Significant Development Application (SSDA) has been submitted and approved (ref: SSD-76913969) for the construction and operation of an automated warehouse and distribution centre.

The development has a Gross Floor Area (GFA) of 106,706m^2 and is expected to have maximum operational traffic volumes as follows:

- AM Peak: 400 veh/hr
- PM Peak: 368 veh/hr
- Daily: 3,980 veh/day

The anticipated construction works relating to ALDI building works have been provided by RCC and are summarised as follows:

- Stage 1A: Excavation and Site Establishment
- Stage 1B: Structure and Concrete
- Stage 2A: Fit out and Automation
- Stage 2B: Fit out and Automation

The proposed extent of the construction works within the wider IPG Estate, and the construction access locations are shown in Figure 1.

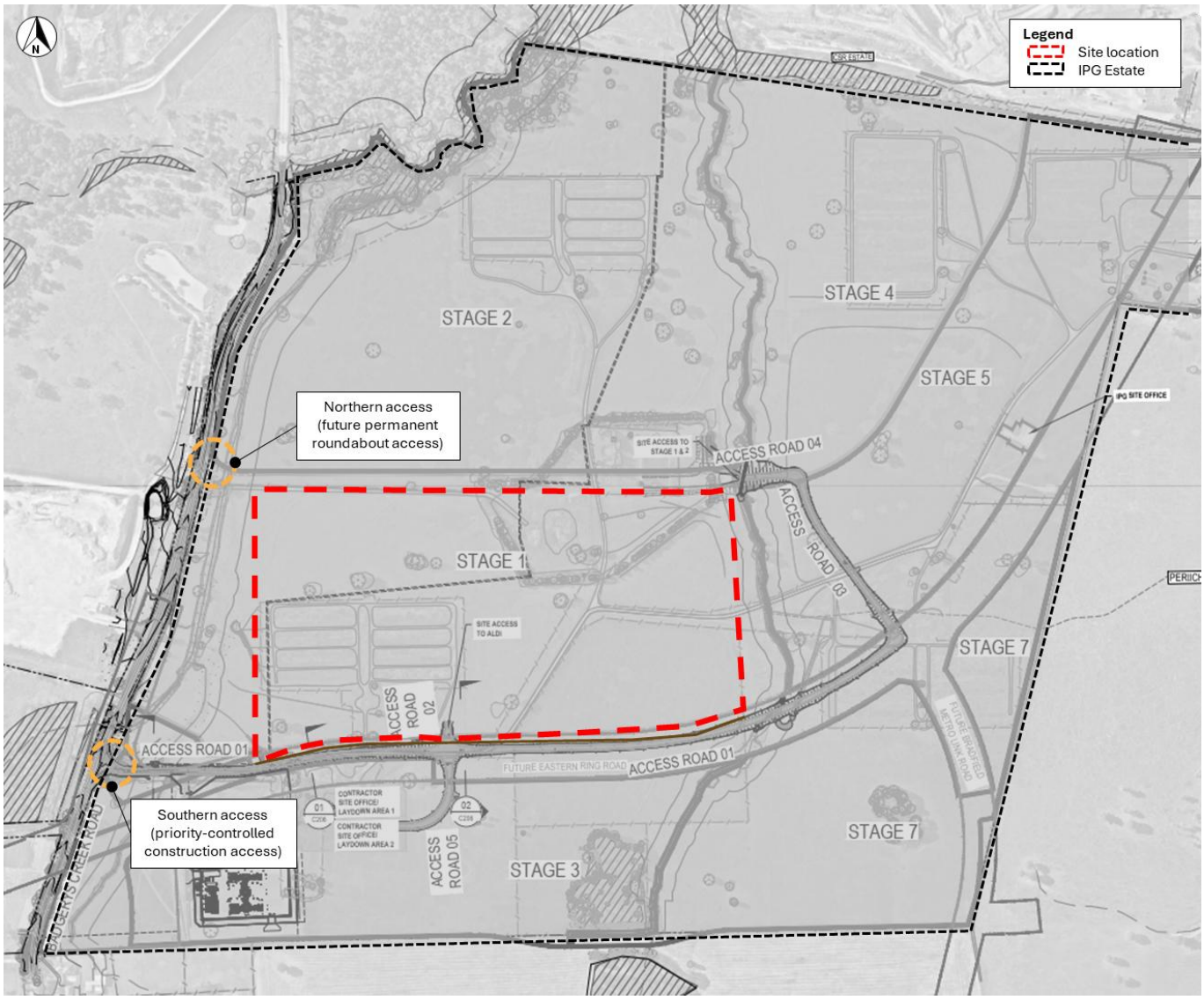


Figure 1: ALDI building works extent & construction access

Base image source: AT&L, dated 15 May 2025

1.4 Stakeholder engagement

As part of the preparation and implementation of this CTMP, RCC will consult with the required stakeholders regarding construction schedules and trucks routes. Any further conflicts with stakeholders will be raised at the earliest time. RCC 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	RCC have submitted the CTMP to the stakeholder with evidence of concurrence provided in Appendix C.
Liverpool City Council	RCC have submitted the CTMP to the stakeholder. The responses to the stakeholder comments are provided in Table 2.
Transport Management Centre (TMC)	Tied to consultation with TfNSW. Any consultation will be undertaken in tandem with TfNSW.

1.4.1 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 Liverpool City Council and TfNSW.

Table 4: Stakeholder engagement

Communication Tool	Timeframe	Distribution
Community Notification	7 days prior to work commencement	Affected properties
Project Website	14 days prior to work commencement	Online stakeholders
Stakeholder Email	7 days prior to work commencement	Stakeholder database
Temporary VMS	14 days prior to work commencement	Number and specific locations to be confirmed

1.5 Site related data

1.5.1 Site location

The Site is located east of Badgerys Creek Road and south of Elizabeth Drive, it sits to the east of Wianamatta-South Creek and is bordered by Badgerys Creek Road to the west where access is currently provided. The Site is located approximately 2 kilometres south of the future Western Sydney International (Nancy-Bird Walton) Airport (WSA), 50 kilometres west of the Sydney CBD and 30 kilometres west of the Parramatta CBD.

Once fully constructed the IPG Estate will be afforded access via access roads that connect to the future Eastern Ring Road, which in turn connects with Elizabeth Drive to the north; and south to the future Bradfield Metro Link Road. From Elizabeth Drive, access is available east to the M7 Motorway and to the future M12 motorway.

The IPG Estate location is shown in Figure 2.

Figure 2: Site context

Base image source: MetroMap

1.5.2 Surrounding road network

The immediate local road network is comprised of Badgerys Creek Road and Elizabeth Drive as summarised in Table 5.

Table 5: Road hierarchy

Key roads	Classification	Description	Speed limit
Badgerys Creek road	Regional road	BCR is a collector road and provides a north-south connection between Elizabeth Drive and The Northern Road. BCR carries 1 lane in each direction. No on-street parking is permitted.	60 km/h
Elizabeth Drive	State road	Elizabeth Drive is an arterial road traversing in the east-west direction. It has 1 lane in each direction, with localised widening for a dedicated right turn lane at intersection with BCR. No stopping is permitted.	80 km/h
The Northern Road	State road	The Northern Road is an arterial road traversing in the north-south direction. It has 2 lanes in each direction. No stopping is permitted.	80 km/h

Key roads	Classification	Description	Speed limit
Westlink M7 Motorway	State road	The M7 Motorway is a high-capacity link road running north-south. It generally provides 2 lanes per direction. No stopping is permitted.	100 km/h
(Future) M12 Motorway	State road	The M12 Motorway will run east-west. It generally provides 2 lanes per direction. No stopping is permitted.	80-100 km/h

Figure 3 shows the location of the site as well as the wider IPG Estate with specific reference to the current State and Regional Road network of which heavy vehicles are typically restricted to (where appropriate).

Figure 3: Site context

Base image source: TfNSW Road Network Categorisation map.

1.5.3 Crash history

A review of 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 2020 to 2024 (inclusive) is outline in Table 6.

Table 6: Crash history

Year	Location	RUM code	RUM description	Degree of crash
2020	2-way undivided	67	Struck animal	Non-casualty (towaway)

2021	2-way undivided	67	Struck animal	Non-casualty (towaway)
2021	2-way undivided	85	Off right/ left bend into object	Serious injury
2021	2-way undivided	71	Off road left into object	Serious injury
2022	2-way undivided	71	Off road left into object	Serious injury
2023	Roundabout	71	Off road left into object	Non-casualty (towaway)
2024	2-way undivided	67	Struck animal	Non-casualty (towaway)
2024	X-intersection	10	Cross traffic	Moderate injury

1.5.4 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. Table 7 provides context to VRUs surrounding the site.

Table 7: VRU facilities

Road name	Pedestrian	Cycling	Public transport
Badgerys Creek Road	No	Yes within shoulder	Yes Bus stops
Elizabeth Drive	No	Yes within shoulder	Yes Bus stops
The Northern Road	Yes Shared path width = 2.6m	Yes Shared path	Yes Bus stops

Currently, limited pedestrian infrastructure and public transport services are available surrounding the IPG Estate due to the largely undeveloped nature of the land in the vicinity. The closest train station to the IPG Estate is Leppington Station, which is approximately 8.5km south-east. Bus services currently do not operate close by to the area. Similarly, there is limited cycling infrastructure available within the area, with the closest shared path 2.7km north of the Site between Pitt Street and Elizabeth Drive.

1.5.5 Existing Traffic Volumes and Peak Periods

A 24-hour traffic survey has been undertaken at Badgerys Creek Road to understand the current traffic environments to better inform the turn warrant assessment. The survey was undertaken on the following days:

- Wednesday, 4 March 2026
- Thursday, 5 March 2026

Based on the survey data, the AM and PM peak hours were identified as follows:

Table 8: Identified peak hours for Mamre Road / Abbotts Road Intersection

Period	Time
AM Peak Hour	06:00am – 07:00am
PM Peak Hour	15:00pm – 16:00pm

In order to provide a conservative and robust assessment to ensure that the works and its associated traffic volumes do not have an adverse impact on the through movement on Badgerys Creek Road, turn movement restrictions have been applied to a broader peak period and is identified as follows:

- AM Peak: 5:00am – 8:00am
- PM Peak: 2:00pm – 5:00pm

2 Proposed works and staging

2.1 Overview of works

A summary of the envisioned construction program, based on the information provided by RCC, has been provided in Table 9.

Table 9: Construction phasing summary

Phase	Description	Programme	Reference table	Construction site access
Prior to delivery of the northern access	Excavation & Site Establishment	May 2026 - March2027	Table 10	Southern access
	Structure and Concrete	July 2026 - June2027	Table 11	
	Fit out and Automation	June 2027 - August 2027	Table 12	
Post delivery of the northern access	Fit out and Automation	August 2027 - March 2027	Table 13	Northern and southern access
	Fit out and Automation	March 2028 - July 2030	Table 14	

2.1.1 Stage 1A – Excavation & Site Establishment

The details of works are shown in Table 10. It is estimated that the total duration of the excavation and site establishment works will be approximately 9 months from the commencement date.

Table 10: Stage 1A – Excavation & site establishment

Criteria	Response
Description of key activities	Excavation & site establishment (01/05/2026 – 01/03/2027)
Maximum vehicle size	20m Articulated Vehicle, Truck & Dog, concrete trucks
Maximum vehicle movement frequency	Approximately 240 light vehicle movements/ day + Approximately 290 heavy vehicle movements/ day
Truck access requirements	All construction vehicles shall access the site via the southern access only, peak and off-peak vehicle turning movements are to be limited as per Table 22 and Table 23.
Vehicle access / egress in a forward direction (Y / N)	Y
Out of Hours Deliveries (Y / N)	N
Use of crane	N
Work Zone	N
Contractor Parking	Y – On-site parking and facilities will be available
Pedestrian Control	Temporary fencing to be installed
Public Transport Services Affected	N
Road Occupancy Requirements	N
Lane or Footpath Closures	N

2.1.2 Stage 1B – Structure/ Concrete

The details of works are shown in Table 11. It is estimated that the total duration of structure/ concrete works will be approximately 11 months from the commencement date.

Table 11: Stage 1B – Structure/ Concrete

Criteria	Response
Description of key activities	Structure/ concrete (01/07/2026 – 01/06/2027)
Maximum vehicle size	20m Articulated Vehicle, Truck & Dog, concrete trucks
Maximum vehicle movement frequency	Approximately 340 light vehicle movements/ day + Approximately 220 heavy vehicle movements/ day
Truck access requirements	All construction vehicles shall access the site via the southern access only, peak and off-peak vehicle turning movements are to be limited as per Table 22 and Table 23.
Vehicle access / egress in a forward direction (Y / N)	Y
Out of Hours Deliveries (Y / N)	N

Use of crane	Y – mobile crane utilised for structural steel erection & precast panel erection. During working hours of 7:00am-5:00pm
Work Zone	N
Contractor Parking	Y – On-site parking and facilities will be available
Pedestrian Control	Temporary fencing to be installed
Public Transport Services Affected	N
Road Occupancy Requirements	N
Lane or Footpath Closures	N

2.1.3 Stage 2A – Fit Out & Automation

As detailed in Section 3.1, construction of the permanent roundabout access (northern access) is anticipated to be completed 14 months from the commencement of construction for ALDI building works, which will coincide with the Stage 2A – fit out and automation works. Therefore, the details of works during Stage 2A works before and after the construction of the northern access are provided in Table 12 and Table 13 separately.

It is estimated that the total duration of fit out and automation works will be approximately 9 months from the commencement date.

Table 12: Stage 2A – Structure/ Concrete (prior to construction of the northern access)

Criteria	Response
Description of key activities	Structure/ concrete (01/06/2027 – 01/08/2027)
Maximum vehicle size	20m Articulated Vehicle, Truck & Dog
Maximum vehicle movement frequency	Approximately 450 light vehicle movements/ day + Approximately 120 heavy vehicle movements/ day
Truck access requirements	All construction vehicles shall access the site via the southern access only, peak and off-peak vehicle turning movements are to be limited as per Table 22 and Table 23.
Vehicle access / egress in a forward direction (Y / N)	Y
Out of Hours Deliveries (Y / N)	N
Use of crane	Y – internal use for racking installation. During working hours of 7:00am-5:00pm
Works Zone	N
Contractor Parking	Y – On-site parking and facilities will be available
Pedestrian Control	Temporary fencing to be installed
Public Transport Services Affected	N
Road Occupancy Requirements	N
Lane or Footpath Closures	N

Table 13: Phase 2A – Structure/ Concrete (post construction of the northern access)

Criteria	Response
Description of key activities	Structure/ concrete (01/07/2026 – 01/06/2027)
Maximum vehicle size	20m Articulated Vehicle, Truck & Dog
Maximum vehicle movement frequency	Approximately 450 light vehicle movements/ day + Approximately 120 heavy vehicle movements/ day
Truck access requirements	Construction vehicles shall access the site via both the northern and southern access. Peak and off-peak vehicle turning movements for the southern access are to be limited as per Table 22 and Table 23.
Vehicle access / egress in a forward direction (Y / N)	Y
Out of Hours Deliveries (Y / N)	N
Use of crane	Y – mobile crane utilised for structural steel erection & precast panel erection. During working hours of 7:00am-5:00pm
Works Zone	N
Contractor Parking	Y – On-site parking and facilities will be available
Pedestrian Control	Temporary fencing to be installed
Public Transport Services Affected	N
Road Occupancy Requirements	N
Lane or Footpath Closures	N

2.1.4 Stage 2B – Fit out & automation

The details of works are shown in Table 14. It is estimated that the total duration of fit out and automation works will be approximately 28 months from the commencement date.

Table 14: Stage 2B – Fit out & automation

Criteria	Response
Description of key activities	Structure/ concrete (01/03/2028 – 01/07/2030)
Maximum vehicle size	20m Articulated Vehicle, Truck & Dog
Maximum vehicle movement frequency	Approximately 360 light vehicle movements/ day + Approximately 60 heavy vehicle movements/ day
Truck access requirements	Construction vehicles shall access the site via both the northern and southern access. Peak and off-peak vehicle turning movements for the southern access are to be limited as per Table 22 and Table 23.

Criteria	Response
Vehicle access / egress in a forward direction (Y / N)	Y
Out of Hours Deliveries (Y / N)	N
Use of crane	Y – internal use for racking installation. During working hours of 7:00am-5:00pm
Works Zone	N
Contractor Parking	Y – On-site parking and facilities will be available
Pedestrian Control	Temporary fencing to be installed
Public Transport Services Affected	N
Road Occupancy Requirements	N
Lane or Footpath Closures	N

2.2 Construction hours

Based on the information provided by RCC, a summary of the construction hours is shown in Table 15, which is in accordance with SSD-76913969 conditions of consent.

Table 15: Hours of work

Activity	Day	Time
Warehouse construction and fit-out	Monday – Friday	7am to 6pm
	Saturday	8am to 1pm
	Sunday Public holidays	No work

It is anticipated that construction works will not be conducted outside of the hours outlined above. Should out of work hours be required, RCC will lodge an application for an Out of Work Hours Permit with the Planning Secretary 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 including what 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.
- Public infrastructure works that shorten the length of the project and are supported by the affected community.
- Works where a proponent demonstrates and justifies a need to operate outside the recommended standard hours.
- Concrete pours to prevent premature setting and risk of cracking caused by higher temperatures during the day.

2.3 Site 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.

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. All vehicles are to access the site via Mamre Road.

Construction access is proposed via 2 phases:

- Phase 1: access arrangements will be via the southern construction access roadway, as shown in Figure 4.
- Phase 2: following construction of the northern access, construction access will be via both the northern and southern access locations, as shown in Figure 5.

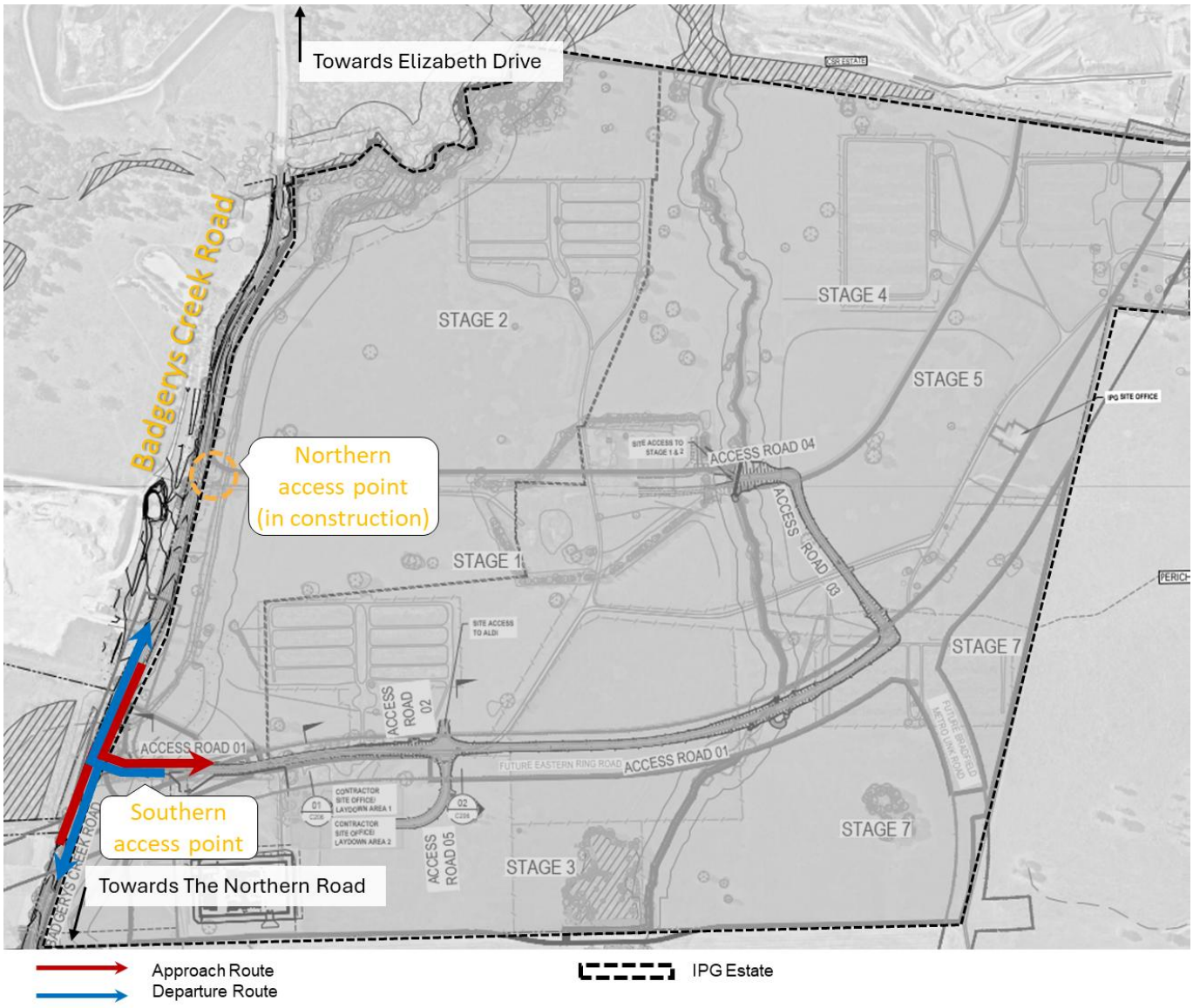


Figure 4: Construction access arrangement (prior to construction of northern access)

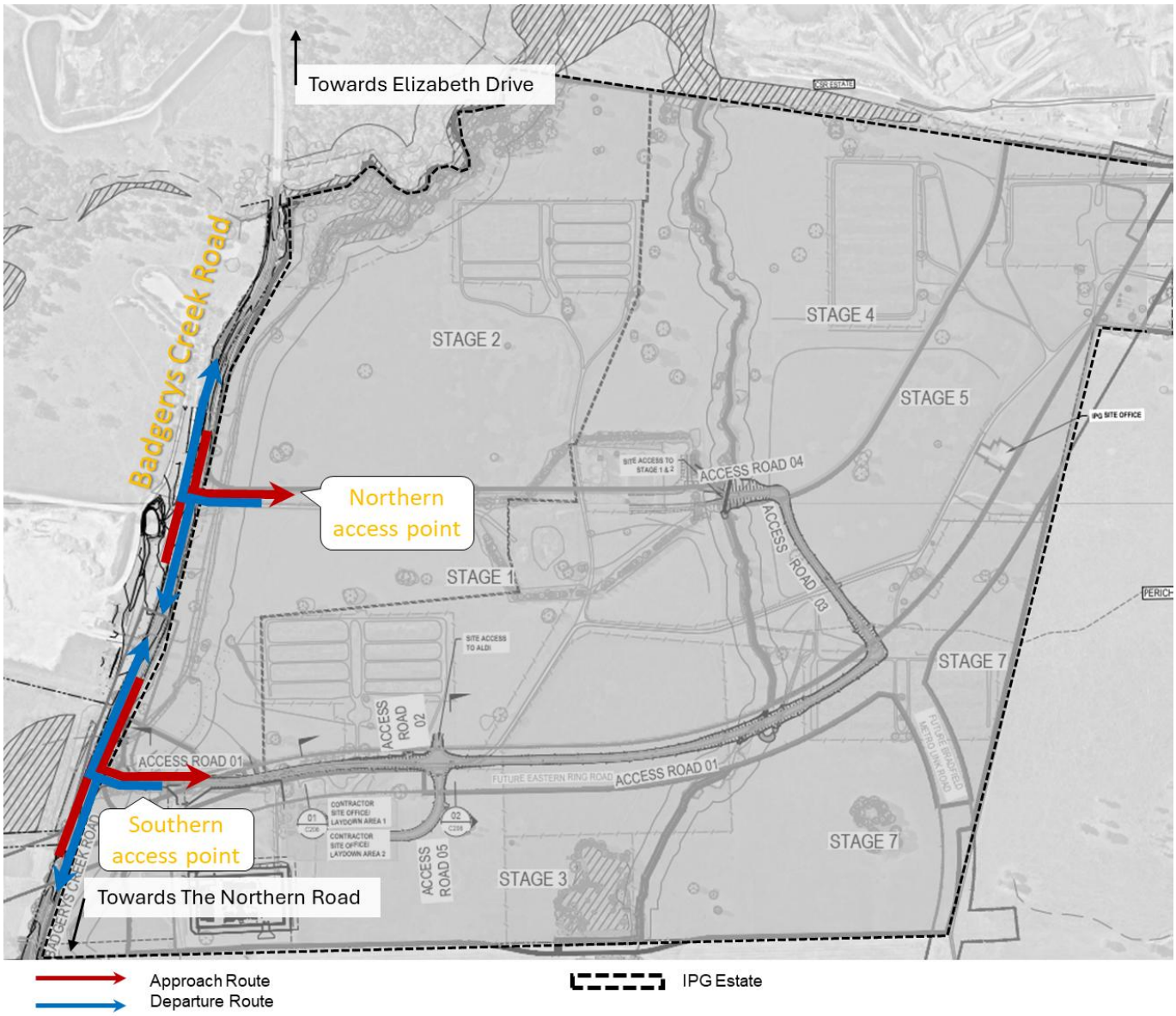


Figure 5: Construction access arrangement (post construction of northern access)

2.4 Truck routes

It is expected that all heavy vehicles will access the Site via the appropriate TfNSW Restricted Access Vehicle (RAV) routes.

A copy of the approved routes will be distributed to all drivers before their arrival to the Site. A site personnel will be responsible to ensure that construction vehicles accessing the site are within the approved thresholds and no trucks will queue on any roads on approach to the construction site. Mobile phones, two-way radios or application-based solutions will be used to coordinate truck arrivals.

As shown in Figure 6, the proposed construction vehicle routes are also consistent with the TfNSW RAV map for vehicles up to 26 metre B-doubles.

Figure 6: Restricted access vehicle (RAV) map

Base image source: NHVR Map

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 G.

2.6 Site contact

The key contacts for the Site during construction have been outlined in Table 16.

Table 16: Construction contact list

Role	Name	Company	Contact
Project Manager	Mitchell Kay	RCC	kaym@richardcrookes.com.au

The list of key contacts shall be provided within the site induction to all staff and contractors, as well as be posted on the site shed. Consideration should also be given to presenting this list of contacts within the project's website.

2.7 Works zone

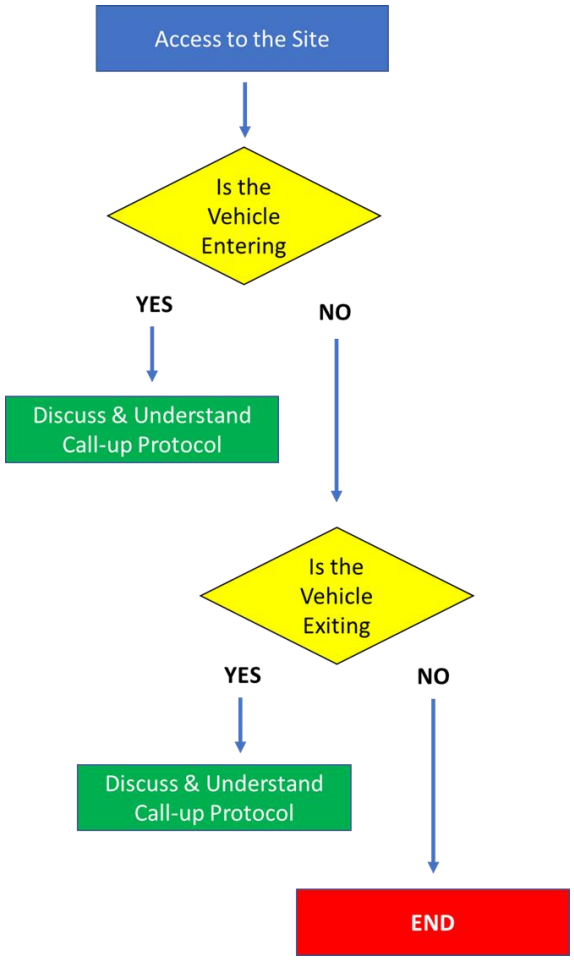
No works zone is required as it relates to ALDI building works, with all construction works to occur within the respective construction site boundaries.

In the event that the implementation of further temporary traffic control measures on public roads/ road related area, the appointed contractor will obtain a Road Occupancy Licence (ROL) from Liverpool City Council. If excavation and/ or road opening works on a public road are necessary, appointed contractor will similarly obtain a ROL.

2.8 Temporary Traffic Management Method

Traffic management will be undertaken in accordance with the methodology defined in Table 17. All road users are expected to be directed around the worksites in order to physically separate the road user from any hazards within the worksites.

Table 17: Access protocols and methodology

Procedure	Responsibility	Notes
	Site Manager/ Foreman/ Traffic Controller	**ENTRY PROTOCOL:** Via UHF radio, channel agreed at pre-start. Vehicle to advise gate controller when 200m from gate via UHF — vehicle to ensure flashing lights are on. Vehicle advises of metres from gate in 50m lots (i.e. 150m from gate 100m from gate). Gate Controller advises safe to enter, vehicle enters site and decelerates behind barriers. If not safe to enter, vehicle is to continue driving and not stop/ queue on the public roadway. Vehicle uses road network to return and make another attempt at entering site.
	Site Manager/ Foreman/ Traffic Controller	**EXIT PROTOCOL:** Via UHF radio, channel agreed at pre-start. Vehicle driver to radio Gate Controller to ensure exit is possible – vehicle to ensure flashing lights are on. If no issues, driver to accelerate to exit gate and merge with traffic. If driver cannot exit, Gate Controller to order vehicle to hold until gate is clear. Gate Controller is not to stop traffic on the public road network.

3 Traffic management

3.1 Construction site access strategy

As shown in Figure 5, construction site access during ALDI building works is anticipated to be provided by the following two access locations:

- Northern access: Badgerys Creek Road/ Access Road 03 roundabout
- Southern access: Badgerys Creek Road/ Access Road 01 priority-controlled construction access.

Construction site access will initially be provided via the southern access only, while the northern access is subject to construction. It is understood that construction of the permanent Badgerys Creek Road/ Road 03 roundabout access will commence concurrently with the ALDI building works and is anticipated to be completed within 14 months from the commencement date. Once constructed, the Badgerys Creek Road/ Access Road 03 roundabout will form one of the permanent IPG Estate access points.

As such, construction vehicle access during ALDI building works will be subject to two phases:

- During construction of the BCR/ Road 03 roundabout: via the southern access only
- Post construction of the BCR/ Road 03 roundabout: via northern and southern access
  - Construction traffic generation

3.2 Construction traffic generation

Based on the construction staging provided by RCC, 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 estimated traffic volumes for RCC as follows:

Table 18: Construction Traffic Generation – Stage 1

Time	Movements
AM Peak	70 per hour
PM Peak	120 per hour
Daily	1,090 per day

Table 19: Construction Traffic Generation – Stage 2

Time	Movements
AM Peak	60 per hour
PM Peak	80 per hour
Daily	510 per day

3.3 Cumulative traffic impact assessment

It is important to understand that the construction works will not be done in isolation, therefore a cumulative traffic assessment of the combined works within the area has been undertaken.

The project team is aware of construction of the BCR / Road 03 roundabout. Notwithstanding, it is understood that although a Development Application has been submitted to Council, is it not approved at the time of writing this report and therefore excluded from the cumulative assessment.

Within the IPG Estate, it is understood that there is construction works being undertaken for bulk earthworks. As such, the following outlines the volumes of bulk earthworks against both RCC stages.

Table 20: Bulk Earthworks Construction Traffic Generation – Stage 1

Time	Movements
AM Peak	96 per hour
PM Peak	82 per hour
Daily	1,170 per day

Table 21: Bulk Earthworks Construction Traffic Generation – Stage 2

Time	Movements
AM Peak	100 per hour
PM Peak	82 per hour
Daily	1,184 per day

3.3.1 Cumulative Construction Trip Generation

Based on the cumulative construction volumes outlined above, the cumulative peak turning movements per hour throughout the peak periods are summarised below.

Table 22: Cumulative proposed traffic volumes – Stage 1A & 1B (April 2026 to June 2027)

Scenario	Time period	Movements per hour			
		Left-in	Right-in	Left-out	Right-out
AM peak	05:00 – 08:00	150 (114 LV & 36 HV)	6 (6 LV & 0 HV)	40 (10 LV & 30 HV)	
PM peak	14:00 – 17:00	42 (28 LV & 14 HV)	8 (8 LV & 0 HV)	160 (145 LV & 15 HV)	
Off-peak	-	124 (78 LV & 46 HV)	20 (14 LV & 6 HV)	120 (70 LV & 50 HV)	

Table 23: Cumulative proposed traffic volumes – Stage 2A (June 2027 to August 2027)

Scenario	Time period	Movements per hour			
		Left-in	Right-in	Left-out	Right-out
AM peak	05:00 – 08:00	150 (139 LV & 11 HV)	6 (6 LV & 0 HV)	30 (20 LV & 10 HV)	

PM peak	14:00 – 17:00	42 (28 LV & 14 HV)	8 (8 LV & 0 HV)	120 (105 LV & 15 HV)
Off-peak	-	50 (30 LV & 20 HV)	20 (15 LV & 5 HV)	120 (100 LV & 20 HV)

3.3.2 Cumulative traffic impact assessment

Reference has been made to the approved Technical Note which accompanied the Complying Development Certificate for the construction of the access road which is intended to provide interim site access to the wider estate (ref: P1492Dtn01 TN_Construction Access 475 Badgerys Creek Road, Bradfield). The purpose of the Technical Note was to undertake a turn warrant assessment to determine the acceptable construction vehicle movement thresholds throughout the various construction hours with the acknowledgement that contractors for the relative works were not yet appointed at the time of undertaking the assessment. Therefore, the assessment provided a theoretical threshold which was expected to be updated upon appointment of a contractor where the relative construction staging and volumes are known.

3.3.2.1 TURN WARRANT ASSESSMENT

A turn movement warrant assessments for both left-tun and right-turn movements into and out of the Site's southern access has been conducted to identify the relevant turning movement thresholds to ensure that no additional infrastructure is required on Badgerys Creek Road. This assessment aims to identify the maximum construction vehicle trips permissible to accommodate the cumulative construction volumes accessing the site

The average traffic volumes of the two days were used to undertake the turn movement warrant assessment to identify the acceptable construction vehicle turning movement thresholds at the southern access to ensure that no additional infrastructure is required on Badgerys Creek Road to accommodate the cumulative construction volumes accessing the Site.

Left Turn Treatment

To understand the capacity of Badgerys Creek Road for vehicles travelling south and wanting to turn left into the Site's access driveway, it is important to understand how many movements are permissible before an upgrade is required.

Based on the survey data and proposed cumulative construction vehicle trips, the following parameters apply to Badgerys Creek Road and the site access for a left-turn assessment:

- Major Road Design Speed: 70km/h (60km/h posted speed limit plus 10km/hr)
- Major Road Traffic Volume, Q_M (surveyed southbound traffic):
  - AM Peak (5:00 am – 8:00am): 136 veh/h
  - PM Peak (2:00pm – 5:00pm): 229 veh/h
  - Off-peak (8:00am – 2:00pm & 5:00pm-7:00pm): 203 veh/h

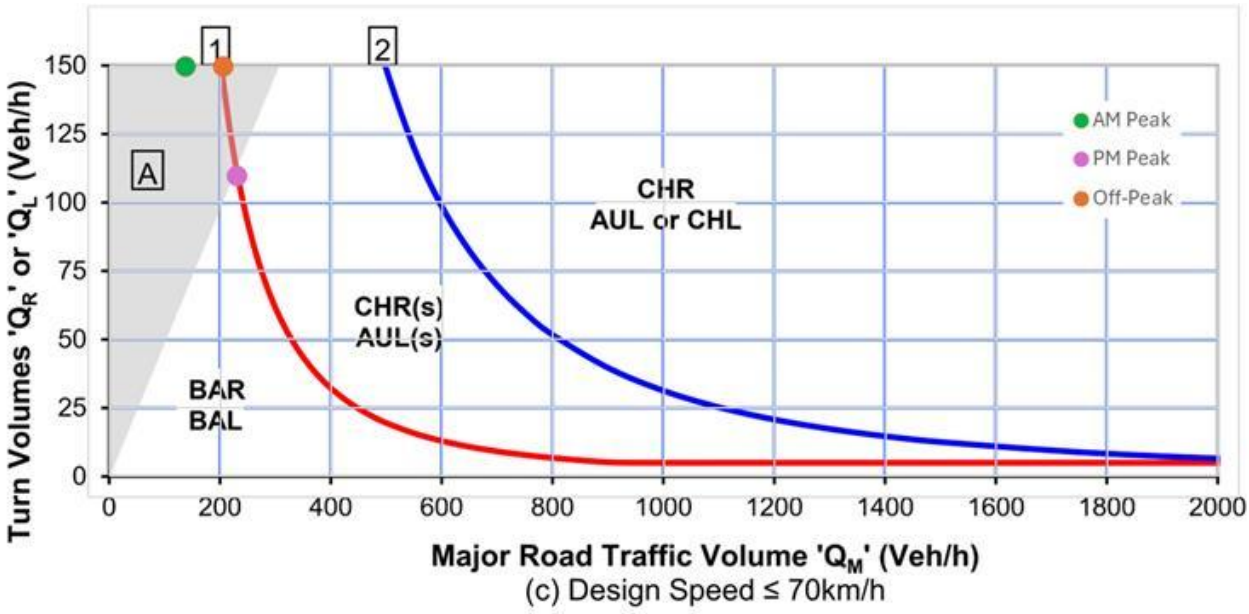


Figure 7: Warrant for (left-turn) turn treatments on Major Roads at Unsignalised Intersections

Based on the surveyed volumes along BCR and the warrant assessment provided above, the maximum volumes of left-turn movements have been outlined within Table 24. These volumes represent the maximum number of movements permissible under each scenario unless a larger turn treatment is provided.

Table 24:Left-in movement thresholds

Scenario	Major Road Traffic Q_M (veh/hr)[1]	Major Road Traffic Q_L (veh/hr)[2]
AM Peak	136	150
PM Peak	229	110
Off Peak	203	150

Notes: 1) Volumes based on tube counts along BCR

2) Maximum volume of vehicles turning left before additional treatments are required

Right Turn Treatment

Similarly, it is important to understand the capacity of Badgerys Creek Road for vehicles travelling north and wanting to turn right into the Site's access driveway, how many movements are permissible before an upgrade is required.

Based on the survey data and proposed cumulative construction vehicle trips, the following parameters apply to Badgerys Creek Road and the site access for a right-turn assessment:

- Major Road Design Speed: 70km/h (60km/h posted speed limit plus 10km/hr)
- Major Road Through Traffic, (Q_{T1} + Q_{T2}) (surveyed southbound & northbound traffic):
  - AM Peak (5:00 am – 8:00am): 426 veh/h
  - PM Peak (2:00pm – 5:00pm): 343 veh/h
  - Off-peak (8:00am – 2:00pm & 5:00pm to 7:00pm): 300 veh/h
- Major Road Traffic Volume (Q_M = Q_{T1} + Q_{T2} + Q_L) where reference has been made to Table 22 and Table 23 to derive the left turn movements (Q_L) for the assessment at the respective periods:
  - AM Peak: Assumes Q_L = 150 veh/h (left-in traffic) resulting in Q_M = 426 + 150 = 576 veh/h

- PM Peak: Assumes Q_L = 42 veh/h (left-in traffic) resulting in Q_M = 343 + 42 = 385 veh/h
- Off-peak: Assumes Q_L = 124 veh/h (left-in traffic) resulting in Q_M = 300 + 124 = 424 veh/h

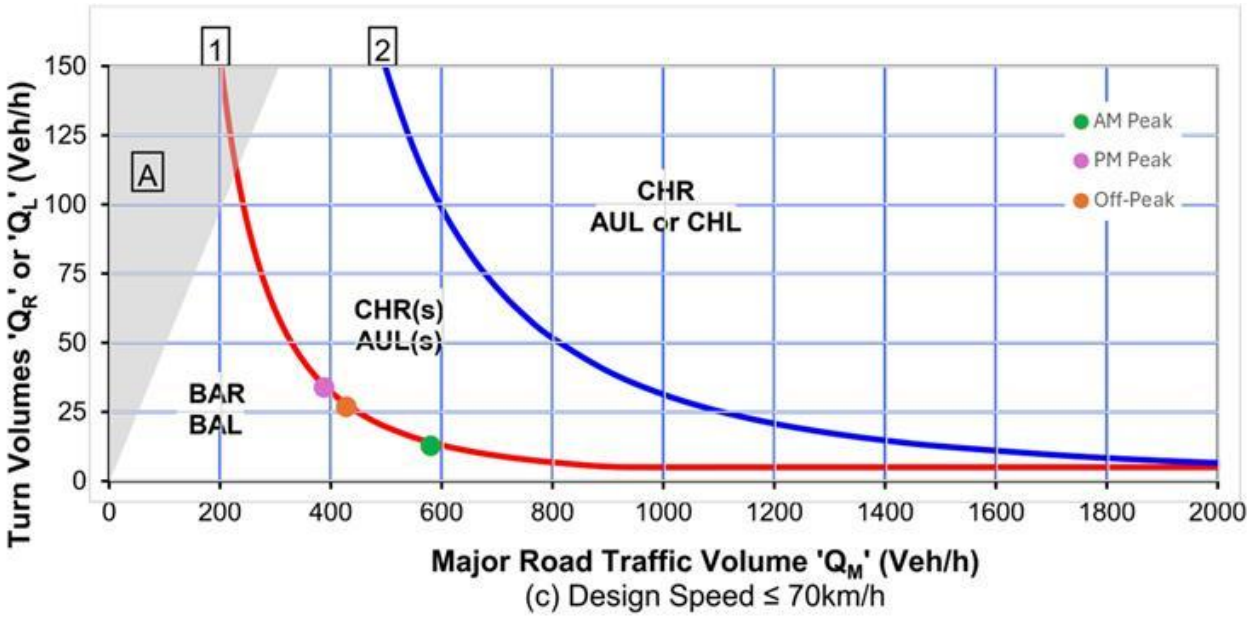


Figure 8: Warrant for (right-turn) turn treatments on Major Roads at Unsignalised Intersections (AGTM06)

With reference to the above major road traffic volumes and turn warrant assessment, the maximum volume of right-turn movements has been outlined in Table 25 below.

Table 25: Right-in movement thresholds

Scenario	Major Road Traffic Q_M (veh/hr)[1]	Major Road Traffic Q_R (veh/hr)[2]
AM Peak	576	13
PM Peak	385	34
Off Peak	424	27

Notes: 1) Volumes based on tube counts along BCR

2) Maximum volume of vehicles turning right before additional treatments are required

The above demonstrates the maximum volume of construction vehicles able to turn right in to the Site before any additional treatments are required.

3.3.3 Exit movement thresholds

It is noted that AGTM06 does not provide turning thresholds for vehicles exiting a minor road (i.e. vehicles exiting from CAR onto BCR). Therefore, SIDRA modelling has been undertaken to assess the performance of the site access with the projected cumulative construction traffic volumes expected to exit the Site during the respective periods.

A summary of the turning movements expected at the southern access during the respective scenarios are shown in Figure 9, Figure 10 and Figure 11 and the results of the SIDRA modelling for the respective periods are summarised in Table 26.

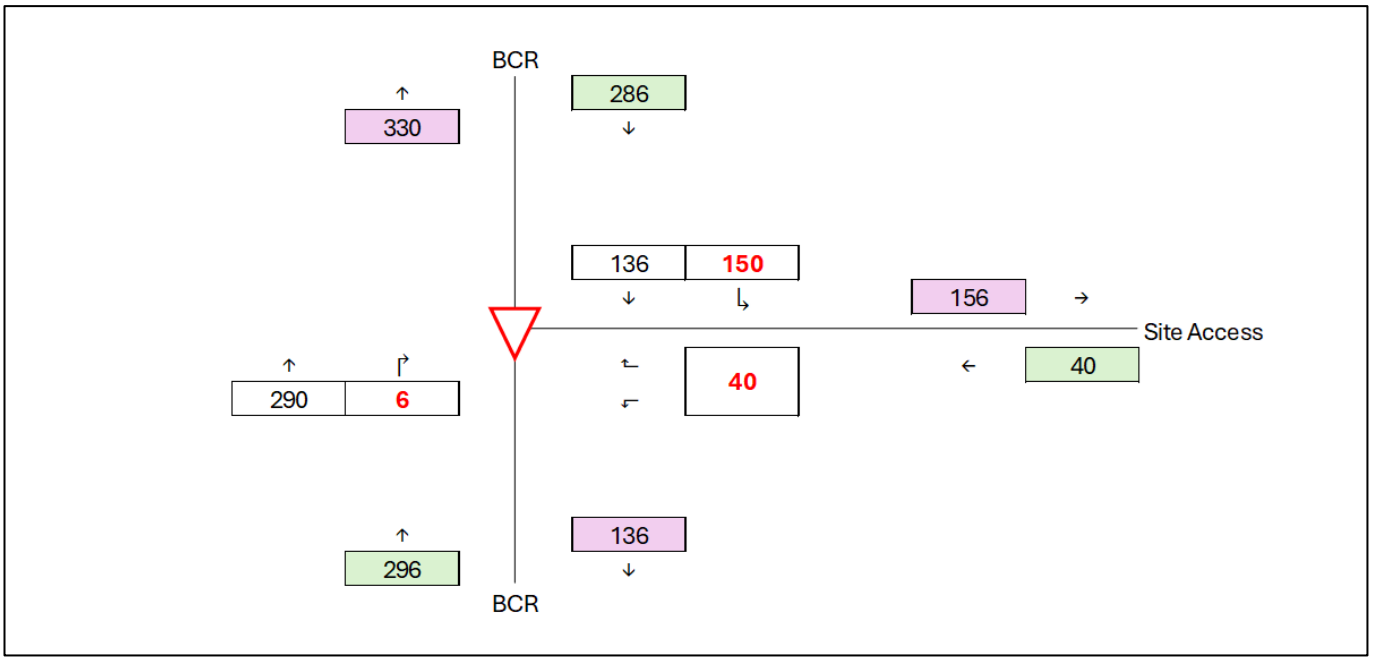


Figure 9: Hourly turning movement summary – AM peak (6:00am – 7:00am)

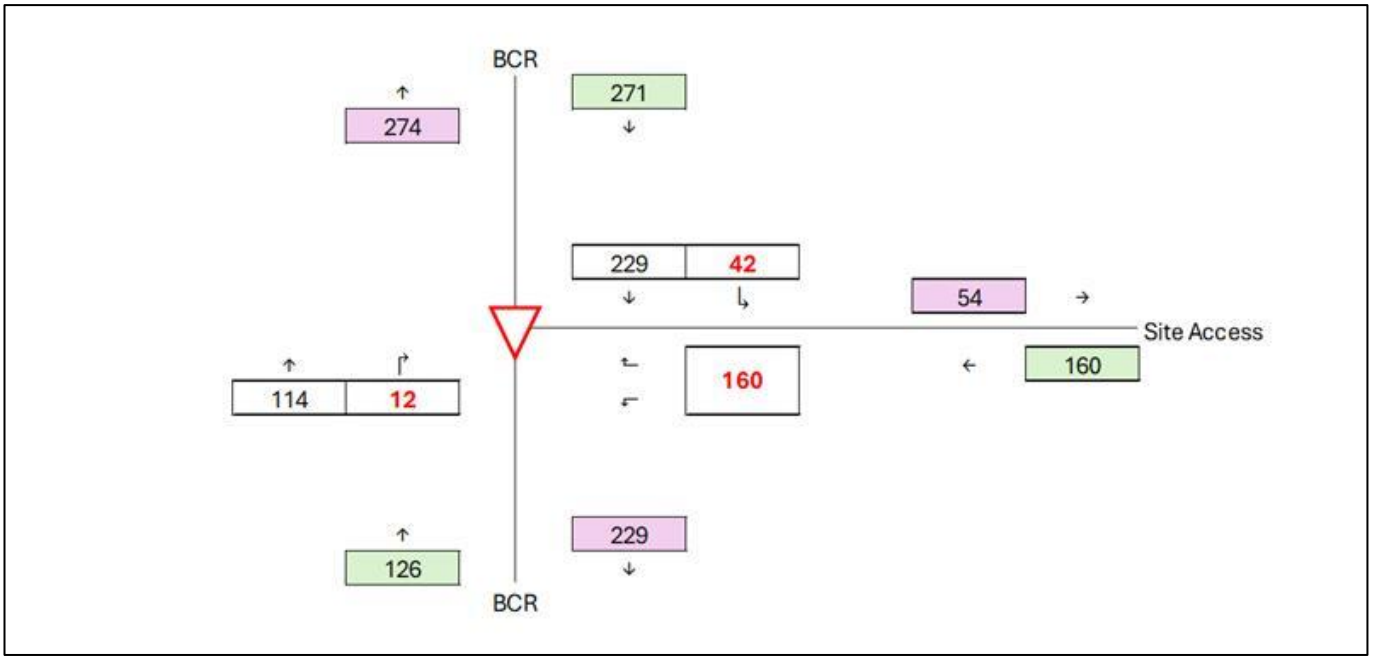


Figure 10: Hourly turning movement summary – PM peak (3:00pm – 4:00pm)

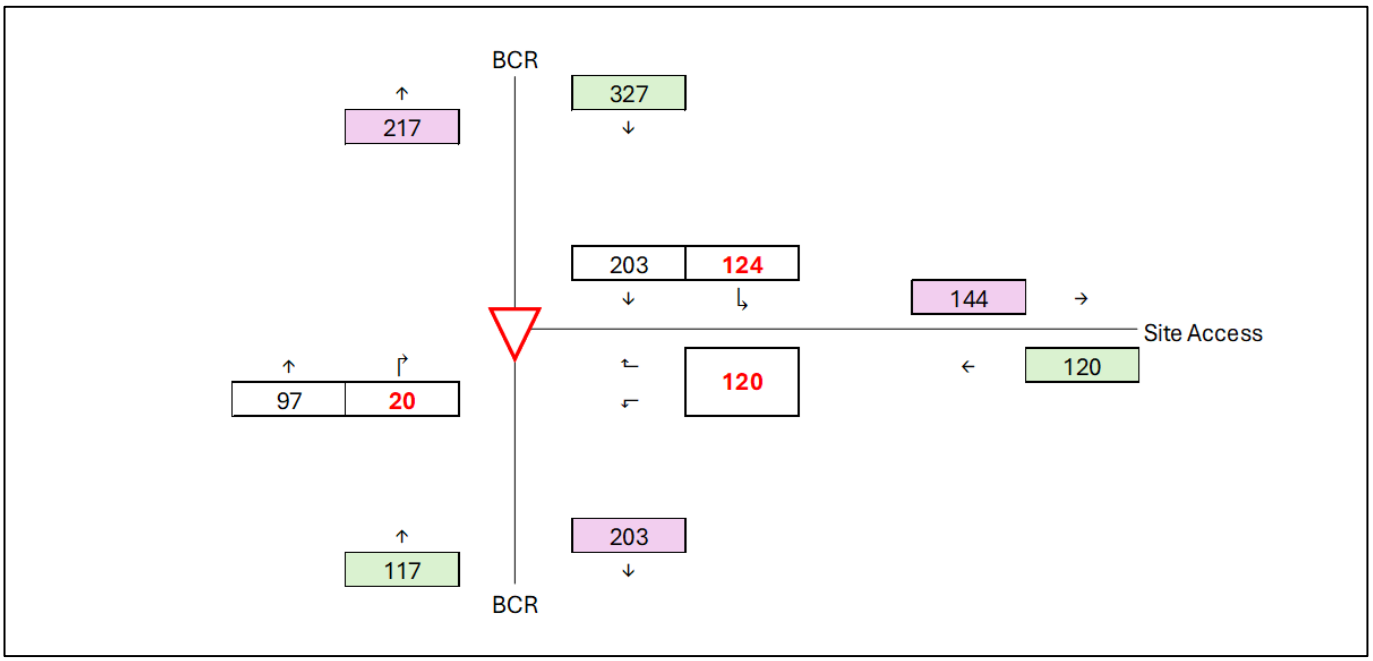


Figure 11: Hourly turning movement summary – Off-peak (8:00am - 4:00pm & 5:00pm – 7:00pm)

Table 26: SIDRA results

Intersection	Period	Degree of Saturation	Average Delay (s)	Level of Service
Badgerys Creek Road / Site Access	AM peak	0.26	13	A
	PM peak	0.44	13	A
	Off-peak	0.34	13	A

Therefore, the assessment has considered the cumulative construction traffic volumes that are expected to access the Site prior to the completion of the roundabout. The assessment indicates that the anticipated turning movements outlined below are within the turning movement thresholds and no additional turn treatments are required.

Table 27: Site access turning movement thresholds summary – Stage 1

Scenario	Permitted			Proposed		
	Left-in	Right-in	Left-out / Right-out	Left-in	Right-in	Left-out / Right-out
AM peak	150	13	40	150	6	40
PM peak	110	34	160	42	8	160
Off-peak	150	27	120	124	20	120

Note: By way of a more conservative assessment, the shoulder peaks (1 hour before and 1 hour after, have also been considered as part of the turning movement thresholds.

Table 28: Site access turning movement thresholds summary – Stage 2

Scenario	Permitted			Proposed		
	Left-in	Right-in	Left-out / Right-out	Left-in	Right-in	Left-out / Right-out
AM peak	150	13	40	150	6	30
PM peak	110	34	160	42	8	120
Off-peak	150	27	120	50	20	110

Note: By way of a more conservative assessment, the shoulder peaks (1 hour before and 1 hour after, have also been considered as part of the turning movement thresholds.

The assessment indicates that the anticipated turning movements are within the turning movement thresholds and no additional turn treatments are required.

3.3.4 Post-roundabout construction

Upon completion of the of the northern access (permanent Badgerys Creek Road roundabout access), all construction traffic is expected to access the site via this route, as previously outlined in Figure 5. As this access route is expected to accommodate the approved operational volumes, the proposed construction traffic volumes can now be benchmarked against the approval.

A comparison between the peak construction traffic volumes, post-roundabout construction and the approved operational traffic volumes has been provided in Table 29.

Table 29: Construction traffic generation

Period	Approved traffic volumes	Construction traffic volumes	Net difference
AM	138	115	-23
PM	127	40	-87

With reference to the above, the estimated construction traffic volumes are shown to be less than the approved operational traffic volumes for the Site during the peak periods. Consequently, the construction traffic is not expected to have any material impacts on the surrounding road network.

Notwithstanding, from a cumulative construction traffic generation assessment, it is expected that the roundabout has been designed to accommodate all volumes outlined above.

3.4 Minimising traffic impacts on surrounding network

The impacts of construction traffic and the mitigating measures to be implemented are outlined below.

- **Monitoring Construction Vehicles**: Each contractor is responsible for monitoring construction vehicle volumes, utilising either manual methods or CCTV monitoring at their respective site entrances to ensure adherence to approved daily construction volumes and approved site ingress and egress arrangements. The contractors shall be responsible to review the volumes relevant to their works and report this to the Principal, IPG, regularly. Notwithstanding, it is also the responsibility of each contractor to notify the Principal if the observed construction volumes get close to the maximum volumes. The Principal shall provide the ER with the vehicle volumes for monthly reporting and advise the ER & DPHI if those volumes have been exceeded. This monitoring approach aligns with efforts to ensure traffic impacts are minimised on the surrounding network. This has been outlined in more detail in
- **Construction Traffic in Badgerys Creek Road**: Construction traffic will use the Site's primary access to access the work area for the works, connecting to the wider network via Badgerys Creek Road. To ensure the impacts to

motorists within the area are kept to a minimum, construction traffic will be contained with the prescribed volumes.

- **Management of deliveries**: The Contractor will manage deliveries to ensure that construction vehicles, particularly heavy vehicles, will not exceed approved limits.
- **Safety During Construction**: Safety to motorists and pedestrians throughout the area will be maintained during construction through the preparation and execution of TGS's. A range of TGS's are to be implemented by the contractor CTMPs, for each access throughout construction, to identify all reasonably foreseeable hazards, assess the hazards, and manage the hazards as best possible by either eliminating or minimising the risks. TGS's shall be monitored and updated accordingly throughout the project.
- **Reporting**: Monitoring of traffic movements during peak periods is to be undertaken to ensure that drivers are adhering to the rules set out in this CTMP. This will ensure that the traffic generation and subsequent impacts on the road network, are in line with those approved. All near misses are to be documented to ensure any developing issues can be resolved with the relevant stakeholders.
- **Drivers Education**: All drivers are to undergo a site induction as outlined in Section 3.10. All drivers are to be made aware of driver expectations and shall adhere to the Driver's code of conduct attached in Appendix A.

With the above measures, it is not expected that this level of traffic movement would create any adverse impact on the surrounding road network.

Notwithstanding, RCC will continue to monitor the traffic volumes along Badgerys Creek Road (BCR). Should any complaints be received by either Liverpool City Council and/or the Site representative on any issues experienced along BCR, RCC is committed to reviewing these issues and investigating mitigation measures to resolve the issue. This can include adjustment to the construction programme to reduce construction traffic volumes during peak periods or implementation of physical separation treatments if required.

3.5 Vehicle management

In accordance with TfNSW requirements and the Conditions of Consent, all drivers are to be familiar with the Driver Code of Conduct before attending the Site. A copy of the Code is included in Appendix A.

All vehicles transporting loose materials will have the entire load covered and/or secured to prevent any large items, excess dust or dirt particles depositing onto the roadway during travel to and from the site. Public roads used by construction vehicles are to be kept clean at all times. All vehicles enter and exit the site in a forward direction.

All subcontractors must be inducted by the contractor to ensure that the procedures are met for all vehicles entering and exiting the construction site.

Vehicle movements to, from and within the site shall do so in a manner, which does not create unreasonable or unnecessary noise or vibration. No tracked vehicles will be permitted or required on any paved roads. Public roads, access points and internal parking areas will not be obstructed by any materials, unapproved vehicles, refuse skips or the like, under any circumstances. At no time shall heavy vehicles and bins associated with the development park on local roads or footpaths in the vicinity of the Site. Additionally, no loading, unloading, material handling or storage of materials or vehicles is to occur on any part of the public road–paved, unpaved, or roadside.

All vehicles are wholly contained on site before being required to stop. In this regard, site boom gates and access point controls should be located well within the site to ensure that no vehicle queuing occurs on the public road network. A schedule for deliveries of goods and materials will be established prior to that day, with Traffic Controllers to maintain radio contact with construction vehicles at all times. The anticipated deliveries will be made known to site personnel at daily prestart meetings.

3.6 Contractor & heavy vehicle parking

Contractors are expected to drive to site in the absence of practical bus services in close proximity to the Site. As such, contractors shall nominate on-site parking zones for contractors and heavy vehicles, such that any vehicle manoeuvre

routes are not obstructed. Additionally, there shall be no illegal parking of contractor or heavy vehicles prior to entering the Site.

During each stage of the project, there shall be enough parking to accommodate the expected maximum demands for that particular stage. Parking arrangements are expected to be updated / relocated as the project progresses. These details shall be outlined and communicated at regular toolbox meetings. Parking is to be regularly monitored to ensure sufficient provisions and to prevent queuing onto the roadway.

3.7 Pedestrian and cyclist management

Badgerys Creek Road does not have any footpaths, bicycle paths or shared paths fronting the Site. As such, pedestrian and cyclist management measures are generally not required for the Site.

Notwithstanding, cyclists are able to travel along Badgerys Creek Road, as such reduced speed limits have been proposed on the site frontage which would be sufficient to ensure the safety of cyclists during the relevant stages of construction.

Additionally, whilst there are currently no footpaths along Badgerys Creek Road, consideration can be given to providing safety measures and traffic controllers in the case that any pedestrian infrastructure is delivered as construction progresses. This can be updated as part of the ongoing monitoring and review process.

3.8 Fencing requirement

Fencing requirements will consist of fencing to the perimeter of the Site with a 1.8 m man-proof fence on the property boundary. During temporary and signal intersection works, concrete jersey kerbs along the site frontage will be constructed.

The fencing is to ensure unauthorised persons are kept out of the Site.

3.9 Driver awareness & Code of Conduct

All drivers shall be made aware and adhere to the Driver Code of Conduct, outlined in Appendix A.

3.10 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 Monitoring and review

4.1 Monitoring program

This CTMP shall be subject to ongoing review and will be updated accordingly. Regular reviews will be undertaken by the on-site coordinator during implementation and execution of this CTMP. Monitoring of this CTMP shall also be picked up in the Environmental checklists, with any incidents being reported within the weekly site meeting. The monitoring procedure has been outlined in Figure 12.

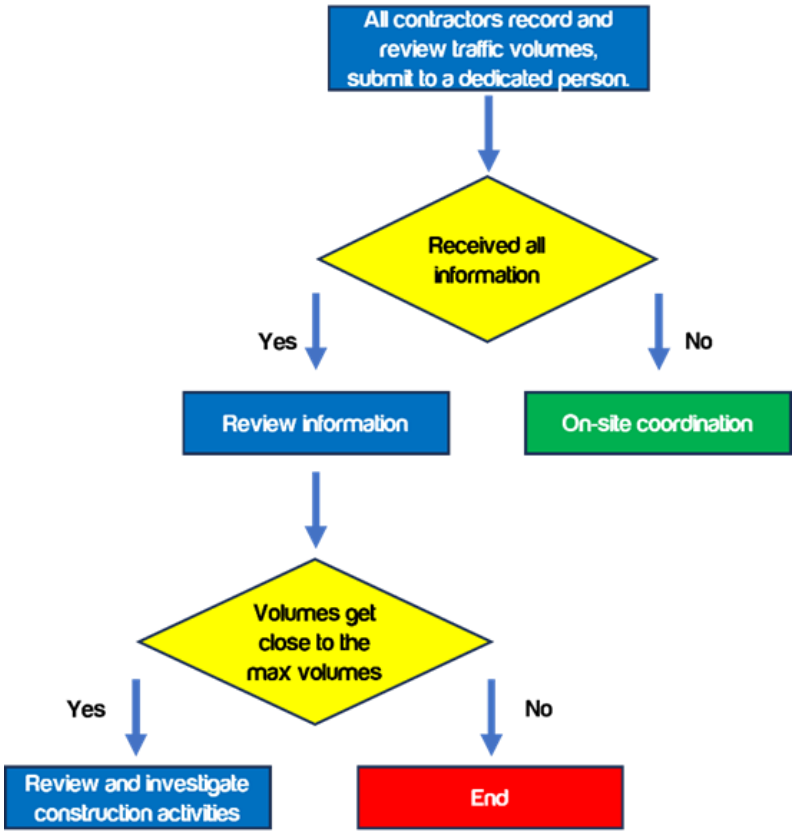


Figure 12: Monitoring procedure

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 the report (deliveries will be tracked against approved volumes and a vehicle log will be kept - including registration and time of entry - for the purpose of assessing the effectiveness of these monitoring programs)
- to identify any shortfalls and develop an updated action plan to address issues that may arise during construction (parking and access issues)
- regular checks to ensure all loads are entering and leaving the site covered as outlined within this CTMP
- to regularly monitor the approved truck routes as outlined within this CTMP

Table 30 below provides triggers to monitor and review this CTMP.

Table 30: Monitoring and reviews of this CTMP

Type of Review	Frequency	Considerations
Scheduled	The scheduled CTMP review must be undertaken monthly or as specified otherwise	The scheduled CTMP review must consider the following: • CTMP is approved • review any departures or variations to the CTMP to ensure they have been documented and approved • speed control effectiveness • construction vehicle entry/ egress suitability, with no queuing on the public road network at any time • construction vehicle 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 noise limits.
Change Generated Review	The change generated review must be undertaken when implementing new traffic stages, switches, or other construction-based activities.	The change generated CTMP review must consider the following: • 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.	Any non-compliance must be reported immediately to the site manager. The below has been implemented to address any non-compliances with the approved CTMP: • Strike one – Non-conformance will be issued to the applicable contractor and subsequently closed out with learnings and improvements • Strike two – Site meeting to be held with management of the applicable contractor – Notice to be issued to applicable contractor notifying them that driver suspension is the next course of action • Strike three – Offending driver to be suspended from attending the site (Note: any serious/ dangerous driving incident, or any incident deemed to result in material harm, identified in relation to the project will move straight to strike three). A non-compliance is anything that deviates from the approved CTMP, as noted by situations requiring a response in the indicative contingency plan in **Table 32** (i.e., situations other than "no response required"). All workplace incidents must be reported immediately to the site manager, who is to determine responsibility for investigating the incident.

4.2 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, with an example provided in Table 31.

Table 31: Example review of activities

Activity	Frequency or Details	
Shift Inspections	☐ Yes	☐ No
Regular Inspections	☐ Yes	☐ No
TMP Review	☐ Yes	☐ No
Road Safety Audit	☐ Yes	☐ No
Other	☐ Yes	☐ No
Comments		

Given that the length of construction and that no regular works have been proposed outside the site, monthly TTM inspections are considered sufficient.

4.3 Contingency plan

The contingency plan would be prepared to address any non-compliance with the approved CTMP. It is assumed that a contingency plan would be prepared by the appointed contractor. An indicative contingency plan has been provided in Table 32, outlining measures to be undertaken by the contractor in the event that the monitoring program identifies the management plan is not effective in managing the construction impacts.

Table 32: Contingency Plan

Observation	Response
Construction Movements	
Construction volumes are in accordance with forecast volumes and thresholds.	No response required.
Construction volumes exceed forecast volumes, however within a permissible range (for instance, exceed peak hour volumes but remain within the daily thresholds).	Review and assess operations to identify opportunities for reducing construction volumes where feasible and implement practical measures, such as: • temporarily stopping deliveries associated with the relevant construction project until conditions improve. • review CTMP, updating as necessary.
Construction volumes exceed forecast volumes and are outside a permissible range.	Review and assess operations to identify opportunities for reducing construction volumes where feasible and implement practical measures, such as: • temporarily stopping deliveries associated with the relevant construction project until conditions improve. • stop all movements in/ out of the IPG Estate until conditions approve. • review CTMP, updating as necessary.

Observation	Response
Construction Haulage Routes	
Construction traffic follows approved haulage routes.	No response required.
Construction traffic generally follows approved haulage routes.	Review and assess operations to identify opportunities to correct haulage routes where practical, such as: • remind drivers of nominated truck routes. • provide additional training.
Construction traffic does not follow the approved haulage routes.	Review and assess operations to identify opportunities to correct haulage routes where practical, such as: • temporarily stopping deliveries associated with the relevant construction project until conditions improve. • stop all movements in/ out of the IPG Estate until conditions improve. • review CTMP, updating as necessary. • provide additional training.
Queuing	
No queuing observed.	No response required.
Queuing observed within the IPG Estate boundary.	Review and assess operations to identify opportunities to reduce queuing where practical, such as: • review and confirm drivers are adhering to the delivery schedule. • provide additional training including review of driver protocols.
Queuing observed on the surrounding public roads.	Review and assess operations to identify opportunities to reduce queuing where practical, such as: • temporarily halting deliveries until conditions improve. • direct all trucks to move within the site and queue along the access road. • review CTMP, updating as necessary. • provide additional training including review of driver protocols.
Dust and Spoil	
No observable dust on the roadway and in the air.	No response required.
Minor quantities of dust on the roadway and in the air.	Review and assess operations to identify opportunities to reduce dust production where practical, such as: • use of additional water sprays. • temporarily stopping site operations until conditions improve. • investigate and modify dust generating sources.
Large quantities of dust on the roadway and in the air.	Review and assess operations to identify opportunities to reduce dust production where practical. If construction activities were responsible for excessive dust production, then submit an incident report to the relevant government body. Implement measures to avoid the incident occurring in the future.

Appendix A Driver Code of Conduct

Safe Driving Policy for ALDI building works within IPG Estate, at 475 Badgerys Creek Road, Badgerys Creek.

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 requires that while driving any vehicle for work-related purposes. Drivers are to be issues with a copy of the Drivers Code of Conduct, and must comply with all of 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 ensure all heavy vehicles pass through the correct truck washdown / rumble grid and are free from dirt and any other loose material.

Police are regularly monitoring traffic movements in the area and drives will be fined for disobeying road rules. 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

Driver Responsibilities

All drivers accessing and departing the Site must:

- Abide by the following routes to and from the Site prior and post completion of the northern access (permanent Badgerys Creek Road roundabout access), as shown in Figure 13 and Figure 14. It is highlighted that construction vehicle turning movements at the southern access point are limited to movements as shown in Table 22 and Table 23.

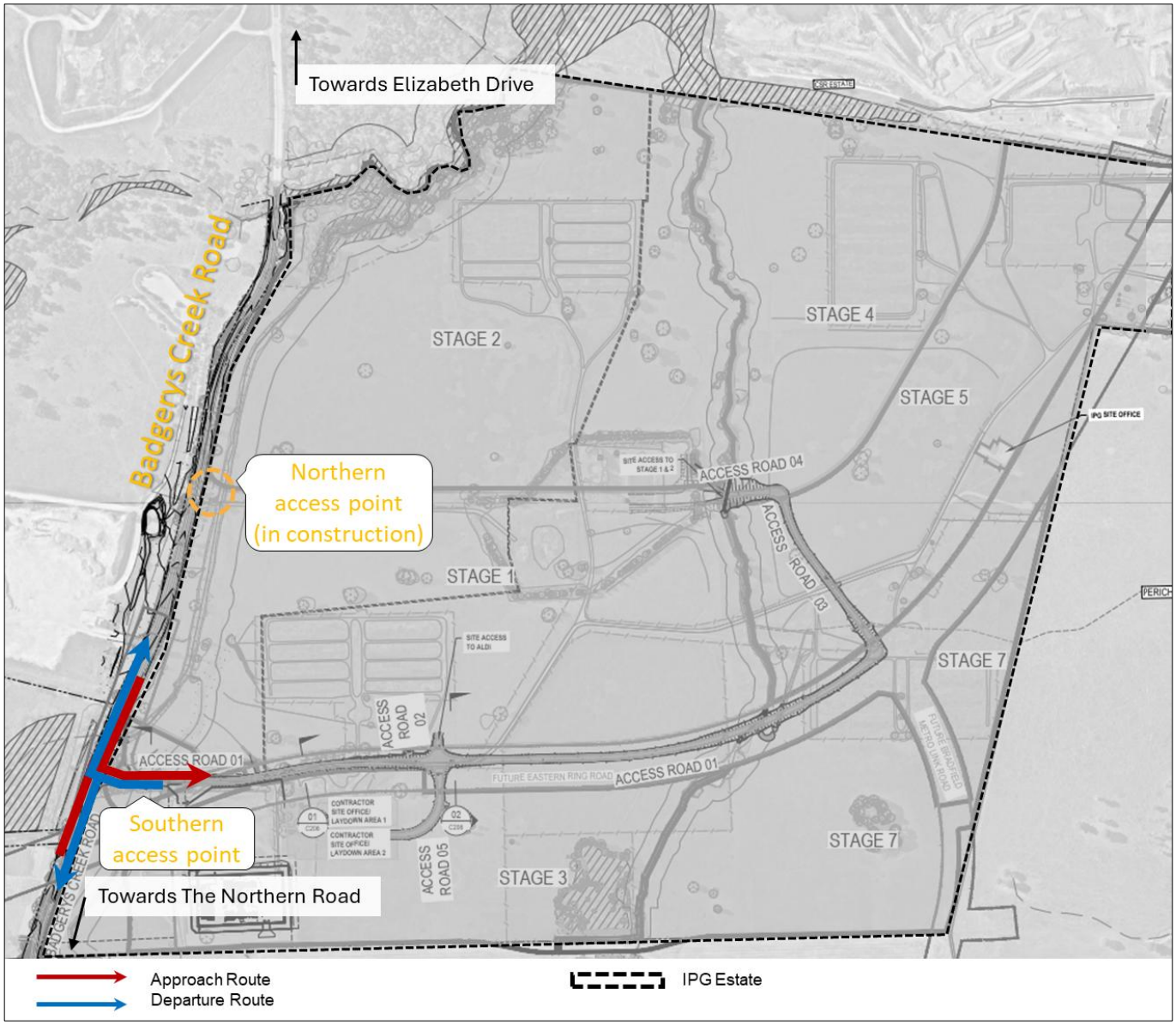


Figure 13: Construction access arrangement (prior to construction of northern access)

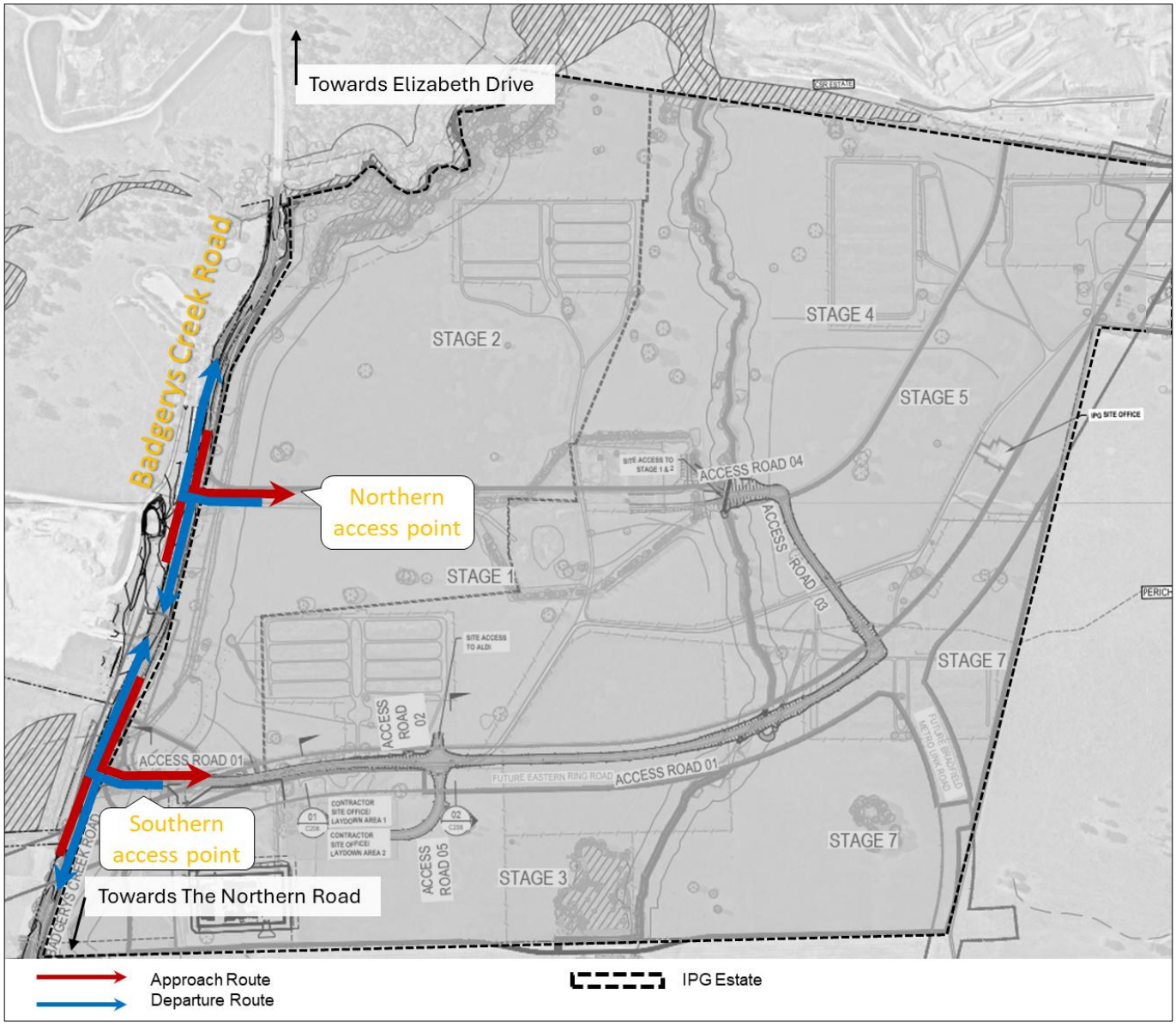


Figure 14: Construction access arrangement (post construction of northern access)

- 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 at all times.
- Ensure they have a current driver licence for the class of vehicle they are driving, and this licence is to be carried at all times.
- 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 used.
- 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 selected routes.
- Be cognisant of any noise and emissions requirements, 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 speed limits as imposed within the Site.
- Keep loads covered at all times.

Site Team and Contractor Responsibilities

The Contractor is responsible to take 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:

- 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 and that illegal use is not undertaken.
- Encouraging better fuel efficiency by:
  - Use of other transport modes or remote conferencing, whenever practical.
  - Providing training on, and circulating information about, travel planning and efficient driving habits.
- Reporting any violation of road rules to police and the Principal and maintaining clear communication pathways for offender management to encourage site compliance.

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, implementing respite periods and refraining unnecessary horn honking and engine revving;
- Adhere to approved site hours for arrivals and departures;
- 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 B Consultation with Council

Jae Jeon

From: Riham Gergis <GergisR@liverpool.nsw.gov.au>
Sent: Monday, 13 April 2026 4:24 PM
To: Mitchell Kay
Cc: Mitchell Alexander; Tina Zheng; Andre Kisso; Maruthi Dhurjati; Jae Jeon; Ali Rasouli
Subject: Endorsement- updated Construction Traffic Management Plan - RICHARD CROOKES CONSTRUCTIONS PTY LTD - 465-495 ~ 22 2026

Hi Mitchell,

I refer to the responses and revised Construction Traffic Management Plan (V02) dated 8 April 2026 and received 8 April 2026.
The revised Construction Traffic Management Plan (CTMP) has been reviewed and found to be satisfactory, incorporating council's requirements.
Please consider this email as an endorsement of the revised CTMP.

Note: 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
Regards

Riham Gergis
Permit Approvals Officer

LIVERPOOL CITY COUNCIL

02 8711 7808 | | GergisR@liverpool.nsw.gov.au
Customer Service: 1300 36 2170 | 50 Scott Street Liverpool, NSW 2170, Australia
www.liverpool.nsw.gov.au

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From: Mitchell Kay <KayM@richardcrookes.com.au>
Sent: Wednesday, 8 April 2026 5:43 PM
To: Riham Gergis <GergisR@liverpool.nsw.gov.au>
Cc: Mitchell Alexander <mitch.alexander@rpinfrastructure.com.au>; Tina Zheng <tina.zheng@rpinfrastructure.com.au>; Andre Kisso <KissoA@richardcrookes.com.au>; Maruthi Dhurjati <dhurjatim@richardcrookes.com.au>; Jae Jeon <jae.jeon@asongroup.com.au>; Ali Rasouli <ali.rasouli@asongroup.com.au>
Subject: CM: Re: Construction Traffic Management Plan - RICHARD CROOKES CONSTRUCTIONS PTY LTD - 465-495 ~ 22 2026 signed

Hi Riham,

Please see attached revised CTMP to suit the comments per CTMP-22/2026 dated 01.04.26.

Can RCC please seek your review / acceptance at your earliest convenience.

RCC have also included tracked changed document to assist with the ease of review.

If I can be of any assistance, please dont hesitate to contact me - Thank you

Mitchell Kay
Senior Project Manager

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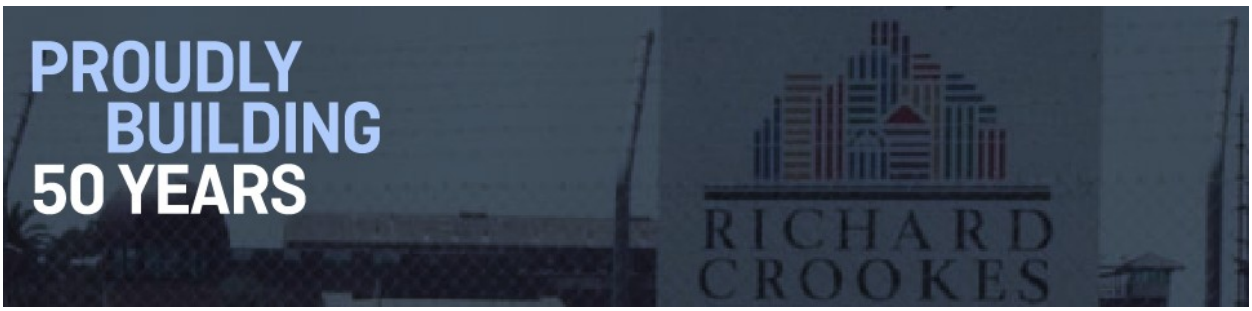

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From: Riham Gergis <GergisR@liverpool.nsw.gov.au>
Sent: Thursday, April 2, 2026 9:15 AM
To: Mitchell Kay <KayM@richardcrookes.com.au>
Cc: trent.daran@aldi.com.au <trent.daran@aldi.com.au>
Subject: Construction Traffic Management Plan - RICHARD CROOKES CONSTRUCTIONS PTY LTD - 465-495 ~ 22 2026 signed

Hi Mitchell,
Please find attached CTMP letter with council comments, plase updated the CTMP by addressing all the comments.
Regards

Riham Gergis
Permit Approvals Officer

LIVERPOOL CITY COUNCIL

02 8711 7808 | | GergisR@liverpool.nsw.gov.au
Customer Service: 1300 36 2170 | 50 Scott Street Liverpool, NSW 2170, Australia
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Appendix C Consultation with Transport for NSW

Jae Jeon

From: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>
Sent: Wednesday, 25 March 2026 1:19 PM
To: Jae Jeon; Development CTMP CJP
Cc: Maryam Yadak; Brana Ravichelvan
Subject: Re: 475 Badgerys Creek Road, Badgerys Creek - CTMP Review

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Jae,

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

- Council to assess this CTMP and determine the need for any auxiliary lanes for left or right turn movements.
- 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.
- 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
- All temporary road signs, including both portable and fixed signs used to advise road users of nearby work sites and changes in traffic conditions due to the implementation of the CTMP, must be removed upon completion of the works

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 note CTMPs are only valid for 12 months and must be resubmitted after this period. Please ensure this CTMP is shared and adhered to by all contractors. If the CTMP changes, please forward a copy to "Development CTMP CJP" <development.CTMP.CJP@transport.nsw.gov.au> for further review and endorsement.

Kind regards

Patrick Wu *He/Him*
Precinct Manager, Precinct Operations
Operations Planning
Coordinator-General Division

Transport for NSW

M: 0439035796 **Email:** patrick.wu@transport.nsw.gov.au

transport.nsw.gov.au

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

From: Jae Jeon <jae.jeon@asongroup.com.au>
Sent: Friday, March 13, 2026 11:02
To: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>
Cc: Maryam Yadak <Maryam.Yadak@transport.nsw.gov.au>; Patrick Wu <Patrick.Wu@transport.nsw.gov.au>; Brana Ravichelvan <brana.ravichelvan@transport.nsw.gov.au>
Subject: 475 Badgerys Creek Road, Badgerys Creek - CTMP Review

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Hi team,

By way of introduction, my name is Jae Jeon and I'm a Senior Transport Engineer at Ason Group.

Ason Group is the appointed traffic consultant for Richard Crookes Constructions, engaged to provide traffic input for the construction works associated with the ALDI Automated Distribution Centre development located at 475 Badgerys Creek Road, Badgerys Creek (ref: SSD-76913969).

As part of Condition B1(b) of the consent conditions, a Construction Traffic Management Plan (CTMP) is required to be prepared in consultation with Transport for NSW and Council. We have now completed the CTMP and would like to formally commence the consultation process in accordance with this requirement. Please find attached the relevant documentation for your review.

We would greatly appreciate it if you could provide your comments/ feedback as a matter of urgency (ideally next week) since there is a tight deadline for construction program for the site.

Should you have any questions or require clarifications, please do not hesitate to contact us.

Many thanks and look forward to your feedback.

Regards,

Jae Jeon
Senior Transport Engineer | Ason Group

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Appendix D SIDRA Results

MOVEMENT SUMMARY

Site: 101 [Badgerys Creek Rd / Site Access - AM Peak (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Badgerys Creek Rd															
2	T1	All MCs	521	17.6	521	17.6	0.328	0.2	LOS A	0.2	1.3	0.03	0.03	0.03	59.7
3	R2	All MCs	6	100.0	6	100.0	0.328	14.2	LOS A	0.2	1.3	0.03	0.03	0.03	17.2
Approach			527	18.6	527	18.6	0.328	0.3	NA	0.2	1.3	0.03	0.03	0.03	58.0
East: Site Access															
4	L2	All MCs	1	0.0	1	0.0	0.617	14.9	LOS B	2.5	32.8	0.92	1.54	1.46	14.1
6	R2	All MCs	84	100.0	84	100.0	0.617	42.3	LOS C	2.5	32.8	0.92	1.54	1.46	13.7
Approach			85	98.8	85	98.8	0.617	41.9	LOS C	2.5	32.8	0.92	1.54	1.46	13.7
North: Badgerys Creek Rd															
7	L2	All MCs	158	100.0	158	100.0	0.296	10.6	LOS A	0.0	0.0	0.00	0.43	0.00	47.4
8	T1	All MCs	196	19.4	196	19.4	0.296	0.1	LOS A	0.0	0.0	0.00	0.43	0.00	55.0
Approach			354	55.4	354	55.4	0.296	4.8	NA	0.0	0.0	0.00	0.43	0.00	51.3
All Vehicles			966	39.1	966	39.1	0.617	5.6	NA	2.5	32.8	0.10	0.31	0.14	43.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Badgerys Creek Rd / Site Access - PM Peak (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Badgerys Creek Rd															
2	T1	All MCs	167	15.7	167	15.7	0.134	1.0	LOS A	0.4	3.0	0.18	0.21	0.18	57.9
3	R2	All MCs	16	100.0	16	100.0	0.134	13.7	LOS A	0.4	3.0	0.18	0.21	0.18	17.1
Approach			183	23.0	183	23.0	0.134	2.1	NA	0.4	3.0	0.18	0.21	0.18	48.0
East: Site Access															
4	L2	All MCs	1	0.0	1	0.0	0.862	24.2	LOS B	7.3	95.0	0.94	2.75	2.68	14.3
6	R2	All MCs	221	100.0	221	100.0	0.862	38.6	LOS C	7.3	95.0	0.94	2.75	2.68	13.9
Approach			222	99.5	222	99.5	0.862	38.5	LOS C	7.3	95.0	0.94	2.75	2.68	13.9
North: Badgerys Creek Rd															
7	L2	All MCs	44	100.0	44	100.0	0.269	10.5	LOS A	0.0	0.0	0.00	0.11	0.00	49.9
8	T1	All MCs	372	15.0	372	15.0	0.269	0.1	LOS A	0.0	0.0	0.00	0.11	0.00	58.6
Approach			416	24.1	416	24.1	0.269	1.2	NA	0.0	0.0	0.00	0.11	0.00	57.5
All Vehicles			821	44.2	821	44.2	0.862	11.5	NA	7.3	95.0	0.29	0.84	0.77	30.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Badgerys Creek Rd / Site Access - Off-Peak (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Badgerys Creek Rd															
2	T1	All MCs	184	39.4	184	39.4	0.174	1.0	LOS A	0.4	4.2	0.18	0.23	0.18	57.3
3	R2	All MCs	21	100.0	21	100.0	0.174	13.7	LOS A	0.4	4.2	0.18	0.23	0.18	17.0
Approach			205	45.6	205	45.6	0.174	2.3	NA	0.4	4.2	0.18	0.23	0.18	46.1
East: Site Access															
4	L2	All MCs	1	0.0	1	0.0	0.903	26.3	LOS B	9.8	126.8	0.94	3.19	3.14	14.2
6	R2	All MCs	263	100.0	263	100.0	0.903	40.5	LOS C	9.8	126.8	0.94	3.19	3.14	13.8
Approach			264	99.6	264	99.6	0.903	40.5	LOS C	9.8	126.8	0.94	3.19	3.14	13.8
North: Badgerys Creek Rd															
7	L2	All MCs	158	100.0	158	100.0	0.306	10.6	LOS A	0.0	0.0	0.00	0.45	0.00	46.7
8	T1	All MCs	179	40.6	179	40.6	0.306	0.2	LOS A	0.0	0.0	0.00	0.45	0.00	54.2
Approach			337	68.4	337	68.4	0.306	5.0	NA	0.0	0.0	0.00	0.45	0.00	50.4
All Vehicles			806	72.8	806	72.8	0.903	16.0	NA	9.8	126.8	0.36	1.29	1.07	26.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Appendix E Traffic Guidance Scheme

Appendix F Verification Checklist

Completed by:				
Name:	Jae Jeon	**Signature:**		
Qualification	Transport Engineer TCT1055002			
TGS details:				
TMP Reference:	P1492E CTMP_ALDI, 475 Badgerys Creek Road, Badgerys Creek	**TGS Reference:**	AG1492E-02-v02	
Date:	12/03/2026	**Review type**	☐ Site Inspection	☑ Desktop Review
Sources used for desktop review	MetroMap dated 14/07/2025			
Site details				
Street name:	Badgerys Creek Road	**Confirmed posted speed limits:**	60km/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,**				

TGS details					
Have the below been addressed on the TGS for this location?					
Traffic volumes	☑ Yes	☐ No	☐ N/A	**Details**	The appointed Contractor is to abide by the traffic volume thresholds outlined in **Section 3**.
Predicted queue length	☑ Yes	☐ No	☐ N/A	**Details**	Construction vehicles performing right-in and left-in turning movements to enter the site will be monitored and limited to remain within the thresholds identified by the turning movement warrant assessment. Therefore, minimal queueing is expected on Badgerys Creek Road at the construction site access. There is ample distance between the Badgerys Creek Road access and each site compound which can cater for any potential queuing internally within the IPG estate.
Shoulder widths	☑ Yes	☐ No	☐ N/A	**Details**	3-5 metres shoulder width between traffic lane to site boundary provided on Badgerys Creek Road.
Sight distances	☑ Yes	☐ No	☐ N/A	**Details**	Straight road with no obstructions and good sight distance and no on-street parking.
Existing infrastructure	☑ Yes	☐ No	☐ N/A	**Details**	Existing electrical pole and trees along Badgerys Creek Road eastern frontage.
Transport services	☑ Yes	☐ No	☐ N/A	**Details**	There is no bus stop directly fronting the Site and will not be affected by the construction works.
Pedestrian generators	☑ Yes	☐ No	☐ N/A	**Details**	Pedestrians are given right of way as far as possible.
Appropriate site access	☑ Yes	☐ No	☐ N/A	**Details**	Appropriate site access for largest vehicle will be provided.
Appropriate escape route for traffic controllers	☑ Yes	☐ No	☐ N/A	**Details**	An escape route will be provided for traffic controllers as necessary during all stages of construction.

Appendix G Risk Assessment

Project Number	P1492E
Project Name	P1492E CTMP_ALDI, 475 Badgerys Creek Road, Badgerys Creek
Site Location	475 Badgerys Creek Road, Badgerys Creek
Date of Assessment	24/02/2026
Revision	V01

Name	Company	Title
J. Laidler	Ason Group	Principal Transport Engineer
J. Jeon	Ason Group	Senior Transport Engineer
A. Ji	Ason Group	Transport Engineer

Document Control

Date Issued	Revision	Issued By	Checked By
24/02/2026	V01	A. Ji	J. Laidler

Risk Matrix		**Consequence**				
		Minor	Major	Severe	Critical	Catastrophic
		A	B	C	D	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.

Geosyntec consultants

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