ENVIRONMENTAL MANAGEMENT PLAN

Bringelly Road Business Hub – Stage 2

Skyline Crescent, Horningsea Park

Issue 8.4 – April 2020

CIP CONSTRUCTIONS

TABLE OF CONTENTS

ENVIRONMENTAL MANAGEMENT PLAN

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List of Tables	
Table 1.0	Key Contacts for Construction Activities
Table 2.0	Aspects & Impacts Register
Table 3.0	General Site Issues
Table 4.0	Waste Action Plan
Table 5.0	Traffic/Access Action Plan
Table 6.0	Hazards and Risk Action Plan
Table 7.0	Air Quality Action Plan
Table 8.0	Noise and Vibrations Action Plan
Table 9.0	Erosion, Sediment and Water Quality Action Plan
Table 10.0	Contaminated Soil Action Plan
Table 11.0	Flora and Fauna Action Plan
Table 12.0	Groundwater Action Plan
Table 13.0	Utilities and Services Action Plan
Table 14.0	Easement Restrictions Action Plan
Table 15.0	Archaeological and Heritage Management Action Plan

Abbreviations	
AS	Australian Standards
CoC	Condition of Consent
DA	Development Application
EMP	Environmental Management Plan
EPA	Environment Protection Authority
HSR	Health and Safety Representative
LEP	Local Environment Plan

LGA	Local Government Area
NCC	National Construction Code (previously Building Code of Australia)
OEH	Office of Environment & Heritage
PM	Project Manager
SM	Site Manager

ENVIRONMENTAL POLICY

CIP Constructions Pty Ltd has developed this policy to serve as a statement of our commitment to protecting our environment while conducting our activities, preventing pollution and other commitments included in the IMS Strategic Plan.

CIP's approach to Environmental Risk Management is one of continuous improvement through the enhancement of skills, knowledge and commitment of our employees at all levels of the organisation.

CIP aims to:

- Develop, implement and maintain an Environmental Management System that complies with the requirements of ISO 14001, applicable environmental legislation, regulations, codes of practice and industry best practice;
- Provide relevant employees with the appropriate skills, resources and support to enable them to carry out their work with due consideration to the environment;
- Develop a culture that encourages employees and subcontractors to demonstrate work practices that are consistent with the objectives of this policy and prevention of pollution;
- Continuously monitor and record relevant parameters of our activities to provide objective evidence of the environmental risk management performance and improvement where there is opportunity to do so;
- Provide a framework for setting and reviewing environmental objectives and targets;
- Consider environmental protection during planning, design and construction of projects;
- Assign responsibility and authority for environmental risk management to relevant employees;
- Communicate the importance of meeting our environmental obligations including this policy to all personnel working for or on our behalf;
- Expect our suppliers and subcontractors to meet the same environmental objectives and systems we have set for ourselves;
- Provide this policy to interested parties and implement effective communication channels with those who are affected or likely to be affected by our business practices.

Mark Hendry
Director - Construction

Date: September 2019
Next Review Date: September 2021

1. INTRODUCTION

1.1. Background to the Project

CIP Constructions (NSW) Pty Ltd (CIP) is the Principal contractor for the Bringelly Road Business Hub Stage 2 Earthworks, at Skyline Crescent, Horningsea Park.

The Stage 2 early works includes:

- Bulk and detailed earthworks (inc. cut/fill, import, grade/trim)
- Retaining walls
- Stormwater installation
- Stormwater management, and
- Civil engineering works

Works will be staged as follows:

- Stage 2A (Lot 3 and Retaining Wall 1), assuming all approvals received by Friday 01/05/2020
    - Bulk earthworks including cut/fill and import: 04/05/2020 – 17/07/2020
    - Construction of Retaining Wall 1: 19/05/2020 – 13/07/2020
    - Installation of stormwater: 03/06/2020 – 04/06/2020
- Stage 2B (Lot 4 and Retaining Wall 2), assuming all approvals received by Friday 17/07/2020
    - Bulk earthworks including cut/fill and import: 18/07/2020 – 18/09/2020
    - Construction of Retaining Wall 2: 18/07/2020 – 15/09/2020
    - Installation of stormwater: 31/07/2020 – 06/08/2020

For more details on works staging please see BRBH Stage 2 Contract Programme (Appendix S).

1.2. Context of the EMP

An Environmental Management Plan (EMP) is required to outline environmental management practices and procedures to be followed during the construction of the internal access road, installation of site services and earthworks. The EMP provides a tool for ensuring that relevant requirements are observed during the project.

The EMP provides, but is not limited to:

- A description of the roles and responsibilities for all relevant employees involved in the construction activities; and
- The EMP outlines environmental management responsibilities, anticipated statutory requirements, incident management, corrective action procedures, and complaint handling responsibilities, auditing requirements and training programs.

Section 5 of this EMP contains actions and checklists to assist in monitoring compliance with the EMP.

This document is designed as a dynamic document that should be reviewed and amended as needed to incorporate additional requirements, and/or modifications in the construction approach and schedule. CIP, appointed as the Principal Contractor, by Western Sydney Parkland's Trust is required to draw on the requirements of the EMP and incorporate these into all Work Method Statements.

This EMP should be read in conjunction with the CIP's Integrated Management System and associated procedures identified under relevant sections of this Plan, developed for the site.

1.3. Objectives of the Environmental Management Plan

The primary objective of this EMP is to provide an environmental management manual to be used by management and construction staff involved in the activities of the site to minimise adverse environmental impacts. The EMP will also provide information to relevant regulatory authorities regarding the environmental management practices that will be implemented throughout construction. The EMP has the following objectives:

- To reduce or eliminate the release of pollutants into the environment during construction;
- To promote environmental awareness amongst employees and contractors and best environmental practise; and
- To reduce waste generation and the depletion of resources by utilising the “avoid, reduce, reuse, recycle” principles where practicable and appropriate.

1.4. Applicable legal and other requirements/Compliance Obligations

The development of this project is governed by the approved Development Application (DA), SSD6324, and Conditions of Consent (CoC). The CoCs are detailed in the DA Conditions Compliance Table (Appendix F) that forms an integral part of this EMP.

The applicable legal and other requirements are identified in the relevant management plans in Section 5. Copies of these plans and documents are available from the Site Manager. The following guidelines and regulations are utilised in Section 5 of the CEMP - Environmental Action Plans and Monitoring Requirements:

- Airports (Environmental Protection) Regulations 1987
- Protection of the Environment Operations Act 1997
- Road Transport (General) Act 2005
- Industrial Noise Policy 2000
- EPA Act 1979
- Water Management Act 2000
- State Environmental Planning Policy No. 33 – Hazardous and Offensive Development
- Protection of the Environment Operations (POEO) Act 1997
- Interim Construction Noise Guideline (DEC, 2009)
- Assessing Vibration: a technical guideline (DEC, 2006)
- Noise Policy for Industry (EPA, 2017)
- NSW Road Noise Policy (EPA, 2011)
- German Standard DIN 4150 Part 3 Structural Vibration in Buildings
- British Standard BS 6472- Guide to Evaluate Human Exposure to Vibration in Buildings
- NSW EPA’s Pollution Control for Urban Stormwater

Compliance with the applicable legal and other requirements is assessed by regular monitoring of environmental controls through site inspections and audits.

This document has been prepared in accordance with the requirements of the AS/NZS ISO 14001:2015 Environmental Management System - Requirements.

2. PROJECT DESCRIPTION

2.1. Location and Site Description

Site address: Proposed Lot 3 & Lot 4, Skyline Crescent, Horningsea Park NSW

2.2. Progression & Duration of Construction Works

The overall construction works are scheduled to be completed within 5 months.

Key Stakeholders

The key stakeholders for the project include:

- Western Sydney Parklands Trust (Land Owner)
- Commercial & Industrial Property (Builder/Developer)
- Charter Hall (Developer)
- Bunnings Group Limited (Tenant)

2.3. Construction Hours

As per the Development Consent, the construction activities associated with the works, including the delivery of materials to and from the site, are to be within the hours of 7:00 am to 6:00 pm from Monday to Fridays, 8:00 am to 1:00pm on Saturdays and no work on Sundays or Public Holiday.

The exception to these hours will be for the duration of the effect of the Ministerial Order issued 31/03/2020: *Environmental Planning and Assessment (COVID-19 Development – Construction Work Days) Order 2020*. Under this order, the construction activities associated with the works, including the delivery of materials to and from the site, are to be within the hours of 7:00 am to 6:00 pm from Monday to Sundays, inclusive of Public Holidays.

All works will occur within these stipulated times.

2.4. Staffing

The number of personnel associated with the works will fluctuate depending upon the particular work stage and the level of work required. At peak periods, it is estimated that the construction staff would be approximately 30 people. Indicatively, the internal staff will be comprised of:

- Project Manager (PM)
- Site Manager (SM)
- Senior Project Engineer (SPE)

2.5. Materials Management

The management of materials will follow as far as practicable, the principles of ecologically sustainable development and a waste minimisation hierarchy. The hierarchy for waste minimisation is as follows:

Avoid - preventing the generation of waste in the first place;

Reduce - reducing waste involves creating less waste;

Reuse - finding or adapting products after their initial use so that they have the same, similar or alternative uses, thus extending the life of a product; and

Recycle - a process by which materials that would otherwise become solid waste are collected, separated, processed and returned to the economic mainstream in the form of raw materials or product.

Dispose – Remove from site materials not able to be incorporated into the works.

Consideration has been made to the reuse of materials on site, so there is no import or export of materials to obtain the correct site elevations. Consideration will also be given to and include:

- Using recycled materials where possible;
- Maximising opportunities to generate less waste, such as wrapping/packaging to be returned to the supplier, recyclable or biodegradable/compost able;
- Avoiding unnecessary waste creation; and
- Minimising consumption of resources by ordering only required amounts of materials. The waste management procedures identified are incorporated into the waste action plan (5.2).

3. PROJECT ORGANISATIONAL STRUCTURE

The organisational structure of CIP Constructions that will be used during construction is provided in **Figure 1.**

3.1. Roles and Responsibilities

The preliminary roles and responsibilities of personnel working on the project are outlined below.

3.1.1. Project Management Team

The Project Management Team (PMT) is comprised of the Principal Contractor's personnel and will consist of the roles of the PM, SM and the SPE. The detailed roles and responsibilities of the PM, SM and SPE are outlined in Sections 3.1.2, 3.1.4 and 3.1.5.

The responsibilities of the PMT include, but are not limited to, the following:

- Accountable for overall delivery and compliance with regulatory requirements including the Conditions of Consent;
- Allocate resources and funding as appropriate;
- Hold PMT meetings to conduct regular reviews of progress and to devise actions and processes for continual improvement of the construction and environmental performance;
- Provide direction and feedback on progress as required;
- Resolve external business factors that may influence progress;
- Review and approve the EMP;
- Review and approve the site induction and training program for all persons involved in the construction activities and monitor implementation;
- Where needed, approve compliance reports and environmental performance reports to be submitted to relevant authorities;
- Where needed, ensure specialist studies and reports are undertaken; and
- Maintain overall control of the site management function.

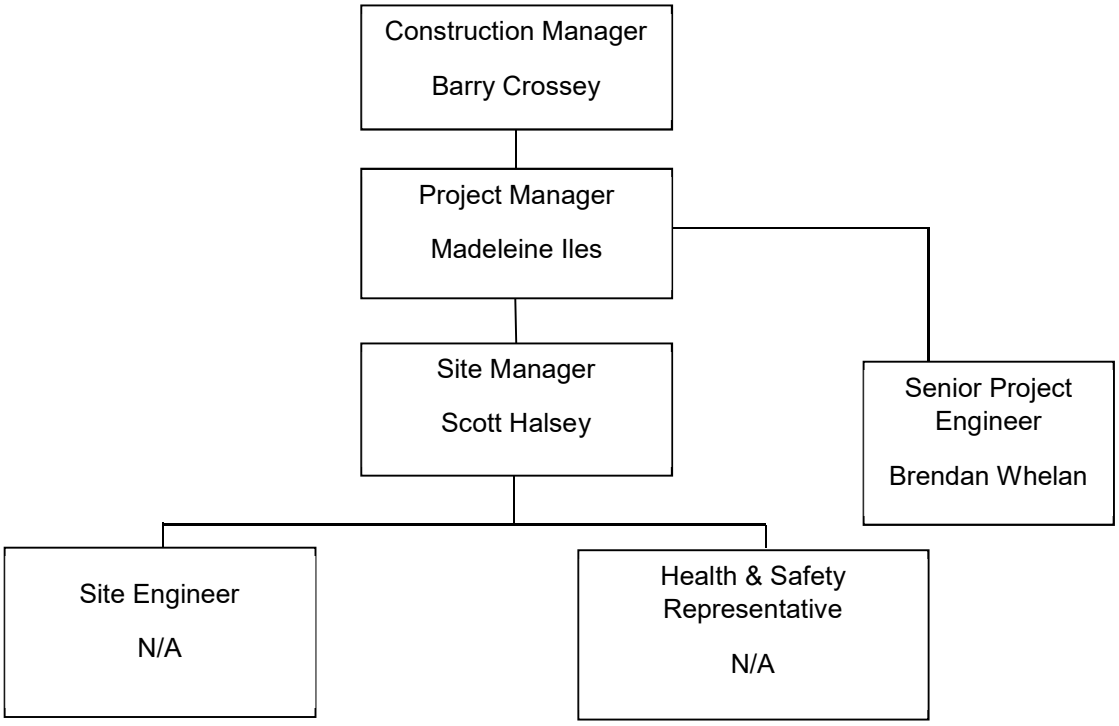

Figure 1.0 - Project Organisational Structure

3.1.2. Project Manager

The PM is a representative of the Principal Contractor. The PM's role includes but is not limited to the following:

- Overall management of the project;
- Coordination of the PMT;
- Ensuring the requirements of this plan are implemented;
- Report performance of project environmental management to the senior management; and
- Management of contractual and environmental issues in particular contractor plant and equipment.

3.1.3. Health and Safety Representative

The Health & Safety Representative (HSR) is part of the PMT and is a representative of the Principal Contractor. The HSR is responsible to the PMT on matters directly relevant to the health and safety component of the project and on matters relating to the implementation of the Health and Safety Management Plan and are defined in the Health and Safety Management Plan.

The HSR will have responsibilities that will include:

- Ensuring induction training includes occupational health and safety;
- Leading safety and incident management and risk assessments;
- Ensuring compliance with the Health and Safety Management Plans;
- Ensuring a monitoring system is in place to track and report all health and safety incidents and liaise with the relevant staff on an as-needed basis;
- Attend routine meetings with the PMT and SM and report any issues of health and safety concern at these meetings; and
- Review corrective and preventative actions to ensure the implementation of recommendations made from the audits and site inspections; and review and approve revisions to the EMP.

3.1.4. Site Manager

The Site Manager's s role includes but is not limited to the following:

- Coordinate and manage training of all staff and contractors/subcontractors prior to the commencement of construction activities, including EMP training;
- Conduct competency assessments;
- Identify environmental aspects and impacts;
- Conduct risk assessment;
- Identify operational controls;
- Manage day-to-day implementation of the EMP;
- Report directly and promptly to the PM on all environmental matters including incidents and non-conformances;
- Implement all required corrective actions and as appropriate amend the EMP;
- Report directly and promptly to the HSR on all occupational health and safety matters including incidents and accidents;
- Conduct site inspections to ensure environmental management measures are effectively in place; and
- Liaise with the relevant staff on an as-needed basis.

3.1.5. Senior Project Engineer

The Senior Project Engineer is responsible for execution and completion of the nominated works under his responsibility in accordance with the specified technical, quality, safety and

environmental requirements, as well as overall project contractual and purchasing performance, including but not limited to:

- Carry out Quality Assurance for all trades including preparation of ITPs.
- Input into the documentation and review of Technical Procedures, Safe Work Method Statements, Risk Analyses and Work Instructions of the nominated work under their responsibility.
- Implementation of the requirements of Technical and Safety/Environmental Procedures, Safe Work Method Statements and Work Instruction of the nominated work under their responsibility
- Execute the works in accordance with the program and achieve productivity requirements of the nominated work under their responsibility.
- Ensure that appropriate labour, material, plant and equipment required for the works are available and conform to the requirements of the contract and best practice of the nominated work under their responsibility.
- Identify and report product non-conformances and implement approved dispositions of the nominated work under their responsibility.
- Preparation of the Job Safety Analysis with employees of the nominated work under their responsibility.
- Report departures from scope of work.
- Coordinating contractual and commercial activities with the Client.
- Tendering of all Subcontract packages on the project.
- Overseeing subcontractor's commercial performance.
- Overseeing the Project purchasing activities and ensuring they are implemented in accordance with the CIP purchasing procedure.
- Sourcing required materials and services and negotiating optimal rates.
- Completion of all required purchasing documentation, placement with suppliers/ subcontractors and transmission to Head Office.
- Expediting delivery of materials and services to meet program requirements.
- Ensure all CIP OH&S and Environmental documentation forms part of the tender documentation of the nominated work under their responsibility.

3.1.6. Subcontractor's Construction Supervisor

The subcontractor's construction supervisor's roles and responsibilities include but are not limited to:

- Ensuring all staff have all relevant statutory and non-statutory licences that are necessary;
- Completing (and ensuring) all the subcontractor's staff complete the induction and environmental awareness training including competency assessments;
- Effectively managing environmental issues associated with their work;
- Reporting any serious environmental incidents directly and promptly to the Site Manager;
- Reporting all communications with the community (including complaints and inquiries) and report the incident directly and promptly to the Site Manager;
- Reporting any serious injuries or accidents to personnel directly and promptly to the Site Manager and HSR;
- Coordinate all corrective action requests given by the Site Manager;
- Notify the Site Manager of forthcoming activities that may affect the community;
- Record all contact with the community;
- Report any environmental incidents, communication with the community and occupational health and safety issues to the Site Manager immediately; and
- Direct staff to install and maintain environmental management devices, where necessary.

3.1.7. Work team

The Work Team is comprised of all personnel on site including Principal Contractor's personnel, consultants, sub-consultants, contractors and subcontractors. The Work Team's role includes:

- Completing the induction and environmental awareness training including competency assessment and maintenance of records;
- Recording (or seeking appropriate assistance to record) all contact with the community on an appropriate register;
- Reporting any environmental incidents, communication with the community and occupational health and safety issues to the Site Manager immediately;
- Site Manager will report all incidents etc. to the PM for consultation with the regulatory authorities, as appropriate; and
- Carrying out all directions from the Site Manager, including installing all environmental management devices.

3.2. Communication

3.2.1. Communication Protocol

CIP, Subcontractors, Consultants and Suppliers will not have any direct liaison function with any members of the media, community or other external stakeholders without the direction of CIP.

The extent of CIP's communications role is likely to extend to the provision of notices and newsletters, as required, to community; for example, the dates/times of works programs that may impact on Stakeholders and/or adjoining owners.

3.2.2. Complaint Management

The following dispute resolution procedure will be implemented for any complaints received from the community. The on-site manager (SM) will receive all complaints.

1. Acknowledge the complaint in a timely manner
2. Assess the complaint and assign it a priority
3. Plan an investigation into the issue
4. Investigate the issue
5. Respond to the complaint and ensure that the decision is clear
6. Follow up the complainant and ensure satisfactory resolution
7. If issue has not been satisfactorily addressed, escalate to Senior Management
8. Consider if there are any systemic issues and accurately report

3.2.3. Key Contacts

Key contacts associated with the construction works are identified in Table 3.1. Except in the case of emergency, the primary contact in the first instance should be the Site Manager (Environment, Construction, Health and Safety and Community Liaison). Government and regulatory authorities should not be contacted under normal circumstances. Table 1.0 (below) provides an indication of the circumstances under which each contact should be contacted.

Table 1.0 – Key Contacts for Construction Activities

Agency	Circumstances	Contact Details
Ambulance Fire Police	All emergency situations	000
Project Manager (PM) Madeleine Iles	Overall Project Control, environmental and contractual issues. Project related incidents, complaints etc	+61 415 609 831

Health and Safety Representative (HSR) N/A	Incidents/Accidents etc	+61 402 229 939
First Aid Officer Madeleine Iles	First Aid injuries	+61 415 609 831
Site Manager (SM) Scott Halsey	Suspected pollution/environmental incident and construction related incident etc.	+61 459 348 352
Senior Project Engineer (SPE) Brendan Whelan	Senior Project Engineer	+61 418 357 838

3.2.4. Community and Communication

Communication with the adjoining properties and neighbouring workers shall be undertaken on an on-going basis, in advance of activities that may be considered as potentially affecting amenity (such as excessively noisy, dusty or traffic generating activities).

Follow-up/closure communication will be undertaken following any complaints received from stakeholders and neighbours to ensure that the issues rose have been adequately resolved. This process is to be managed using form EMP-002 Complaints Register.

A sign at the construction area will advise stakeholders of:

- The requirement that unauthorised entry to the work site is prohibited;
- The name of the person in charge of the work site (SM), a 24-hour telephone number at which that person may be contacted during and outside working hours and postal addresses for CIP provided at the entrance to the site.
- Name of Principal Contractor.

4. ENVIRONMENTAL IMPACTS AND RISKS

4.1. Management Requirements

As considered necessary, CIP will prepare a statement of environmental management measures. The statement will include their scope of works, a risk analysis and controls that will be put in place to mitigate deleterious environmental impacts of the activities that are consistent with the procedures of this EMP. All personnel working on site, including subcontractors will be required to undertake site induction and EMP training (Section 6.1).

The environmental action plans provided in Section 5 are to be referred to and used by sub-contractors in the preparation of their work method statement/s.

4.2. Environmental Aspects & Impacts

Activities and processes associated with construction that may have negative impact on the environment are summarised below which identifies the applicable environmental impacts associated with the works, outlines how these activities may impact on the environment and comments on the status of the site in relation to the environmental impact. The environmental aspects will consider the life cycle perspective of the project for example raw material supply and use, design, construction, transportation, etc. Design stage environmental aspects and impacts are documented in the project Design Risk Assessment.

Specific control measures for activities that have significant environmental impact (Rating 1) are contained within the Action Plans in Section 5. Activities that have been identified as having an

environmental impact rating of 2 or 3 are to be monitored to ensure that the risks associated with these activities are not increasing.

Table 2.0 – Aspects & Impacts Register

Sr.	Area	Aspect/s	Potential Impact/s	Impact Rating	Control Measures	Legal & Other Requirements
1	Site Offices, Amenities and General Site Areas	Lighting / IT Equipment	▪ Use of energy ▪ Use of natural resources	2	▪ Turn off the lights when not required. ▪ Monitor electricity consumption. ▪ Periodic maintenance. ▪ Use of CFL and low voltage fittings where possible. ▪ Turn all IT equipment to energy saver mode. ▪ Periodic maintenance.	Nil
		Printing	▪ Use of natural resources/paper ▪ Use of energy ▪ Waste & by-products	2	▪ Turn all printers into energy saver mode. ▪ Avoid printing by screen reading. ▪ Encourage/default double sided printing. ▪ Encourage/default grey scale printing. ▪ Recycle waste paper. ▪ Recycle printer cartridges. ▪ Periodic maintenance. ▪ Procure green star rating printers.	Nil
		HVAC	▪ Emissions to air ▪ Use of energy ▪ Use of natural resources	2	▪ Periodic maintenance. ▪ Set temperature to 22°C. ▪ Individual controls for low use areas like meeting rooms.	Nil
		Appliances	▪ Use of natural resources ▪ Use of energy ▪ Emissions to air	2	▪ Periodic maintenance. ▪ Procure at least 4 star rated appliances. ▪ Recycle e-waste.	Nil
		Emergency	▪ Emissions to air ▪ Emissions to land ▪ Emissions to water	2	▪ Periodic maintenance of emergency equipment. ▪ Dispose of any contained spill / leaks as per MSDS.	Nil
		Water usage	▪ Use of natural resources	2	▪ Minimize water usage. ▪ Use water saving taps. ▪ Fix drips and leaks.	Nil
		Cleaning chemicals	▪ Waste and by-products ▪ Emissions to land ▪ Emissions to water	2	▪ Minimize usage. ▪ Procure eco-friendly chemicals. ▪ Disposal of left-over chemicals, contained spill / leaks & empty containers as per MSDS.	Nil
		Travel	▪ Use of natural resources and fossil fuels ▪ Emissions to air	2	▪ Limit travel by use of communication technology. ▪ Use of alternate means of transport where possible. ▪ Use of small engine size / hybrid hire cars.	Nil

		Minor site purchases	▪ Emissions to air ▪ Emissions to land ▪ Emissions to water	2	▪ Procure “green” products where possible. ▪ Buy from local suppliers where possible. ▪ Buy bulk packaging	Nil
2	Construction Activities	Removal of vegetation/soil disturbance	▪ Loss of biodiversity ▪ Soil erosion	1	▪ Implement requirements of Erosion and Sediment Control Plan. ▪ Periodic site inspections. Remove vegetation that is utmost necessary for the construction activities.	Airports (Environmental Protection) Regulations 1987 EPA Act 1979 No. 203
		Excavation - Acid Sulphate Soils and Unsuitable / Contaminated soils	▪ Emissions to land ▪ Emissions to water ▪ Odour ▪ Emissions to air ▪ Complaints / legal breach	1	▪ Develop and implement Remediation Works Plan & Air Quality Management Plan when contamination is found. ▪ Implement complaints procedure	Airports (Environmental Protection) Regulations 1987 POEO Act 1997
		Excavation & Demolition - General	▪ Emissions to air - dust ▪ Noise ▪ Vibration ▪ Complaints / legal breach ▪ In-ground utilities and services	1	▪ Work in accordance with DA conditions. ▪ Implement complaints procedure ▪ Undertake Dial Before You Dig survey and permit to excavate.	Airports (Environmental Protection) Regulations 1987 POEO Act 1997
		Use of construction equipment	▪ Emissions to air – dust and carbon emission ▪ Noise ▪ Vibration ▪ Use of natural resources / fossil fuels ▪ Spills & leaks	1	▪ Minimize use ▪ Maintain adequate spill kits on site ▪ Use of residential class mufflers ▪ Avoid idle running ▪ Conduct periodic maintenance ▪ Implement dust control measures like speed limits, water spray, etc.	Airports (Environmental Protection) Regulations 1987 POEO Act 1997
		Use of construction vehicles	▪ Disruption to local traffic ▪ Noise ▪ Emissions to air – dust and carbon emission ▪ Spills & Leaks ▪ Dirt transported onto adjoining public roads	1	▪ Minimize use ▪ Implement requirements of Traffic Control Plan ▪ The covering of loads and the installation of “shake down” pads will ensure no materials are left on public roads. ▪ Use of streetsweeper and watercarts. ▪ Maintain adequate spill kits on site. ▪ Maintain road worthiness ▪ Conduct periodic maintenance ▪ Avoid idle running	Airports (Environmental Protection) Regulations 1987 POEO Act 1997 Road Transport (General) Act 2005
		Water Usage	▪ Use of natural resources ▪ Run-off of polluted water into storm water system.	1	▪ Minimize use ▪ Use recycled water for construction activities where possible. ▪ Disposal of polluted water in accordance with statutory requirements.	Airports (Environmental Protection) Regulations 1987 EPA Act 1979 No. 203

Use of construction chemicals	▪ Spills and leaks ▪ Emissions to air ▪ Emissions to water ▪ Emissions to land	1	▪ Minimize use ▪ Store in bunded containers ▪ Follow MSDS requirements ▪ Minimize stock	POEO Act 1997 Environmental Hazardous Chemical Act 1985
Construction Waste	▪ Waste and by-products ▪ Emissions to land ▪ Emissions to water	1	▪ Avoid waste by buying bulk packaging and required quantities. ▪ Reuse waste where possible. ▪ Segregate recyclable and general construction waste. ▪ Monitor waste disposal. ▪ Monitor construction water quality before discharge/disposal.	POEO Act 1997 Water Management Act 2000
Site Hoarding	▪ Visual Impact	1	▪ Ensure site hoarding is constructed in accordance with DA conditions. ▪ Ensure graffiti and damage to site hoarding is promptly rectified.	

		Consequence				
		Disaster	Very Serious	Serious	Substantial	Minor
Likelihood	Almost certain	1	1	1	2	2
	Likely	1	1	2	2	2
	Possible	1	2	2	2	3
	Remotely possible	2	2	2	3	3

Likelihood / consequence	Risk Class
The hazard has the potential to: • Permanently disable or kill • Cause major damage to the structure • Have significant impact on the surrounding population and environment	1
The hazard has the potential to: • Temporarily disable or seriously injure • Cause minor damage to the structure • Breach the site boundary and pollute local environment	2
The hazard has the potential to: • Cause minor injury • Be contained within the site boundary	3

The environmental impacts with a rating of 1 or those having any legal or other requirements associated with it are considered as “significant”. The ratings shall be based on the control and influence CIP can have on the environmental impact.

The aspects and impacts are to be reviewed at least quarterly or when changes in construction activities which are likely to change the environmental risk profile or impacts.

5. ENVIRONMENTAL ACTION PLANS AND MONITORING REQUIREMENTS

This section of the plan includes the action plans for each environmental aspect that may be impacted upon from the construction works. The action plans set out the environmental monitoring and management tasks that need to be undertaken during the works. Details regarding the location and frequency of monitoring and auditing are specified. Each action plan specifies the monitoring required to assess the effectiveness of environmental controls and who is responsible for each action. Monitoring requirements also includes the periodic inspections of the emergency response measures to ensure that these are maintained in operative conditions at all times.

Records of monitoring and site inspections are maintained as part of IMS records.

It is essential that prior to the commencement of the construction works, the site personnel and subcontractors are made aware of their environmental management responsibilities associated with their designated tasks. CIP ensures that all personnel working for and on behalf of CIP are inducted into the project environmental requirements including this EMP and any associated management plans and documents. Re-training is conducted when changes to the site environmental conditions occur.

Records of project induction are maintained as part of IMS records.

5.1. General Site Issues

(This includes Authority requirements, monitoring of environmental performance, and actions to address impacts as outline in section 5.4 of this EMP.)

Strategy:	To ensure all management procedures operate effectively.
Performance Target:	All personnel are trained. All registers and reporting processes are in place and maintained. Construction works aim for continual improvement.
Legislation, Guidelines, References:	Protection of the Environment Operations Act 1997 And all associated Legislations Complaints Register (C-E-R—001) (Appendix D) Site Environmental Control Checklist

Table 3.0 – General Site Issues

Environmental Management Requirement	Responsibility	Timing/Frequency	Reference/Notes
Ensure that all Subcontractors are aware of this EMP.	SM	Pre-Construction	Tender Letting Checklist
Ensure that this EMP forms part of any subcontract document.	CA	Pre-Construction	PMP
Ensure EMP, checklists, registers and Work Instructions are available to all personnel and documentation is maintained as outlined in the PMP and Section 9 of this EMP.	PM	Pre-Construction	PMP and Section 9 of EMP
Ensure all approvals and licenses are obtained.	SM	Pre-Construction	Section 2 of the PMP
Conduct a site induction including site environmental training for all personnel involved in the construction works to orientate them to the work areas and to explain the requirements of the EMP. Environmental training is to include all aspects detailed in Section 5.12 of this EMP.	SM	Pre-Construction, or during construction for new personnel	Induction and Training Register Section 5.12 of this EMP
Conduct an initial site inspection to ensure environmental controls are established on-site in accordance with site checklists.	SM	Pre-Construction	Section 8.2 of this EMP

Construction activities associated with the works, including the delivery of materials to and from the site, are to be within the hours of 7:00 am to 6:00 pm from Monday to Fridays, 8:00 am to 1:00 pm Saturdays. All work will occur within these stipulated times.	SM	Daily throughout entire construction period	Section 2.4 of this EMP
Review the EMP and amend where necessary.	PM / HSR	As necessary	Section 10.2 of this EMP
Inspections and Audits			
Inspect environmental controls and repair as necessary.	SM	Daily and/or after rain	Section 8.2 of this EMP
Monitor the implementation of all environmental management control procedures, check compliance with requirements and take remedial action where necessary.	SM	To be established	Site Checklist
Ensure all Registers are maintained accurately.	SM	Daily	Site Checklist
Incidents and Accidents			
Report any oil or chemical spills or accidents on-site that are likely to cause environmental pollution or health and safety issues. Document incident.	SM	Immediately on incident	Section 5 and 15 of SSMP Plan
Following any spillage or incident the SM will ensure the appropriate contractor is responsible for the clean-up. Any clean-up will be documented in accordance with Section 9 of this EMP and the WHS Plan. Any contaminated material or waste required to be removed off-site will be sent to an appropriately licensed landfill.	SM	Immediately on incident	Section 5 and 15 of SSMP Plan
Notify the SM immediately of any incidents breaching the EMP or legislative provisions.	Work Team	Immediately on incident	Section 5 and 15 of SSMP Plan
Notify the relevant authority immediately of any incidents breaching legislative provisions.	PM	Immediately on incident	Section 3 of this EMP
Document any complaints, inquiries or contact with stakeholders.	PM	As per incident/complaint	Section 8 of this EMP
Respond to all complainants.	SM or PM	As soon as practicable	Complaints Register
Issue a Non-conformance/Corrective Action Report when: A complaint is received regarding any pollution or other environmental impact caused by the project; and A departure from approved or agreed procedures is observed.	SM	When required	Section 8.3 of this EMP

5.2. Waste Action Plan

Strategy: That development and ongoing management reduce waste generation and maximise appropriate use of recycled or recyclable materials.

Performance Target: Evaluate options for utilising recycled and recyclable materials. Consider waste generation during construction activities.

Compliance with all applicable environmental legislation and guidelines (Water Management Act 2000)

Table 4.0 – Waste Action Plan

Environmental Management Requirement	Responsibility	Timing/Frequency	Reference/Notes
Incorporate into contracts where possible, requirements for the procurement of materials to have high recycled or recyclable content.	CA	Pre-tender	Contract documents
As possible, ensure the Subcontractor's methods include practices which minimise the generation of waste, maximise recycling opportunities and re-use waste materials (e.g. order the right quantity, reuse from work).	PM & CA	Pre-construction	Contract documents

Ensure that facilities for the collection, transfer and disposal of all identified waste streams are in place.	SM	Pre-construction	
During Construction			
Construction waste to be disposed off-site (if any) to be classified in accordance with Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-liquid wastes, to the NSW EPA and to be disposed of to a facility that may lawfully accept the waste.	SM	Throughout construction	
All recyclable waste streams identified from construction to ensure materials are reuse and or recycled where practicable.	SM	Throughout construction	Waste contractors monthly recycling report
Waste containers/skips must not be located on a public road or road related area (footpath, nature strip, shoulder, road reserve, public car park, etc.)	SM	Throughout construction	
Ensure bins are serviced regularly to ensure the area remains tidy.	SM	Throughout construction	
Dispose of any waste that cannot be reused or recycled at a landfill licensed by the NSW EPA to accept that type of waste.	SM	As required	
Construction employees and subcontractors will be encouraged to minimise domestic waste production and reuse/recycle where possible.	SM	As required	
Ensure the site is maintained in a clean and tidy condition.	SM	Throughout construction	
Post Construction			
Clean and remove rubbish from the site working areas.	SM	Throughout construction	
Monitoring requirements			
Waste dockets to be provided and kept on site for construction waste (not including domestic waste) is collected and transported to landfill.	SM	As needed	
Visual inspection of bins and other waste disposal areas.	SM	Daily	

5.3. Traffic and Access Action Plan

Strategy:	To minimise disruption to roads and road users.
Performance Target:	Minimise traffic congestion
	Allow safe access along roads for all users
	Compliance to Project Specific Traffic Management Plan
Legislation, Guidelines, References:	Protection of the Environment Operations Act 1997
	And all associated Legislations
	Project Specific Traffic Management Plan
	Complaints Register (C-E-R-001) (Appendix D)
	Site Environmental Control Checklist
	Schedule 4, B7 & B8

Table 5.0 – Traffic/Access Action Plan

Environmental Management Requirement	Responsibility	Timing/Frequency	Reference/Notes
Parking for all construction staff and personnel is to occur within designated areas.	SM & Subcontractors	Pre-construction	TMP
All construction traffic is to enter/exit the construction site via the site main access way.	SM & Subcontractors	Throughout construction period	TMP
Identify and use a primary transportation route for construction trucks.	SM & Subcontractors	Throughout the entire construction period	TMP
Drivers will notify the Site Manager of major changes to the transportation route.	SM & Subcontractors	As required	Revise TMP
Ensure trucks are correctly sized and fully loaded (not overloaded) so that the volume of each delivery is maximised, and the number of trips is therefore minimised.	SM & Subcontractors	Throughout the entire construction period	
Consult with Council and RMS as necessary to identify periods when major road works or traffic re-developments in designated routes are occurring.	SM	Throughout the entire construction period	
Use communication systems (such as CB radios, mobile phones) as necessary to manage the flow of truck movements to site.	SM & Subcontractors	Throughout the entire construction period	
Post Construction			
All roads damaged by construction activities must be rehabilitated – i.e. re-seal or fill in holes and ditches etc that the construction equipment has caused.	SM	As needed and on completion of the project, as required	
Monitoring Requirements			
Visual inspections to be undertaken of the condition of accesses to the site, parking areas, access roads, and compliance with vehicle speeds at construction site	SM	Throughout construction	C-E-MG-004 Site Environmental Controls Checklist

5.4. Hazards and Risk Action Plan

Strategy: That measure is taken to minimise hazards and risks.

Performance Target: Zero environmental accidents or incidents

Legislation, Guidelines, References:

Protection of the Environment Operations Act 1997

State Environmental Planning Policy No. 33 – Hazardous and Offensive Development

And all associated Legislations

Site Safety Management Plan 20181210 (Appendix J)

Schedule 3, B22 – Hazards and Risks

NOTE: This Action Plan relates to environmental hazards and risks only. Occupational, Health and Safety hazards and risks are addressed in the Occupational Health and Safety Plan and will be incorporated into the subcontractors Safe Work Method Statements and Job Safety Analysis.

Table 6.0 – Hazards and Risk Action Plan

Environmental Management Requirement	Responsibility	Timing /Frequency	Reference/Notes
Prepare a site safety management plan that will identify the potential risks presented to non-construction workers and present strategies to minimise these risks.	HSR	Pre-construction	SSMP
During Construction			
Ensure the subcontractor takes measures to include spill containment procedures and appropriate storage and control of chemical facilities (include locations on the site layout plans).	SM	During construction	Section 9 of SSMP
Any imported fill must be validated in accordance with Council's Contaminated Lands Policy and NSW EPA requirements.	Specialist Consultant	Prior to importing fill	Council Policies, EPA guidelines
Minimise the volume of chemicals, oil and fuel stored temporarily on site as part of construction activities works and ensure substances are stored and used in appropriately contained areas. Refuel vehicles using mini-tankers (thereby eliminating onsite fuel storage).	SM	Throughout construction	Section 4 SSMP
Incident Management Procedures identified in Section 8 are to be followed at all times.	SM	Throughout construction	Section 15 of SSMP
To manage risks associated with trip hazards, overhead hazards and other potential dangers surrounding the site: ▪ Fully fence the site and ensure all materials are contained within it, ▪ Provide signage that advises of the works and alternative access arrangements around the area; and ▪ Provide separate visitor access to the site that avoids construction areas.	HSR & SM	Throughout construction	Section 4 of SSMP

5.5. Air Quality Action Plan

Objective:	To have no change to the existing air quality
Strategy:	Minimise dust
	Control dust generated from demolition and removal of existing structures
	Minimise impact of exhaust emissions
	Monitor dust generation
Performance Target:	No dust and particulate matter generated at the site boundary
Legislation, Guidelines, References:	Protection of the Environment Operations Act 1997
	And all associated Legislations
	Complaints Register (C-E-R-001) (Appendix D)
	Site Environmental Control Checklist
	Schedule 4, C4

Table 7.0 – Air Quality Action Plan

Environmental Management Requirement	Responsibility	Timing/Frequency	Reference /Notes
During Construction			
Ensure dust suppression resources are provided on-site (i.e. water carts).	SM	Pre-construction	
Ensure trafficable areas are clearly defined and stabilised and the on-site speed limit is adhered to.	SM	Throughout construction	
Maintain construction equipment including trucks and vehicles, to reduce exhaust emissions.	SM & Subcontractors	When required	
Control any dust generated from the demolition and removal of existing buildings and structures.	SM	Throughout construction	
Keep dust-generating activities to a minimum during dry and windy conditions. Cease all works that have the potential to generate dust in excessively windy conditions and/or use fine mist sprays to suppress the dust.	SM	When required	
Keep large, unprotected areas moist during windy weather. If water is insufficient, soil binders and/or dust retardants may be used	SM	During construction	
Load and cover trucks and ensure the tailgates of all trucks transporting spoil from site are securely fixed prior to loading and immediately after unloading.	SM & Subcontractors	During construction	
Ensure there is no burning of waste material on site.	SM	Throughout construction	
Minimise diesel pollutant impacts on surrounding land uses by: ▪ Turning off diesel combustion engines on construction equipment not in active use and on dump trucks that are idling while waiting to load or unload material; and ▪ Ensuring vehicles are well maintained.	SM & Subcontractors	Throughout construction	
Post Construction			
Stabilise soils as soon as practicable after disturbance to prevent dust generation.	SM	As soon as practicable	
Progressively rehabilitate all disturbed areas to their original condition as soon as possible to prevent dust generation.	SM	As soon as practicable	
Monitoring Requirements			
Visually inspect the site on a regular basis to check for the deposition of dust. Where a significant accumulation of dust is determined, review practices in this area.	SM	Daily	
Install dust monitoring gauges and analyse monthly.	SM & Specialist consultant	Monthly	Dust Monitoring Methodology Document

5.6. Noise and Vibration

Objective:	The impact of construction noise on surrounding land uses is minimised.
Strategies:	Keep construction noise levels within community accepted levels
	Comply with EPA guidelines for construction and traffic noise
	Ensure construction equipment has adequate noise prevention safeguards and is maintained in good working condition
Performance Target:	No complaints relating to noise arising from construction activities.
Legislation, Guidelines, References:	Protection of the Environment Operations (POEO) Act 1997
	Interim Construction Noise Guideline (DEC, 2009)
	Assessing Vibration: a technical guideline (DEC, 2006)
	Industrial Noise Policy 2000
	Noise Policy for Industry (EPA, 2017)
	NSW Road Noise Policy (EPA, 2011)
	German Standard DIN 4150 Part 3 Structural Vibration in Buildings
	British Standard BS 6472- Guide to Evaluate Human Exposure to Vibration in Buildings
	Noise Impact Assessment – Acoustic Logic (Appendix N)
	Complaints Register (C-E-R-001) (Appendix D)
	Site Environmental Control Checklist
	Construction Noise and Vibration Management Plan (Appendix M)

Table 8.0 – Noise and Vibration Action Plan

Environmental Management Requirement	Responsibility	Timing/Frequency	Reference/Notes
Pre-Construction			
Ensure all equipment (excavators, backhoes, cranes, trucks etc.) have adequate noise prevention safeguards such as residential class mufflers, acoustic enclosures for any diesel generators and/or air compressors as necessary.	SM & Subcontractors	Pre-Construction	
Provide mechanism to ensure that any complaints arising from noisy activities are addressed.	PM & SM	Pre-construction	Section 8.3 of this EMP
Ensure that the technical specifications for all subcontractors' plant and equipment are written to incorporate consideration of noise mitigating procedures.	SM & CA	Pre-construction	
During Construction			
The hours for construction activities associated with the works, including the delivery of materials to and from the site are between 7:00am and 6:00pm, Monday to Friday, 8:00am to 1:00pm Saturday. No work is to be carried out on Sundays or on public holidays.	PM	Throughout construction	Section 2.4 of this EMP Development Conditions (C2)
Establish and ensure regular use of effective communication with relevant stakeholders. Surrounding occupiers to be	PM & SM	As necessary	

notified of the schedule of construction works and given forewarning for especially noisy activities.			
In the event of a noise complaint, implement the complaint procedures detailed in Section 5.6.	PM & SM	Immediately on incident	
Instruct subcontractors and other personnel to maintain vehicles and equipment to ensure manufacturers noise control equipment remain intact and any squeaks and rattles on dump truck bodies and excavator tracks are minimised.	SM & Subcontractors	As necessary	
Maintain truck routes on the site in good condition and ensure trucks remain on designated internal routes. Maintain low speeds.	SM & Subcontractors	Throughout construction	
Ensure there is no 'warming up' of plant and machinery outside the construction site.	SM & Subcontractors	Throughout construction	
Maintain low speeds at the construction site to minimise engine noise and chassis rumble.	SM & Subcontractors	Throughout construction	
Where possible, locate construction equipment in a position that provides the most acoustic shielding from surrounding land uses.	SM & Subcontractors	When required	
Ensure trucks are fully loaded so that the volume of each delivery is maximised, and the number of trips is therefore minimised.	SM & Subcontractors	Throughout construction	
Minimise rock breaker use where possible. Ripping using a larger excavator or dozer is preferred, if possible, to longer periods of hammering with a smaller machine.	SM & Subcontractors	Throughout construction	
Monitoring Requirements			
Carry out noise compliance checks as necessary on all major equipment, such as drills and cranes to ensure the noise emission levels are generally within expected levels. Instruct subcontractors and other construction personnel to repair or remove noisy equipment from the site if noise levels are exceeded.	SM & Subcontractors	During construction	

5.7. Erosion, Sedimentation and Water Quality

Objective:	To protect the soil from erosion and sedimentation caused by construction works.
Strategies:	Minimise the amount of soil disturbance during construction. Minimise potential risk of sediments entering waterways including soil erosion or chemical spillage
Performance Target:	No erosion of soils on-site and no sedimentation down slope of works. Compliance to Erosion and Sediment Control Plan.
Legislation, Guidelines, References:	Protection of the Environment Operations Act, 1997 DLWC's Urban Erosion and Sedimentation Handbook NSW EPA's Pollution Control for Urban Stormwater Schedule 3, B12 d) Schedule 4, B17

Schedule 4, C6

Erosion and Sediment Control Plan (Appendix B)

Table 9.0 – Erosion and Sedimentation Action Plan

Environmental Management Requirement	Responsibility	Timing/Frequency	Reference/Notes
Pre-Construction			
Install Sedimentation Controls as per the Erosion and Sediment Control Plan	SM	Pre-Construction	Erosion and Sediment Control Plan
All boundaries are to be provided with siltation fencing. Protection of stormwater system (e.g. sandbags on roads, sealed areas, around drains, geotextile silt/sediment fences on unsealed areas and hay bales on grassed areas).	SM	Pre-Construction and throughout construction	Erosion and Sediment Control Plan
During Construction			
Minimise the area of potential soil exposure. Ensure any area of potential soil exposure is kept to an absolute minimum, including all machinery parking sites.	SM	Throughout construction	Erosion and Sediment Control Plan
Divert runoff generated outside the work areas around the construction site and divert to sedimentation control.	SM	Throughout construction	Erosion and Sediment Control Plan
All construction vehicles exiting the site will depart via a wheel wash facility.	SM	Throughout construction	Erosion and Sediment Control Plan
Cleaning of dirt transported onto adjoining roads by use of watercart and/or streetsweeper	SM	Throughout Construction	
Control vehicle and machinery movements to well defined compounds where possible. Access areas to be limited to a maximum width of 10m.	SM	Throughout construction	Erosion and Sediment Control Plan
Maintain all construction equipment and regularly inspect for leaks, fuels and oils.	SM & Subcontractors	During construction	
Post Construction			
Stabilise soils as soon as practicable after disturbance.	SM	After disturbance	Erosion and Sediment Control Plan
Lands recently established with grass species must be watered regularly until effective cover has properly established.	SM	After grass planting	Erosion and Sediment Control Plan
Remove all temporary erosion and sedimentation control structures.	PM & SM		Erosion and Sediment Control Plan
Monitoring Requirements			
Discharges to the stormwater system from the sedimentation controls will be monitored for parameters identified according to EPA's pollution control.	Civil / Stormwater Consultant	First discharge and then every three months	Erosion and Sediment Control Plan
Visually monitor water runoff for oils and grease after rainfall events (>10mm in 24hrs). If a sheen or oil film is present, prevent discharge to waterways and undertake water quality sampling and notify the PM. The	Civil / Stormwater Consultant	During/after rainfall events	Erosion and Sediment Control Plan

monitoring will be completed in accordance to the checklists outlined in **Appendix A.**			
Monitor rehabilitation to determine if rehabilitation has been effective.	PM & SM	As required	

5.8. Contaminated Soils

Objective:	To limit exposure to contaminated soils during construction works.
Strategies:	Minimise the amount of soil disturbance during construction. Maintain overlying capping layers at all times. Dispose any excavated soils appropriately. Ensure imported soil materials meet clean fill requirements.
Performance Target:	Compliance to Erosion and Sediment Control Plan. Unexpected Finds Protocol
Legislation, Guidelines, References:	Protection of the Environment Operations Act 1997 And all associated Legislations Erosion and Sediment Control Plan (Appendix B) Complaints Register (C-E-R-001) (Appendix D) Site Environmental Control Checklist Unexpected Find Procedure (Appendix L) Schedule 4, C17

Table 10.0 – Contaminated Soil Action Plan

Environmental Management Requirement	Responsibility	Timing/Frequency	Reference/Notes
During Construction			
Minimise the area of potential soil exposure. Ensure any area of potential soil exposure is kept to an absolute minimum, including all machinery parking sites.	SM	Throughout construction	Erosion and Sediment Management Plan
Ensure capping layer is maintained at all times (where practical) to avoid exposure of underlying contaminated materials. The capping layer should comprise one of the following: - a concrete slab (minimum thickness 100mm); - bitumen/asphalt paving on 150mm compacted road base; or - compacted low permeability soil to a minimum depth of 0.5m.	SM	Throughout construction	Erosion and Sediment Management Plan
Off-site disposal of contaminated soil must be carried out in accordance with the conditions of a Disposal Permit, issued under Section 424 of the EP Act. Contaminated soil must not be removed off-site without a Disposal Permit.	SM & specialist consultants	Throughout construction	Erosion and Sediment Management Plan

Any imported fill will be assessed/sampled (as appropriate) to demonstrate compliance with clean fill criteria. The source of all imported materials will be documented and assessed. Imported fill may be required to be sampled at a rate of 1 sample per 200m^3 to confirm compliance with clean fill criteria. However, if imported fill is a quarry product or can be verified to be from a clean source, then sampling may not be required.	SM & specialist consultants	Throughout construction	Erosion and Sediment Management Plan
If stockpiling of excavated soils is required, where possible, soil material is to be stockpiled on existing hardstand areas. If soil material is unable to be stockpiled on hardstand areas, validation testing will be required beneath the stockpile footprint following the removal of stockpiled materials.	SM & specialist consultants	Throughout construction	Erosion and Sediment Management Plan
If during excavations on site, offensive or noxious odours and/or evidence of gross contamination not previously detected is identified, work must cease in this area of the site and specialist assistance sought to prevent environmental harm. Any remedial action should be developed by an appropriately qualified and experienced person in accordance with Section 381 of the EP Act.	SM & specialist consultants	Throughout construction	Erosion and Sediment Management Plan

5.9. Flora and Fauna

Objectives: To minimise impacts to flora and fauna.

Strategies: Conduct activities within identified construction areas to minimise contact with any existing flora and fauna

Remove noxious weeds encountered throughout construction

Carry out appropriate rehabilitation and revegetation.

Performance Target: No harm to sensitive areas or detrimental change to flora and fauna in vicinity of works.

Legislation, Guidelines, References: Protection of the Environment Operations Act 1997

And all associated Legislations

Table 11.0 – Flora and Fauna Action Plan

Environmental Management Requirement	Responsibility	Timing/Frequency	Reference/Notes
Pre-Construction			
Trees required to be cleared from the site must first be checked for the presence of arboreal mammals or active nests (that is, containing fertile eggs or nestlings). Should observations identify the presence of these, the subject tree (s) should not be removed or pruned until animals nesting in them have completed their breeding cycle or arboreal mammals have been relocated.	SM	Pre-Construction	
During Construction			
If, during the course of construction, personnel become aware of the presence of any sensitive fauna at or near the site, all work likely to affect the sensitive fauna is to immediately cease and the BCC consulted to determine an appropriate course of action prior to the recommencement of work at that site.	SM	During construction	

Any weed removal (if necessary) is to be undertaken in accordance with Council's Noxious and Environmental Weeds Policy and using appropriate pesticides and herbicides handling procedures.	SM	When required	Rehabilitation Plan
Weed debris and weed-contaminated debris is to be destroyed and disposed appropriately.	SM	When required	Rehabilitation Plan
If any native fauna is found injured during construction, notify and obtain advice from WIRES immediately. Notify the SM.	Work Team	When required	
Undertake any planting or replacement of shrubs with locally native species as possible.	SM & CA	When required	Rehabilitation Plan
Monitoring Requirements			
Visual inspections for sensitive flora and fauna to be undertaken on site and at site boundaries	SM	When required	

5.10. Groundwater

Objective: To ensure protection of groundwater.

To ensure surface waters are not polluted by contaminated groundwater.

Strategies: Manage construction activities to avoid impacts on groundwater.

Performance Target: No change to groundwater quality

Legislation, Guidelines, References: Groundwater Act 1912

Schedule 4, C5

Groundwater – Satisfying Conditions – Department of industry (Appendix Q)

Table 12.0 – Groundwater Action Plan

Environmental Management Requirement	Responsibility	Timing/Frequency	Reference/Notes
During Construction			
Prevent excavation to depth where groundwater table is encountered.	SM	During construction	
Although groundwater is not likely to be encountered, any de-watering should be undertaken in accordance with the requirements of NSW Department of Primary Industries.	PM	As required	
Maintain groundwater flows below 0.5L/s greater then normal, which equate to an increase of 15ML/year	PM	As required	A water license from the NSW Department of Primary Industries will be require prior to groundwater take exceeding this threshold

5.11. Utilities and Services

Objective:	To avoid damage to any existing utilities and services.
Strategies:	Ensure measures are taken to avoid damage to existing utilities and services.
Performance Target:	No damage to existing utilities and services.
Legislation, Guidelines, References:	Dial-before-you-dig on 1100 Permit to Excavate SSMP-045 Excavation Management Procedure (C-S-MG-011) (Appendix T)

Table 13.0 – Utilities and Services Action Plan

Environmental Management Requirement	Responsibility	Timing/Frequency	Reference/Notes
Pre-Construction			
Ensure that services and utilities are identified using Site Drawings and the 'Dial-before-you-dig on 1100' service. Permit to Dig and services search process.	PM	Pre-construction	Permit to Excavate SSMP-045
Identify any services potentially affected by construction activities in consultation with relevant authorities and determine requirements for diversion, protection and/or support.	PM	Pre-construction	C-S-MG-011 Excavation Management Procedure
If utilities and/or services are identified, the Principal Contractor will consult with the relevant provider of the utilities identified and make arrangements to adjust and/or relocate their services as required.	PM	As required	C-S-MG-011 Excavation Management Procedure
During Construction			
Ensure no services are disrupted to the local community due to construction works.	SM	During construction	C-S-MG-011 Excavation Management Procedure
In the event of damage to utilities or services cease works immediately and implement the Incident Management Plan, as required.	SM	During construction	Section 15 of SSMP

5.12. Easement Restrictions

Objective:	To avoid risk to health and safety of all construction workers within Endeavour Energy easements encompassing overhead transmission lines and TransGrid exclusion zone to the temporary power poles.
Strategies:	Ensure measures are taken to avoid any risk to the health and safety of all construction workers.
Performance Target:	No injuries to any person inside or near the electrical easement and exclusion zone.
Legislation, Guidelines, References:	Endeavour Energy's Development Affecting Transmission Line Easement.

Table 14.0 – Easement Restrictions Action Plan

Environmental Management Requirement	Responsibility	Timing/Frequency	Reference/Notes
Prior and during construction			
Fully understand SWMS and Risk Assessment while working close or within the easement area and/or exclusion zone.	Site team, Subcontractors	Prior construction	Ausgrid Energy Easement requirements, Site Work Health & Safety Plan.
Overhead Power services to be surveyed.	PM	Prior construction	Existing Services Survey
Hazard identification and risk assessments to be regularly carried out within easement area	SM, WHS, PM, SE	Prior and during construction	SSMP
Avoid unauthorized access into easement area and/or exclusion zone by issuing Permit to Enter on daily basis.	WHS, SM	During construction	SSMP
Avoid operating envelope of plant and equipment to encroach into easement area and/or exclusion zone.	WHS, SM	During construction	SSMP
Authorized Spotters located in working areas within easement area.	SM, WHS	During construction	SSMP
Easement area and exclusion zone to be fenced, sign posted and flagged.	SM, WHS	Prior construction	SSMP
All subcontractors and site staff to be regularly updated/reminded about easement restrictions, risk assessments and SWMS.	Site team, Subcontractors	During construction	Ausgrid Energy Easement requirements SSMP

5.13. Archaeological and Heritage Management

Objective: To protect and preserve any objects of historical significance found on site.

Strategies: Ensure measures are taken to avoid the damage or destruction of any archaeological finds during the construction.

Performance Target: Identification and preservation of any objects of historical or archaeological significance.

Legislation, Guidelines, References:

Schedule 4, B3 & B4 - Heritage

Schedule 4, C18 – Discovery of Aboriginal Heritage

Schedule 4, C17 – Impact of Below Ground (sub-surface) Works – Non-Aboriginal Relics

Unexpected Finds Protocol (Appendix L)

Aboriginal Heritage Impact Assessment – AHMS (Appendix P)

Aboriginal and Historical Archaeological Assessment – DSC (Appendix R)

Heritage Interpretation Plan – Biosos (Appendix H)

NSW Heritage Manual

NSW Heritage Act 1977

Table 15.0 – Archaeological and Heritage Management Action Plan

Environmental Management Requirement	Responsibility	Timing/Frequency	Reference/Notes
Pre-Construction			
Aboriginal and Historical Archaeological Assessment is to be prepared to the satisfaction of the Secretary in accordance with the NSW Heritage Manual.	PM	Prior construction	Aboriginal and Historical Archaeological Assessment – DSC (Appendix R) Schedule 4, B3
A Heritage Interpretation Plan shall be prepared in consultation with and to the satisfaction of the NSW Heritage Branch.	PM	Prior construction	Schedule 4, B4 Heritage Interpretation Plan – Biosos (Appendix H)
During Construction			
As a result of site activity, an Unexpected Find may be identified through earthworks and movement of plant and equipment about the site. When an Unexpected Find is located a person (s) must stop work in the immediate area of the Unexpected Find, notify the CIP Senior Site Manager or H&S Representative and Establish an Unexpected Find perimeter (10m no go zone identified by bollards with hazard tape and signage ("Unexpected Find Keep Out"))	Site team, Subcontractors, WHS	During construction	Unexpected Finds Protocol (Appendix L)
In the event that surface disturbance identifies a new Aboriginal object, all works must cease in the immediate area to prevent any further impacts to the objective(s). A suitably qualified archaeologist and a registered Aboriginal representative must be contacted to determine the significance of the object(s). The site is to be registered in the Aboriginal Heritage Information Management System (AHIMS) which is managed by OEH and the management outcome for the site included in the information provided to AHIMS. The applicant must consult with the Aboriginal community representatives, the archaeologist and the OEH to develop and implement management strategies for all objects/sites. Aboriginal heritage Management is to be carried out in accordance with an AHIP applicable to the site.	PM	During construction	Aboriginal Heritage Impact Assessment – AHMS (Appendix P) Aboriginal and Historical Archaeological Assessment – DSC (Appendix R) Schedule 4, C18 – Discovery of Aboriginal Heritage
In the event an archaeological relic is uncovered during the course of the work the Heritage Branch of the OEH must be contacted. Depending on the possible significance of the relics, an archaeological assessment and an excavation permit under the NSW Heritage Act 1977 may be required before further works can continue in that area.	PM	During construction	Appendix H – Heritage Interpretation Plan – Biosos

6. INDUCTION AND TRAINING

6.1. Initial Site Induction and Training

CIP is responsible for ensuring all personnel working on-site have received an initial site induction prior to each employee commencing work on site. Records of this induction will be maintained.

CIP's construction supervisor is responsible for training all subcontractors' employees in relation to this EMP and ensuring subcontractor's personnel attend their induction training. Anyone found departing from the environmental requirements and breaching the controls on site will face strict disciplinary action and potential for permanent removal from the site.

6.2. On-going Training

CIP and the subcontractor's construction supervisor will be responsible for ensuring all personnel working on-site receive on-going training if construction activities/plan/schedule change or as the need arises.

7. INCIDENT MANAGEMENT

An emergency and incident response plan has been prepared for the early works phase of the project. The emergency and incident response plan include the procedures to be followed during any incidents that can cause environmental damage.

Any incident likely to cause pollution of the site (such as an oil or chemical spill or accident) must be reported immediately to the SM. If the incident results in a breach of legislative provisions, then SM must inform the PM & HSR. The PM will contact relevant authorities (including the EPA) as required.

The EPA must be notified of incidents causing or threatening material harm to the environment as soon as practicable after a person/organisation becomes aware of the incident. The HSR, in his EM role, is responsible for notification to the EPA. Written details of the incident must be notified to the EPA within 7 days of the date on which the incident occurred, if requested by the EPA. Whilst all reporting will occur via the EM, subcontractors and other personnel are required to assist to the fullest extent possible in the notification and reporting of such incidents.

The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by CIP. CIP will provide such further details to the EPA within the time specified in the request. Relevant personnel involved with the construction activities on site must be made aware of such requests and facilitate the attainment of these requirements.

Emergency scenarios for this project include the following:

- Chemical & Oil spills and leaks
- Fire
- Contamination
- Unexpected find
- Damage to heritage structure

Emergency contact numbers are provided in Table 1.0.

Incidents are recorded in the incident report and investigation, as necessary, is carried out to assess the root cause of incident to prevent its recurrence.

7.1. Unexpected Find Protocol

CIP implements this method of operation when an unexpected find has been identified at the Bringelly Rd Business Hub. All personnel starting work at this project will be inducted into the procedure during the site-specific induction process prior to starting work onsite.

The objective of the Unexpected Find Procedure is to ensure that:

- Site personnel and visitors are not placed at risk to their health, safety or welfare
- Incidence of an Unexpected find are managed and dealt with quickly and efficiently
- Good communication is maintained throughout the site to enable proper management of active work areas

Unexpected Find – relates to but limited to the following:

- Unexpected materials / substances
- Unexpected liquids
- Objects of possible cultural significance (e.g. Aboriginal artefacts)
- Unexpected active or redundant services, power, water, gas.

When an Unexpected Find is identified the person (s) locating it will carry out the following actions

- Stop work in the immediate area of the Unexpected Find
- Notify the CIP Senior Site Manager or H&S Representative
- Establish an Unexpected Find perimeter - 10m no go zone identified by bollards with hazard tape and signage (“Unexpected Find Keep Out”)

The find will then be dealt with according to CIP’s unexpected find procedure (Appendix L)

8. CHECKING, CORRECTIVE ACTION AND REPORTING

8.1. Training Records

Section 6.1 of this EMP details the initial site induction and on-going environmental training that all personnel working on the construction will be required to undertake. The SM will ensure all employees working on-site have received initial site induction and environmental training. Records of all training undertaken at the construction site will be maintained by the SM. The SM will therefore be able to assess the competency of individuals in accordance with their roles and responsibilities.

8.2. Site Environmental Inspections and Checklist

A site environmental checklist is a simple means for checking the day-to-day environmental controls at a site and recording the details in a manner that is available for inspection. It provides a series of items that can be quickly examined to provide an accurate indication of the effectiveness of safeguards contained in the EMP. An environmental checklist has been developed to cover environmental aspects and impacts identified in Section 4.2 and Section 5. The checklist will be revised as necessary to ensure that it is specific to the site and work to be undertaken.

Inspections will be undertaken by the project personnel. If any deficiency is detected it shall be fixed and a record is made of the corrective action taken. A timeline for corrective actions will be established dependent upon the nature of the action, however, the goal will be to ensure all corrective actions are closed out as soon as possible.

During periods of rainfall greater than 10mm per day, all work areas will be visited, and the erosion control facilities inspected by the SM.

8.3. Non-conformance, Corrective Action and Preventive Action

Corrective and preventive action, as appropriate, will be undertaken when non-conformances and incidents occur at the construction site. These will occur at times that include when:

- A complaint is received regarding any pollution or other environmental impact caused by construction site activities;

- A departure from approved or agreed procedures (i.e. performance targets specified in Section 5) is observed;
- A non-conformance is identified as a consequence of any self-assessment, formal audit or other environmental survey or inspection.

If the non-conformance is considered to breach legislative requirements, the SM will be responsible for notifying the PM who will be responsible for reporting any perceived breaches of legislative requirements to the appropriate regulatory authority as soon as possible.

Non-conformances will be analysed and investigated by the SM and/or PM to determine the cause of the non-conformance and to develop a corrective action to prevent recurrence. The SM and/or the PM will record all non-conformances and ensure that the corrective actions are undertaken as soon as possible. Refer to procedure for Nonconformity, Corrective Action and Preventive Action for more details.

8.4. Auditing

CIP has implemented an internal audit regime for its offices and project sites. Audits are carried out to determine the compliance with the IMS, EMP and AS/NZS ISO 14001:2015.
The PM will arrange audits of the subcontractor's activities as necessary to determine compliance with the EMP. The frequency of audits will be determined by the PM and the need for these audits will be reviewed throughout the duration of the project. Refer to procedure for Internal Audits for more details.

9. CONTROL OF DOCUMENTS AND RECORDS

Distribution and control of this EMP and related documents is the responsibility of CIP's Project Management Team. All project personnel shall be provided access to the correct revision of the EMP. A copy of these documents is also made available on E-site for reference purposes.

This EMP is considered to be a dynamic document, which will be reviewed at the regular PMT meetings and any amendments required will be made accordingly to reflect changes to the project conditions.

Changes to the EMP will be communicated to the appropriate level of responsibility through inductions, on-going training and the issue of revised documentation where necessary.

Records are maintained to demonstrate compliance with the requirements of this EMP, CoC, CIP IMS, etc. The records maintained for the project construction activities are available on site and E-site.

Refer to CIP's Control of Documents and Records Procedure (CA-IMS-010) for more details.

10. MANAGEMENT REVIEW

10.1. Environmental Management Review

The performance and effectiveness of the implementation of this EMP and related documents is reviewed at the regular PMT and client meetings. Participation from other project staff, specialist consultants, and stakeholders, as appropriate, will be included.

Following meetings are held on site where the performance of EMP is reviewed:

- Regular Project Team Meetings
- Monthly Project Control Group meetings/report

Records of these meetings are maintained in the form of minutes and the PMT is responsible to ensure that actions arising out of these meetings are taken in a timely manner.

CIP senior management also regularly reviews the performance of its Environmental Management System across the company as part of the IMS review. Records of these meetings are maintained in the form of minutes held in the Sydney office.

10.2. Continual Improvement

Continual improvement of the EMP will be achieved by continually evaluating environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement. The continual improvement process for the project has been designed to:

- Identify areas of opportunity for improvement of environmental management which leads to improved environmental performance;
- Determine the root cause or causes of non-conformances and deficiencies;
- Develop and implement a plan of corrective and preventative action to address root causes;
- Verify the effectiveness of the corrective and preventative actions;
- Document any changes in procedures resulting from process improvement;
- Make comparisons with objectives and targets.

Implementation of strategies/techniques to improve the environmental performance of the construction works is the responsibility of the PM. Actions and further opportunities for continual improvement will be discussed at Project Management Team Meetings as required.

APPENDICES

Appendix A Project Environmental Management Checklist (C-E-MG-003)

Appendix B Erosion and Sediment Control Plan

Appendix C Site Environmental Controls Checklist (C-E-MG-004)

Appendix D Complaints Register (C-E-R-001)

Appendix E Traffic Management Plan (C-S-MG-012)

Appendix F DA Conditions Compliance Table

Appendix G Electrical Management Procedure (C-S-MG-007)

Appendix H Heritage Interpretation Plan

Appendix I Heritage Interpretation Plan Confirmation – Heritage Branch

Appendix J Site Safety Management Plan

Appendix K Dilapidation Report

Appendix L Unexpected Finds Protocol

Appendix M Construction Noise and Vibration Management Plan

Appendix N Noise Impact Assessment – Acoustic Logic

Appendix O Construction Traffic and Pedestrian Management Plan

Appendix P Aboriginal Heritage Impact Assessment - AHMS

Appendix Q Groundwater – Satisfying Conditions – Department of industry

Appendix R Aboriginal and Historical Archaeological Assessment – DSC

Appendix S Programme 20190118

Appendix T Excavation Management Procedure (C-S-MG-011)

Document Revision History

Issue No	Date	Sec No	Brief Description of Change	Reason	Prepared By	Approved By
1.0	Sep 12	All sect	Initial setup	Set up of project	PM	CM
2.0	8 Aug 14	Policy	Environmental Management Policy updated	Environmental Management Policy reviewed, and revision updated.	KA	RB
		General	Revision numbers updated accordingly.	To reflect above change.	KA	RB
3.0	Oct 2014	All	Site Engineer added to section 3. General maintenance/tidy.	RB felt this was important to be included in the EMP. N/A	KA	RB
4.0	Jul 16	All	Reformatting	CIP Rebranding	KA	RB
5.0	Aug 16	Intro.	Environmental Policy update	New Environmental policy issued.	KA	RB

6.0	Aug 17	All	Updates to AS references. General tidy/up of wording and formatting.	New Australian Standards	KA	RB
7.0	Mar 18	All	Tidy up of comments & specifications	Include streetsweeper/watercart info. As well as other Environmental requirements.	KA	RB
7.1	Mar 18	All	Site Specific changes	Changes to proforma for site specific documentation	SY	FK
7.2	Apr 18	All	Site specific changes	Changes to proforma for site specific documentation for BRBH	MI	FK
7.3	June 18	All	Legislation update	Update all references to NSW legislation	MI	FK
8.0	Dec 18	All	Reformatting Contact details	ESR/CIP rebranding Update site team details	MI	FK
8.1	Jan 19	All	Updating details + references	Department of Planning	AC	MI
8.2	Jul 19	All	Update CM	New CM	AC	MI
8.3	Sep 19	All	New CM and remove DERM	<	AC	MI
8.4	Apr 20	All	Program, staging, project details	Stage 2 information	MI	BC