MARCH 4, 2021

ENVIRONMENTAL MANAGEMENT PLAN

BRINGELLY ROAD BUSINESS HUB – STAGE 2 SKYLINE CRESCENT, HORNINGSEA PARK

> AWJ CIVIL PTY LTD 155 NEWTON ROAD, WETHERILL PARK 9757 2999

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ENVIRONMENTAL MANAGEMENT PLAN

Prepared By: Andrew Placko Reviewed By: Steve Crockett Approved By: Dominic Gerace

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 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

SE - Site Engineer

ENVIRONMENTAL MANAGEMENT STATEMENT

AWJ Civil is committed to the maintenance, preservation and enhancement of the Environment. We recognise our responsibility for the protection of the environment throughout all business activities.

We shall manage the activities under our control to minimise adverse impact on the environment. To achieve this, we:

- Comply with environmental legislation and legal obligations.
- Promote recycling and the economical use of resources to decrease emissions and wastage in order to
 prevent pollution.
- Will control our work activities via the education and motivation of our personnel to ensure
- accountability for optimal performance in the protection of the environment.
 Act as good corporate citizens and respect community environmental values.
- Provide a consultative process to encourage our people to participate in the identification and mitigation of environmental risk.
- Provide resources to establish and monitor objectives and set targets to ensure continuous improvement.

Our environmental systems and procedures are integrated within our Management System so that Environmental Management, along with all our other business activities, is controlled at all stages.

Managing Director: Martin O'Connell

SIGNATURE: M

mand

1. INTRODUCTION

1.1. Background to the Project

AWJ Civil Pty Ltd is the Principal contractor for the Bringelly Road Business Hub Southern Lots Earthworks at Skyline Crescent, Horningsea Park.

The Southern Lots works includes:

- Bulk and detailed earthworks (inc. cut/fill, import, grade/trim)
- Civil engineering works

Works will be staged as follows:

- 22/03/2021: Site establishment & Site Stripping to commence with weed spraying in preparation for commencement at full capacity after Easter break.
- 06/04/2021: Works to commence at full capacity at the discretion of AWJ project manager as per the program.

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.

AWJ Civil, 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: Southern Lots, Skyline Crescent, Horningsea Park NSW

2.2. Progression & Duration of Construction Works

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

The key stakeholders for the project include:

- Western Sydney Parklands Trust (Landowner)

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 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
- Site Manager
- Site Engineer

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 SE. The detailed roles and responsibilities of the PM, SM and SE 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

- Project Manager: Dominic Gerace
- Site Manager: Anthony Faro
- Site Engineer: Andrew Placko
- Health & Safety Representative: N/A

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. Site Engineer

The Site 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

AWJ, 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 AWJ.

The extent of AWJ'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. The Key Contacts section below provides an indication of the circumstances under which each contact should be contacted.

Key Contacts for Construction Activities:

- Ambulance, Fire, Police & All emergency situations: 000
- Project Manager (PM) Dominic Gerace Overall Project Control, environmental and contractual issues. Project related incidents/Accidents, Injuries, Health and Safety concerns, complaints etc: 0401 495 555
- Site Manager (SM) Anthony Faro Suspected pollution/environmental incident and construction related incident etc:
- Site Engineer (SE) Andrew Placko: 0417 007 292

3.2.4. Community and Communication

Communication with the adjoining properties and neighbouring workers shall be undertaken on an ongoing 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 AWJ 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 subcontractors 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. | NII |
| | | 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. | NII |
| | | 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 |
| | 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 Emissions Emissions water Emissions | l leaks s to air s to s to land | 1 | Minimize use Store in bun containers Follow MSD requirement Minimize sto | e ded S s ick | POEO Enviror Hazard Chemia 1985 | Act 1997 Inmental Ious cal Act |
|----------|---|--|--|--|-----------|---|--|---|---|
| | | Construction Waste | Waste an products Emission: Emission: water | d by- s to land s to | 1 | Avoid waste bulk packag required qua Reuse wastr possible. Segregate rr and general construction Monitor was Monitor cons water quality discharge/di | by buying ing and initities. a where acyclable waste. te disposal. struction v before sposal. | POEO Water Manag 2000 | Act 1997 ement Act |
| l | | Site Hoarding | Visual Im | pact | 1 | Ensure site I constructed accordance conditions. Ensure graff damage to s is promptly r | hoarding is in with DA iti and ite hoarding ectified. | | |
| | | | Consequence | | | | | | |
| | | C | Disaster | Very Se | rious | Serious | Substantia | I M | inor |
| - | Almost certai | 'n | 1 | 1 | | 1 | 2 | | 2 |
| ê | Likely | | 1 | 1 | | 2 | 2 | | 2 |
| <u>.</u> | Possible | | 1 | 2 | | 2 | 2 | | 3 |
| | Remotely pos | ssible | 2 | 2 | | 2 | 3 | | 3 |
| Likeli | hood / conseq | luence | | | | | | Risk Cla | SS |
| The ha | azard has the p Permanen Cause maj Have signi | ootential to: tly disable or kill jor damage to the ficant impact on th | structure e surrounding p | opulation | and envir | onment | | | 1 |
| The h | 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 ha | azard has the p Cause min Be contain | potential to: for injury fed 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 always maintained in operative conditions. 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. AWJ ensures that all personnel working for and on behalf of AWJ 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.
- Protection of the Environment Operations Act 1997
- 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

I

| 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
- 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

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
- 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
- Protection of the Environment Operations Act 1997
- And all associated Legislations
- Complaints Register (C-E-R-001) (Appendix D)
- Site Environmental Control Checklist

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.
- 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. | РМ | 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.
- Protection of the Environment Operations Act, 1997
- DLWC's Urban Erosion and Sedimentation Handbook
- NSW EPA's Pollution Control for Urban Stormwater
- 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 guality sampling and notify the PM. The | Civil / Stormwater Consultant | During/after rainfall events | Erosion and Sediment Control Plan |

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
- 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)

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.
- 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
- Groundwater Act 1912
- 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 SM During groundwater table is encountered. construction Although groundwater is not likely to be PM As required encountered, any de-watering should be undertaken in accordance with the requirements of NSW Department of Primary Industries. Maintain groundwater flows below 0.5L/s PM A water license from the NSW As required greater then normal, which equate to an Department of Primary Industries will be require prior to groundwater take increase of 15ML/year

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.
- 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.
- 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.
- 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 | PM | Prior construction | Schedule 4, B4 |
| satisfaction of the NSW Heritage Branch. | | | 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. | РМ | 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. | РМ | During construction | Appendix H – Heritage Interpretation Plan – Biosos |

6. INDUCTION AND TRAINING

6.1. Initial Site Induction and Training

AWJ 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. AWJ'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

AWJ 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 fully required to assist 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 above.

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 Finds Protocol

AWJ 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 Finds - 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 tap and signage ("Unexpected Find Keep Out")

The find will then be dealt with according to AWJ'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 because 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.

9. CONTROL OF DOCUMENTS AND RECORDS

Distribution and control of this EMP and related documents is the responsibility of AWJ'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 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, AWJ IMS, etc. The records maintained for the project construction activities are available on site and Esite. Refer to AWJ'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.

AWJ 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 Wetherill Park head 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 E Traffic Management Plan (C-S-MG-012) Appendix F DA Conditions Compliance Table Appendix G Site Safety Management Plan Appendix H Dilapidation Report Appendix I Unexpected Finds Protocol Appendix J Noise Impact Assessment – Acoustic Logic Appendix K Programme 20190118

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 | МІ | 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 |