Environmental Management Plan (EMP)

Project name: Penrith Regatta Small Cells

EO number: EO9921275 PD2

Contractors

EMP prepared & submitted by: **Peter Savell** **Signature:** P.Savell

Primary contractor: **MIKCOMM COMMUNICATIONS** **Date: 31/8/22**

Name & title of the person who will have the responsibility for environmental issues onsite - CEC: Peter Savell

Nominated after hours person to manage site issues and phone number: 0414472215

Optus:

Optus Project Engineer managing the site: Les Troupkous

Reviewed by: Geoff Thiel

Signature: Geoff Thiel

Date: 2 Sept 2022

Acronyms

EMP	-	Environmental Management Plan
EMS	–	Environmental Management System
CEC	–	Contractor on-site Environmental Contact (designated on-site environmental officer) – usually a Team Leader or Safety, Environmental, Traffic Office(SET)
OPE	–	Optus Project Engineer
OPM	–	Optus Project Manager
LE&R	–	Optus Land Environment and Regulatory Team

Site Location:

Penrith Regatta Centre

Project Overview

Install Small Cells

Construction Methodology;

All Civil work where possible will be under bored with NDD and HDD by way for Vac Trucks and Drill Rig

Telecommunication pits will be in installed by means of excavation

Fibre Optic cable to be installed by hand and cable winch

Site induction:

The Project Manager must ensure all project personnel and contractors receive a site induction on the requirements of this EMP, key environmental issues of the site (e.g. Site Environment Manifest) and project, and their incident reporting obligations prior to commencing work. Copies of the above documents are to be provided or made readily accessible to all parties. Records are to be maintained of this induction.

Critical Site / Environmental Issues:

- Encroachment of TPZ

Environmental Management (EM) Issue	Objective	Potential Impacts from EM Issue	Management Safeguards / Control Measures	Monitoring and Responsibility	Implemented? Yes/No Comments
General	To ensure that all environmental risks are identified and effectively managed throughout the life of project.	Failure to properly manage the site could lead to an environmental incident resulting in possible fine and or prosecution.	• The Project Manager must ensure all project personnel and contractors receive a site induction on the requirements of this EMP, key environmental issues of the site (e.g. Site Environment Manifest) and project, and their incident reporting obligations prior to commencing work. Copies of the above documents are to be provided or made readily accessible to all parties. Records are to be maintained of this induction. • Establish designated lay-down areas for equipment, all vehicles and machinery shall be confined to the existing road.	**Project Management / Site Supervisor** prior to commencement and throughout duration of construction	

Environmental Management (EM) Issue	Objective	Potential Impacts from EM Issue	Management Safeguards / Control Measures	Monitoring and Responsibility	Implemented? Yes/No Comments
Stormwater Management	Minimise generation of contaminated / sediment-laden stormwater. Ensure no polluted water enters the stormwater drain system or watercourses.	• Site run-off may transport sediment and/or pollutants off-site, into stormwater drains and waterways. • Breaching pollution laws.	• Before work starts, install appropriate erosion and sediment controls. • Soil disturbance in an area will be minimised at all times to keep exposed areas as small as possible. • If the flow of storm water across disturbed soil is to result likely to result in sedimentation or erosion, ensure stormwater is diverted around disturbed areas of soil.	SITE SUPERVISORS - Sediment control devices will be inspected and maintained daily and after significant rainfall events SITE SUPERVISORS - Nearby water courses, along the service road , will be inspected regularly for evidence of sediment run-off	

Environmental Management (EM) Issue	Objective	Potential Impacts from EM Issue	Management Safeguards / Control Measures	Monitoring and Responsibility	Implemented? Yes/No Comments
Excavation: **Trenching and underboring.**	To minimise the impact of excavation works.	• Loss of riparian vegetation, sediment flow. • Inadequate reinstatement of excavated site. • Impact on flora or habitats.	• Keep and set aside top layers so that they can be placed back in-situ. • Return soil in the correct order, keeping top soil at the top. • Ensure reinstatement to near original condition. • Ensure correct disposal of spoil not required for reinstatement/restoration purposes. Disposal is the responsibility of the primary contractor. • All trenches are to be closed at the end of each work day to ensure animals are not trapped within them and also for the safety of pedestrians. • The construction works corridor shall not encroach beyond the established road corridor/verge; absolutely no encroachment into any adjoining or nearby areas of native vegetation is permitted. • Establish sediment fences around mounds of soil - where required.	PROJECT MANAGER and all SITE SUPERVISORS - Frequent monitoring of installation activities	

Environmental Management (EM) Issue	Objective	Potential Impacts from EM Issue	Management Safeguards / Control Measures	Monitoring and Responsibility	Implemented? Yes/No Comments
Soil erosion and sediment control	To minimise and contain soil erosion on-site and restrict off-site transfer of sediment	• Off-site transport of soil and sediment • Erosion of ground surface on-site • Breaching of pollution laws.	• Pre-construction – install appropriate erosion and sediment controls (ex. silt fences, sediment traps, gravel/sand bags, check banks, etc.) • Install a sediment fence on the low side of the construction site and follow the contour of the slope. Fence stakes are not to exceed 3m apart. The fence mesh is to be installed 150mm deep, turning to the upside slope. • Limit the areas left exposed on-site at any one time • Divert stormwater around disturbed areas of soil, cleared areas, steep slopes and fill/spoil storage areas (ex. catch drains) e.g. near LTR • Sweep and keep worksite tidy to minimise erosion and sedimentation issues • The location of any Stock piles must be made with consultation with land owners. • Locate stockpiles away from drainage lines or waterways and install a sediment fence on the low side. • Stockpiles to have a minimum 2:1 height to width ratio and not exceed 2m in height, Cover stockpiles with tarpaulins, geotextile, stabilisation matting or other suitable material • Replace erosion and sediment control devices as appropriate. Restrict site disturbance and access to work areas only and ensure that no vehicle or pedestrian traffic extends outside necessary areas. • Restrict site disturbance and access to work areas only and ensure that no vehicle or pedestrian traffic extends outside necessary areas.	PROJECT MANAGER and all SITE SUPERVISORS - Sediment and erosion control devices will be inspected and maintained daily and after significant rainfall events Sediment and erosion control measures to stay in place and be maintained until the restoration stage stabilises the area.	

Environmental Management (EM) Issue	Objective	Potential Impacts from EM Issue	Management Safeguards / Control Measures	Monitoring and Responsibility	Implemented? Yes/No Comments
Contaminated Land Management	To ensure that any discovered contaminated materials are managed in an environ-mentally responsible manner	• Contamination of surrounding areas • Improper disposal of contaminated material • Breaching environmental protection laws.	• Immediately notify the client (Project contact and L&E) if you believe that contaminated land has been encountered • Ensure that excavated contaminated soil/spoil is reinstated in the same excavation • If any contaminated or potentially contaminated material is to be removed off-site, it must be classified in accordance with the relevant State Waste Classification Guidelines and transport by an accredited contaminated waste hauler and disposed of at a licensed disposal facility • Excavate, store, reinstate and/or remove material in a manner which avoids off-site environmental problems (see: Stormwater Management and Soil Erosion and Sediment Control) • Contaminated soil may pose an OH&S risk to workers and/or passers-by. Appropriate precautions and wearing of PPE to avoid ingestion, inhalation or physical contact with the contaminants – Contact LE&R or Networks OH&S for more guidance • Should a suspect site be encountered during construction, work will stop in the area and the site will be assessed by a suitably qualified person. Appropriate clean-up measures will be undertaken.	PROJECT MANAGER and all SITE SUPERVISORS -If contamination is suspected or known, inspect all stormwater management and sediment control measures to ensure adequacy. PROJECT MANAGER and all SITE SUPERVISORS -- Ensure any recommended or required OH&S measures are fully implemented.	

Environmental Management (EM) Issue	Objective	Potential Impacts from EM Issue	Management Safeguards / Control Measures	Monitoring and Responsibility	Implemented? Yes/No Comments
Dust Control	Minimise dust emissions arising from maintenance and construction activities, including traffic movements.	• Complaints from nearby residents, businesses and passers-by. • Off-site windblown transport of dust.	• Minimise the area of land exposed to wind erosion by limiting areas left exposed. • Restrict construction works under extreme wind conditions. • Cover stockpiles with tarpaulins, geotextile, stabilisation matting or other suitable material. • Prudent wetting down of the work site keeping in mind local water restrictions risk of run-off. • All vehicles and machinery to be maintained in good working order and compliant with legal emissions levels.	PROJECT MANAGER and all SITE SUPERVISORS -to regularly inspect the site to ensure that dust generation is minimised.	

Environmental Management (EM) Issue	Objective	Potential Impacts from EM Issue	Management Safeguards / Control Measures	Monitoring and Responsibility	Implemented? Yes/No Comments
De-watering worksites	To ensure that de-watering operations do not result in turbid or contaminated water entering waterways.	• Contamination of surrounding areas • Improper disposal of contaminated water Breaching environmental protection laws.	• Minimise the amount of water requiring removal and/or treatment by using cut off trenches, sand bags, hay bales, etc. • If pumping from a pit, excavation or dam, ensure that pump inlet is floated to prevent bottom sediment from being suctioned. Remove collected sediment afterwards • If present, water is to be suctioned into a container truck and disposed of according to the relevant regulations and to an authorised disposal facility. Copies of receipts/waste dockets for the water taken off site should be forwarded to the Optus Project Engineer for their records • Water is not to be removed from site and applied to land elsewhere • On a case by case basis and with the agreement of Optus Land and Environment, alternative de-watering options may be applied • Relevant authorities (e.g. EPA, Council) to be consulted prior to any discharge into the stormwater drainage system and their approval obtained.	PROJECT MANAGER and all SITE SUPERVISORS -to regularly inspect the site to ensure that there is no unauthorised release of water to a drainage system or waterway	

Environmental Management (EM) Issue	Objective	Potential Impacts from EM Issue	Management Safeguards / Control Measures	Monitoring and Responsibility	Implemented? Yes/No Comments
Flora and Fauna	To minimise the environ-mental impact that civil construction has on the flora and fauna of the area.	• Clearing of significant vegetation • Habitat disruption or destruction • Injury or death of fauna	• Minimise and prevent vegetation clearing wherever possible • Define work and exclusion areas on site with temporary fencing if possible or danger tape where temporary fence isn't practical. • Keep to previously cleared areas wherever possible. • Ensure that vegetation is not damaged or cleared outside of work area. • Animal habitats such as old trees and burrows are to be avoided and not disturbed. • Endangered and protected flora not to be impacted without relevant State/Commonwealth approvals. • Trenches are not to be left open over-night.	PROJECT MANAGER and all SITE SUPERVISORS - Verify integrity of exclusion zones or barriers for protection of vegetation	

Environmental Management (EM) Issue	Objective	Potential Impacts from EM Issue	Management Safeguards / Control Measures	Monitoring and Responsibility	Implemented? Yes/No Comments
Trees	To minimise the impact that construction has on the canopy, trunks and roots of trees	• Unplanned tree damage, death or destabilisation • Damage to registered/protected trees • Public relations issues	• Define work exclusion areas on site to avoid damage to trees from plant and machinery and to minimise soil compaction and root damage • Underground work preferably to be outside of the Tree Protection Zone (TPZ) . If within the TPZ, care must be taken and boring at a sufficient depth (at least 800mm with entry/exit outside of TPZ) or hand trenching methods to be used to avoid root damage. • No pits to be placed inside the TPZ. • All machinery associated with thrusting or directional boring must remain outside the tree protection zone. • To avoid destabilising a tree, absolutely no roots to be cut within the 'root plate radius' (RPR), which, measured from the centre of the trunk is estimated at: 90cm for 10cm diameter tree; 200cm for 30cm diameter tree; 260cm for 50cm diameter tree; 290cm for 70cm diameter tree; 350cm for 100cm diameter tree • When unavoidable to cut a root (outside of the RPR), only roots smaller than the following diameters may be cut: 30mm for trees <5m tall; 50mm for trees 5/15m tall; 70mm for trees >15m tall. Cut roots using cutting device – do not rip with excavating machinery or tools. • In all situations where the TPZ is likely to be encroached by construction activities, the Land & Environment Group should be contacted in order to decide whether an arborist is to be engaged to provide advice on tree protection solutions, in accordance to Australian Standards 4970:2009, Protection of Trees on Developments sites.	PROJECT MANAGER and all SITE SUPERVISORS - Verify integrity of exclusion zones or barriers for protection of trees OPE – Ensure that any required notification has been duly served OPE – Liaise with L&E and/or land authority when required	

Environmental Management (EM) Issue	Objective	Potential Impacts from EM Issue	Management Safeguards / Control Measures	Monitoring and Responsibility	Implemented? Yes/No Comments
Restoration and Rehabilitation	To effectively return the vegetation of disturbed areas to conditions as similar as possible to those present prior to disturbance To restore the ground surface to, as near as practicable, pre-existing conditions	Erosion and sedimentation of disturbed areas Claims from land owner/authority for unfinished or unacceptable rehabilitation and restoration Complaints from land owners or public authorities OH&S risks to the public for inadequately restored land	• Separate the organic/soil layers from the lower horizons of excavated soil/fill and re-instate in the same order (i.e. keep topsoil at the top) • Rehabilitation of the route should be progressive with activities commencing as soon as possible after the infrastructure is installed • Utilise temporary stabilisation techniques as required until vegetation can become established • Temporary restoration of ground surface to happen as soon as possible following installation • Sufficient compaction to avoid subsequent slumping • Final restorations to be to pre-existing conditions • Use the existing ground covering material to spread over excavated ground once compaction has happened to finish. • All disturbed areas shall be monitored and necessary action taken to ensure they remain erosion free and ground cover is established for a period of one year.	PROJECT MANAGER and all SITE SUPERVISORS - Ensure site rehabilitated and restored to, as near as practicable, pre-existing conditions OPE – Periodic inspection to ensure rehabilitation and restoration has been successful OPE – inspection before the end of the 1 year warranty period	

Environmental Management (EM) Issue	Objective	Potential Impacts from EM Issue	Management Safeguards / Control Measures	Monitoring and Responsibility	Implemented? Yes/No Comments
Weed Management	To minimise the spread of weeds along a cable route or within a site.	Invasion of weeds can have a negative impact on local flora and fauna populations and ecosystems	• Establish entry and exit points away from weed infested areas • Minimise the vehicles and equipment brought to site to reduce the opportunity for spread • Avoid un-necessary movements in weed infested areas • Weeds prominent in the area include those shown in Appendix 1 • All Trenching equipment is to be cleaned / washed down before entering the site. • Clean all machinery prior to leaving the site.	• PROJECT MANAGER and all SITE SUPERVISORS - Frequent visual monitoring of route & wash down points	

Environmental Management (EM) Issue	Objective	Potential Impacts from EM Issue	Management Safeguards / Control Measures	Monitoring and Responsibility	Implemented? Yes/No Comments
Indigenous Heritage	To minimise the impact of construction on known or potential items, sites or places of Aboriginal heritage Monitoring is to be maintained and if any suspect items encountered these measures must be implemented.	• Breaching aboriginal cultural protection legislation.	• If any items of possible indigenous significance are discovered during construction, stop work immediately, restrict access, and contact Optus LE&R. • Works are not to recommence without the prior approval of the appropriate authority or LE&R.	Continual monitoring of all earthworks for evidence of subsurface archaeological material. Monitoring may need to be undertaken by a representative of the local Aboriginal Land Council or Group	

Environmental Management (EM) Issue	Objective	Potential Impacts from EM Issue	Management Safeguards / Control Measures	Monitoring and Responsibility	Implemented? Yes/No Comments
Non-indigenous Heritage	To minimise the impact of construction on known or potential items or places of non-indigenous heritage.	Damage to heritage buildings, items or areas	• If any archaeological relics are discovered during construction, work is to stop immediately and Optus LE&R is to be contacted. • Works will not recommence without the prior approval of the appropriate authority.	PROJECT MANAGER and all SITE SUPERVISORS - Continual monitoring of all earthworks for evidence of subsurface archaeological material where the potential has been noted.	

Environmental Management (EM) Issue	Objective	Potential Impacts from EM Issue	Management Safeguards / Control Measures	Monitoring and Responsibility	Implemented? Yes/No Comments
Waste Minimisation and Disposal	To minimise the impact of construction and site waste production and disposal both on and off the site.	• Littering and pollution of the environment. • Complaints from the public, landowners and/or public authorities.	• Reduce, reuse and recycle • Minimise the amount of material brought onto the site to reduce the eventual amount of waste produced • Sort as much construction waste as possible for reuse and/or recycling • Exotic weeds must not be spread as mulch • Construction waste to be disposed of off-site in an approved manner • Ensure that all debris is removed at the completion of the works • Trenching spoil to be re-used as backfill. • An ablutions facility will be installed at an appropriate location on site for the duration of the construction phase. If no connection to a reticulated sewerage system or approved septic system is available, chemical toilets will be temporarily installed and serviced on a regular basis.	PROJECT MANAGER and all SITE SUPERVISORS - Periodic visual monitoring of waste reduction and disposal techniques	

Environmental Management (EM) Issue	Objective	Potential Impacts from EM Issue	Management Safeguards / Control Measures	Monitoring and Responsibility	Implemented? Yes/No Comments
Hazardous materials and storage	To ensure that chemical and fuel storage is safe and that any materials that escape do not cause environmental damage To minimise the health and safety risk from hazardous materials and chemicals encountered on-site (such as asbestos and PCBs)	• Breaching of pollution laws. • Potential OH&S issue with some hazardous materials (eg. Asbestos and PCBs)	• Minimal quantities of hazardous materials to be brought onto site including glue and diesel. • No contaminated hazardous material to be contained on site. Ensure material cannot be washed or blown away. • Install bunds and take other precautions to reduce the risk of spills from stored chemicals • A spill kit must be available on site, commensurate to the machinery on site. • As much as practicable ALL fuel filling of plant and equipment should be conducted outside the nature reserve. • Clean up spills immediately • In case of a fire or major spill contact the relevant authorities as detailed in the Emergency Response Plan • Ensure that warning signs are adequate and visible • MSDS sheets for on-site dangerous goods are to be held on site by the and kept accessible	OPE & PROJECT MANAGER and all SITE SUPERVISORS - Monitor OH&S issues relating to hazardous materials and storage	

Environmental Management (EM) Issue	Objective	Potential Impacts from EM Issue	Management Safeguards / Control Measures	Monitoring and Responsibility	Implemented? Yes/No Comments
Noise and Vibration	To ensure that noise emanating from operations associated with the site construction comply with the requirements of all relevant legislation and licensing authorities (generally the responsibility of the relevant State government or local council)	• Committing an offence under pollution laws. • Complaints from the public, landowners and/or public authorities	• Work hours are from: Monday to Friday: 7am – 5pm Saturday 7am – 12noon No work Sundays or public holidays • Work outside standard working hours must be approved by Optus.	PROJECT MANAGER and all SITE SUPERVISORS - Should any complaints be received, refer to OPE and L&E.	

Environmental Management (EM) Issue	Objective	Potential Impacts from EM Issue	Management Safeguards / Control Measures	Monitoring and Responsibility	Implemented? Yes/No Comments
Visual Impacts	To limit visual impacts of the proposed development on the local community	• Complaints from the public, landowners and/or public authorities	• Keep the site well-kept and tidy at all times. • Provide disposal bins and skips to deal with all recyclable material and litter/waste. • Use site induction to communicate the requirement of a tidy site and consideration for local residents. • Ensure that public roads and footpaths are kept free of dirt and mud from the construction site.	PROJECT MANAGER and all SITE SUPERVISORS - Daily monitoring of visual impact management techniques	

Environmental Management (EM) Issue	Objective	Potential Impacts from EM Issue	Management Safeguards / Control Measures	Monitoring and Responsibility	Implemented? Yes/No Comments
Incidents, Accidents and Reporting	To ensure that appropriate measures are taken in relation to environmental incidents and accidents likely to cause adverse environmental effects	• Exacerbation of the incident or accident if not managed appropriately • Due diligence and risk issues if not managed appropriately • Hindering the continual improvement of the EMS if incidents and accidents are not reported • Breaching pollution laws.	• **Stop work immediately.** • If practicable, take corrective action(s) to prevent the incident or accident having an adverse effect on the environment (do not endanger the health & safety of people). • All accidents / incidents are to be immediately reported to the Contract Supervisor. • If immediate corrective action not feasible or practical, supervisor shall immediately report the accident / incident to the OPE and/or OPM, who will report it to LE&R • If the accident/incident is likely to have significant environmental impact and may lead to the involvement of regulatory authorities (EPA) and / or negative public reaction, report it immediately to LE&R **Geoff Thiel 0408080153 / Howard Coombes 0434233156** • As soon as possible after every event, the supervisor is to inform Contract Supervisor who is to log an Incident Report in INX In Control. • Ensure that- a list of emergency contact numbers including the OPE / OPM, local EPA, local authority (Council)is available on site and that all employees are aware of its location.	As described	

Environmental Management (EM) Issue	Objective	Potential Impacts from EM Issue	Management Safeguards / Control Measures	Monitoring and Responsibility	Implemented? Yes/No Comments
Traffic Management	To minimise the impact of the proposed works on the traffic flows and pedestrians	• Complaints from Public and Land -owners, Road Authorities or local council. • Potential non-compliance with AS1742.3	• Ensure that appropriate approvals have been obtained from relevant authorities before commencement of construction (eg Road Occupancy Licence, Traffic Management Plan etc) • Maintain pedestrian access (of at least 1.2m width) at all times • Site will be set up in accordance with the approved TMP.	Site Supervisor Traffic signage and barriers will be inspected periodically to ensure that it remains in position (particularly in windy weather)	

Environmental Management (EM) Issue	Objective	Potential Impacts from EM Issue	Management Safeguards / Control Measures	Monitoring and Responsibility	Implemented ? Yes/No Comments
Acid Sulphate Soils (PASS)	To manage soils with the potential to generate acid drainage in such a way that sulphide oxidation is prevented as far as possible.	Generation of sulphuric acid run-off or dust, contaminating surrounding land and/or waterways Committing an environmental offence	**Note: PASS should be identified prior to construction.** Possible indicators include: • Low lying areas • The presence of mangroves, reeds, rushes or swamps • Iron staining in water bodies or drains • Milky blue/green water • Yellow mineral deposits or shells in the soil Management measures: • Minimise disturbance to the soil • Keep excavations as shallow as possible • Minimise the time that soils are exposed to the air by staging works, storing soils on plastic and covering soils with plastic • Where possible, re-bury soils at the same depth from which it was excavated • Spoil from ASS areas will require testing and possible treatment prior to disposal	Project Manager / Site Supervisor - regular visual monitoring to identify any signs of ASS oxidation (degradation or death of vegetation; unexplained death or disease in aquatic organisms; rust coloured deposits on plants); Site Supervisor - Regular inspection of implemented control measures	

APPENDIX 1 –