



## APPENDIX E – ENVIRONMENTAL RISK ASSESSMENT AND MITIGATION MEASURES

A consolidated set of mitigation measures required for each of the environmental and social impacts identified in Section 6 of the EIS are outlined in the table below. The mitigation measures directly respond to each impact and are based upon the range of technical consultant reports appended to the EIS.

The type of mitigation measure as noted within the table below are as follows:

- **Performance based measure** – identify performance criteria that must be complied with to achieve an appropriate environmental outcome but do not specify how the outcome is to be achieved.
- **Prescriptive measure** – require action or be taken or specify something that must not be done.
- **Management based measure** – identify one or more management objectives that must be achieved through the implementation of a management plan.

Following the implementation of appropriate mitigation measures as recommended, it is determined that the proposal will not result in any significant adverse impacts on the surrounding environment.

The mitigation measures have also been allocated to the construction ('C') and/or operational ('O') phase.

SEARs	Potential Area	Stage of Project	Approach	Type of Measure (Pe/Pr/Ma)
Traffic, Transport and Accessibility	Impact of proposed development on the surrounding road network.	C and O	<ul style="list-style-type: none"> <li>▪ A detailed CTMP will be prepared prior to the construction of the relevant stages of the development. The detailed CTMP will include a detailed assessment of the anticipated construction traffic generation associated with each and identify how construction and operational vehicles will be managed within the site during the construction of Stage 2. The requirement for a detailed CTMP can be secured via an appropriately worded planning condition.</li> <li>▪ A detailed Green Travel Plan will be prepared prior to the occupation of the proposed development.</li> </ul>	Ma
Trees and Landscaping	Impact of the proposed construction works on existing trees	C	<ul style="list-style-type: none"> <li>▪ All retained trees require the following general protection measures (further detail is set out in the AIA): <ul style="list-style-type: none"> <li>– Activities restricted within the Tree Protection Zone</li> <li>– Protective fencing</li> <li>– Trunk and ground protection</li> <li>– Tree protection signage</li> <li>– Involvement from the project arborist</li> <li>– Project milestones</li> <li>– Compliance reporting</li> </ul> </li> <li>▪ The following activities are restricted within the tree protection zone of the retained trees: <ul style="list-style-type: none"> <li>– Machine excavation including trenching</li> <li>– Storage</li> <li>– Preparation of chemicals, including cement products</li> <li>– Parking off vehicles and plant</li> <li>– Refuelling</li> <li>– Dumping of waste</li> </ul> </li> </ul>	Pr

SEARs	Potential Area	Stage of Project	Approach	Type of Measure (Pe/Pr/Ma)
			<ul style="list-style-type: none"> <li>- Wash down and cleaning of equipment</li> <li>- Placement of fill</li> <li>- Lighting of fires</li> <li>- Soil level changes</li> <li>- Temporary or permanent installation of utilities and signs</li> <li>- Physical damage to the tree</li> </ul>	
Biodiversity	Impact of the proposed development on local ecology	C and O	<ul style="list-style-type: none"> <li>▪ Implementation of erosion and sediment controls, including monitoring and maintenance of all controls throughout construction</li> <li>▪ Suppression of dust generated during construction</li> <li>▪ Vegetation that is proposed to retained on site will be protected in accordance with the arborists tree management recommendations or other directives provided by the project's ecologist</li> <li>▪ Pre-clearance and clearance surveys will be undertaken to detect and, if necessary, relocate any resident or visiting fauna in vegetation and other areas that will be cleared</li> <li>▪ Implementation of hygiene measures to prevent the introduction and/or spread of weeds, pathogens or disease in soils and vegetation.</li> <li>▪ Installation of stormwater management measures (in accordance with requirements set out in the Cumberland DCP 2021) to prevent and minimise any polluted water discharging from the operational development</li> <li>▪ Installation of lights and other illuminations that minimise potential adverse effects on nocturnal fauna. Lighting will be designed in accordance Commonwealth of Australia (2020) National Light Pollution Guidelines for Wildlife Including Marine Turtles, Seabirds and Migratory Shorebirds and AS/NZS 4282:2019 Control of the obtrusive effects of outdoor lighting</li> </ul>	Ma / Pr
Air Quality	Impacts of air quality during construction activities	C and O	<u>Construction</u>	Pr/Ma

SEARs	Potential Area	Stage of Project	Approach	Type of Measure (Pe/Pr/Ma)
			<ul style="list-style-type: none"> <li>▪ Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.</li> <li>▪ Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.</li> <li>▪ Display the head or regional office contact information.</li> <li>▪ Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the relevant regulatory bodies.</li> <li>▪ Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.</li> <li>▪ Make the complaints log available to the local authority when asked.</li> <li>▪ Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book.</li> <li>▪ Undertake daily on-site and off-site inspections where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars, and window sills within 100m of site boundary</li> <li>▪ Carry out regular site inspections to monitor compliance with the dust management plan / CEMP, record inspection results into a log book, and provide to the local authority when asked.</li> <li>▪ Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.</li> </ul>	

SEARs	Potential Area	Stage of Project	Approach	Type of Measure (Pe/Pr/Ma)
			<ul style="list-style-type: none"> <li>▪ Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.</li> <li>▪ Erect solid screens or barriers around dusty activities or the site boundary that they are at least as high as any stockpiles on site.</li> <li>▪ Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period.</li> <li>▪ Avoid site runoff of water or mud.</li> <li>▪ Keep site fencing, barriers and scaffolding clean using wet methods.</li> <li>▪ Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below</li> <li>▪ Cover, seed or fence stockpiles to prevent wind erosion</li> <li>▪ Ensure all on-road vehicles comply with relevant vehicle emission standards, where applicable</li> <li>▪ Ensure all vehicles switch off engines when stationary - no idling vehicles</li> <li>▪ Avoid the use of diesel or petrol-powered generators and use mains electricity or battery powered equipment where practicable</li> <li>▪ Impose and signpost a maximum-speed-limit of 25 km·h<sup>-1</sup> on surfaced and 15 km·h<sup>-1</sup> on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate</li> <li>▪ Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing)</li> <li>▪ Only use cutting, grinding, or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems</li> </ul>	

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			<ul style="list-style-type: none"> <li>▪ Ensure an adequate water supply on the site for effective dust/particulate matter suppression/ mitigation, using non-potable water where possible and appropriate</li> <li>▪ Use enclosed chutes and conveyors and covered skips</li> <li>▪ Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate</li> <li>▪ Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods</li> <li>▪ Avoid bonfires and burning of waste materials.</li> <li>▪ Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.</li> <li>▪ Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.</li> <li>▪ Only remove the cover in small areas during work and not all at once</li> <li>▪ Avoid scabbling (roughening of concrete surfaces) if possible</li> <li>▪ Ensure sand and other aggregates are stored in banded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place</li> <li>▪ Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.</li> <li>▪ For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust</li> <li>▪ Use water-assisted dust sweeper(s) on the access and local roads to remove, as necessary, any material tracked out of the site.</li> <li>▪ Avoid dry sweeping of large areas</li> </ul>	

SEARs	Potential Area	Stage of Project	Approach	Type of Measure (Pe/Pr/Ma)
			<ul style="list-style-type: none"> <li>▪ Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.</li> <li>▪ Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.</li> <li>▪ Record all inspections of haul routes and any subsequent action in a site log book.</li> <li>▪ Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.</li> <li>▪ Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).</li> <li>▪ Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permit.</li> <li>▪ Access gates to be located at least 10 m from receptors where possible</li> </ul> <p><u>Operation</u></p> <ul style="list-style-type: none"> <li>▪ Use of emergency generators to be minimised as far as possible and in accordance with the testing maintenance regime</li> </ul>	
Noise and Vibration	Noise generation during construction phase and from back-up generators during operational phase.	C & O	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>▪ A Construction Noise and Vibration Management Plan (CNVMP) will be prepared before any work begins. A Stage 2 Construction Noise and Vibration Management Plan will also be prepared prior to the commencement of works for Stage 2.</li> <li>▪ No works will be undertaken outside of Standard Construction Hours</li> <li>▪ Other standard measures for minimising construction noise and vibration impacts will be implemented.</li> </ul> <p><u>Operation</u></p>	Pr/Ma

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			<p>Potential mitigation measures to be considered further at the detailed design stage include:</p> <ul style="list-style-type: none"> <li>▪ Use broadband and/or ambient sensing alarms on heavy vehicles where they are required to reverse, during the night-time</li> <li>▪ Appropriate specification and location of mechanical plant during detailed design</li> <li>▪ Roller doors kept closed when loading/unloading is not occurring</li> <li>▪ Production of an Operational Noise Management Plan</li> <li>▪ The use of acoustic screening</li> <li>▪ A requirement for temporary screening along the southern edge of the Stage 1 building will be confirmed prior to the operation of the Stage 1 development.</li> </ul>	
Ground and Water Conditions	Impact of the proposed development on ground and water conditions	C & O	<ul style="list-style-type: none"> <li>▪ Materials to be imported to site are to be assessed for suitability for the intended use. Very-to-highly saline soils shall not be imported. Salinity testing shall be undertaken on imported soil and in accordance with “Site Investigations for Urban Salinity”, Department of Land and Water Conservation (2002).</li> <li>▪ Vegetation cover will be estimated and maintained on permanent batters upon completion to control erosion</li> <li>▪ The final surface of all areas of the development will be graded to prevent the ponding of surface water</li> <li>▪ Erosion control of temporary batters, stockpiles and disturbed areas will be planned prior to undertaking the earthworks and implemented during the earthworks. Consideration will be given to: <ul style="list-style-type: none"> <li>– Grading and sealing partially completed surfaces</li> <li>– Installation of clearly visible fencing and traffic control measures to prevent unnecessary trafficking of areas and ensuring site disturbance</li> </ul> </li> </ul>	Pr

SEARs	Potential Area	Stage of Project	Approach	Type of Measure (Pe/Pr/Ma)
			<ul style="list-style-type: none"> <li>- Establishing set vehicular access points and roads</li> <li>- Protecting stockpiles (temporary vegetation or mulching) where these are to be left in place for long durations</li> <li>▪ Sediment control shall be implemented by means of sediment traps and silt fencing where considered necessary</li> <li>▪ Dust suppression using water carts will be undertaken (to avoid over-watering). Only sufficient water required to manage dust will be used. Surface ponding will be avoided using dust suppression</li> <li>▪ Water used for construction purposes will be applied sparingly.</li> <li>▪ Irrigation of rehabilitated or landscaped areas will utilize low-water-use fixtures such as drippers, subsurface irrigation or similar. Water will be applied sparingly and only in quantities sufficient to promote plant growth. Subsoil moisture will be physically checked (through visual observation) regularly during irrigation to ensure watering rates are not excessive.</li> <li>▪ Plant species have been selected with consideration to soil conditions.</li> <li>▪ Potential for water logging will be minimised by: <ul style="list-style-type: none"> <li>- Utilising plant species with minimal watering requirements</li> <li>- Adopting waterwise gardening principles</li> <li>- Minimising use of potable water in landscaped areas</li> <li>- Irrigation systems will be properly designed and implemented</li> <li>- Perennial plant species and deep rooted trees will be used where possible.</li> </ul> </li> <li>▪ Roads, footpath and hardstand surfaces will be graded (and the grades maintained at all times) to prevent ponding of surface water at locations where this can result in infiltration into the underlying soils (e.g. pavement joints)</li> </ul>	

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			<ul style="list-style-type: none"> <li>▪ Connections between the roads, footpath and hardstand surfaces and the surface water and stormwater drainage infrastructure will be designed, constructed and maintained to restrict infiltration into underlying soils</li> <li>▪ Where practical, services that are to be located below the roads, footpath and hardstand surfaces will be installed at the time of construction</li> <li>▪ Provision for a damp-proof course or membrane beneath slabs will be considered</li> <li>▪ Disturbance of natural drainage patterns will be reduced as far as possible. Appropriate artificial drainage will be installed as necessary as shown in the civil plans</li> <li>▪ Stormwater and surface water will be managed to restrict infiltration</li> <li>▪ Temporary water retaining structures used during construction will be managed to restrict infiltration</li> <li>▪ Stormwater and surface water infrastructure will be designed and constructed to minimise the likelihood of leakage</li> <li>▪ Guttering and down pipes will be connected and maintained</li> <li>▪ Surface water run off will be directed around all exposed surfaces, temporary stockpiles and landscaped areas.</li> <li>▪ Disturbance to the natural hydrological system shall be minimised by maintaining good surface drainage and reducing water logging on the site.</li> <li>▪ Groundwater recharge is to be minimised to the extent it does not adversely impact groundwater dependent ecosystems downstream</li> <li>▪ The design of structural concrete members in contact with the ground (excluding piles) will adopt an A2 exposure classification as defined in Australian Standard AS36000:2018.</li> <li>▪ The design of concrete cast in situ piles will adopt a mild classification as fined in AS2159:2009</li> </ul>	

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			<ul style="list-style-type: none"> <li>Implementation of the measures set out within the SMP will ensure that the risks associated with soil salinity can be appropriately managed.</li> </ul>	
Water Management	Pollution of water resources and stormwater flooding.	C	<ul style="list-style-type: none"> <li>Implementation of Erosion and Sediment Control Plan, including the installation of silt fences</li> </ul>	Pr
Flood Risk	Flood impacts of the proposed development	O	<ul style="list-style-type: none"> <li>A flood emergency response plan will be prepared for the site prior to the commencement of operations, with preliminary consideration of available warning time for the closure of the site, opportunities for evacuation and the potential for temporary shelter-in-place in response to extreme events</li> </ul>	Ma
Hazards and Risks	Combustion of dangerous goods	C and O	<p><u>Design requirements</u></p> <ul style="list-style-type: none"> <li>The design requirements outlined within the Riskcon report will adhered to in the detailed design of the proposed development</li> <li>Spillage containment with a net capacity of at least 14m3 will be installed for the power transformers</li> <li>The cell manufacturer shall ensure that the Li-ion battery modules and BMS are compliant with the testing requirements of UL9540A or the more contemporary version</li> <li>Personnel shall be trained to ensure that the inactive leaf remains in the closed position when not in use</li> <li>At least one carbon dioxide portable fire extinguisher shall be provided on each floor</li> </ul> <p><u>Documentation requirements</u></p> <ul style="list-style-type: none"> <li>A Dangerous Goods Register, indicating the type of chemical, any notations that may be required from the risk assessment and the Safety Data Sheet for the chemical will be prepared and maintained</li> <li>A Placard Schedule will be prepared and maintained</li> </ul>	Pe/Pr

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			<ul style="list-style-type: none"> <li>▪ A Manifest and notification shall be submitted to SafeWork NSW</li> <li>▪ A Dangerous Goods Risk Assessment of the storage and handling areas will be undertaken</li> <li>▪ An Emergency Response Plan will be prepared and maintained</li> </ul>	
Contamination and Remediation	Unexpected fins with the potential to impact future human or ecological receptors.	C	<ul style="list-style-type: none"> <li>▪ A Construction Environmental Management Plan will be prepared and implemented for the proposed development</li> <li>▪ An Unexpected Finds Protocol will be prepared and implemented during construction.</li> <li>▪ A Fill Importation Protocol will be prepared and implemented during construction</li> <li>▪ The LTEMP will be reviewed and updated following the construction of the development.</li> </ul>	Ma
Waste Management	Waste associated with the construction and operation of the data centre.	O and C	<p><u>Construction</u></p> <ul style="list-style-type: none"> <li>▪ Waste avoidance measures will be implemented as far as possible</li> <li>▪ Waste materials produced from site preparation and construction activities will be separated at the source and stored separately on-site</li> <li>▪ Where possible, all demolition and construction materials will be recycled either on-site through reuse or offsite at a licensed facility.</li> <li>▪ Monitoring and reporting measures will be implemented including: audits of other projects and review of past waste disposal receipts (where feasible); record keeping (records of waste quantities recycled, reused or contractor removed will be maintained); daily visual inspections of waste storage areas by site personnel and logs recorded for reporting to the Site Manager on a weekly basis or as required; and site audits undertaken by the Building Contractor and any issues identified remedied.</li> <li>▪ Signs which clearly identify waste management procedures and provisions to contractors, staff and visitors will be installed on the site as appropriate.</li> </ul>	Pr/Ma

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			<p>The design and use of safety signs will comply with Australian Standard AS 1319 Safety Signs for the Occupational Environment and clearly describe the types of materials designated for each bin.</p> <p><u>Operation</u></p> <ul style="list-style-type: none"> <li>▪ Waste avoidance, re-use and recycling measures will be implemented throughout the operation of the development. Staff will be educated on waste management initiatives and these will also be clearly conveyed to visitors</li> <li>▪ Separate containers will be used for the collection of recyclables</li> <li>▪ Signs which clearly identify waste management procedures and provisions to contractors, staff and visitors will be installed on the site as appropriate. The design and use of safety signs will comply with Australian Standard AS 1319 Safety Signs for the Occupational Environment and clearly describe the types of materials designated for each bin.</li> <li>▪ Subject to the implementation of these mitigation measures, the proposed development is considered acceptable from a waste management perspective</li> </ul>	
Aboriginal Cultural Heritage	Impacts of construction on activities or unknown Aboriginal objects.	C	<ul style="list-style-type: none"> <li>▪ Ongoing consultation with RAPs will continue</li> <li>▪ An unexpected finds procedure will be prepared in the event of any unexpected finds of Aboriginal sites, objects or archaeological deposits identified during construction</li> <li>▪ Heritage inductions will be prepared and provided to contractors. The inductions will include a summary of the Aboriginal background of the site, relevant legislation and the unexpected finds policy.</li> </ul>	Pr
Environmental Heritage	Impacts on existing environmental heritage	C	<ul style="list-style-type: none"> <li>▪ An unexpected heritage finds procedure will be detailed within a Construction Environment Management Plan (to be prepared prior to the commencement of construction) and will be implemented as required.</li> </ul>	Pr

SEARs	Potential Area	Stage of Project	Approach	Type of Measure (Pe/Pr/Ma)
			<ul style="list-style-type: none"> <li>A brief heritage induction will be prepared to advise contractors of what to do in the event that an unexpected heritage find is encountered.</li> </ul>	
Social Impact	Social impacts on the local community and users of the Guildford West Sports Ground	C and O	<p>Additional recommendations or enhancements identified to minimise negative social impacts and enhance positive impacts will be implemented as far as reasonably possible and include:</p> <ul style="list-style-type: none"> <li>Continued engagement with Guildford West Sports Ground users for ongoing monitoring and assessment of impacts during construction as part of the Construction Environmental Management Plan.</li> <li>Consultation with local workforce including workers with a disability to inform the scope of accessibility, and provision of worker amenities.</li> <li>Develop and implement a communication and engagement strategy for the construction period to ensure effective and ongoing communication with the surrounding community and to address queries and concerns.</li> <li>Consider company employment and procurement policies or targets during the tender process for the construction works and selection of the future operator (e.g. in relation to local businesses or workforce, diversity and inclusion, Aboriginal economic participation and opportunities for vulnerable groups).</li> <li>Work with the future operator to develop an Operational Plan of Management that outlines an approach to monitoring and managing amenity impacts including a channel for queries and concerns, including generator testing.</li> <li>Minimise back-to-back quarterly maintenance and testing of generators to reduce noise impacts.</li> <li>Implement contractual requirements for the construction contractor and future site operator to enhance employment opportunities including establishing employment and procurement targets (focused on local employment, diversity and inclusion) and establishing ongoing partnerships with Western Sydney tertiary providers.</li> </ul>	Pr/Ma

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			<ul style="list-style-type: none"> <li>▪ Consider engaging with local high schools/TAFE institutions to provide opportunities for STEM students to tour the site and engage in local learning.</li> <li>▪ Consult with Cumberland Council and sporting ground users in the development of a plan of management, to ensure generator testing does not occur during peak sports ground use periods.</li> </ul>	
<b>Ecologically Sustainable Development</b>	The proposed development's alignment with ESD principles	O	<ul style="list-style-type: none"> <li>▪ Installation of Solar Panel system on the roof of the proposed development</li> <li>▪ 90% of construction waste will be diverted from landfill</li> <li>▪ Water efficient fixtures will be used</li> <li>▪ Twenty percent of car parking will be dedicated for future electric vehicle charging spaces</li> </ul>	Pe/Pr