APPENDIX D - ENVIRONMENTAL RISK ASSESSMENT AND MITIGATION MEASURES

The following section provides recommendation for mitigation measures in response to potential impacts identified in **Section 6** of the EIS. The structure of mitigation measures is based on the DPIE's hierarchy of approaches for managing impacts identified in the *Draft Environmental Impact Assessment Guidance Series* released by DPE in June 2017, as:

- **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 to 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 following table illustrates how the matters raised within the SEARs will be addressed.

This analysis comprises a qualitative assessment consistent with AS/NZS ISO 31000:2009 *Risk Management–Principles and Guidelines* (Standards Australia 2009). The level of risk was assessed by considering the potential impacts of the proposed development prior to application of any mitigation or management measures. In accordance with the SEARs, the Environmental Risk Assessment (ERA) addresses the following significant risk issues:

- The adequacy of baseline data;
- The potential cumulative impacts arising from other developments in the vicinity of the site; and
- Measures to avoid, minimise, offset the predicted impacts where necessary involving the preparation of detailed contingency plans for managing any significant risk to the environment.

Risk comprises the likelihood of an event occurring and the consequences of that event. For the proposal, the following descriptors were adopted for 'likelihood' and 'consequence'.

Likelihood		**Consequence**	
A	Almost certain	1	Widespread and/or irreversible impact
B	Likely	2	Extensive but reversible (within 2 years) impact or irreversible local impact
C	Possible	3	Local, acceptable or reversible impact
D	Unlikely	4	Local, reversible, short term (<3 months) impact
E	Rare	5	Local, reversible, short term (<1 month) impact

The risk levels for likely and potential impacts were derived using the following risk matrix.

		LIKELIHOOD				
		A	**B**	**C**	**D**	**E**
CONSEQUENCE	**1**	High	High	Medium	Low	Very low
	2	High	High	Medium	Low	Very low
	3	Medium	Medium	Medium	Low	Very low
	4	Low	Low	Low	Low	Very low
	5	Very low	Very low	Very low	Very low	Very low

The results of the environmental risk assessment for the proposed development are presented in the below table and are based upon the range of technical and specialist consultant reports appended to the EIS. The table has directly related mitigation measures responding to each impact also based upon the range of technical and specialist consultant reports appended to the EIS.

N.B. **'O' – Operational; 'C' – Construction**

'Pe' – Performance based mitigation measure; 'Pr' – Prescriptive based mitigation measure 'Ma' – Management based mitigation measure

SEARS	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
Traffic and Transport	Impacts of the construction activities on the surrounding road network	C	B	3	Medium	▪ A construction fence and suitably classed hoarding shall be provided along site boundaries / works area boundaries to provide safe pedestrian access. The fencing / hoardings should be maintained for the duration of the construction program associated with the stage of works being undertaken. ▪ Traffic control would be required to manage and regulate traffic movements into and out of the site during construction, with pedestrian priority provided during peak hour periods and to maintain accessibility to public transport facilities. ▪ Disruption to road users should be kept to a minimum by scheduling intensive delivery activities outside of road network peak hours. ▪ Supervised traffic control will be required where two-way flow is restricted over any length of the roadway, depending on the number of truck movements required and would be managed outside of peak hour vehicle and pedestrian activity.	Ma	Low
Trees and Landscaping	Tree removal	O	A	3	Medium	To mitigate the loss of the 16 trees to be removed to enable the development, the landscape design includes the planting of 18 large tree species and three medium tree species at ground floor level. These trees are proposed to be planted along the Bourke Road and Gardeners Road frontages, to best contribute to the public domain and streetscape, as well as providing screening of the development. The planting selection for the large tree species proposed includes a mature tree height of up to 30 metres.	Pr	Very low
Biodiversity	Indirect impacts to biodiversity values	C	D	3	Low	▪ Any trees to be retained should be protected in accordance with Australian Standard AS4970 – 2009 Protection of trees on development sites. ▪ In the unlikely event that unexpected threatened species are identified during the project, works should cease and an ecologist should be contacted for advice. ▪ Appropriate erosion and sediment control measures should be installed to avoid impacts to nearby waterways via stormwater collection systems. ▪ Minimise disturbance to any vegetation to be retained.	Ma	Very low
Air Quality	Impacts of construction activities in relation to dust and human health at sensitive receptors	C	A	2	High	<u>Communication</u> ▪ Develop and implement a stakeholder communications plan that includes community engagement before work commences on site. ▪ 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. ▪ Display the head or regional office contact information. ▪ Develop and implement a Dust Management Plan (**DMP**), which may include measures to control other emissions, approved by the relevant regulatory bodies.	Ma	Low

SEARS	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
						<u>Site Management</u> ▪ 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. ▪ Make the complaints log available to the local authority when asked. ▪ 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. ▪ Hold regular liaison meetings with other high-risk construction sites within 500 metres of the site boundary, to ensure plans are coordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/ deliveries which might be using the same strategic road network routes. <u>Monitoring</u> ▪ 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. ▪ Carry out regular site inspections to monitor compliance with the DMP / CEMP, record inspection results, and make an inspection log available to the local authority when asked. ▪ Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions. ▪ Agree dust deposition, dust flux, or real-time continuous monitoring locations with the relevant regulatory bodies. Where possible commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. <u>Preparing and Maintaining the site</u> ▪ Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible. ▪ Erect solid screens or barriers around dusty activities or the site boundary that they are at least as high as any stockpiles on site. ▪ Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period. ▪ Avoid site runoff of water or mud. ▪ Keep site fencing, barriers and scaffolding clean using wet methods. ▪ Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below. ▪ Cover, seed or fence stockpiles to prevent wind erosion. <u>Operating Vehicle/Machinery and Sustainable Travel</u> ▪ Ensure all on-road vehicles comply with relevant vehicle emission standards, where applicable. ▪ Ensure all vehicles switch off engines when stationary - no idling vehicles.		

SEARS	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
						▪ Avoid the use of diesel or petrol-powered generators and use mains electricity or battery powered equipment where practical. ▪ Impose and signpost a maximum-speed-limit of 25 km/h on surfaced and 15 km/h 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). ▪ Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials. ▪ Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing). <u>Construction Operations</u> ▪ 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. ▪ Ensure an adequate water supply on the site for effective dust/particulate matter suppression/ mitigation, using non-potable water where possible and appropriate. ▪ Use enclosed chutes and conveyors and covered skips. ▪ Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate. ▪ Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods. <u>Waste Management</u> ▪ Avoid bonfires and burning of waste materials. <u>Construction Activities</u> ▪ Avoid scabbling (roughening of concrete surfaces) if possible. ▪ Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place. ▪ Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery. ▪ For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust. <u>Measures Specific to track-out</u> ▪ Use water-assisted dust sweeper(s) on the access and local roads to remove, as necessary, any material tracked out of the site. ▪ Avoid dry sweeping of large areas. ▪ Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.		

SEARS	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
						▪ Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable. ▪ Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned. ▪ Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable). ▪ Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits. ▪ Access gates to be located at least 10 metres from receptors where possible. <u>Construction Traffic</u> ▪ Ensure all on-road vehicles comply with relevant vehicle emission standards, where applicable. ▪ 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. ▪ Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport. ▪ Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable. ▪ Record all inspections of haul routes and any subsequent action in a site log book.		
Air Quality	Operational air quality impacts	O	C	2	Medium	▪ Observation of speed limits on site. ▪ The minimisation vehicle engine idling where possible.	Ma	Low
Noise and Vibration	Impact of construction activities on surrounding receivers	C	A	3	Medium	<u>General engineering noise controls</u> ▪ Implementation of noise control measures, such as those suggested in Australian Standard 2436-2010 ‘Guide to Noise Control on Construction, Demolition and Maintenance Sites’ including distance, screening, acoustic enclosures, engine silencing and substitution by alternative process. <u>General noise management measures</u> ▪ Use less noisy plant and equipment, where feasible and reasonable. ▪ Plant and equipment must be properly maintained. ▪ Provide special attention to the use and maintenance of ‘noise control’ or ‘silencing’ kits fitted to machines to ensure they perform as intended. ▪ Strategically position plant on site to reduce the emission of noise to the surrounding neighbourhood and to site personnel. ▪ Avoid any unnecessary noise when carrying out manual operations and when operating plant. ▪ Any equipment not in use for extended periods during construction work must be switched off. ▪ Simultaneous operation of noisy plant within discernible range of a sensitive receiver is to be limited/avoided where possible.	Ma	Low

SEARS	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
						▪ The offset distance between noisy plant and adjacent sensitive receivers is to be maximised where practicable. ▪ Plant used intermittently to be throttled down or shut down when not in use where practicable. ▪ Noise-emitting plant to be directed away from sensitive receivers where possible. ▪ Staging of construction works so as to erect solid external walls first and utilising them to provide noise shielding to the noise sensitive receivers. ▪ In addition to the noise mitigation measures outlined above, a management procedure will need to be put in place to deal with noise complaints that may arise from construction activities. Each complaint will need to be investigated and appropriate noise amelioration measures put in place to mitigate future occurrences, where the noise in question is in excess of allowable limits. ▪ Good relations with people living and working in the vicinity of a construction site should be established at the beginning of a project and be maintained throughout the project, as this is of paramount importance. Keeping people informed of progress and taking complaints seriously and dealing with them expeditiously is critical. The person selected to liaise with the community must be adequately trained and experienced in such matters. ▪ Use of broadband “quacker” type of reverse/movement alarms instead of the tonal ‘beeping” type. ▪ All employees, contractors and subcontractors are to receive site induction and toolbox talks and ongoing training so that the above noise management measures are implemented accordingly. Content within toolbox talks will include, location of nearest sensitive receivers; relevant project specific and standard noise and vibration mitigation measures; permissible hours of work, truck route and truck loading restrictions and construction employee parking areas. <u>Highly noise affected receivers</u> ▪ High noise impact activities should be carried out in continuous blocks of up to three hours. Respite from high noise impact activities would be provided between each block for at least one hour. No high noise impact activities should be carried out during this one hour respite period. <u>Noise monitoring</u> ▪ Where potential noise impacts are predicted to be up to 10 dB(A) above the noise criteria, all feasible and reasonable noise reduction measures must be investigated, where necessary. ▪ Where potential noise impacts are predicted to be more than 10 dB(A) above the noise criteria, the potential construction noise nuisance is considered to be moderate. In the event of a compliant, noise monitoring may be carried out to confirm predicted noise impacts. Reasonable and feasible noise reduction measures must be investigated, where necessary. <u>Cumulative noise impacts and potential construction fatigue</u> ▪ Coordinating work between construction sites to minimise cumulative noise impacts, where feasible and reasonable (ie. to ensure that multiple sites are not undertaking noise intensive works concurrently with direct line-of-sight to receivers). ▪ Community consultation to gauge key noise impacts and issues and identify any unknown impacts from concurrent or consecutive sets of constructions works.		

SEARS	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
						▪ Consideration of cumulative construction noise impacts during the development of noise mitigation and management measures for the worksites, including coordination between construction projects, where reasonable and feasible. <u>Complaints management</u> ▪ Owners and occupants of nearby affected properties are to be informed by direct mail of a direct telephone line and contact person where any noise and/or vibration complaints related to the construction activities are to be reported. <u>Construction vibration</u> ▪ Neighbouring data centre operators be consulted prior to construction commencement, to determine the locations of any vibration sensitive equipment and determine suitable vibration levels that could be generated at these items from construction activities. ▪ An assessment is to be undertaken during the detailed design phase to identify areas of the site that are within the minimum working distance to the Sydney trains T8 Airport & South line tunnel, further review of the potential vibration impacts to the tunnel, and any required mitigation and management measures. ▪ Potential human annoyance impacts should be reviewed when vibration intensive works are proposed to take place within the minimum working distances, in close proximity to the data centre office spaces.		
Noise and Vibration	Operational noise impacts	O	B	2	High	<u>Overall and operational management</u> ▪ Broadband reversing alarms “quackers” shall be adopted across the tenant truck fleet that operates through warehouse facility centre. This should be adopted for all permanent and tenant owned/controlled vehicles. This is of particular note for vehicles that would operate in non-enclosed areas (ie. service vehicles parked on roof level). Where tenants do not have control over vehicles that operate through the facility, management of potential impacts should be reviewed further as part of the tenant operational management plan. ▪ Any PA systems required as part of normal operation that emit sound within the facility, are to be designed so that they would result in a negligible increase in overall noise emissions from the facility. PA announcements as part of normal operations would be restricted to within the enclosed areas of the facility during the night period. ▪ Ensure that for all non-enclosed areas of the facility, and entry and exit areas (ie. Gardeners Road and Bourke Road access points): – All pavement is smooth (ie. no speed bumps). – Transitions from the external public road to the site are smooth, as to not result in jolting, or unnecessary accelerating of the truck the truck is required. – Drainage grates are designed to not result in noise events. – Ensure that trucks do not have to stop/brake and then accelerate (ie. pedestrian crossing points, security gates). ▪ Design elements should also ensure that trucks do not have to stop/brake and then accelerate (ie. pedestrian crossing points) outside of dock areas with line of sight to nearby residential receivers, in particular where they are required to operate during the night period.	Pr/Ma	Low

SEARS	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
						▪ Alternate methods and practices to the use of horns as a safety warning for onsite moving forklifts should be reviewed and incorporated into site operations and safety practices. ▪ Building services, mechanical plant and plantroom spaces are to be designed to not increase total site noise emissions. This will likely include selection of quiet plant/equipment, acoustic absorption, noise barriers, and the use of acoustic louvres and attenuators as part of the design. ▪ Materials of the warehouse facility facade would be selected during detailed design, so that any noise break-out from internal activities would result in a negligible increase in overall noise emissions from the facility. <u>Ground level</u> ▪ Eastern facade of the entrance corridor is closed from ground to the slab above. This extends from the Gardeners Road entrance and extend substantially past the ground floor hardstand area opening. ▪ Acoustic absorption lining to be installed on the underside of the enclosure roof entrance corridor, and along the internal walls, to minimise truck movement and hardstand activity noise build up and breakout via the southern Gardeners Road entrance. ▪ Acoustic absorption lining to be installed on the underside of the ceiling/slab above internally. ▪ Incorporate acoustic absorptive material along the eastern building façade and the soffit of the slab above along the ground level truck exit route to minimise reflections from dock activities back to residence. ▪ Maintain the solid and non-perforated façade elements extending down from the Level 1 slab, which result in acoustic shielding to elevated residential receivers to the southern west, from ground level hardstand activities, trucks exiting the hardstand, and truck movements exiting from Level 1. <u>Level 1</u> ▪ Level 1 eastern truck route prior to the Level 1 hardstand area is enclosed. This extends from the hardstand until the northern most point along the eastern Level 1 internal access road. Acoustic absorption lining to be installed on the underside of the enclosure roof. ▪ Acoustic absorption lining to be installed on the underside of the ceiling/slab above internally. ▪ The western opening to the Level 1 hardstand area is enclosed. This enclosure extends north along the exit road substantially past the Level 1 floor hardstand area opening. Acoustic absorption lining to be installed on the underside of the enclosure roof. ▪ The concrete perimeter barrier along the internal truck road between the Level 1 hardstand and the ramp to ground level is to a minimum 2.5m high above the local ground level. <u>Level 2</u> ▪ Incorporate acoustic absorptive material along the internal walls of the void from the Level 1 hardstand to the external breakout locations on the roof (Level 2). The configuration of the solid roof coverings over the top of the ventilation voids to the hardstand below (with sufficient open area for required ventilation) are to incorporate measures that break line-of-sight through these voids to the hardstand from the nearby elevated receiver locations. ▪ Perimeter barriers are to be installed along the western boundary of the western roof plant area, and the eastern boundary of the eastern roof plant area. They should be a minimum 2m above the top of the tallest noise generating plant item (ie. condenser unit) within the plant area and extend a minimum of 2m north of the northern most plant item. This is to be installed for both the eastern and		

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						western plant areas. Acoustic absorption installed on all internal surface of the condenser plantroom area, along the northern façade of the office building and along the above recommended perimeter wall. Ramps ▪ Maintain the solid and non-perforated façade elements shielding the northern truck and car ramps from the adjacent commercial receiver, to minimise noise impacts from ramp activities. Noise barriers and enclosures ▪ All noise barriers should give regard to the following to maintain acoustic integrity and to perform effectively as noise barriers: – any penetrations through the fabric of the fence should be sealed airtight – all joints and gaps between fence panels and adjacent structures should be sealed airtight – any gaps between the fence and the ground / retaining walls should be filled to ensure that the fence provides appropriate noise attenuation. Building services and mechanical plant and equipment The following in-principle noise management measures should be considered during detailed design: ▪ Acoustic assessment of mechanical services equipment should be undertaken during the detailed design phase of the development to ensure that the cumulative noise of all equipment does not exceed the applicable noise criteria. This includes the detailed specification and location of mechanical plant on site. ▪ Noise control treatment can affect the operation of the mechanical services system. An acoustic engineer should be consulted during the initial design phase of mechanical services system to reduce potential redesign of the mechanical system. ▪ Mechanical plant noise emission can be controlled by appropriate mechanical system design and implementation of common engineering methods, which may include: – procurement of 'quiet' plant – strategic positioning of plant away from sensitive neighbouring premises to maximise intervening acoustic shielding between the plant and sensitive neighbouring premises – commercially available acoustic attenuators for air discharge and air intakes of plant – acoustically lined and lagged ductwork – acoustic barriers between plant and sensitive neighbouring premises – partial or complete acoustic enclosures over plant. ▪ Fans shall be mounted on vibration isolators and balanced in accordance with Australian Standard 2625 'Rotating and Reciprocating Machinery – Mechanical Vibration'. Best practice management ▪ Reducing peak 15-minute heavy vehicles movements across the site by staggering delivery / arrival / departure times during sensitive time periods (ie. night). ▪ Minimising concurrent use of mobile plant near hardstand openings (ie. ground floor exit) and/or limiting their use to the less sensitive daytime and evening periods. ▪ Minimising use of reversing alarms by providing forward manoeuvring where practicable. ▪ Switching vehicles and plant off when not in use. ▪ Keeping equipment well-maintained and operating it in a proper and efficient manner.		

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						▪ Training staff and drivers on the effects of noise and the use of quiet work practices (eg. informing drivers of the noise impacts from sudden braking or accelerating, bangs and clangs, etc). <u>Best available technology</u> ▪ The use of quieter mobile plant, such as electric forklifts instead of gas-powered forklifts. ▪ Using equipment with efficient muffler design. ▪ Fitting and maintaining noise reduction packages on plant and equipment. <u>Operational Noise Management Plan</u> ▪ Regular reviews of on-site noise mitigation and management practices to incorporate and capture opportunities for reductions of site noise emissions, with considerations of the following: – Review of noise reduction opportunities during changes or refinements of site noise generating activities. – Reviewing noise levels of plant, equipment and activities, during both ongoing compliance checks and in response to complaints. – Improvements in Best Management Practice. – Improvements in Best Available Technology Economically Achievable.		
Ground and Water Conditions	Impacts of disturbance of acid sulfate soil	C	C	3	Medium	Acid Sulfate Soil Management Plan: ▪ Investigation of Occurrence of ASS and/or PASS Material ▪ Evaluation of Potential Management Strategies ▪ Avoidance Strategies ▪ Management by Neutralisation ▪ Full Oxidation and Leachate Collection ▪ Reburial of ASS Material ▪ Separation Techniques ▪ Selection of Preferred Management Strategies ▪ General Site Management Strategy ▪ Pre-disturbance Works ▪ Neutralisation Chemicals ▪ Treatment Area Design ▪ General Site Management ▪ Excavation Works ▪ Treatment of Excavated PASS Material ▪ Water Management During Treatment ▪ Validation of Treated PASS Material ▪ Site Condition Monitoring ▪ Removal of Neutralised ASS Material from the Site	Ma	Low

SEARS	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
Stormwater and Wastewater	Impacts of construction stormwater, sediment and site run off	C	B	2	High	Erosion and sediment control plan: <u>Sediment Basins</u> Sediment basins have been sized and located to ensure sediment concentrations in site runoff are within acceptable limits. Preliminary basin sizes have been calculated in accordance with the Blue Book and are based on 'Type F' soils. These soils are fine grained and require a relatively long residence time to allow settling. Sediment basins for 'Type F' soils are typically wet basins which are pumped out following a rainfall event when suspended solids concentrations of less than 50 mg/L have been achieved. <u>Sediment Fences</u> Sediment fences are to be located around the perimeter of the site to ensure no untreated runoff leaves the site. They will also be located around the existing drainage channels to minimise sediment migration into waterways and sediment basins. <u>Stabilised Site Access</u> Stabilised site access is proposed at the entry to the works area. This will limit the risk of sediment being transported onto Raymond Avenue and other public roads. <u>Other Management Measures</u> Other management measures that will be employed include: ▪ Minimising the extent of disturbed areas across the site at any one time. ▪ Progressive stabilisation of disturbed areas or previously completed earthworks to suit the proposal once trimming works are complete. ▪ Regular monitoring and implementation of remedial works to maintain the efficiency of all controls.	Ma	Low
Contamination and Remediation	Management of the potential for contamination during construction	C	D	3	Low	It is recommended that a Construction Environmental Management Plan be prepared for the future site redevelopment works to identify typical site management controls and makes provisions for unexpected finds.	Ma	Very low
Aboriginal Cultural Heritage	Impacts of construction activities on unexpected archaeological finds	C	D	3	Low	<u>Archaeological Finds Procedure</u> Should any archaeological deposits be uncovered during any site works, the following steps must be followed: ▪ All works within the vicinity of the find must immediately stop. The find must not be moved 'out of the way' without assessment. ▪ The site supervisor or another nominated site representative must contact either the project archaeologist (if relevant) or Heritage NSW (Enviroline 131 555) to contact a suitably qualified archaeologist. ▪ The nominated archaeologist must examine the find, provide a preliminary assessment of significance, record the item and decide on appropriate management measures. Such management may require further consultation with Heritage NSW, preparation of a research design and	Ma	Very low

SEARS	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
						archaeological investigation/salvage methodology and registration of the find with the Aboriginal Heritage Information Management System. ▪ Depending on the significance of the find, reassessment of the archaeological potential of the subject area may be required and further archaeological investigation undertaken. ▪ Reporting may need to be prepared regarding the find and approved management strategies. ▪ Works in the vicinity of the find can only recommence upon receipt of approval from Heritage NSW. <u>Human Remains Procedure</u> In the unlikely event that human remains are uncovered during the proposed works, the following steps must be followed: ▪ All works within the vicinity of the find must immediately stop. The find must be cordoned-off and signage installed to avoid accidental impact. ▪ The site supervisor or other nominated manager must notify the NSW Police and Heritage NSW (Enviroline 131 555). ▪ The find must be assessed by the NSW Police, which may include the assistance of a qualified forensic anthropologist. ▪ Management recommendations are to be formulated by the NSW Police, Heritage NSW and site representatives. ▪ Works are not to recommence until the find has been appropriately managed.		
Environmental Heritage	Impacts of construction activities on unexpected archaeological finds	C	D	3	Low	<u>Archaeological Finds Procedure</u> Should any archaeological deposits be uncovered during any site works, the following steps must be followed: ▪ All works within the vicinity of the find must immediately stop. The find must not be moved ‘out of the way’ without assessment. ▪ The site supervisor or another nominated site representative must contact either the project archaeologist (if relevant) or Heritage NSW (Enviroline 131 555) to contact a suitably qualified archaeologist. ▪ The nominated archaeologist must examine the find, provide a preliminary assessment of significance, record the item and decide on appropriate management measures. Such management may require further consultation with Heritage NSW, preparation of a research design and archaeological investigation/salvage methodology and registration of the find with the Aboriginal Heritage Information Management System. ▪ Depending on the significance of the find, reassessment of the archaeological potential of the subject area may be required and further archaeological investigation undertaken. ▪ Reporting may need to be prepared regarding the find and approved management strategies. ▪ Works in the vicinity of the find can only recommence upon receipt of approval from Heritage NSW.	Ma	Very low

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						Human Remains Procedure In the unlikely event that human remains are uncovered during the proposed works, the following steps must be followed: ▪ All works within the vicinity of the find must immediately stop. The find must be cordoned-off and signage installed to avoid accidental impact. ▪ The site supervisor or other nominated manager must notify the NSW Police and Heritage NSW (Enviroline 131 555). ▪ The find must be assessed by the NSW Police, which may include the assistance of a qualified forensic anthropologist. ▪ Management recommendations are to be formulated by the NSW Police, Heritage NSW and site representatives. ▪ Works are not to recommence until the find has been appropriately managed.		