

Appendix E – 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
Visual Impact	Visual impact of development on existing catchment.	C & O	B	3	Medium	The VIA included a range of mitigation measures to help further reduce the visual impact, which have been coordinated and reflected in the landscape design response provided in Appendix DD. These include: - The proposed landscape plan incorporates landscaping and trees to the northern boundary which will provide valuable integration with the existing carpark. This planting should be included in early staging to ensure establishment and ongoing visual relief during construction. - Landscape palette is to coordinate with ecologist recommendations to ensure species of the surrounding visual environment are used for integration. - Coordinate with CPTED requirements and electrical engineering reports, if available, to propose light control methods that are sympathetic to the surrounding landscape and visual environment. - Reduce feature lighting extents to CPTED required area and/or employ methods that reduce unnecessary spillage. - Landscape design is to coordinate with bush fire consultant and NSW Rural Fire Service Planning for any bushfire requirements to ensure best outcome is achieved for integration with the surrounding visual environment.	Pe	Med
Traffic Impact	Impacts of construction activities on the surrounding road network.	C	B	3	Medium	A preliminary Construction Traffic Management Plan (CTMP) is prepared by Varga Traffic. It notes a detailed CTMP incorporating a Traffic Control Plan as well as the consent authority's site-specific requirements will need to be prepared in response to development consent conditions <i>prior</i> to the issue of the Construction Certificate. Construction traffic impact will be managed with no issues, subject to the mitigation measures identified in the Preliminary CTMP.	Ma	Low
Water Management	Impacts associated with stormwater treatment and water quality	C	D	3	Low	OSD is required in accordance with Council's requirements to mitigate the increase in post-development discharge. A 444.7m³ sized OSD Tank is proposed to attenuate all post-development peak discharges. Storm filter cartridges and Filtration Baskets have been proposed as a solution to remove gross pollutants from the stormwater drainage cycle from roof, hard surface and landscape. Treatment systems have been proposed to be installed within the OSD tanks for water quality treatment. Through the implementation of the above stormwater quality and quantity mitigation measures, the proposed development will not generate impacts to downstream	Ma	Low

SEARS	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
Tree Impacts	Damage to retained trees as a result of construction	C	C	3	Med	All trees are proposed to be removed. No tree retention measures are required.	Pr, Ma	Low
Aboriginal Cultural Heritage	Impacts of construction activities on unexpected Aboriginal heritage	C	D	3	Low	The following mitigation measures were identified to be implemented by McCardle Cultural Heritage: - The persons responsible for the management of onsite works will ensure that all staff, contractors and others involved in construction and maintenance related activities are made aware of the statutory legislation protecting sites and places of significance. Of particular importance is the National Parks and Wildlife Regulation 2019, under the National Parks and Wildlife Act 1974. - An Unexpected Finds Procedure will be implemented during all works. - Should any Aboriginal objects be uncovered during works, all work will cease in that location immediately, the Unexpected Finds Procedure followed and the Environmental Line contacted.	Ma	Very Low
Social Impacts	Potential social impacts as a result of the development	C & O	C	3	Med	The following range of mitigation measures were identified, in relation to the eight categories of social impact. - Distributing affordable housing across the precinct avoids the stigmatisation risks associated with a dedicated standalone building. Where a standalone building is retained, the affordable housing building should be designed to the same architectural standard and materials palette as the market residential buildings, affordable housing residents should have equal access to all shared amenities and open space, and signage should not identify or distinguish the building by tenure type. - Car share spaces and EV charging spaces to be provided at minimum rates consistent with the draft Leppington Town Centre DCP - All ground-floor commercial and retail tenancies are to maintain active frontages to public streets and the public open space, in accordance with the design principles established in the Urban Design Report. - The public open space is to be designed to CPTED principles. - The Applicant should engage constructively with DPHI and Camden Council through the SARP process to ensure community infrastructure is planned and delivered in a coordinated manner. - Design publicly accessible open space to be safe, inclusive, legible, and directly connected to the surrounding street network and pedestrian paths leading to the station and town centre. - Implement traffic management measures consistent with the Traffic and Transport Assessment (Varga, 2026)	Varies	Low

SEARS	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
						- Ensure design quality, material selection and landscape character contribute to a distinctive, welcoming and inclusive public realm consistent with the Better Placed design principles. - Ensure affordable housing is managed by a registered CHP in accordance with Housing SEPP requirements - Implement noise and vibration management measures in accordance with the Construction Noise and Vibration Assessment - Establish and maintain a clearly advertised community contact point (phone and email) throughout construction. Implement a formal complaints handling process with documented response procedures and timeframes.		
Contamination and Remediation	Management of the potential for contamination during construction	C	D	3	Low	The following measures are proposed to be implemented where required. - A hazardous building materials survey should be undertaken by a suitably qualified consultant prior to the demolition of buildings. Asbestos containing material (ACM) identified during the building survey, should be dismantled by an appropriately licensed asbestos removalist in such a manner that does not impact the ground surface; - The preparation of a waste classifications for any material to be excavated and disposed of off-site. The waste classifications must be prepared in accordance with EPA guidelines; and - All waste must be managed and disposed of in accordance with current guidelines and regulations.	Ma	Very Low
Biodiversity	Management of biodiversity risks of proposed development	C	D	4	Low	No mitigation measures were identified as the site is biodiversity certified.	N/A	N/A
Bushfire	Management of bushfire risks to proposed development	C+O	D	3	Low	The Bushfire Hazard Assessment identifies the following mitigation measures to be implemented where required and feasible: - maintenance of the required APZs and managed separation to the southeast woodland hazard; - application of BAL construction requirements to buildings or parts of buildings located on mapped bush fire prone land and affected by Figure 7; - retention of temporary southern and western interface construction measures only where building elements are within 10 metres of those boundaries; - provision of compliant water supply, utilities, access, landscaping and emergency management arrangements.	Ma	Low
Heritage	Risk and damage to heritage items or	C	D	3	Low	N/A	N/A	N/A

SEARS	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
	areas with heritage or cultural significance.							
Hazards and Risk	Management of dangerous goods and materials in vicinity of proposal location	C	D	3	Low	N/A	N/A	N/A
Noise and Vibration	Management of acoustic impacts on sensitive receivers	C + O	C	3	Medium	The NVIA details building façade construction requirements, façade glazing requirements and other recommendations pertaining to the construction and operational activities. These recommendations prepared by Acouras can appropriately mitigate noise and vibration impacts.	Pr + Ma	Low
Groundwater	Management of impact on groundwater	C	B	4	Medium	The report identifies the following measures to be carried where required. - Detailed groundwater investigation, testing, long term water levels monitoring, and an inflow seepage analysis will be required to assess the feasibility for the use of a partially tanked basement structure and support the approvals process. - Additional Geotechnical Investigation in the form of cored boreholes to confirm the depth and quality of shale bedrock across the site (planned); - Aggressivity testing for buried concrete and steel structures; - Geotechnical design, stability, and possibly ground deformation assessments for excavation and/or retaining structure design. - Stability assessment of temporary batters using computer modelling, if required; - Dilapidation surveys; - Design of working platforms (if required) for construction plant by an experienced and qualified geotechnical engineer; - Spoil Waste Classification of all excavated material transported off site - Construction stage geotechnical inspections of footing excavations.	Ma	Low
Ecologically Sustainable Development	Management of impact on sustainability	O	B	2	Low	The proposed ESD initiatives continue to be developed and implemented throughout this project where required and feasible and the performance benchmarks be met during the detailed design phase, as the design of building services progresses and becomes more refined.	Pe, Ma	Med
Infrastructure and Utilities	Management on impact on surrounding infrastructure	C + O	B	3	Low	The proposed development can be adequately serviced by existing and planning infrastructure works, subject to detailed design. To ensure electrical infrastructure requirements are fully addressed, a Level 3 Accredited Service Provider (ASP) must be engaged. The ASP will provide necessary clarity on the	Ma	Low

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						potential new electrical feeder and formalise the electricity connection strategy for the complete development during design phase.		