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 DPE'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.
- 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

Likelihood		Consequence	
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.

CONSEQUENCE	LIKELIHOOD				
	A	**B**	**C**	**D**	**E**
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
Built Form and Urban Design	Built form scale and appearance which will be readily visible from the surrounding road network.	O	D	3	Low	The proposed built form has been designed to conform with the design parameters established by SSDA 9667 (as modified).	Pe	Low
Traffic, Transport and Accessibility	Impacts on road network from construction and operational phase. Additional demand on car parking spaces.	C & O	D	3	Low	Traffic control would be required to manage and regulate construction vehicle traffic movements to and from the Site during construction. During construction, vehicle access will involve the proposed northern truck access driveway on the access road while the parking area for construction workers will be accessed through the new car park driveway on the east-west section of the access road. Operational traffic impacts have been assessed to be consistent with impacts envisaged and approved under SSDA-9667 (as modified). Passenger vehicle parking has been provided in accordance with the	Ma	Low

SEARS	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
						RMS Guide to Traffic Generating Developments.		
Visual Impacts	Visual impact from key viewpoints within the surrounding existing catchment.	O	D	3	Low	The proposed built form has been designed to conform with the design parameters established by SSDA-9667 (as modified). The visual impact assessment which supports the EIS package has confirmed that the proposed construction of Lot 7 will not result in any adverse impacts above those already consented to under SSD-9667.	Pe	Low
Tree Removal	Impact on existing trees both being removed and retained.	C	E	3	Medium	All site establishment works required to enable the construction of Lot 7 have been approved under SSDA 9667 and underway. The proposal does not require any additional tree removal, and presents minor potential impact to retained vegetation.	Ma	Low
Biodiversity	Impacts associated with the development in accordance with	C	E	3	Low	All impacts associated with the development of Lot 7 have previously been assessed and approved under SSD 9667 and the	Ma	Low

SEARS	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
	the Biodiversity Conservation Act 2016 and the Biodiversity Assessment Method 2020					associated Biodiversity Assessment Development Report (BDAR) prepared by Ecoplanning (2020). All BOS credits have been purchased and retired successfully as per condition B30, B31 and B32 of the SSD-9667 Development Consent conditions.		
Air Quality	Impacts from air emissions sources at the proposed development (during construction and operation)	C & O	C	4	Low	General environmental awareness training should be provided to relevant staff and contractors during construction and operation. All staff and contractors should be instructed to report any undue pollutant release (including odour) and visible emissions from the exhaust vents to the Site Manager.	Ma	Risk of any adverse off-site air quality impacts.
Noise and Vibration	Construction and operational noise and vibration impacts on nearby sensitive receivers and structures.	C & O	C	3	Medium	Prior to the commencement of major construction works, the contractor should develop a Construction Noise and Vibration Management Plan (CNVMP). The CNVMP should: • Identify relevant construction noise and vibration criteria as detailed in this report	Pr/Ma	Management of noise impacts on surrounding noise sensitive receivers specifically during the construction

SEARS	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
						• Identify neighbouring sensitive land uses for noise and vibration • Summarise key noise- and vibration-generating construction activities and the associated predicted levels at neighbouring land uses • Identify reasonable and feasible work practices to be implemented during the works • Summarise stakeholder consultation and complaints handling procedures for noise and vibration. Noise management measures may include the following which could be incorporated into during operation: • Reduce the number of higher noise events. • The current strategy would be for the Elite Level Game Days to occur twice per year. • Providing marshalling to usher visitors onto the site encouraging		and operation phase.

SEARS	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
						quiet arrival and departure noting the proximity of the adjacent residential area. • Providing sufficient alternative transportation (such as shuttle buses) to the site for the Elite Level Games Days do reduce pressure on the nearby local road network. • Driving to the speed limit. • Limiting unnecessary acceleration and braking. • Encouraging users of the site to find a parking space promptly and minimise idling time. • Implement drop off and pick off points for shuttle buses and the like that are located away from adjacent sensitive receivers insofar as practical.		
Ground and Water / Stormwater	Impacts on soil resources, including related infrastructure and	C & O	D	2	Low	The proposal benefits from a thorough assessment of impacts relating to stormwater and flooding contained within SSD-9667 as	Pr	Flood compatible material would need to be

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	riparian lands on and near the site. Impacts on surface and groundwater resources (quality and quantity)					modified. Under this consent, numerous ongoing mitigation measures are mandatory, and therefore not required to be doubled up under the assessment of this proposal. Despite this, the following mitigation measures have been noted by AT&L to ensure no adverse impacts result from the site's hydraulic management. • Finished Floor Levels (FFL) are to have minimum 500mm freeboard to 100-year ARI overland Flow. • Rainwater tanks are desirable for re-use for irrigation, toilet and other non-potable water uses only. • GTPs are to be provided as part of the Lot 7 stormwater management system prior to discharging into the estate bio-retention basin. These will be owned and maintained by Charter Hall and designed to capture 90% of Gross Pollutants as per the BCC WSUD guidelines. •		considered to eliminate the risk of flood damage from overland flooding. Details on flood compatible material will be provided in the structure report.

SEARS	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
Hazards and Risks	Impacts from storage of dangerous goods at the site. Impact from and on adjacent Jemena Gas Pipeline.	O	D	2	Low	The following recommendations are to be implemented once the proposal is operational: • Flammable liquids shall not be stored within 5 m of the intertenancy wall. • The DGs shall be stored in a manner which complies with the applicable storage standards (i.e. AS/NZS 3833:2007 or Class specific standards such as AS 1940:2017). • The documentation required by the Work Health and Safety (WHS) Regulation 2017 (Ref. [2]) shall be prepared to demonstrate the risks have been assessed and minimised So Far As Is Reasonably Practicable (SFARP) as required by the WHS Regulations. • Where flammable gases or liquids are stored, a hazardous area classification in accordance with AS/NZS 60079.10.1:2009	Ma	Potential incident from DGs stored at the site.

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						(Ref. [3]) shall be prepared to ensure that an ignition source does not enter a hazardous atmosphere as required by the WHS Regulations.		
Contamination and Remediation	Impact from any ground or soil contamination to users of the site during both construction and operation.	C & O	D	3	Low	Stage 1 works (including remediation) were approved under SSDA-9667 and are currently underway. No further mitigation works are required to be undertaken beyond those already required under SSD-9667.	Pr/Ma	Possible contamination on site which may impact on future users of the site.
Aboriginal Cultural Heritage	Impacts for any Aboriginal cultural heritage values on the site.	C & O	D	4	Low	Stage 1 site preparation and civil works were approved under SSDA-9667 and are currently underway. No further mitigation works are required to be undertaken beyond those already required under SSD-9667.	Ma	All works are respectful of any archaeology significance.
Environmental Heritage	Direct or indirect impacts on the heritage significance of environmental heritage.	C & O	D	4	Low	Per the above.	Ma	All works are respectful of any environmental heritage significance.

SEARS	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
Bushfire Risk	Potential Impacts from bushfire prone land adjacent to the site.	C & O	C	4	Low	The development does not involve habitable uses (Class 1, 2 or 3) or Special Fire Protection Purpose (SFPP) development. Nonetheless, numerous measures have been proposed to manage the level of risk posed on the development from a bushfire. This includes providing suitable access, emergency and evacuation arrangements, water supply And other key utilities, and the appropriate storage of DGs at the site.	PR/Ma	Potential impact to property and life.
Construction, Operation and Staging	Impacts from the proposed construction and operation of the proposed development.	C	C	3	Medium	Appropriate hoarding / fencing (as specified in Australian Standards and Work Cover requirements) and safety barriers will be installed to the entire work areas prior to commencement of the works. As is currently installed on the site, hoardings will be erected around the perimeter of the site and maintained to prevent public access. Site signage will provide 24-hour emergency contact details including	Ma	Impacts on the amenity of neighbouring properties.

SEARS	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
						contact name and telephone number. Construction vehicle access / egress gates / Signage will be installed. These public and property protection measures will be reviewed at the time of contract award for the works to ensure alignment with proposed preferred methodologies and sequencing developments and to ensure that the safety of the general public is maintained at all times during the works. As part of the noise mitigation treatment for the project, the Main Contractor will be responsible for the management, checking of compliance maintenance regimes and statutory supervision of all equipment, such as making sure all trucks and machinery involved in the works are checked for defective exhaust systems and general servicing.		