

## SSD-8706 – NIGHT RACING AT ROYAL RANDWICK RACECOURSE

## APPENDIX B – MITIGATION MEASURES AND ENVIRONMENTAL RISK ASSESSMENT

The following section provides recommendation for mitigation measures in response to potential impacts identified in Section 9 of this report. The structure of mitigation measures are based on the Department'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 and CIP Conditions 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 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 CONSEQUEN			CE
А	Almost certain	1	Widespread and/or irreversible impact
В	Likely	2	Extensive but reversible (within 2 years) impact or irreversible local impact
С	Possible	3	Local, acceptable or reversible impact
D	Unlikely	4	Local, reversible, short term (<3 months) impact
Е	Rare	5	Local, reversible, short term (<1 month) impact

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

ı	IKFI	IHC	

		Α	В	С	D	Е
	1	High	High	Medium	Low	Very low
Щ	2	High	High	Medium	Low	Very low
UENC	3	Medium	Medium	Medium	Low	Very low
ISEQ	4	Low	Low	Low	Low	Very low
CON	5	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

SEAR	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation measure (Pe/Pr/Ma)	Residual Impact
Visual and Landscape Impact	Damage to tree roots due to light column, associated footings and cabling located within existing trees TPZ.	O/C	С	1	Medium	Establish existing trees TPZ and ensure the light column and associated works are located outside the existing trees protection zone.	Pr	Reduced chance of impact on tree roots
	Pruning required to tree canopy due to light columns located within existing trees canopy.	O/C	С	1	Medium	Adjust location of column to avoid significant tree branches.	Pr	Reduced chance of impact on trees
	Scale of columns next to the heritage grandstand.	0	А	3	Medium	Paint the columns a dark colour, such as charcoal grey, so they recede in visual significance.	Pr	Reduced visual impact
	Vertical elements added to a visibly flat and horizontal landscape.	0	А	3	Medium	Paint the columns a dark colour, such as charcoal grey, so they recede in visual significance	Pr	Reduced visual impact
	Change to skyline	0	А	3	Medium	Paint the columns a dark colour, such as charcoal grey, so they recede in visual significance.	Pr	Reduced visual impact
	Big scale of the columns.	0	A	3	Medium	New tree planting to match the existing species to infill gaps created in the tree line along Alison Road.  Large new tree planting along the edge of the Racecourse near Doncaster Avenue residences.  Large new tree planting around the Racecourse Gate on High Street.  Paint the columns a dark colour, such as charcoal grey, so they recede in visual significance.	Pr	Painting the columns will reduce their visual impact.  Tree planting is a long term approach that in time will partially screen some of the columns and reduce views of the racecourse.
	Large number of columns visible.	0	A	3	Medium	New tree planting along the edge of the racecourse to screen the poles.	Pt	Painting the columns will reduced their visual impact.



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						Paint the columns a dark colour, such as charcoal grey, so they recede in visual significance.		Tree planting is a long term approach that in time will partially screen some of the columns and reduce views of the racecourse.
Heritage (European)	The proposed works have been assessed to have no physical impact on the fabric of the existing heritage Item I249 ('Members' Stand/Official Stand).	0	A	3	Medium	There are to be no physical works or structural alterations to existing significant buildings without assessment against the Heritage Act 1977 development consent.	None.	None.
	Change to the existing views to and from the buildings as a result of the light columns.	0	A	3	Medium	Paint the columns a dark colour, such as charcoal grey, so they recede in visual significance.	Pr	Reduced visual impact.
Heritage (Aboriginal)	The site has been assessed to have very limited to no potential for cultural materials to be present within the project area.	С	E	1	Very low	All employees will be educated of the statutory legislation protecting places of significance and all works will cease if Aboriginal objects are uncovered during works. If a known Archaeological site is affected as a result of the proposed works, an Aboriginal Heritage Impact Permit (AHIP) will be required. Aboriginal consultation will occur in accordance with the Aboriginal Consultation Requirements for Proponents 2010 if an AHIP is required.	None.	None.
Residential Amenity	Light Spill onto adjoining residential dwellings	0	С	3	Medium	The proposed lighting design has incorporated design elements such as baffles, lighting technology and positioning of lights to prevent light spill exceeding 110 lux. Further, the variable controlled lights mean that lights can be dimmed between races to further reduce any amenity impacts.	None	Following the implementation of proposed mitigation measure(s) light spill from the site will fall well below the maximum 110 lux levels and disturbance of amenity for adjoining residential properties will be minimised to acceptable levels.
	Noise	0	С	3	Medium	A noise management plan has been prepared to address the SEARs and provide measures to manage noise generated by vehicles and pedestrians leaving the night racing events. This includes requiring all patrons to exit via Gate 1 after 8pm.	None	Following the implementation of proposed mitigation measures, disturbance of amenity for adjoining residential properties will be minimised to acceptable levels.



SEAR	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation measure (Pe/Pr/Ma)	Residual Impact
	Traffic and Parking	0	A	3	Medium	Sufficient parking is available on site for patrons choosing to drive to night racing events to minimise impacts on on-street parking surrounding RRR.  Require taxis/ubers to enter and exit the site via Gate 1 during night racing events to reduce the delays and queues at the Doncaster Avenue/ Ascot Street intersection and associated impacts on residents in this area.	Pe	Reduction of traffic congestion and parking impacts during night racing events.
	Safety and Security (antisocial behaviour)	0	С	5	Very low	Private contracted security to have an increased number of specially trained RSA officers at the main entrance on ingress and in the bar areas of the racecourse.  Private Security and NSW Police to proactively observe intoxicated behaviour of patrons Staff to be aware and report immediately to security unacceptable behaviour / intoxicated patrons.  Utilisation of the large CCTV network to identify and react rapidly to intoxicated patrons.	Ma	Early detection and strong management of intoxicated persons and resulting antisocial behaviour reducing the likelihood of alcohol related incidents.
Lighting Impacts	Boundary 1 – Alison Road  Elevated lighting levels exceeding light spill criteria of <110 lux levels onto Alison Road and building facades of adjoining sensitive receivers.	0	С	3	Medium	The proposed lighting design has incorporated design elements such as baffles, lighting technology and positioning of lights to prevent light spill exceeding 110 lux. Further, the variable controlled lights mean that lights can be dimmed between races to further reduce any amenity impacts.	None	Following the implementation of proposed mitigation measure(s) light spill from the site will fall well below the maximum 110 lux levels applicable for this zone.
	Boundary 2 – Wansey Road  Elevated lighting levels exceeding light spill criteria of <110 lux levels onto Wansey Road and building facades of adjoining sensitive receivers.	0	С	3	Medium	The proposed lighting design has incorporated design elements such as baffles, lighting technology and positioning of lights to prevent light spill exceeding 110 lux. Further, the variable controlled lights mean that lights can be dimmed between races to further reduce any amenity impacts.	None	Following the implementation of proposed mitigation measure(s) light spill from the site will fall well below the maximum 110 lux levels applicable for this zone.
	Boundary 3 - High Street	0	С	3	Medium	The proposed lighting design has incorporated design elements such as baffles, lighting technology and positioning of lights to prevent	None	Following the implementation of proposed mitigation measure(s) light spill from the



SEAR	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation measure (Pe/Pr/Ma)	Residual Impact
	Elevated lighting levels exceeding light spill criteria of <110 lux levels onto High Street and building facades of adjoining sensitive receivers.					light spill exceeding 110 lux. Further, the variable controlled lights mean that lights can be dimmed between races to further reduce any amenity impacts.		site will fall well below the maximum 110 lux levels applicable for this zone.
	Boundary 4 – Doncaster Avenue  Elevated lighting levels exceeding light spill criteria of <110 lux levels onto building facades of adjoining sensitive receivers located on Doncaster Avenue.	O	С	3	Medium	The proposed lighting design has incorporated design elements such as baffles, lighting technology and positioning of lights to prevent light spill exceeding 110 lux. Further, the variable controlled lights mean that lights can be dimmed between races to further reduce any amenity impacts.	None	Following the implementation of proposed mitigation measure(s) light spill from the site will fall well below the maximum 110 lux levels applicable for this zone.
Noise/Acoustic Impacts	Noise impact from generators required for additional lighting	0	С	3	Medium	Generators should be selected to have a maximum sound power level of 98 dBA. In addition to this, they are required to be located the following distances away from sensitive receivers:  Receivers R01 to R07 – 160 metres  Receivers R08 to R21 – 100 metres  These distances would need to be adjusted to a further distance should a generator with a higher sound power level be selected.  Conversely, they may be adjusted to a closer location should they have a lower sound power level.	Pe	Noise emission from generators will be sufficiently below the noise criteria that it will not have a negative impact on the sensitive receivers
	Noise impact from patrons egressing on foot disturbing surrounding residents	0	В	3	Medium	Patrons leaving the venue following the completion of the event should exit through the entry/exit gates on Alison Road. The exit to Ascot Street should be blocked for pedestrians.  Patrons exiting on Alison Street should be directed by security towards public transport and areas away from residential receivers. Staff should be directed to monitor noise levels and ensure that patrons are departing in a	Pe	There may be a residual noise impact from patrons exiting the site. Security and management will be important to ensure this impact is kept to a minimum.



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						quiet manner as to not impact the residents in the vicinity of the racecourse.  Patrons must be directed by security guards away from residential dwellings when exiting to Alison Road.		
	Vehicles exiting member's car park using Ascot Street and Doncaster Avenue disturbing residents.	0	A	3	Medium	Patrons leaving the venue following the completion of the event should exit through the entry/exit gates on Alison Road. The exit to Ascot Street should be blocked for pedestrians.  Patrons exiting on Alison Street should be directed by security towards public transport and areas away from residential receivers. Staff should be directed to monitor noise levels and ensure that patrons are departing in a quiet manner as to not impact the residents in the vicinity of the racecourse.  Patrons must be directed by security guards away from residential dwellings when exiting to Alison Road.	Pe	There may be a residual noise impact from patrons exiting the site. Security and management will be important to ensure this impact is kept to a minimum.
	Vehicles exiting member's car park using Ascot Street and Doncaster Avenue	0	A	3	Medium	Clear signage should be displayed throughout the car park informing patrons to return to their vehicles and exit the car park in a quiet manner.  Security should be located at the exit to Ascot Street to monitor the movement of traffic exiting the car park. Speed signs should be located throughout with a maximum speed of 10 km/h.	Pe	Noise levels from the cars exiting using Ascot Street and Doncaster Avenue may still exceed the noise requirements of the Road Noise Policy and will need to be managed to reduce impact on residents
	Vehicles exiting infield car park using High Street	0	A	3	Medium	Clear signage should be displayed throughout the car park informing patrons to return to their vehicles and exit the car park in a quiet manner.  Security should be located at the exit to High Street to monitor the movement of traffic exiting the car park. Speed signs should be located throughout with a maximum speed of 10 km/h.	Pe	Noise levels from the cars exiting using High Street may still exceed the noise requirements of the Road Noise Policy and will need to be managed to reduce impact on residents



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	Commentary and music from the public address system	O	В	3	Medium	Noise emission from the public address system, including commentary and music, must not exceed the following maximum noise levels at any sensitive receiver:  LAmax 60 dB  LCmax 75 dB  It is recommended that noise monitoring be undertaken at various events throughout the year, including the first event, a Class 2 event and a Class 3 event. Noise levels of the public address must be reduced should the above maximum noise levels be exceeded.	Pe	Potential exceedances to the noise criteria from crowd noise during major races. The short duration and characteristics of the crowd noise could be considered a low impact on the sensitive receivers as it does not contain annoying characteristics. Since large races only occur occasional and for a short the impact on residential amenity is considered to be minor.
	Amplified music from other sources (ie DJ's at the rear of the grandstand)	0	В	3	Medium	Noise emission from the amplified music must not exceed the following maximum noise levels at any sensitive receiver:  LAmax 60 dB  LCmax 75 dB  It is recommended that noise monitoring be undertaken at various events throughout the year, including the first event, a Class 2 event and a Class 3 event. Noise levels of amplified music must be reduced should the above maximum noise levels be exceeded.  It is recommended that large post-event concerts should not be held as it is highly likely that the above maximum noise levels will be exceeded.	Pe	
	Noise management plan	-	-	-	-	A noise management plan has been prepared to address the SEARs	-	-
	Acoustic monitoring plan	-	-	-	-	An acoustic monitoring plan has been prepared to address the SEARs	-	-
Transport and Accessibility	Increased traffic and transport demands	0	A	3	Medium	A Transport Management Plan for night events has been prepared	Pe	Management of traffic and transport impacts during night events.



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	Worsened traffic conditions specifically along Doncaster Avenue	0	A	3	Medium	Require taxis/ubers to enter and exit the site via Gate 1 during night racing events to reduce the delays and queues at the Doncaster Avenue/ Ascot Street intersection.	Pe	Reduction of traffic congestion on the intersection during night racing events.
	Private vehicle trip generation	0	A	3	Medium	Manage peak traffic conditions through event specific sustainable travel plans, stagger arrivals through early bird parking promotions prior to 5pm, promote car pooling, integrate free public transport services with prepurchased tickets and more. Refer to <b>Section 6.4.7</b> of the EIS.	Pe	Management of traffic and transport impacts during night events.
Safety and Security	Access Control							
	Unauthorised patrons entering the racecourse with potential to commit a security breach.  Unauthorised vehicles entering the course with potential to commit a security breach.	0	D	1	Low	A security Management plan will be developed and Implemented.  A Risk Management plan will be developed and implemented.  Mitigation Measure  Implementation of an electronic access control management system throughout Royal Randwick to manage, monitor and record all staff and visitors who attend the racecourse.  Access point to the racecourse to be limited to Alison Road Main Gate 1.  Private Security to be strategically deployed for ingress/ egress monitoring and management.  Utilisation of NSW Police commensurate to Risk Management Plan for each Night Racing event.  Deployment of security to manage the immediate vicinity of Royal Randwick during egress.	Ma	Strong access control measures in place to minimized the potential for unauthorized patrons and/ or vehicles to enter the racecourse area
	Security and screening			,	,			



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	Increase in security vulnerability with potential security breaches compromising patron safety.  Increase in undetected contraband entering event area.	O	D	1	Low	Management Measure  A Security Management Plan will be developed and Implemented A Risk Management plan will be developed and implemented.  Mitigation Measure  Strong Private security presence at the main entrance.  Gate 1 Alison Road Security operatives to conduct bag searches and personal screening of patrons during egress.  Security operatives to complete warranted identification checks during ingress.	Ma	Strong security screening measures to eliminate the potential for contraband to be taken into the racecourse area.
	Intoxication		'	-	'			
	Heavily intoxicated patrons resulting in antisocial behaviour and potential assaults.  Patrons unable to follow instruction and disregarding directions on egress and emergency evacuation.  Patron egress lengthy with increased noise level.	0	C	5	Very low	Private contracted security to have an increased number of specially trained RSA officers at the main entrance on ingress and in the bar areas of the racecourse.  Private Security and NSW Police to proactively observe intoxicated behaviour of patrons Staff to be aware and report immediately to security unacceptable behaviour / intoxicated patrons.  Utilisation of the large CCTV network to identify and react rapidly to intoxicated patrons.  Security staff to have heightened awareness of non compliance by patrons in an emergency evacuation and act according to security procedures.	Ma	Early detection and strong management of intoxicated persons and resulting antisocial behaviour reducing the likelihood of alcohol related incidents.
	Terrorist Attack							
	Hostile vehicle entering the racecourse area intent on	0	Е	1	Very low	Management Measure	Ма	Increased awareness amongst staff in the current threat environment.



SEAR	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation measure (Pe/Pr/Ma)	Residual Impact
	causing death and/ or major injury to patrons.					A Security Management Plan will be implemented and Developed.		Increased knowledge of staff in how to prepare and respond to an attack.
	Active Armed offender entering racecourse area intent on causing death and/or major injury to patrons.  Offender carrying or planting an IED device intent on causing death or major injury to patrons.					A training plan for staff covering preparedness and response to an Active Armed Offender Attack in the current threat environment.  Implementation of specific procedures in relation to active armed offender, IED's, hostile vehicle attack and dynamic lockdown.  Mitigation measures  Hostile vehicle vulnerability assessment and target hardening strategy resulting in Implementation of Vehicle Security Barriers and visual deterrent barriers.  Regular staff exercises and drills to be conducted on Terrorist attack scenarios to assist staff in understanding their response and role in an attack.		Increased security measures in response to a hostile vehicle attack within the racecourse area.
	Security Resources							
	Ineffective deployment of security operatives resulting in undetected security breaches.  Ineffective management of ingress, egress and circulation.  Ineffective management of intoxicated persons and potential assaults.  Ineffective response to and management of patrons in an emergency evacuation.	0	D	1	Low	A Security Management Plan will be developed and implemented.  An Emergency Management Plan will be developed and implemented.  A Crowd Management Plan will be developed and implemented.  Mitigation Measure  A risk assessment to be completed on each night racing event prior to the event.  Each private security operative to be well educated on their role and responsibility in respect to security management and emergency management at the racecourse.	Ma	Security Management deployment will be based on a risk management assessment of each event providing appropriate numbers and locations to effectively provide and manage security at the event.
	Lighting							



SEAR	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation measure (Pe/Pr/Ma)	Residual Impact
	Lack of lighting in high patron traffic areas entrances and pedestrian routes resulting in patron injury.  Insufficient lighting around event area resulting in undetected security breaches.  Insufficient lighting in Emergency Evacuation assembly areas resulting in patron confusion and injury.	O	D	5	Very low	A lighting plan will be developed and implemented  Mitigation measures  Identify and/or assess lighting requirements in the heavy pedestrian traffic areas.  Identify security lighting needs to ensure no opportunities for crime in dark areas to exist.  Assess the lighting and upgrade if necessary the emergency evacuation area at Doncaster Lawn.	Ma	Minimisation of areas vulnerable to crime in dark.  Minimisation of patron injury through good lighting along main pedestrian routes and areas within the racecourse and surrounding area.
	Perimeter Security							
	Impact on event security through fence and gate breached due to vulnerable locations along fence lines and damaged fence.  Impact on event security through unauthorized persons using climbable gates to gain access to the racecourse.	0	D	5	Very low	A Security Management Plan will be implemented and developed.  A training plan for staff covering security procedures, safety procedures and emergency procedures including emergency evacuation.  Implementation of specific procedures in relation to emergency management and response.  Mitigation measures  Regular staff exercises and drills to be conducted on Emergency Management and evacuation to assist staff in understanding their response and role in an emergency incident.	Ma	Well trained and knowledgeable staff on emergency and evacuation procedures with a clear understanding of their role and responsibilities minimising the potential impacts to staff and patrons.
	Staff Training							
	Impact to staff and patron safety if safety and response training is insufficient. Impact to staff and patron safety if emergency response and emergency evacuation is not	0	D	5	Very Low	Management Measure  A Security Management Plan will be implemented and developed. A training plan for staff covering security procedures, safety procedures and emergency procedures including emergency evacuation.	Ма	Well trained and knowledgeable staff on emergency and evacuation procedures with a clear understanding of their role and responsibilities minimising the potential impacts to staff and patrons.



SEAR	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation measure (Pe/Pr/Ma)	Residual Impact
	trained and exercised in a regular basis.					Implementation of specific procedures in relation to emergency management and response.  Mitigation measures  Regular staff exercises and drills to be conducted on Emergency Management and evacuation to assist staff in understanding their response		
	Covid-19 transmission control							
	Impact to staff, patron and community health and safety in the event of a COVID-19 outbreak resulting in large-scale infection transmission	0	D	5	Very Low	Implementation of a COVID Safe Plan for Royal Randwick. A training plan for staff covering COVID Safe protocols, procedures and reporting consistent with NSW Public Health guidelines A comprehensive communications framework in place to advise patrons of COVID Safe protocols and conditions of entry.  Mitigation measures  Medical services onsite with rapid response plan in the event a patron becomes unwell. Additional Security resources to perform COVID Safe protocols effectively. Implementation of trained COVID Marshalls to monitor and manage COVID safe practices such as physical distancing, contact tracing registration, minimal crowd movement etc.		Strong infection control measures in place to minimise the potential for transmission on a large scale.
Ecologically Sustainable Development (ESD)	Inefficient energy usage and inappropriate use of resources.	O/C	С	3	Medium	Lighting design incorporates the use of LED lamps to maximise efficiency and lifespan compared to traditional metal halide lamps. Lights will also be dimmed when not required between races.	None	Responsible and efficient use of energy and resources, to minimise the development's environmental footprint.
Servicing and Waste	Disruption to surrounding land uses and litter.	0	С	4	Low	Servicing and waste is to be managed in accordance with the Event Operational Management Plan	None	Minimised impacts on surrounding land uses.