Eastern Creek Speedway

Operational Environmental Management Plan

Document Control

Project No: 0214

Project: Eastern Creek Speedway Operational Environmental Management Plan

Prepared For: Speedway Promotions Pty Ltd

File Reference: P0214r1v7 Eastern Creek Speedway Operational Environmental Managment Plan

Revision History

Revision	Date	Details	Approved by
v1	6/08/2021	Draft 1	A. Reisch
v2	8/10/2021	Draft 2	A. Reisch
v3	14/10/2021	Draft 3	A. Reisch
v4	27/10/2021	Draft 4	A. Reisch
v5	5/11/2021	Draft 5	A. Reisch
v6	12/11/2021	Final Draft 1	A. Reisch
v7	/11/2021	Final 1	A. Reisch

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Definitions & Abbreviations

Term	Definition
Access Approval	*Planning Approval Consistency Assessment Form: Sydney International Speedway Amended Access Proposal 2021,* Sydney Metro
AQ MP	Operational Air Quality Monitoring Program
BCC	Blacktown City Council
CJP	Customer Journey Planning (within Transport for NSW).
CRPA Requirements	*Compliance Reporting Post Approval Requirements 2020*, DPIE
DPIE	NSW Department of Planning, Industry and Environment
Disability Act	*Disability Discrimination Act 1992*
The Dragway	Sydney Dragway
Emergency Plan	Speedway Emergency Response Plan
EMP Guidelines	*Guidelines for the Preparation of Environmental Management Plans,* NSW Government
EPA	NSW Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
Event Plan	Speedway Event Management Plan
GSP	Greater Sydney Parklands
IAPA Requirements	*Independent Audit Post Approval Requirements 2020,* DPIE
Intersection 1	Intersection of Ferrers Road and the Speedway access road
Intersection 2	Intersection of Ferrers Road and the Pit Area at the southern boundary of the Speedway Site
Intersection 3	Intersection of Ferrers Road and the Sydney Motorsports Park access road
Motorsport Park	Sydney Motorsport Park
Motor Sports Precinct	Western Sydney Parklands Precinct 5: Eastern Creek Motor Sports
MVS Act	*Motor Vehicle Sports (Public Safety) Act 1985 (MVS Act*
MVS Regulation	*Motor Vehicle Sports (Public Safety) Regulation 2015 (MVS Regulation)*
Noise MP	Operation Noise Monitoring Program
OAQMP	Operational Air Quality Management Plan
OEMP	Operational Environmental Management Plan
OMP	Operational Monitoring Program
ONMP	Operational Noise Management Plan
Operating Hours Approval	*Planning Approval Consistency Assessment Form: Sydney International Speedway Operating Hours 2021*, Sydney Metro
OTTMP	Operational Traffic & Transport Management Plan
Pit Area	Dedicated Speedway competitor Pit Area

Definitions & Abbreviations (continued)

Term	Definition
The Proponents	Sydney Metro and Western Sydney Parklands Trust
PEO Act	*Protection of the Environment Operations Act 1997*
Pit Road	Access road along the western boundary of the Site between Car Park A and the Pit Area
Rural Fires Act	*Rural Fires Act 1997*
Speedway Australia	Speedway Australia
Speedway Australia Racing Rules	*Speedway Australia Racing Rules and Regulations*
Speedway Australia Track Manual	*Speedway Australia Track Operations Manual*
SEPP SRD	*State Environmental Planning Policy (State and Regional Development) 2011*
SEPP HOD	*State Environmental Planning Policy No. 33 – Hazardous and Offensive Development*
SEPP Infrastructure	*State Environmental Planning Policy (Infrastructure) 2007*
SEPP WSP	*State Environmental Planning Policy (Western Sydney Parklands) 2009*
The Site	The Eastern Creek Speedway site within Sydney Motorsports Park
The Speedway	Eastern Creek Speedway, previously Sydney International Speedway
Speedway Amendment Report	*Sydney International Speedway SSI Amendment Report 2020*, DPIE
Speedway Approval	*SSI 00048 Notice of Decision 2020,* issued by the Minister for Planning & Places
Speedway Conditions	*SSI 00048 Instrument of Approval December 2020,* issued by the Minister for Planning & Places
Speedway EIS	*Sydney International Speedway Environmental Impact Statement 2020*, Sydney Metro
MS Precinct PCG	Motor Sports Precinct Project Control Group
Speedway Submissions Report	*Sydney International Speedway Submissions Report 2020*, DPIE
Speedway WHSMS	Speedway Promotions Work, Health & Safety Management System
SSI 10048	*State Significant Infrastructure 10048 Sydney International Speedway*
Sub-Plan	Sub-Plans relating to Air Quality, Traffic & Transport and Noise prepared in accordance with the Speedway Conditions
Sydney Metro	Sydney Metro
TfNSW	Transport for NSW
TMC	Transport Management Centre (within Transport for NSW)
T&T MP	Operational Traffic & Transport Monitoring Program
WARR Act	*Waste Avoidance and Resource Recovery Act 2001 (WARR Act)*
Water NSW Act	*Water NSW Act 2004*
Water NSW Regulation	*Water NSW Regulation 2013*
WQ OMP	Operational Water Quality Monitoring Program
WSP Design Manual	Western Sydney Parklands Design Manual
WSPT	Western Sydney Parklands Trust

1 Introduction

1.1 Overview

A State Significant Infrastructure (**SSI 10048**) proposal for the Sydney International Speedway (now referred to as the Eastern Creek Speedway – the **Speedway**) was approved by the NSW Minister for Planning & Public Spaces in the *SSI 00048 Notice of Decision* December 2020 (the **Speedway Approval**).

The former Sydney Speedway site, located on Government-owned land at Clyde, was required to house the future stabling and maintenance facilities for the Sydney Metro West project. As such, the new Speedway is being constructed by Sydney Metro and Western Sydney Parklands Trust (the **Proponents**) on land owned by Western Sydney Parklands Trust (**WSPT**) within the Eastern Creek Motor Sports Precinct (**Motor Sports Precinct**) east of Ferrers Road, Eastern Creek (the **Site**).

Full details of the Speedway development are provided in the Sydney International Speedway Environmental Impact Statement 2020, prepared by the NSW Government and Sydney Metro (**Speedway EIS**).

1.2 Purpose & Objectives of the OEMP

1.2.1 Compliance with Speedway Conditions

This Operational Environmental Management Plan (**OEMP**) has been prepared to comply with the requirements of the *SSI 00048 Instrument of Approval* December 2020 issued by the Minister for Planning & Places (**Speedway Conditions**) and the relevant requirements of the NSW Government's *Guidelines for the Preparation of Environmental Management Plans* (**EMP Guidelines**).

Environmental management was identified as a key issue in the Speedway EIS; in this regard, the desired performance outcome is for the Speedway to operate in a manner that minimises environmental risks, and in turn minimises risks to human health and the local environment to the greatest extent practicable.

1.2.2 OEMP Objectives

Further to the above, the underlying objectives of the OEMP are to:

- Fulfil the requirements of the Speedway Approval and Speedway Conditions with regard to operational environmental management.
- Identify the relevant statutory requirements and other obligations that the Speedway is required to meet during the operation of the Speedway, including consents, licences, approvals and consultation.
- Identify the roles and responsibilities of all Speedway staff involved in operational environmental management of the Speedway.

- Identify the overall environmental policy and environmental principles that are to be applied during the operation of the Speedway.
- Identify the environmental monitoring required during operation of the Speedway.
- Identify the relevant environmental standards and performance measures to be applied during the operation of the Speedway.
- Identify management policies that will ensure to the greatest extent practicable that environmental performance goals are met during the operation of the Speedway.
- Identify the methodology to be adopted for review and improvement (where necessary) of environmental performance during operation of the Speedway.
- Identify procedures for environmental monitoring, periodic review and updates of the OEMP as required.

1.3 Operational Environmental Management Plan Scope

The scope of the OEMP has primarily been determined with reference to the Speedway Conditions (detailed further in Section 2) and the EMP Guidelines, and includes:

- Demonstrating that the OEMP addresses the requirements of applicable legislation and the Speedway Conditions.
- Minimising all known and potentially emerging risks though the operation of the Speedway, with a particular focus on the risks associated with:
  - Air quality;
  - Noise and vibration;
  - Traffic and transport; and
  - Water Quality.
- The establishment of comprehensive air quality, traffic and transport and water quality monitoring programs to ensure that Speedway operations are in line with the Speedway Approval, and/or to rectify any area of non-compliance.

1.4 Consultation

1.4.1 Key Stakeholders

Stakeholder and community engagement has formed an integral part of the development of the Speedway prior to and through the preparation of the Speedway EIS. These key stakeholders are identified in Table 1.

Table 1: Speedway Project Stakeholder Consultation

Stakeholders	Consulted
Existing Leaseholders within the Motor Sports Precinct	Sydney Dragway (operated by the operated by the Western Sydney International Dragway) Sydney Motorsport Park (operated by the Australian Racing Drivers' Club)
Existing users of the Western Sydney Parklands and adjoining lands	Eastern Creek International Karting North Shore Sporting Car Club Driver training facilities including MotoDNA and Driving Solutions Pty Ltd Sydney Zoo.
State and Local Government Agencies	NSW Department of Planning, Industry and Environment Western Sydney Parkland Trust NSW Office of Sport National Parks and Wildlife Service Blacktown City Council
Public Utilities, Business and Industry Groups near the Site	Water NSW SUEZ Eastern Creek Recovery Park Global Renewables Austral Bricks
Special Interest Groups	Local Aboriginal Land Councils Aboriginal stakeholders Sporting associations
Racing Industry Bodies	Speedway Australia Sydney Speedway's previous owners Speedway patrons The wider motorsport community

1.4.2 Pre-Speedway EIS Consultation

A Motor Sports Precinct Control Group (**MS Precinct PCG**) comprising the Office of Sport, Sydney Metro, WSPT, Sydney Dragway and Speedway Australia was established to coordinate the integration of the Speedway within the Motor Sports Precinct, and set the terms for the scope of the Speedway EIS.

1.4.3 Speedway EIS Consultation

Consultation continued throughout the Speedway EIS process, with key stakeholders including State Government agencies, Speedway Australia and the Dragway operators. This consultation included:

- Attending meetings and workshops;
- Meetings of the MS Precinct PCG; and
- Responding to requests for advice and information enabling the consideration of ongoing stakeholder input throughout the Speedway EIS process.

Sydney Metro also worked closed with Speedway Australia to ensure the relevant safety standards that would apply to the Speedway were addressed through the Speedway design process, in accordance with Speedway Australia's requirement for 5 Star Safety Standards.

1.4.4 OEMP Consultation

The OEMP has referenced the feedback from earlier consultation periods, and in turn the Speedway Submissions Report, and the Speedway Assessment Report, which specifically addressed the results of the consultation and Speedway EIS submissions. Additional details in regard to this consultation are provided in the OEMP **Sub-Plans**, which are provided as appendices to the OEMP.

1.5 Reference Documents

1.5.1 Speedway Approval Documents

Numerous planning reports were prepared to assess the Speedway as part of the Speedway EIS process. The OEMP specifically references the following reports:

- *Sydney International Speedway Environmental Impact Statement 2020, prepared by the NSW Government and Sydney Metro* (**Speedway EIS**);
- *Sydney International Speedway Submissions Report 2020, prepared by the NSW Government and Sydney Metro* (**Speedway Submissions Report**);
- *Sydney International Speedway SSI Amendment Report 2020*, prepared by DPIE (**Speedway Amendment Report**);
- SSI 00048 Notice of Decision 2021 issued by the Minister for Planning & Places (**Speedway Approval**);
- Planning Approval Consistency Assessment: Sydney International Speedway Amended Access Proposal 2021, approved by Sydney Metro (**Access Approval**); and
- Planning Approval Consistency Assessment: Sydney International Speedway Operating Hours 2021, approved by Sydney Metro (**Operating Hours Approval**).

1.5.2 OEMP Support Documents

The OEMP also references the following OEMP support documents, which are provided as appendices to the OEMP:

- Environmental Management Plan Guideline for Instructure Projects 2020, prepared by DPIE (**EMP Guidelines**);
- Operational Air Quality Management Plan 2021, prepared by Ramboll (**OAQMP**);
- Operational Traffic & Transport Management Plan 2021, prepared by arc traffic + transport (**OTTMP**);
- Operational Noise Management Plan 2021, prepared by Marshall Day Acoustics (**ONMP**);
- Speedway Event Management Plan (**Event Plan**);
- Speedway Event Emergency Response Plan, provided as Section 5 of the Event Plan (**Emergency Plan**);
- Speedway Promotions Work, Health & Safety Management System (**Speedway WHSMS**);
- Speedway Australia Racing Rules and Regulations 2021 (**SA Race Rules**); and
- Speedway Australia Track Operators Manual 2020 (**SA Track Manual**).

Further to the above, it is noted that Speedway Condition D3 requires the preparation of a *Noise & Vibration Environment Management Plan*. The detailed assessment of potential vibration impacts during the operation of the Speedway is provided in Section 7.7 of the Speedway EIS, and concludes the following:

> *There are not expected to be any vibration impacts from operation of the Sydney International Speedway.*
>
> *The nearest heritage building or structure identified in the study area is within the Prospect Reservoir and Surrounding Area heritage item, 300 metres east of the project site. The separation distance is sufficient to mitigate potential vibration impacts and no exceedance of the heritage vibration damage criterion is expected during operation of the project.*
>
> *The Warragamba Pipelines are about 20 metres south of the area to the south of Ferrers Road; however, as the project is not expected to introduce any new sources of operational vibration near this area no vibration impacts on the pipeline are expected.*

The absence of any potential impacts arising from vibration resulting from Speedway operations is consistent with the findings in the Speedway Amendment Report, and as such a Sub-Plan has been prepared in regard to Noise only (the ONMP).

1.6 Operational Environmental Management Plan Structure

The structure of the OEMP references Section 4.2 and 4.3 of the EMP Guidelines, and provides an overarching document referencing the part(s) of the OEMP itself, and/or the OEMP support documents, where each of the Speedway Conditions are addressed. Table 2 provides a summary of the relevant EMP Guidelines requirements, and the section of the OEMP where each are addressed.

Table 2: OEMP Structure

EMP Guidelines	OEMP Section
Background	
Introduction	Section 1
Project Description	Section 3
EMP Context	Section 1.2
EMP Objectives	Section 1.2
Compliance with Conditions	Section 1.2 and Section 2
OEMP Scope	Section 1.3
Consultation	Section 1.4
Key Reference Documents	Section 1.5
Environmental Management	
Structure and Responsibilities	Section 5
Approval and Licensing Requirements	Section 4
Reporting	Section 6
Environmental Training	Section 5.3
Emergency Contacts and Response	Section 5.4
Implementation	
Risk Assessment	Section 7.1
Environmental Activities and Controls	Section 7.1
Hazard Log	Table 16
Environmental Control Plans	Section 7.2
Environmental Schedules	Section 7.3
Monitoring and Review	
Environmental Monitoring	Operational Management Plans (Appendices)
Environmental Auditing	Section 6.3
Corrective Action	Operational Management Plans (Appendices)
OEMP Review	Section 7.4

2 Speedway Conditions and Commitments

2.1 Speedway Conditions

The relevant operational Speedway Conditions, and a reference to the section of the OEMP, Sub-Plan and/or OEMP support documents where each is addressed, are detailed in the following tables:

- Table 3 addresses the **Administrative Conditions** detailed in Section A of the Speedway Approval.
- Table 4 addresses the **OEMP Conditions** detailed in Section D of the Speedway Approval.
- Table 5 addresses the **Key Issue Conditions** detailed in Section E of the Speedway Approval.

Table 3: Speedway Approval Administrative Conditions

Condition	Section A: Administrative Conditions	OEMP	OAQMP	OTTMP	ONMP
A1	*The Proponent must carry out the SSI in accordance with the terms of this approval and generally in accordance with the:* *(a) Sydney International Speedway – Environmental Impact Statement Volume 1 & 2 (the EIS) (dated August 2020);* *(b) Sydney International Speedway – Submissions Report (the Submissions Report, dated November 2020); and* *(c) Sydney International Speedway – Amendment Report (the AR, dated November 2020).*	Section 1.5	Section 1.2	Section 4.2	Section 1.2
A2	*The SSI must only be carried out in accordance with all procedures, commitments, preventative actions, performance criteria and mitigation measures set out in in accordance with the documents listed in Condition A1 unless otherwise specified in, or required under, this approval.*	Section1.5	Section 1.2 Section 1.3	Section 4.2	Section 1.2
A6	*Where the terms of this approval require a document or monitoring program to be prepared or a review to be undertaken in consultation with identified parties, evidence of the consultation undertaken must be submitted to the Planning Secretary with the document. The evidence must include:* *(a) documentation of the engagement with the party identified in the condition of approval that has occurred before submitting the document for approval;* *(b) a log of the dates of engagement or attempted engagement with the identified party and a summary of the issues raised by them;* *(c) documentation of the follow-up with the identified party(s) where feedback has not been provided to confirm that they have none or have failed to provide feedback after repeated requests;* *(d) outline of the issues raised by the identified party and how they have been addressed; and* *(e) a description of the outstanding issues raised by the identified party and the reasons why they have not been addressed.*	Section 1.4 Table 1	Section 9 Appendix D	Section 4.3	Section 4.5

Table 3: Speedway Approval Administrative Conditions (continued)

Condition	Section A: Administrative Conditions	OEMP	OAQMP	OTTMP	ONMP
A25	*Compliance Reports of the project must be carried out in accordance with the Compliance Reporting Post Approval Requirements (2020).*	Section 6.2			
A29	*Independent Audits of the development must be conducted and carried out in accordance with the Independent Audit Post Approval Requirements (2020).*	Section 6.3			
A30	*Proposed independent auditors must be agreed to in writing by the Planning Secretary prior to the commencement of an Independent Audit.*	Section 6.3			
A31	*The Planning Secretary may require the initial and subsequent Independent Audits to be undertaken at different times to those specified in the Compliance Reporting Post Approval Requirements (2020), upon giving at least four weeks' notice (or timing as stipulated by the Planning Secretary) to the Proponent of the date upon which the audit must be commenced.*	Section 6.3			
A32	*Independent Audit Reports and the Proponent's response to audit findings must be submitted to the Planning Secretary within two months of undertaking the independent audit site inspection as outlined in the Independent Audit Post Approval Requirements (2020), unless otherwise agreed by the Planning Secretary.*	Section 6.3			
A33	*Notwithstanding the requirements of the Independent Audit Post Approval Requirements (2020), the Planning Secretary may approve a request for ongoing independent operational audits to be eased, where it has been demonstrated to the Planning Secretary's satisfaction that independent operational audits have demonstrated operational compliance.*	Section 6.3			

Table 3: Speedway Approval Administrative Conditions (continued)

Condition	Section A: Administrative Conditions	OEMP	OAQMP	OTTMP	ONMP
A34	*The Planning Secretary must be notified in writing via the Major Projects Website immediately after the Proponent becomes aware of an incident. The notification must identify the SSI (including the application number and the name of the SSI if it has one) and set out the location and nature of the incident. Subsequent notification requirements must be given, and reports submitted in accordance with the requirements set out in Appendix A.*	Section 6.5			
A35	*The Planning Secretary must be notified in writing via the Major Projects Website within seven days after the Proponent becomes aware of any non-compliance.*	Section 6.5			
A36	*A non-compliance notification must identify the SSI and the application number for it, set out the condition of approval that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be undertaken to address the non-compliance.* *Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.*	Section 6.5			

Table 4: Operational Environmental Management Conditions

<table>
<tr><th>Condition #</th><th>Operational Environment Management Conditions</th><th>OEMP</th><th>OAQMP</th><th>OTTMP</th><th>ONMP</th></tr>
<tr><td>D1</td><td>An Operational Environmental Management Plan (OEMP) must be prepared in accordance with the Environmental Management Plan Guideline for Infrastructure Projects (Department Planning, Industry and Environment 2020). The OEMP must detail how the performance outcomes, commitments and mitigation measures made and identified in the documents listed in Condition A1 will be implemented and achieved during operation. This condition (Condition D1) does not apply if Condition D2 of this approval applies.</td><td colspan="4">The OEMP has been prepared with specific reference to the key documents detailed in Speedway Condition A1, including:
The Speedway EIS
The Speedway Approval
The Speedway Submissions Report
The Speedway Amendment Report</td></tr>
<tr><td>D3</td><td>Where an OEMP is required, the Proponent must include the following OEMP Sub-plans in the OEMP:
Table 5: OEMP Sub-Plans<table><tr><th></th><th>Required OEMP Sub-plan</th><th>Relevant government agencies to be consulted for each OEMP Sub-plan</th></tr><tr><td>(a)</td><td>Dust</td><td>Office of Sport and WaterNSW</td></tr><tr><td>(b)</td><td>Traffic and Transport</td><td>Relevant Road Authorities</td></tr><tr><td>(c)</td><td>Noise and Vibration</td><td>Council</td></tr></table>Note: the Traffic and Transport sub-plan does not apply to major concurrent events with other venues in the motorsport precinct where a Major Events Operation Plan (or other equivalent document) as required by Condition E8 applies.</td><td colspan="4">The OEMP incorporates each of the Sub-Plans required under Speedway Condition D3, including:
An OAQMP
An ONVMP
An OTTMP.</td></tr>
<tr><td>D4</td><td>Each of the OEMP Sub-plans must include the information set out in Condition D1 of this approval.</td><td colspan="4">Each of the key documents identified in Speedway Condition D1 are referenced in the individual Sub-Plans.</td></tr>
<tr><td>D5</td><td>The OEMP Sub-plans must be developed in consultation with relevant government agencies as identified in Condition D3. Details of all information requested by an agency to be included in an OEMP Sub-plan as a result of consultation, including copies of all correspondence from those agencies, must be provided with the relevant OEMP Sub-Plan.</td><td colspan="4">Each of the Sub-Plans have been prepared further to detailed consultation with the relevant agencies; details of the consultation are provided in each of the Sub-Plans.</td></tr>
<tr><td>D6</td><td>The OEMP Sub-plans must be submitted to the Planning Secretary as part of the OEMP.</td><td colspan="4">The Sub-Plans are provided as appendices to the OEMP,</td></tr>
<tr><td>D7</td><td>The OEMP or EMS or equivalent as agreed with the Planning Secretary, must be submitted to the Planning Secretary for information no later than one (1) month before the commencement of operation.</td><td colspan="4">The OEMP and Sub-Plans will be submitted to the Planning Secretary no later than 1 month prior to the commencement of Speedway operations.</td></tr>
</table>

Table 4: Operational Environmental Management Conditions (continued)

<table>
<tr><th>Condition #</th><th>Operational Environment Management Conditions</th><th>OEMP</th><th>OAQMP</th><th>OTTMP</th><th>ONMP</th></tr>
<tr><td>D8</td><td>The OEMP or EMS or equivalent as agreed with the Planning Secretary, as submitted to the Planning Secretary and amended from time to time, must be implemented for the duration of operation and the OEMP or EMS or equivalent must be made publicly available before the commencement of operation.</td><td colspan="4">The OEMP will be implemented for the duration of Speedway operations or until agreed by the Planning Secretary, and will be made publicly available before the commencement of Speedway operations.</td></tr>
<tr><td>D9</td><td>Operational Monitoring Program
The following Operational Monitoring Programs must be prepared in consultation with the relevant authorities identified for each Operational Monitoring Program to compare actual operational performance against predicted performance.
Table 6 Operation Monitoring Programs
<table>
<tr><th></th><th>Required Operational Monitoring Programs</th><th>Relevant authority(s) and council(s) to be consulted for each Operational Monitoring Program</th></tr>
<tr><td>(a)</td><td>Dust</td><td>Office of Sport and WaterNSW</td></tr>
<tr><td>(b)</td><td>Traffic and Transport</td><td>Council and the Transport Management Centre</td></tr>
</table></td><td>Section 6.1</td><td>OAQMP</td><td>OTTMP</td><td></td></tr>
<tr><td>D10</td><td>Each operational monitoring program must include:
a) details of baseline data;
b) details of all monitoring of the project to be undertaken;
c) the parameters of the project to be monitored;
d) the frequency of monitoring to be undertaken;
e) the location of monitoring;
f) the reporting of monitoring and analysis results against relevant criteria;
g) details of the methods that will be employed to analyse the monitoring data;
h) procedures to identify and implement additional mitigation measures where results of monitoring are unsatisfactory; and
i) any consultation to be undertaken in relation to the monitoring programs.</td><td>Section 6.1</td><td>Section 5
Section 4
Section 9
Appendix B</td><td>Section 6.2
Section 6.4
Section 6.4
Section 6.4
Section 6.4
Section 6.5
Section 6.5
Section 6.6
Section 6.7</td><td></td></tr>
</table>

Table 4: Operational Environmental Management Conditions (continued)

Condition #	Operational Environment Management Conditions	OEMP	OAQMP	OTTMP	ONMP
D11	*The Operational Monitoring Program(s) must be submitted to the Planning Secretary at least one month before the commencement of operation.*	The OMPs will be submitted to the Planning Secretary no later than 1 month prior to the commencement of Speedway operations.			
D12	*Operation must not commence until the Planning Secretary has been provided with all of the required Operational Monitoring Programs, and all relevant baseline data has been collected.*	The OMPs outline the Baseline data that that will be referenced in future OMPs.			
D13	*The Operational Monitoring Programs must be implemented for the duration identified in the terms of this approval. Where no duration is specified in this approval, they must be implemented for the duration specified in the relevant Operational Monitoring Program or as specified by the Planning Secretary, whichever is the greater.*	The OMP provisions will be in place for the duration of Speedway operations or as otherwise agreed by the Planning Secretary.			
D14	*The results of the Operational Monitoring Programs must be submitted to the Planning Secretary, and relevant regulatory authorities, for information in the form of an Operational Monitoring Report at the frequency identified in the in the terms of this approval. Where no frequency is identified in this approval, the results must be submitted at the frequency identified in the relevant Operational Monitoring Program.*	The OMPs detail the proposed frequency of OMP data collection and reporting.			
D15	*Where a relevant OEMP Sub-plan exists, the relevant Operational Monitoring Program may be incorporated into that OEMP Sub-plan.*	The relevant OMPs have been incorporated into the OAQMP and OTTMP.			

Table 5: Key Issue Conditions

Condition #	Key Issue Conditions	OEMP	OAQMP	OTTMP	ONMP
E7	***Events Management*** *Scheduling of events (both minor, major and concurrent) must be managed to reduce noise,*	No concurrent Major Events will be permitted until a Major Events Operations Plan has been prepared and approved by the Planning Secretary. The Major Events Operations Plan would examine all potential impacts arising from a Major Event and then be provided as an appendix to the OEMP.			
E8	***Events Management*** *No concurrent events at the Sydney International Speedway and the Western Sydney International Dragway are permitted to occur until a Major Events Operations Plan (as identified in the documents listed in **Condition A1**) has been prepared to address traffic management,*				
E9	***Air Quality*** *In addition to the commitments to develop performance outcomes and mitigation measures for air quality specified in the documents listed in Condition A1, all reasonably practicable measures must be implemented to minimise the emission of dust and other air pollutants during the construction and operation of the SSI.*		Section 4.2 Section 5.2		
E10	***Air Quality*** *The commitments to develop performance outcomes and mitigation measures for air quality specified in the documents listed in Condition A1 must be implemented during construction and operation of the SSI to ensure the operational safety of the Western Sydney International Dragway.*		Section 5.1 Section 5.2		
E11	***Air Quality*** *Operational air quality mitigation measures as identified in the documents listed in Condition A1 that will not be physically affected by work, must be established as soon as practicable during construction.*		Section 2.3		
E29	***Operational Noise Mitigation Measures*** *At-property treatment must be provided to the properties identified in Table 38 of the Noise and Vibration Technical Paper (dated July 2020), unless otherwise agreed by the Planning Secretary.*				Table 2

Table 5: Key Issue Conditions (continued)

Condition #	Key Issue Conditions	OEMP	OAQMP	OTTMP	ONMP
E31	***Operational Noise Mitigation Measures*** *Within 12 months of the commencement of operation of the SSI, the Proponent must undertake monitoring of operational noise to compare actual noise performance of the SSI against the noise performance predicted in the documents listed in Condition A1.*				Section 4
E32	***Operational Noise Mitigation Measures*** *The Proponent must prepare an Operational Noise Compliance Report to document this monitoring. The Report must include, but not necessarily be limited to:* *a) noise monitoring to assess compliance with the operational noise levels predicted in the documents listed in Condition A1;* *b) methodology, location and frequency of noise monitoring undertaken, including monitoring sites at which SSI noise levels are ascertained, with specific reference to locations indicative of impacts on receivers;* *c) details of any complaints and enquiries received in relation to operational noise generated by the SSI between the date of commencement of operation and the date the report was prepared;* *d) any required recalibrations of the noise model taking into consideration factors such as noise monitoring and types of race vehicles;* *e) an assessment of the performance and effectiveness of applied noise mitigation measures together with a review and if necessary, reassessment of mitigation measures; and* *f) identification of additional measures to those identified in the documents listed in Condition A1, that are to be implemented with the objective of meeting the criteria outlined in the Noise Guide for Local Government (EPA, 2013), when these measures would be implemented and how their effectiveness would be measured and reported to the Planning Secretary, Western Sydney Parklands Trust and Council.* *The Operational Noise Compliance Report must be submitted to the Planning Secretary within 60 days of completing the operational noise monitoring and made publicly available.* *Note: Any additional mitigation measures required must be implemented within 12 months of the commencement of operation.*				Section 4.3

2.2 Additional Compliance Measures

2.2.1 Management & Mitigation

Table 5.1 of the Speedway Amendment Report details a number of revised **Management & Mitigation** commitments to be considered throughout the operation of the Speedway (**Speedway Commitments**). These Management & Mitigation measures are detailed in Table 6, with a reference to the section of the OEMP, Sub-Plan and/or OEMP support documents where each is addressed.

2.2.2 Desired Performance Outcomes

Table 25.4 of the Speedway EIS outlines the **Desired Performance Outcomes** for the Speedway operations. These Desired Performance Outcomes are detailed in Table 7, with a reference to the section of the OEMP, Sub-Plan and/or OEMP support documents where each is addressed.

Table 6: Management & Mitigation Commitments

Reference	Issue	Mitigation Measure	Site Location	OEMP	OAQMP	OTTMP	ONMP
AQ3	*Dust generation during construction and operation*	*Four permanent dust monitoring stations would be installed across the project site and at Sydney Dragway. These stations would acquire and measure baseline dust levels in real time to inform thresholds for safe operational dust levels at the Sydney Dragway and to monitor dust levels during construction and operation of the project.*	*Main Operational Site and Sydney Dragway*		Section 5		
AQ4		*An on-site meteorological station would be installed, sited in accordance with the relevant standards and guidelines, to inform the dust monitoring programme*	*Main Operational Site*		Section 5.1 Appendix B		
C3	*Accidental leaks or spills during operation*	*The Operational Environmental Management Plan would include an Emergency Response Plan which would specify the procedure to be followed in the event of a spill, including the notification requirements and use of absorbent material to contain the spill.*	*All Areas*	Table 16 PHA19 PHA 21			
GW3	*Accidental spills and potential to contaminate groundwater*	*The Operational Environmental Management Plan would be implemented including appropriate procedures for storage of hazardous materials, refuelling, spill prevention and spill response.*	*Main Operational Site and Sydney Dragway*	Table 16 PHA9 PHA21			
H4	*Management of operational hazards and risks*	*An Operational Hazard and Risk Management Plan would be developed for the project site and implemented as part of the OEMP for the project. This plan would be reviewed regularly and updated should goods entering the project site change. As a minimum, the plan would adopt the requirements of the Code of Practice for Storage and Handling of Dangerous Goods (Work Cover NSW, 2005).*	*All Areas*	Table 16 SMPSH21			
NV2	*Operational motorsport noise*	*At-property treatment would be provided to noise sensitive receivers where the predicted average event noise level LAeq(15minute) is more than 5 dB above the background noise level.*	*All relevant receivers*				ONMP Table 2

Table 6: Management & Mitigation Commitments (continued)

Reference	Issue	Mitigation Measure	Site Location	OEMP	OAQMP	OTTMP	ONMP
NV3	*Fireworks Displays*	*An evaluation of the potential noise impacts from occasional firework displays during some events would be carried out when more information is available regarding the proposed displays associated with the project.*	*Main Operational Site*	Table 16 PHA22			
NV4	*Operational Environmental Management Plan*	*An Operational Environmental Management Plan (OEMP) (to be prepared by the operator, once appointed) would include the following measures to manage and mitigate noise:* *i. Establishing vehicle noise control limits for events and monitoring to verify compliance with these limits* *ii. Managing the use of the public address system to minimise noise Coordination with other motorsports operators to minimise noise from concurrent events.* iii. *Establishment of a complaints handling and response procedure.*	*Main Operational Site*	This document			
TTP8	*Public Transport and Accessibility during Major Events*	*Opportunities to enhance public transport accessibility to the project would be investigated, including the provision of bus services and bus stop infrastructure to service major events.*	*All Areas*			Section 7.2	Section 7.2
TTP9	*Property Access for Emergency Vehicles*	*Access to other properties within Western Sydney Parklands Precinct 5; Eastern Creek Motor Sports for emergency vehicles would be provided at all times.*	*All Areas*			Section 7.3	Section 7.3
TTP10	*Impacts to road network performance during events at the project site (including concurrent operations)*	*An operational traffic management plan would be developed by the operator of Sydney International Speedway and would include traffic measures to minimise impacts to road network performance during peak event times. The traffic management plan would consider measures to be implemented to manage the arrival and exit of vehicles to the project site, including traffic marshalling and the use of temporary traffic signals when major events are scheduled at the same time as Sydney Dragway.*	*All Areas*			Section 5.2 Section 7	Section 5.2 Section 7

Table 6: Management & Mitigation Commitments (continued)

Reference	Issue	Mitigation Measure	Site Location	OEMP	OAQMP	OTTMP	ONMP
SWW6	*Surface Water Discharge*	*Water treatment infrastructure would be designed to include appropriate water quality measures so that surface water runoff is treated taking into consideration the pollutant reduction target criteria taken from Table 2 of Part J: Water Sensitive Urban Design and Integrated Water Cycle Management of the Blacktown Development Control Plan 2015. to a level that is compliant with the ANZECC/ARMCANZ (2000) and ANZG (2018) default guidelines for 95 per cent species protection.*	*All Areas*	Resolved through Design			
SWW7	*Water quality monitoring*	*An operational surface water monitoring program would be implemented to observe any changes in surface water quality that may be attributable to the project and inform appropriate management responses. The monitoring program would be developed and implemented to align with the preconstruction and construction monitoring described in SSW5.*	*All Discharge Points*	Appendix H WQ OMP			

Table 7: Desired Performance Outcomes

Issue	Desired performance outcome from SEERs	Speedway Performance Outcome	How the Project addresses Performance Outcomes	Reference
Traffic, Transport and Parking	*Network connectivity, safety and efficiency of the transport system in the vicinity of the project are managed to minimise impacts.*	*Events will be coordinated through a Major Events Operations Plan to minimise the impact of concurrent Major Events on traffic, noise, dust and parking*	The Speedway EIS parking assessment concludes that sufficient parking capacity is provided for the concurrent operation of the Speedway and Dragway. Notwithstanding, concurrent Major Events will not be permitted prior to the preparation of a *Major Events Management Plan.*	OTTMP Section 7
		Approximately 2,800 parking spaces are provided across the Speedway and Dragway sites, sufficient to accommodate parking demand for a Major Event at the Speedway on a Saturday evening, and for concurrent minor race events at the Speedway and Dragway on a Friday evening.	Potential impacts on existing Dragway parking have been minimised through the provision new parking across the Speedway and Dragway sites. The Speedway and Dragway operators have entered into a reciprocal car parking agreement which permits the sharing of the Speedway and Dragway parking areas between both the Speedway and the Dragway for major and other events as necessary. Each motorsports operator would have exclusive access to the broader Site on agreed dates during the year in accordance with an events calendar, with other operators not permitted to hold a concurrent event unless with the agreement of the operator who has exclusive access.	OTTMP Section 7
	Impacts on network capacity and the level of service are effectively managed.	*Potential operational impacts to local roads are minimised through event scheduling*	Impacts to the road network during operation of the project are expected to be minor and manageable with the implementation of appropriate traffic management.	OTTMP Section 7

Table 7: Desired Performance Outcomes (continued)

Issue	Desired performance outcome from SEERs	Speedway Performance Outcome	How the Project addresses Performance Outcomes	Reference
Noise & Vibration: Amenity	*Operation noise and vibration (including airborne noise, ground borne noise) are effectively managed to minimise adverse impacts on acoustic amenity.*	*Potential operational noise and vibration levels are minimised during race events.*	Further details on potential noise impacts and mitigation is provided in the ONMP.	ONMP Section 3
Noise & Vibration: Structural	*Increases in noise emissions and vibration affecting environmental heritage as defined in the Heritage Act 1977 during operation of the project are effectively managed.*	*Structural damage to buildings and heritage items from operation vibration is avoided.*	There are not expected to be any potential impacts on structures from operational vibration.	Resolved through Design
Biodiversity	*The project design considers all feasible measures to avoid and minimise impacts on terrestrial and aquatic biodiversity.*	*Impacts to threatened species or ecological communities as listed under the Commonwealth Environmental Protection and Biodiversity Act 1999 are avoided*	Development of the carparking layout has avoided impacts to threatened ecological communities where possible. Opportunities to further minimise vegetation clearance would be considered as part of further design development.	Resolved through Design
	Offsets and/or supplementary measures are assured which are equivalent to any residual impacts of project construction and operation.	*Impacts on biodiversity are avoided (where possible) and minimised, including the clearing of native vegetation* *Biodiversity impacts are offset in accordance with the Biodiversity Conservation Act 2016.*	There would be no impacts to biodiversity protected under the Commonwealth *Environmental Protection and Biodiversity Act 1999.*	Resolved through Design

Table 7: Desired Performance Outcomes (continued)

Issue	Desired performance outcome from SEERs	Speedway Performance Outcome	How the Project addresses Performance Outcomes	Reference
Heritage	*The operation of the Speedway facilitates, to the greatest extent possible, the long term protection, conservation and management of the heritage significance of items of environmental heritage and Aboriginal objects and places.*	*Impacts to known Aboriginal sites are avoided*	The Site footprint has been designed to avoid nearby areas identified as Potential Archaeological Deposits.	Resolved through Design
	The operation of the Speedway avoids or minimises impacts, to the greatest extent possible, on the heritage significance of environmental heritage and Aboriginal objects and places.	*Direct impacts to non-Aboriginal heritage items are avoided*	The project would not have any direct or indirect impact on non-Aboriginal heritage, including visual impacts to 'Prospect Reservoir and surrounding area' heritage item, which have been assessed as negligible.	Resolved through Design
		Indirect visual impacts to nearby non-Aboriginal heritage items are minimised		
		Accidental impacts to heritage items are avoided.		
Air Quality and Dust Generation	*The project is designed, constructed and operated in a manner that minimises air quality impacts (including nuisance dust) to minimise risks to human health and the environment to the greatest extent practicable.*	*Dust would be managed during operation within agreed levels, established through a dust monitoring program, that allow the safe operation of the Sydney Dragway*	The project would not result in exceedances of air quality criteria during operation of the project for receivers for which there are criteria under the Environment Protection Authority's *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales (2016)*.	OAQMP Section 5
		Impacts from dust would be minimised.	Project specific dust management criteria will be developed for Dragway based on dust monitoring and dispersion modelling, with the construction contractor and Speedway operator required to limit dust deposition on Dragway within agreed levels and in accordance with an air quality management plan.	OAQMP Section 4.2

Table 7: Desired Performance Outcomes (continued)

Issue	Desired performance outcome from SEERs	Speedway Performance Outcome	How the Project addresses Performance Outcomes	Reference
Design, sustainability and visual amenity	*The project contributes to a high quality public space.*	*The design reflects the principles of the Western Sydney Trust Design Manual (Version 2) (Western Sydney Parklands Trust, 2018)*	The design has been developed to be consistent with the principles of the *Western Sydney Trust Design Manual* (Version 2) (Western Sydney Parklands Trust, 2018), where reasonable and feasible. The primary architecture of the venue has adopted the Western Sydney Parklands Trust recommendations for pavilion buildings. The design includes landscaping surrounding all carparking areas with new vegetation to better integrate into the precinct, including the planting of about 1000 trees.	Resolved through Design
	The project design complements the visual amenity, character and quality of the surrounding environment.			
	The project contributes to an increase in tree plantings and tree canopy.			
	The project minimises adverse impacts on the visual amenity of the built and natural environment (including public open space) and capitalises on opportunities to improve visual amenity.			
Safety & Risk	*The project avoids or minimises any adverse health impacts arising from the project.*	*Dangerous goods are transported, stored and used so as to not cause a hazardous event.*	Potential hazards associated with the on- site storage, use and transport of chemicals, fuels and materials used would be managed in accordance with the *Work Health and Safety Act 2011*, the *Work Health and Safety Regulation 2017*, the *Storage and Handling of Dangerous Goods Code of Practice* (Work Cover NSW, 2005) and *Applying SEPP 33* (Department of Planning, 2011).	OEMP Table 16
	The project avoids, to the greatest extent possible, risk to public safety.			

Table 7: Desired Performance Outcomes (continued)

Issue	Desired performance outcome from SEERs	Speedway Performance Outcome	How the Project addresses Performance Outcomes	Reference
Water: Quality	*The project is designed, constructed and operated to protect the NSW Water Quality Objectives where they are currently being achieved, and contribute towards achievement of the Water Quality Objectives over time where they are currently not being achieved, including downstream of the project to the extent of the project impact including estuarine and marine waters (if applicable).*	*Water quality discharge criteria are established with consideration of NSW Water Quality Objectives*	Appropriate water quality controls have been included in the design of Speedway operations to minimise the potential for the project to impact on water quality. A Surface Water Monitoring Program will be in place throughout	WQ OMP Section 4 Section 5
		Stormwater runoff from the project is effectively treated to meet water quality discharge criteria.	Appropriate water quality controls have been included in the design of Speedway operations to minimise the potential for the project to impact on surface water runoff	
Water: Hydrology	*Long term impacts on surface water and groundwater hydrology are minimised.*	*Water quality impacts of the project are neutral or beneficial*	On-site water detention is provided in accordance with Council requirements.	Resolved through Design
		Surface water flows are managed in accordance with Council requirements.		
	The environmental values of nearby, connected and affected water sources, groundwater and dependent ecological systems are maintained (where values are achieved) or improved and maintained (where values are not achieved).	*Surface water flows are managed in accordance with Council requirements*	On-site water detention is provided in accordance with Council requirements. Rainwater harvesting and non-potable water storage is provided on site as an alternative to the use of potable water where appropriate.	Resolved through Design
	Sustainable use of water resources.			

Table 7: Desired Performance Outcomes (continued)

Issue	Desired performance outcome from SEERs	Speedway Performance Outcome	How the Project addresses Performance Outcomes	Reference
Social and Economic	*No desired performance outcome from Secretary's Environmental Assessment Requirements*	*Negative impacts on stakeholders and the community (including transport services, amenity, noise and vibration, water management and air quality) are minimised*	The implementation of noise, air quality and traffic mitigation measures would minimise the potential amenity impacts associated with the project.	OAQMP OTTMP ONVMP
		Affected stakeholders are communicated with in a clear and timely manner to enhance community benefits, reduce disruption and address concerns.	Stakeholder engagement has been ongoing throughout the design development.	OEMP Section 1.4
Flooding	*No desired performance outcome from Secretary's Environmental Assessment Requirements.*	*Existing upstream and downstream flooding conditions are not increased during operation.*	Whilst drainage catchments would be slightly altered by the project, the design includes on-site detention tanks to manage the flow of stormwater across the project site to appropriate flow rates in keeping with pre-development flows.	Resolved through Design
Climate Change Adaptation	*No desired performance outcome from Secretary's Environmental Assessment Requirements.*	*Comprehensively address climate change risks during the design life of the Sydney International Speedway for all risks rated 'medium' or higher.*	Climate change risk treatments have been confirmed and incorporated into the detailed design for the project.	Resolved through Design

Table 7: Desired Performance Outcomes (continued)

Issue	Desired performance outcome from SEERs	Speedway Performance Outcome	How the Project addresses Performance Outcomes	Reference
Waste Management	*No desired performance outcome from Secretary's Environmental Assessment Requirements.*	*Waste is managed appropriately in accordance with the waste hierarchy*	Waste streams will be segregated to avoid cross-contamination of materials and maximise recycling opportunities.	Event Plan Section 3.8
		The use of potable water for non-potable purposes is avoided if non-potable water is available	On-site water use and management has been provided in accordance with Council requirements.	Resolved through Design
		The reuse of water is maximised, either on site or off site.		
Property & Land Use	*No desired performance outcome from Secretary's Environmental Assessment Requirements.*	*The Sydney International Speedway is effectively integrated with land use planning.*	The project is consistent with the Western Sydney Parklands Plan of Management 2030.	Resolved through Design

3 The Speedway

3.1 Location

The Speedway is located on land east of Fullers Road, and immediately north of the Warragamba Pipeline. The Speedway is shown in its local context in Figure 1 and regional context in Figure 2.

Figure 1: Speedway Site Local Context

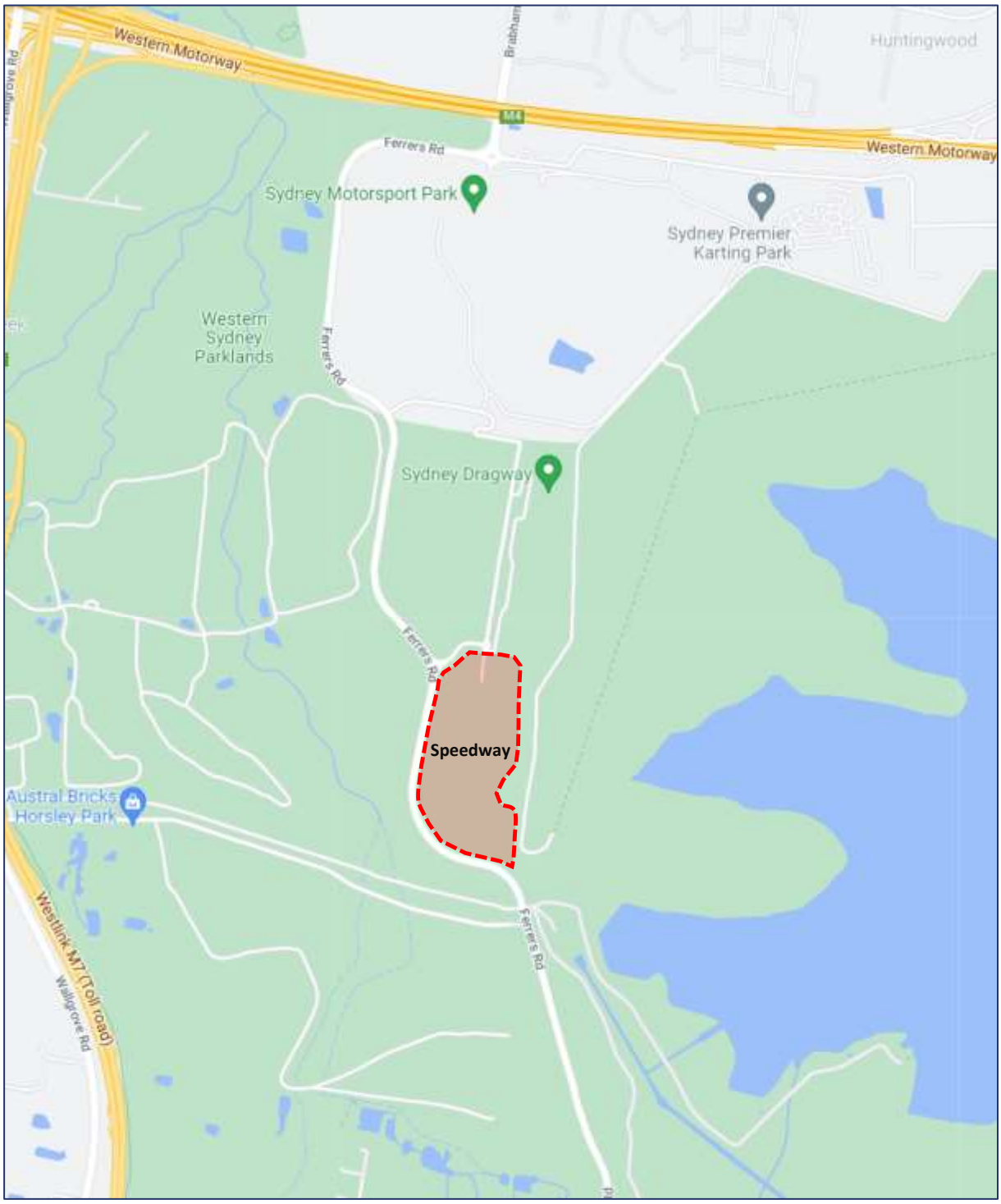
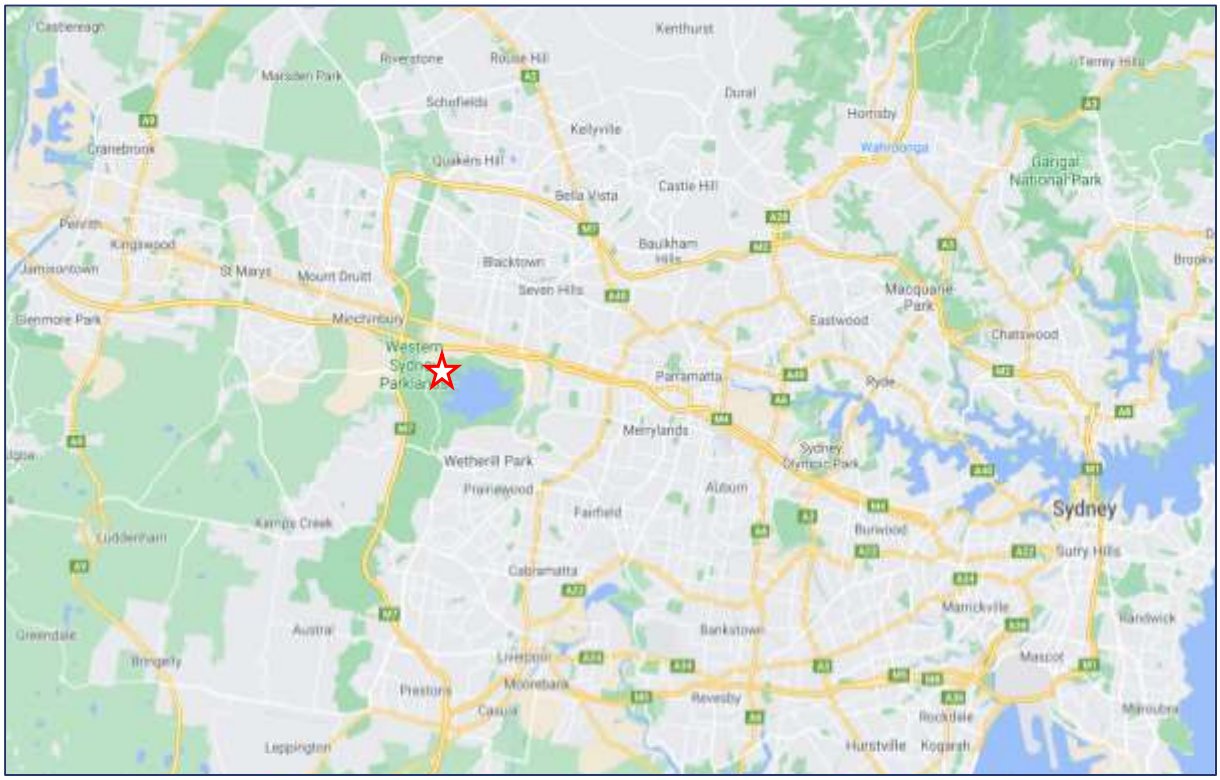


Figure 2: Speedway Site Regional Context



3.2 Speedway Activities

The Speedway will provide:

- A world-class clay-based racetrack for speedway cars including sprintcars, wingless sprints, Midgets, V8 Dirt Modifieds and Formula 500 cars;
- A new grandstand and terraced seating accommodating up to 7,000 spectators;
- Public amenities, corporate boxes, food, beverage and merchandise outlets;
- Dedicated on-site parking for Speedway competitors (**Car Park B**) and spectators (**Car Park A** and **Car Park C**) in accordance with a Reciprocal Car Parking Agreement with the Dragway;
- A dedicated competitor **Pit Area** to service the speedway, including workshops, garages and trackside support areas;
- All entry to the Speedway via the existing Speedway access road intersection with Ferrers Road (**Intersection 1**); and
- All departures from the Speedway's spectator car parks via Intersection 1, and all departures from the Pit Area and Car Park B via a new intersection to Ferrers Road at the southern end of the Site (**Intersection 2**).

The Speedway Site Plan is provided in Figure 3, and also identifies the existing intersection of Ferrers Road and the Dragway and Motorsports Park access road (**Intersection 3**).

Figure 3: Speedway Site Plan

Source: Sydney Metro

3.3 Speedway Operations

3.3.1 General Speedway Operations

The Speedway Approval allows the Speedway to be operational year-round, though most Speedway Events are to be held during the typical speedway racing season (September to May). The Speedway has the ability to be used for a variety of speedway track racing events, including those previously held at the Sydney Speedway at Clyde.

3.3.2 Speedway Event Schedule

On average, it is expected that the Speedway will host:

- 10 Major Events per year, attracting approximately 4,000 to 6,000 spectators;
- 30 – 35 Average Events per year, attracting approximately up to 3,000 spectators;
- 10 Minor Events per year, attracting approximately up to 1,500 spectators; and
- Practice sessions, typically for competitors and teams, across the year.

Major Events will typically be held on Saturdays, and Minor Events will typically be held on weekends (Saturdays and Sundays); for all Events, gates will open to spectators at 1:00pm, with racing occurring between 4:00pm and 11:00pm. It is noted that the Speedway EIS assessment was based on races being completed by 10:00pm, but the extension of race hours to 11:00pm was recently approved in the *Planning Approval Consistency Assessment Form: Sydney International Speedway Operating Hours* 2021 prepared by Sydney Metro (**Operating Hours Approval**).

There are typically 60 to 120 competitors per Speedway Event, with each competitor to be provided with parking for their racing vehicle(s), and for larger vehicles transporting the racing vehicle(s) to and from the Speedway (see Section 3.4).

The typical schedule for a Speedway Event Day is shown in Table 8.

Table 8: Speedway Event Day Schedule

Speedway Event Item	Schedule
Competitor Access	1:00pm – 4:00pm
Event Staff Arrival	Prior to 1:00pm
Car Parks Open to Public	1:00pm
Pre-Event Entertainment	1:00pm – 4:00pm
Pre-Event Races	4:00pm - 6:00pm
Main Race Events	6:00pm - 11:00pm
Spectator Departures	11:00pm - 12:00pm
Speedway Close	12:30pm

Source: Speedway Promotions

3.4 Vehicle Access

3.4.1 Speedway Access

All entry to the Speedway will be via the existing Speedway access road running east from Intersection 1, which in turn provides access to all spectator car parks, and to the Pit Area and Car Park B in the southern portion of the Site.

All departures from the Speedway's spectator car parks will be via Intersection 1, while all departures from the Pit Area and Car Park B will be via Intersection 2.

3.4.2 Competitor Access

All competitor access to the Site will be via Intersection 1, through Car Park A and then **Pit Road** which runs between Car Park A and the Pit Area; all departures from the Pit Area and Car Park B will be via Intersection 2, i.e. no competitors will depart to the north via Pit Road to Intersection 1.

With reference to the *Planning Approval Consistency Assessment Form: Sydney International Speedway Amended Access Proposal* prepared by Sydney Metro (**Access Approval**), any large competitor vehicles (over 10m) arriving at the Site after 4:00pm will enter the Site via Intersection 2 (under Speedway staff supervision) to maximise the safety of spectators (vehicles and pedestrians) in Car Park A.

3.4.3 Staff Access

Parking for Speedway administrative staff is to be provided along Pit Road adjacent to the Speedway administration buildings; additional parking for Speedway works and maintenance staff parking is provided adjacent to the maintenance shed in the southern part of the Site.

With reference to the Access Approval, Speedway staff will be able to use Pit Road for two-way vehicles movements, but these are expected to be minimal during competitor entry periods.

3.4.4 Emergency Vehicle Access

Emergency vehicle access will be available to all parts of the Site at all times; this will include two-way access in Pit Road.

3.5 Parking

The total number of parking spaces to be provided for Speedway competitors, and Speedway and Dragway spectators, is detailed in Table 9. The Speedway and Dragway operators have entered into a Reciprocal Car Parking Agreement which permits the sharing of the Speedway and Dragway parking areas between both the Speedway and the Dragway for Major Events and other Events as necessary.

Table 9: Speedway and Dragway Car Parks

Car parking area	Competitor parking spaces	Spectator parking spaces
A	-	600
B	150	-
C	-	460
D	-	1760
Total car parking spaces	150	2820

Source: Speedway EIS

3.6 Speedway Environmental Support Infrastructure

3.6.1 Stormwater Management

A pit and pipe system has been installed across the Site to collect and transport stormwater run-off into stormwater drains; water will then flow to the on-site detention tanks located across the Site before being treated in accordance with BCC water quality targets. Stormwater run-off would ultimately be discharged into the existing culverts underneath Ferrers Road, and from there flow into local waterways.

The stormwater drainage system has been designed to provide capacity to convey stormwater flows from the broader Speedway and Dragway sites during a 100 year average recurrence interval storm event.

3.6.2 Onsite Water Detention

On-site detention storage tanks are located in the car park areas, beneath the Speedway track and beneath the terraced seating areas. These will provide adequate system capacities and mitigate potential flood impacts and increases in stormwater discharge from the Site.

In addition to the on-site detention tanks, three rainwater harvesting tanks are provided across the Site, with a combined capacity of approximately 200 cubic metres. The rainwater tanks will collect surface run-off and run-off from the grandstand roof for non-potable uses within the Site, including:

- Irrigating the track during a race Event;
- Flushing toilets and for use within the garbage room of the grandstand facility; and
- Hose taps and at washdown areas across the Site.

3.6.3 Waste water management

Waste water includes a combination of discharge from amenity buildings, trade waste and grease waste. A plumbing system will convey the flow of waste water from the Site via gravity feed to the existing Dragway connection to the Sydney Water sewer main for discharge via Brabham Drive.

All trade and grease waste discharges will be pre-treated prior to entering Sydney Water's sewer main. Trade waste includes liquid discharges from racetrack facilities including wash down areas, pit facilities, waste management areas, loading docks and garage workshop areas, while grease waste includes liquid discharges from retail areas with hot food cooking operations and bin wash areas.

These systems have been designed in accordance with Sydney Water's trade waste policy requirements.

3.6.4 Signage

All wayfinding and signage for the Speedway has been developed in accordance with the WSP Design Manual (**WSP Design Manual**) and includes signage relating to the Speedway entry points; directional signage for vehicles; identification signage for the Speedway's main facilities and amenities; and pedestrian and wayfinding signage for all people attending the Site.

Signage external to the Speedway also includes the temporary use of variable messaging systems for wayfinding along Ferrers Road on Event days.

3.6.5 Lighting

The Speedway track will be lit during night time Events via a series of LED floodlights mounted on the grandstand roof and on poles around the racetrack, and lighting has been provided to undercover spectator viewing areas where required.

There is lighting provision to all external areas of the Speedway, including access roads, pedestrian pathways, car parks and the Pit Area; all lighting has been provided in accordance with the Australian Standards and Australian & New Zealand Standards.

Interior lighting is provided to all accessible buildings within the Site in accordance with Australian Standards for the specific use of the space and tasks carried out in that space, and incorporates LED technology.

Emergency and exit lighting is also provided to all internal areas.

3.6.6 Communications

Information and communications technology infrastructure that has been installed for the operation of the Speedway includes:

- A public address system;
- CCTV for security; and
- Audio and visual requirements for broadcasting of race events and streaming of races onto video screen.

New communications connections (telephone and fibre optic network to suit internet broadcasting bandwidth and PA/AV provisions) have been installed using new pit and conduit systems to dedicated carrier connections to external networks.

3.6.7 Dust management

Consultation with the Dragway operators has identified airborne dust settling on the Dragway track as a key issue for concern given the potential to disrupt Dragway racing.

As a result, significant dust control and mitigation measures have been developed as part of the racetrack design, layout and operational procedures. These include a vertical mesh screen and vegetation planting to the north-east of the Speedway, behind the terracing, to decrease wind speeds and drop out airborne dust particles as they migrate off site. The screen is approximately 25 metres high (above the Speedway track level) to align with the mature height of the future vegetation. The screen's location to the north-east of the track was selected based on the most common wind direction (from the south-west) and to manage potential dust impacts on the Dragway.

Additional dust control measures are anticipated to include combining the clay material for the Speedway track with additives to minimise the mobilisation of dust during the use of the track; and the use of water suppression during race Events.

Dust mitigation and control protocols have been agreed between the Proponent, Speedway operators and Dragway operators, and are incorporated into both the Speedway lease and the Dragway lease. These protocols include the determination of Baseline Dust Levels through an Air Quality Monitoring Program (**AQ OMP**) and setting dust trigger levels that would avoid impact on Dragway operations.

Further details in regard to the management of dust impacts are provided in the OAQMP (Appendix E).

3.7 Maintenance and other Operational Activities

Outside of racing Events, ongoing operational activities would include general administration and maintenance of the racetrack and support facilities to a good condition, as well as facilitating non-Event activities at the Speedway. No general maintenance or servicing will be undertaken on Event Days.

4 Legislative Framework

4.1 Environmental Planning and Assessment Act 1979

The Environmental Planning and Assessment Act 1979 (**EP&A Act**) and the Environmental Planning and Assessment Regulation 2000 (**EP&A Regulation**) are the primary pieces of legislation regulating land use planning and development assessment in NSW. This legislation is supported by a range of environmental planning instruments including State environmental planning policies (SEPPs) and local environmental plans (LEPs); planning instruments relevant to the OEMP are detailed further in sections below.

4.2 State Significant Infrastructure

Section 5.12(4) of the EP&A Act provides for the declaration of specified development on specified land as State Significant Infrastructure.

The assessment and approval process for an SSI project is established under Part 5, Division 5.2 of the EP&A Act. As part of the Speedway EIS process, Sydney Metro submitted a SSI Application and supporting documentation to the Planning Secretary in March 2020; the Secretary's Environmental Assessment Requirements (**SEARs**) for Sydney were provided to Sydney Metro in May 2020.

The Speedway EIS was subsequently prepared in full accordance with the SEARs and the requirements of Schedule 2, Part 3 of the EP&A Regulation. Further to the completion and submission of the Speedway EIS, DPIE placed the Speedway EIS on public exhibition, during which time the community, stakeholders and Government agencies had the opportunity to review the Speedway EIS and provide written submissions to DPIE for their consideration in its assessment of the Speedway EIS.

At the completion of the public exhibition period, DPIE provided Sydney Metro with a copy of all submissions received. After reviewing the submissions, Sydney Metro prepared the Speedway Submissions Report responding to the relevant issues raised, and also issued the Speedway Amendment Report addressing the changes to the Speedway design detailed in the Speedway EIS so as to further minimise the potential environmental impacts of the Speedway.

Further to their assessment of the Speedway EIS, Speedway Submissions Report and Speedway Amendment Report, the Minister for Planning and Public Spaces issued the Speedway Approval and associated Speedway Conditions in December 2020.

4.3 NSW Environmental Planning Instruments

Section 5.22 of the EP&A Act provides that environmental planning instruments do not, with some exceptions, apply to SSI projects. Notwithstanding, key environmental planning instruments that have been considered for consistency with the operation of the Speedway are detailed in sections below.

4.3.1 State Environmental Planning Policy (State and Regional Development) 2011

State Environmental Planning Policy (State and Regional Development) 2011 (**SEPP SRD**) identifies development that is State Significant Development (**SSD**) or SSI; further to the declaration of the Speedway project as SSI, Schedule 4 of SEPP SRD was amended to include the Speedway.

4.3.2 State Environmental Planning Policy (Western Sydney Parklands) 2009

The Speedway is located within Western Sydney Parklands' *Precinct 5: Eastern Creek Motor Sports*, and as such the project was assessed for consistency with the aims of State Environmental Planning Policy (Western Sydney Parklands) 2009 (**SEPP WSP**). This assessment is detailed in Table 3.2.3 of the Speedway EIS, and determined that the Speedway was entirely consistent with the aims and objectives of SEPP WSP.

4.3.3 State Environmental Planning Policy No.33 – Hazardous and Offensive Development

State Environmental Planning Policy No. 33 – Hazardous and Offensive Development (**SEPP HOD**) applies to any projects that fall under the policy's definition of *potentially hazardous industry* or *potentially offensive industry*; such activities in this regard may involve handling, storing or processing of a range of substances which in the absence of local, national, technical or operational controls may create a potential hazard or offence to people, property or the environment. Such activities would be defined as potentially hazardous or potentially offensive.

The Speedway EIS considered the Speedway project in the context of the *potentially hazardous industry* or *potentially offensive industry* as defined in SEPP HOD. The assessment of potential operational hazards is provided in Chapter 19.6 of the Speedway EIS, and determined that the risks associated with operational hazards can be appropriately managed by the Proponent and the Speedway operator. These hazards, and the operational management response to each, are detailed in Table 16 (PHA-22) and Appendix D, noting that no hazardous or dangerous goods would be stored on-site at any time.

4.3.4 State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Infrastructure) 2007 (**SEPP Infrastructure**) aims to facilitate the effective delivery of infrastructure across NSW. Clause 104 of SEPP 2007 applies to projects listed in Schedule 3, being traffic generating developments, defined in turn as developments with 200 or more parking spaces with access to the public road network.

As such, a detailed assessment of the traffic and transport characteristics of the operation of the Speedway is provided in Chapter 6 of the Speedway EIS, and further detailed in the OTTMP.

4.3.5 Motor Vehicle Sports (Public Safety) Act 1985

The Office of Sport issues licences authorising the holding of motor vehicle race meetings at prescribed grounds pursuant to the Motor Vehicle Sports (Public Safety) Act 1985 (**MVS Act**). A licence will be obtained prior to the commencement of Speedway operations.

4.3.6 Motor Vehicle Sports (Public Safety) Regulation 2015

The Motor Vehicle Sports (Public Safety) Regulation 2015 (**MVS Regulation**) includes requirements for motor vehicle racing grounds and race meetings. While this licence approval process was separate to the Speedway EIS process, the requirements of the MVS Regulation were fully considered and incorporated in the design and construction of the Speedway, and will continue to be an important reference throughout the Speedway operations.

4.3.7 Protection of the Environment Operations Act 1997

Section 120 of the Protection of the Environment Operations Act 1997 (**PEO Act**) prohibits the pollution of waters; the potential pollution of waters was assessed in Chapter 13 and Chapter 15 of the Speedway EIS in regard to soils and surface water, and groundwater and geology respectively. These assessments determined that the risks associated with water quality can be appropriately managed by the Speedway design and by operational management measures to be undertaken by the Proponent and Speedway operator, as detailed in the Operational Water Quality Monitoring Program (**WQ OMP**).

Sections 124 - 126 of the PEO Act relate to air pollution; potential air quality impacts are assessed in Chapter 9 of the Speedway EIS, and determined that the risks associated with air quality can be appropriately managed by the Speedway design and management measures to be undertaken by the Proponent and the Speedway operator, as detailed in the OAQMP.

Part 5.6 of the PEO Act relates to pollution of land and water; potential land and water impacts are assessed in Chapter 22 of the Speedway EIS, which determined that the risks associated land and water pollution can be appropriately managed by the Speedway design and by management measures to be undertaken by the Proponent and Speedway operator, as detailed in the WQ OMP.

4.3.8 Rural Fires Act 1997

Sections 63(1) and 63(2) of the Rural Fires Act 1997 (**RF Act**) require that public authorities and owners/ occupiers of land take all practicable steps to prevent the occurrence of bushfires on, and to minimise the danger of the spread of bushfires on or from, that land.

As the Site is located within a designated bush fire prone area, potential bushfire risks are assessed in Chapter 19 of the Speedway EIS, which determined that the risks associated with bushfire can be appropriately managed by the Speedway design and by management measures to be undertaken by the Proponent and Speedway operator, as detailed in Table 16 (SSHA-02) and the Event Plan.

4.3.9 Waste Avoidance and Resource Recovery Act 2001

The Waste Avoidance and Resource Recovery Act 2001 (**WARR Act**) encourages the most efficient use of resources in order to reduce environmental harm. Waste management is assessed in Chapter 22 of the Speedway EIS, and determined that waste can be appropriately managed by the Speedway operator, as detailed in Table 16 and the Event Plan.

4.3.10 Water NSW Act 2004

The Warragamba Pipelines infrastructure are classified as Controlled Areas under the Water NSW Act 2004 (**Water NSW Act**). Given the location of this infrastructure immediately south of the Site, the potential to impact the pipeline was assessed in Chapter 7 (Noise and Vibration) and Chapter 19 (Hazards) of the Speedway EIS, and determined that the operation of the Speedway would have no impact on this infrastructure.

4.3.11 Water NSW Regulation 2013

Water NSW Regulation 2013 (**Water NSW Regulation**) provides for regulatory powers to manage pollution activities that impact water quality, including those specifically relating to Special Areas and Controlled Areas. The potential impact of Speedway operations on these Special Areas and Controlled Areas are assessed in Chapter 13 of the Speedway EIS, and determined that the risks associated with water quality can be appropriately managed by the Speedway design and by management measures to be undertaken by the Proponent and Speedway operator, as detailed in Table 16 (SMPSH 14) and the WQ OMP.

4.4 Commonwealth Disability Discrimination Act 1992

The Disability Discrimination Act 1992 (**DD Act**) aims to eliminate as far as possible discrimination against persons on the grounds of disability in areas including access to premises and the provision of facilities, services and land. The Speedway has been designed to be independently accessible and in compliance with the objectives and requirements of the DD Act, and such all key parts of the Speedway will continue to be independently accessible throughout Speedway operations.

5 Roles and Responsibilities

5.1 Key Roles and Responsibilities

The key roles and responsibilities in maintaining the highest environmental management throughout the operation of the Speedway are detailed in Table 10. Additional Event Day roles and responsibilities are detailed in Section 3 of the Event Plan (Appendix I).

Table 10: Key Roles and Responsibilities

Role	Responsibility
Proponent	• Ongoing management and maintenance of the Site and key support infrastructure • Revisions to/upgrades of key support infrastructure as required to support standard Speedway operations • Mitigation of any impacts/areas of non-compliance arising from Speedway operations, unless specifically stated otherwise • Engaging consultants to undertake ongoing Compliance Reports, Audits and Operational Monitoring Programs as required under the OEMP, unless specifically stated otherwise • Acting as the primary contact point in relation to environmental performance of the Site and reporting relevant environmental matters to the relevant authorities as required
Speedway Operator	• Overall responsibility for the environmental performance of Event operations • Operational environmental management and impact mitigation for Event operations, unless specifically stated otherwise • On-site operations during Events as detailed in the relevant Sub-Plans and Event Plan • Coordination with emergency services in the preparation for, and during, Events • Maintaining/archiving relevant environmental and monitoring data as required for Compliance Reports, Audits and Operational Monitoring Programs • Environmental training • Complaints management • Incident management • Waste Management
Event Manager	• All Site operations during Events • All Speedway and Event staff • Making the final decision in regard to event changes, or (in consultation with the Race Director and/or Chief Steward) and as to whether the Emergency Plan needs be activated • Leading an Event Day Briefing for all Speedway and Event staff prior to each event • Opening and closing of the Speedway prior to and following an event
Security Manager	• Activating the Emergency Plan and then coordinating with emergency services where required further to consultation with the Event Manager
Speedway and Event Staff	• General management and safety of spectators prior to, during and after an Event, including car park directions and pedestrian wayfinding • Controlling access to Pit Road and the Pit Area
Chief Steward	• In charge of the relevant Racing Division for the applicable Race Meeting • Sole authority for that Racing Division, for the interpretation and enforcement of the Speedway Australia Racing Rules & Regulations, in all respects • Power to direct or instruct such all Speedway Officials in the conduct of their duties
Race Director Clerk of the Course	• Response directly to the Chief Steward for the safe and efficient ‘’on track’ operation of the Race Meeting in accordance with the Speedway Australia Racing Rules & Regulations
Race Secretary Pit Marshal	• Responsible directly to the Chief Steward for the ‘’off track’’ operation of the Race Meeting (e.g. the Pit Area) in accordance with the list of duties under Rule 5.9 of the SA Racing Rules
Volunteer Officials	• Responsible directly to the Chief Steward and/or Clerk of Course • General safety of all spectators, staff and competitors prior to, during and after an Event.

5.2 General Responsibilities

All Speedway and Event staff and general contractors appointed by the Speedway operator will be formally advised of their obligations under the OEMP, and the significance of the OEMP minimising environmental impacts during Speedway operations (see also Section 5.3).

5.3 Environmental Training

5.3.1 Speedway and Event Staff

All Speedway and Event staff will undergo general environmental training along with training for their specific role in Speedway operations, so that all staff understand their obligation to exercise due diligence in regard to environmental matters. While it is acknowledged that the ability of Speedway and Event staff to exercise any significant actions to minimise environmental impacts is limited given the nature of Speedway operations, environmental training will as a minimum include the following:

- A Site induction, detailing the key parts of the Site that requirement management prior to, during and following a Speedway event, and the specific responsibilities of difference staff members.
- The key environmental objectives for Speedway operations as detailed in the OEMP, focusing on:
  - Traffic and parking management, including the safe movement of vehicles and pedestrians across the Site, and access restrictions in Pit Road and the Pit Area;
  - Minimising to the extent possible noise impacts associated with the operation of the car parks; and
  - Ensuring that senior staff and race officials are fully aware of the procedures in regard to air quality monitoring during events, and benchmark dust levels where races are required to be halted until appropriate air quality is achieved.
- Appropriate clothing (Hi-Vis) and identification to be worn at all times.
- The location of fire extinguishers and appliances across the Site.
- The location of medical facilities across the Site.
- Emergency exit locations and assembly points.
- The Emergency Response Plan (**Emergency Plan**), more details of which are provided in Section 5 of the Event Plan.

The Speedway operator will be responsible for all Speedway and Event staff training, and maintain detailed records of all training, to include:

- Name of staff member;
- When the staff member was trained, and by whom; and
- The Speedway operations for which they were trained, and general outlined of the training for those operations.

5.3.2 Race Officials and Staff

All Race officials and staff will similarly undergo general environmental training along with training for their specific role in Speedway operations, so that all staff understand their obligation to exercise due diligence for environmental matters.

Along with all of the training components required for Speedway and Event staff as detailed in Section 5.3.1, additional special training and instructions will be provided to key safety staff, including fire marshals, paramedics and medical staff, tow truck and push car drivers, and all other infield personnel. This additional training will focus on:

- Incident management, including appropriate actions to be undertaken in the event of a crash; spectator or competitor injury; fire control; hazardous material spills and other emergency situations;
- The appropriate clothing to be worn by all race officials and staff depending on their location across the Speedway;
- The Speedway Australia Racing Rules & Regulations (**Speedway Australia Racing Rules**);
- The Speedway Australia Track Operations Manual (**Speedway Australia Track Manual**) requirements and controls;
- The Speedway Work, Health & Safety Management System (**Speedway WHSMS**) requirements and controls; and
- The Emergency Plan.

Environmental training for race officials and staff will be the responsibility of the Speedway operator and Speedway Australia through the specific training and qualification protocols detailed in the SA Rules, and SA Track Manual.

5.3.3 Competitors

All competitors will be provided with summary documentation reflecting their obligations to safety and environmental awareness while participating in Events. All competitors will necessarily be required to comply with the stringent requirements of all parts of the Speedway Australia Racing Rules and Speedway Australia Track Manual, and also adhere to competitor requirements and responsibilities detailed in the Event Plan.

5.4 Environmental and Emergency Contacts & Emergency Plan

Details of key environmental and emergency contacts are provided in Table 11, and emergency management procedures during an Event are detailed in the Emergency Plan, which is provided as Section 5 of the Event Plan.

Table 11: Emergency Contacts

Title	Name	Contact Number
Operator and Proponents		
Speedway Operator	(TBC prior to operations)	(07) 3277 7745 (Temporary)
Event Manager	(TBC prior to operations)	(07) 3277 7745 (Temporary)
Greater Sydney Parklands	N/A	(02) 9895 7500
Sydney Metro	N/A	1800 171 386
Emergency Services		
NSW Police	N/A	000 (Emergency) 131 444 (Non-Emergency)
Fire and Rescue NSW	N/A	000 (Emergency) 1300 729 579 (Non-Emergency)
NSW Ambulance	N/A	000 (Emergency) 1300 655 200 (Non-Emergency
External Parties		
EPA	N/A	(02) 9955 5000 131 555
SafeWork NSW	N/A	131 050
Blacktown City Council	N/A	(02) 9839 6000
Transport Management Centre	N/A	131 700
Speedway Australia	N/A	(08) 8139 0777

6 Environmental Reporting

6.1 Operational Monitoring Program

Speedway Conditions D9 and D10 detail the requirements for Operational Monitoring Programs (**OMP**s) to be developed and implemented in regard to air quality, and traffic and transport. These OMPs are provided in the OAQMP and OTTMP respectively, and Table 4 provides a reference to where the sub-requirements of Speedway Condition D10 are provided in these OMPs.

While the Speedway Conditions do not identify the need for a specific water quality monitoring program, Speedway Commitment SWW7 requires that a WQ OMP be implemented *to observe any changes in surface water quality that may be attributable to the project and inform appropriate management responses*.

In accordance with Speedway Commitment SWW7, the WQ OMP (Appendix H) has been *developed and implemented to align with the preconstruction and construction monitoring described in SSW5*, i.e. in accordance with the water quality monitoring program prepared for the construction of the Speedway (**WQ CMP**), which includes water sampling, assessment and mitigation parameters agreed further to consultation with the NSW Environment Protection Authority (**EPA**) and BCC.

6.2 Compliance Reports

In accordance with Speedway Conditions A29 – A33, Compliance Reports will be prepared with reference to the Compliance Reporting Post Approval Requirements (**CRPA Requirements**). In accordance with the CRPA Requirements:

- Compliance Reports will be prepared through the duration of Speedway operations, or as otherwise agreed with the Planning Secretary.
- Compliance Reports will be prepared at intervals no greater than one (1) year, and each will be submitted to DPIE via the Major Projects portal.
- The Compliance Reports will document the compliance status of Speedway operations in accordance with the CRPA Requirements, and will be structed in accordance with Section 3.1 of the CRPA Requirements, to include:
    - A brief overview of the project;
    - A table of actions arising from previous Independent Audit and/or Compliance Reports;
    - The total number and details of the non-compliances identified during the reporting period;
    - The total number of incidents and proposed actions for reducing the recurrence of incidents; and
    - A table of complaints received and proposed actions for reducing the recurrence of incidents.
- A detailed Compliance Table to include:

- The Speedway Condition number;
- The compliance requirement in regard to each Speedway Condition;
- The applicable timing for compliance with each Speedway Condition;
- Evidence of compliance/non-compliance with each Speedway Condition; and
- Compliance status as determined in the Compliance Report assessment.

Each Compliance Report will be accompanied by a declaration by the Authorised Reporting Office.

6.3 Independent Audits

In accordance with Speedway Conditions A29 – A33, Independent Audits will be prepared with reference to the Independent Audit Post Approval Requirements (**IAPA Requirements**). In accordance with the IAPA Requirements:

- The Independent Audits will be prepared by independent Auditors with input from technical specialists as required; the appointment of the Auditor and technical experts will be agreed in writing by the Planning Secretary before each audit is commissioned.
- Independent Audits will be prepared within 26 weeks of Speedway operations commencing, and then every 3 years or as otherwise agree with the Planning Secretary;
- The Auditor must consult with DPIE, who may request that other parties or agencies are consulted, to obtain their input into the scope of the Independent Audits. Comments received during such consultation must be recorded and reported in the Independent Audit.

The Independent Audit will include:

- An assessment of compliance with:
  - All Speedway Conditions applicable to the operation of the Speedway;
  - All Post-Approval and Compliance documents prepared to satisfy the Speedway Conditions, including an assessment of the implementation of the OEMP and Sub-Plans; and
  - All environmental licences and approvals applicable to Speedway operations.
- A review of the environmental performance of Speedway operations, including but not necessarily limited to, an assessment of:
  - Actual impacts compared to predicted impacts documented in the Speedway EIS;
  - Incidents, non-compliances and complaints that occurred or were made during the Independent Audit period;
  - The performance of Speedway operations having regard to agency policies, guidelines, and any particular environmental issues identified through the Independent Audit consultation period; and
  - Feedback received from DPIE and other relevant agencies and stakeholders on the environmental performance Speedway operations during the Independent Audit period.

- The status of the implementation of previous Independent Audit findings, recommendations and actions (if any).
- A high-level assessment of whether the OEMP and Sub-plans provide appropriate detail to minimise any environmental impacts associated with Speedway operations.
- Any other matters considered relevant by the Auditor or DPIE, taking into account relevant regulatory requirements and legislation, and past information in regard to the operation of the Speedway.

6.4 Complaints

6.4.1 Complaint Management

Complaints received relating to an Event will be collected via email, phone or through the Speedway operator's website; where complaints are received, they will be managed in accordance with the actions detailed in Table 12.

Table 12: Complaint Management

Issue	Action	Escalation
Anti-Social Behaviour	Advise onsite security staff to investigate	If behaviour escalates, advise NSW Police
Illegal Parking	Advise onsite security staff to investigate	If the issue is causing a traffic or safety issue, advise NSW Police
Crowd Swell	Advise onsite security staff to manage, including providing announcements and instructions, and continue to monitor through CCTV	
Dust	Dust monitors located on Speedway and Dragway	If dust levels exceed approved levels, stop racing and undertake track mitigation (where required) until air quality has returned to approved level.
Noise	Advise Event Manager and investigate noise levels using on-site noise monitors	

6.4.2 Complaints Register

A Complaints Register will be prepared by the Speedway operator and maintained throughout the operation of the Speedway; the Complaints Register will include the following as a minimum:

- The date and time of the complaint;
- The name and contact details of the complainant;

- The type of complaint;
- Response actions;
- The status of the complaint; and
- The satisfaction of the complainant further to the compliant being closed.

A sample Complaints Register is provided in Appendix D.

6.5 Environmental Incident Report

The Incident Reporting and Notification process is detailed in Appendix A of the Speedway Approval, and is reproduced below, noting that the Speedway operator will be required to fully comply with this process.

1. *A written incident notification addressing the requirements set out below must be submittedto the Planning Secretary via the Major Projects website within seven days after the Proponent becomes aware of an incident. Notification is required to be given under this Appendix even if the Proponent fails to give the notification required under Condition A34 or, having given such notification, subsequently forms the view that an incident has not occurred, unless otherwise agreed by the Planning Secretary.*
2. *Written notification of an incident must:*
    a) *identify the SSI and application number;*
    b) *provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);*
    c) *identify how the incident was detected;*
    d) *identify when the Proponent became aware of the incident;*
    e) *identify any actual or potential non-compliance with terms of approval;*
    f) *describe what immediate steps were taken in relation to the incident;*
    g) *identify further action(s) that will be taken in relation to the incident; and*
    a) *identify a project contact for further communication regarding the incident.*
3. *Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Planning Secretary, the Proponent must provide the Planning Secretary and any relevant public authorities (as determined by the Planning Secretary) with a detailed report on the incident addressing all requirements below, and such further reports as may be requested.*
4. *The Incident Report must include:*
    a) *a summary of the incident;*
    b) *outcomes of an incident investigation, including identification of the cause of the incident;*
    c) *details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and*
    d) *details of any communication with other stakeholders regarding the incident.*

6.6 Environmental Training Register

With reference to Section 5.3, a register of all staff and race official training will be prepared by the Speedway operator and maintained throughout the operation of the Speedway. A sample Training Register is provided in Appendix D.

6.7 Waste Management Register

With reference to Section 4.3.9, a private waste contractor will be engaged to manage all waste activities across the Site, and they will be required to maintain a Waste Management Register throughout the operation of the Speedway. A sample Waste Management Register is provided in Appendix D.

7 OEMP Implementation

7.1 Risk Assessment

In accordance with the Speedway Approval and the EMP Guidelines, a comprehensive Risk Assessment has been prepared examining all of the potential risks associated with the operation of the Speedway, and the appropriate management activities, mitigation and control measures that will be used/implemented to prevent or minimise environmental impacts.

An Operational Hazard Log has been prepared with reference to TfNSW's Safety Risk Matrix, Safety Frequency and Risk Ratings policies. These policies are provided in the tables below, and the detailed Operational Hazard Log is provided in Table 16, and again references the section of the OEMP, Sub-Plans and/or other OEMP documents where the means of mitigating these hazards to as great an extent as practicable are addressed.

Table 13: TfNSW Safety Risk Matrix

TfNSW Safety Risk Matrix		Illness, first aid or injury not requiring medical treatment.	Illness or minor injuries requiring medical treatment	Single recoverable lost time injury or illness, alternate/restricted duties injury or short-term occupational illness.	1-10 major injuries requiring hospitalisation and numerous days lost, or medium-term occupational illness.	Single fatality and/or 10-20 major injuries/permanent disabilities/ chronic diseases.	Multiple Fatalities iand/or >20 major injuries/permanent disabilities / chronic diseases.
		Insignificant - C6	Minor - C5	Moderate - C4	Major - C3	Severe - C2	Catastrophic - C1
10 times or more every year. Expected to occur frequently during time of activity or project.	**Almost Certain - L1**	**C - Medium**	**B- High**	**B- High**	**A - Very High**	**A - Very High**	**A - Very High**
1 to 10 times every year. Expected to occur occasionally during time of activity or project.	**Very Likely - L2**	**C - Medium**	**C - Medium**	**B- High**	**B- High**	**A - Very High**	**A - Very High**
Once each year. More likely to occur than not occur during time of activity or project.	**Likely - L3**	**D - Low**	**C - Medium**	**C - Medium**	**B- High**	**B- High**	**A - Very High**
Once every 1 to 10 years. More likely not to occur than occur during time of activity or project	**Unlikely - L4**	**D - Low**	**D - Low**	**C - Medium**	**C - Medium**	**B- High**	**B- High**
Once every 10 to 100 years. Not expected to occur during the time of activity or project	**Very Unlikely - L5**	**D - Low**	**D - Low**	**D - Low**	**C - Medium**	**C - Medium**	**B- High**
Less than once every 100 years. Not expected to occur during time of activity or project	**Almost Unprecedented - L6**	**D - Low**	**D - Low**	**D - Low**	**D - Low**	**C - Medium**	**C - Medium**

Source: TfNSW

Table 14: TfNSW Risk Frequency

TfNSW Safety Risk Matrix Risk Frequency	Likelihood - QUALITATIVE EXPECTATION	Likelihood - QUANTITATIVE FREQUENCY
Almost Certain - L1	Expected to occur frequently during time of activity or project.	**10 times or more every year.**
Very Likely - L2	Expected to occur occasionally during time of activity or project.	**1 to 10 times every year.**
Likely - L3	More likely to occur than not occur during time of activity or project.	**Once each year.**
Unlikely - L4	More likely not to occur than occur during time of activity or project	**Once every 1 to 10 years.**
Very Unlikely - L5	Not expected to occur during the time of activity or project	**Once every 10 to 100 years.**
Almost Unprecedented - L6	Not expected to occur during time of activity or project	**Less than once every 100 years.**

Source: TfNSW

Table 15: TfNSW Risk Rating

Risk Rating	Risk Description	Action to be Taken (refer to the Transport Enterprise Risk Management (TERM) Standard 30-ST-164 for more information)
A	**Very High - generally intolerable**	Risks with this rating are generally intolerable and should be avoided. In relation to health and safety and environment, the task must not be performed and alternative solution found - without special dispensation from the Director General. All necessary steps must be taken to reduce the risk below this level without delay.
B	**High - undesirable**	Risks with this rating are undesirable. They can only be tolerated if it is not reasonably practicable to reduce the risk further. In relation to health and safety and environment, the task must not be performed without the explicit concurrence of the Director General Direct Report, who is to verify that all reasonably practicable treatments have been implemented These risks are considered on the verge of being unacceptable and must be given immediate priority.
C	**Medium - tolerable**	Risks with this rating are tolerable if it is not reasonably practicable to reduce the risk further. In relation to health and safety and environment, the task should be reviewed to determine if it can be reduced further and whether all reasonable and practicable controls have been considered / applied.
D	**Low - broadly acceptable**	Risks with this rating are considered to be broadly acceptable. In relation to health and safety and environmental risks, control measures should be effective and reliable and subject to appropriate monitoring. If there are options for further risk reduction and the cost is proportionate to the benefits to be gained, then implementation of these measures should be considered. The risk and its treatment measures should be subject to appropriate monitoring.

Source: TfNSW

Table 16: Operational Hazard Log

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	Hazard	Sub-System	Potential Causes	Potential Consequences	Consequence	Likelihood	Ranking	Safety Control ID	Hazard Control	Hazard Control Owner	Hazard Control Status	Safety Control Verification Evidence	SFAIRP Argument	Hazard Status
PHA-01	Conflict between pedestrians and vehicles including driving dangerously/not following road rules	Civil & Utilities, Track	CA 1: Spectator distracted by the race spectacle, noise etc CA 2: Persons under the influence of drugs (inc. alcohol)	CO 1: Public/spectators incident	Severe - C2	Possible - L3	A - Very High	PHA-01-03	Physical Control to access the gate	O&M	Open	Event Plan Section 4	The risk of public injury/fatality from collision with vehicles driving dangerously will be reduced SFAIRP through the implementation of controls consistent with AS standards and operational best practice. These controls address causes such as poor visibility during Events, driving under influence of alcohol in car parks and internal roads, children in the carriageway and mismanagement of slow moving traffic. These controls include e\s, controlled access gates, physical controls to guide traffic, monitoring of driver behaviour during each race, sufficient lighting with adequate power supply, marshalled car park density control, safe circulation of roadways, high visibility PPE, and a controlled serving of alcohol as appropriate. This is not a novel hazard. The hazard cannot be eliminated due to the nature of operations and is not reasonably practicable to be reduced any further as all credible controls have been applied.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
								PHA-01-04	Monitoring of the driver behaviour during the race and license can be cancelled.	O&M	Open	Track Manual Section 17.3		
								PHA-01-09	Alcohol control for the driver (random testing for some divisions, compulsory for others)	O&M	Open	Racing Rules Section 6		
								PHA-01-10	Controller wearing High viz	O&M	Open	Racing Rules Section 3.3		
								PHA-01-11	No access of children (<16 year old) in the pit area, unless holders of Junior Speedway Australia competition licence (which allows ages 12 and up to compete)	O&M	Open	Track Manual Section 17.3		
								PHA-01-12	Alcohol banned in the Pit area during competition	O&M	Open	Track Manual Section 17.3		

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	**Hazard**	**Sub-System**	**Potential Causes**	**Potential Consequences**	**Consequence**	**Likelihood**	**Ranking**	**Safety Control ID**	**Hazard Control**	**Hazard Control Owner**	**Hazard Control Status**	**Safety Control Verification Evidence**	**SFAIRP Argument**	**Hazard Status**
PHA-02	Race vehicles are refuelled within the precinct	Track	CA 1: Limited quantity of fuel is restricted in the race vehicle tank during the race CA 2: Period to refuel is time limited CA 3: Limitation of fuel race vehicle fuel capacity requires fuel to be stored in the Pit area.	CO 1: Explosion in the Pit area CO 1: Destruction of race vehicle CO 3: Injury of race vehicle support crew and driver	Severe - C2	Possible - L3	A - Very High	PHA-02-01	Refer to Civil of dangerous liquid	O&M	Open	Racing Rules Section 4.28	The risk of fatality from vehicle fire or explosion whilst refuelling within the Site will be reduced SFAIRP through the implementation of controls consistent with operational best practice. These controls address causes such as limited quantity of fuel tank requiring refuelling, limited and rushed refuelling periods and limitations of fuel storage outside race Events. These controls include appropriate management of dangerous and flammable liquids, and refuelling limited to pit area only by qualified personnel. This is not a novel hazard. The hazard cannot be eliminated due to the nature of operations and is not reasonably practicable to be reduced any further as all credible controls have been applied.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
								PHA-02-03	Race crews managing refuelling activities	O&M	Open	Racing Rules Section 4.28		

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	Hazard	Sub-System	Potential Causes	Potential Consequences	Consequence	Likelihood	Ranking	Safety Control ID	Hazard Control	Hazard Control Owner	Hazard Control Status	Safety Control Verification Evidence	SFAIRP Argument	Hazard Status
PHA-03	Presence and storage of flammable and dangerous liquids/equipment	Civil & Utilities, Track	CA 1: Fuel is required to be stored to refuel the race vehicles by competitors CA 2: Product used for cleaning or maintaining equipment or in equipment CA 3: Presence of Glass material (bottles, windows, light fittings) CA 4: Uncontrolled introduction of new materials during operation phase CA 5: Presence of Chemicals (e.g. paints, oils, etc.) for the maintenance of the race vehicles	CO 1: Fire of pit area CO 2: Exposure to toxic fluids/emissions (solvents, materials, oils, fuel, diesel etc.) CO 3: Injury and cut to spectators, public and maintainers/staff CO 4: Exposure toxic products leading to contamination of maintenance staff and ground	Severe - C2	Possible - L3	A - Very High	PHA-03-01	Fire extinguishers checked, certified and dated.	O&M	Open	Racing Rules Section 3.6	The risk of public injury/fatality from exposure to flammable and dangerous liquids/equipment will be reduced SFAIRP through the implementation of controls consistent with AS standards and operational best practice. These controls address causes such as improper storage of fuel, improper storage of cleaning equipment, presence of dangerous materials, uncontrolled introduction of new materials during operations and presence of chemicals. These controls include provision of fire extinguishers and their regular inspection and maintenance, removal of all glass materials in race area at design phase, protection facilities compliant with minimum requirements, controlled access to maintenance facilities and sufficient separation of access road from facility. Importantly, no hazardous materials will be stored on-site This is not a novel hazard. The hazard cannot be eliminated due to the nature of operations and is not reasonably practicable to be reduced any further as all credible controls have been applied. Note that Control #4 was deemed not required during detailed design as fuel tanks are self-bunded and additional bunding is not required.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	**Hazard**	**Sub-System**	**Potential Causes**	**Potential Consequences**	**Consequence**	**Likelihood**	**Ranking**	**Safety Control ID**	**Hazard Control**	**Hazard Control Owner**	**Hazard Control Status**	**Safety Control Verification Evidence**	**SFAIRP Argument**	**Hazard Status**
PHA-04	Presence of large amount of people in the pit area	Civil & Utilities	CA 1: Spectator distracted by the race spectacle, noise etc CA 2: Persons under the influence of drugs (inc. alcohol)	CO 1: Staff/Maintenance worker incident CO 2: Spectator/Public incident CO 3: Injury to public and staff CO 4: Assault of staff	Severe - C2	Possible - L3	A - Very High	PHA-04-01	Controlled access - 12 and up (SP to check for ten year old's) allowed with SA licence. Passes / wrist bands etc for Pit Access. Licence to identify allowed access (with Indemnity)	O&M	Open	Track Manual Section 17.3 Event Plan Section 4	The risk of public/staff injury or fatality from an overcrowded Pit Area due to people under the influence of alcohol or drugs and distractions from noise will be reduced SFAIRP through the implementation of controls consistent with operational best practice. These controls include controlled access of public at Events, and procedures detailed in the Event Plan including marshal control during Events and ticketing with checks. This is not a novel hazard. The hazard cannot be eliminated due to the nature of operations and is not reasonably practicable to be reduced any further as all credible controls have been applied.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
								PHA-04-02	Speedway operator's Concept of Operation	O&M	Open	Track Manual Section 17.3		
								PHA-04-03	Access the pit area controlled by Pit Access pass and restricted access controlled gate from General Admissions area.	O&M	Open	Track Manual Section 17.3 Event Plan Section 4		
								PHA-04-04	Presence of Marshall	O&M	Open	Track Manual Section 17.3 Event Plan Section 4		
								PHA-04-05	Ticket (pit pass) mandatory	O&M	Open	Track Manual Section 17.1 Section 17.2 Section 17.3 Event Plan Section 4		
								PHA-04-06	The operator shall ensure that gates and access to competitor areas are restricted during competition to competitors and officials only	O&M	Open	Track Manual Section 17.1 Section 17.2 Section 17.3 Event Plan Section 4		

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	**Hazard**	**Sub-System**	**Potential Causes**	**Potential Consequences**	**Consequence**	**Likelihood**	**Ranking**	**Safety Control ID**	**Hazard Control**	**Hazard Control Owner**	**Hazard Control Status**	**Safety Control Verification Evidence**	**SFAIRP Argument**	**Hazard Status**
PHA-06	People being struck by vehicles	Civil & Utilities, Track	CA 1: Poor visibility of people during events CA 2: Alcoholised drivers driving in car park and related roads CA 3: Driver ejected from the car in the racetrack during a race CA 4: Transition of people between the racetrack and the pit area	CO 1: Injury or death of maintenance staff and public/spectators	Severe - C2	Possible - L3	A - Very High	PHA-06-02	Gate Access controlled	O&M	Open	Track Manual Section 17.3 Event Plan Section 4	The risk of injury/death to maintenance staff/spectators due to collision with vehicles will be reduced SFAIRP through the implementation of controls consistent with AS standards and operational best practice. These controls address causes such as poor visibility during Events, alcohol influenced drivers, transition of people between race track and pit and driver ejected from car during race. These controls include segregated safe pedestrian paths, controlled gate access, car harness inspection prior to race, delineation of pedestrian walkway, sufficient lighting, access control to grandstand concourse during race, track control system to slow or stop vehicles in the event of an incident, bollards at key access/egress points, event staff monitoring and communication between race control and driver. This is not a novel hazard. The hazard cannot be eliminated due to the nature of operations and is not reasonably practicable to be reduced any further as all credible controls have been applied.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
								PHA-06-03	Competitor vehicle safety and compliance checking undertaken by either self-certification, club/division vehicle checks, and/or pre-post-race scrutineering	O&M	Open	Racing Rules Section 5.6		
								PHA-06-06	Concourse behind grandstand to be closed to vehicle movements during events	O&M	Open	Event Plan Section 4		
								PHA-06-09	Event staff to monitor public movement within paddock/Pit area	O&M	Open	Track Manual Section 17.3 Event Plan Section 4		
								PHA-06-10	1-way communication with the race control to driver to inform	O&M	Open	Racing Rules Section 3.4		
								PHA-06-12	The operator shall ensure that suitable parking areas are allocated to competitor vehicles in the competitor area	O&M	Open	Event Plan Section 3 Section 4		

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	**Hazard**	**Sub-System**	**Potential Causes**	**Potential Consequences**	**Consequence**	**Likelihood**	**Ranking**	**Safety Control ID**	**Hazard Control**	**Hazard Control Owner**	**Hazard Control Status**	**Safety Control Verification Evidence**	**SFAIRP Argument**	**Hazard Status**
PHA-09	The racetrack is made off clay which dusty during the race	Building, Track	CA 1: Racetrack Requirement	CO 1: Driver visibility compromised by dust/environment or clay CO 2: Clay/rocks are flung by racing cars onto the stands CO 3: Dust impacting visibility of the dragway driver and dragway motor performance	Major - C3	Possible - L3	B - High	PHA-09-02	The track curation and maintenance of the track	O&M	Open	Event Plan Section 3.4	The risk of injury to driver and spectators due to clay track will be reduced SFAIRP to an acceptable level through the implementation of controls consistent with AS standards and operational best practice. These controls include fence mesh size to prevent excess dust and debris, track curation and maintenance, signage warning, disclaimer on ticketing, appropriate clay thickness for track use, preparation of surface prior to event. This is not a novel hazard. The hazard cannot be eliminated due to the nature of operations and constraints of race track requirements and is not reasonably practicable to be reduced any further as all credible controls have been applied.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
								PHA-09-04	Disclaimer on spectator ticket about the dangers of motor racing	O&M	Open	Conditions of Entry Conditions of Sale		
								PHA-09-07	Pre-race inspection of the track	O&M	Open	Event Plan Section 3.4 Appendix B		
								PHA-09-08	Preparation of the dryness of the track before event	O&M	Open	Event Plan Section 3.4 Appendix B		
								PHA-09-10	The operator shall provide PPE/Eyewear (for purchase) by spectators	O&M	Open	Event Plan Section 3.11		

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	**Hazard**	**Sub-System**	**Potential Causes**	**Potential Consequences**	**Consequence**	**Likelihood**	**Ranking**	**Safety Control ID**	**Hazard Control**	**Hazard Control Owner**	**Hazard Control Status**	**Safety Control Verification Evidence**	**SFAIRP Argument**	**Hazard Status**
PHA-11	Flying debris due to race vehicle collision	Track	CA 1: Failure of track infrastructure (e.g. fence falling) CA 2: Projectile/car part falls off while racing CA 3: Clay/rocks are flung by racing cars onto the stands CA 4: Car collides/loses control CA 5: Vehicle becomes airborne during a collision incident or due to inadequate weight.	CO 1: Driver incident CO 2: Car collision CO 3: Damage to infrastructure CO 4: Spectator/public incident CO 5: Track official/Pitt Marshall incident	Severe - C2	Possible - L3	A - Very High	PHA-11-04	Vehicles are safety checked either through self-certification, club/division vehicle inspections, or pre and post-event scrutineering	O&M	Open	Racing Rules Section 5.6	The risk of injury/death to driver or staff/spectators due to vehicle collision and flying debris will be reduced SFAIRP through the implementation of controls consistent with AS standards and operational best practice. These controls address causes such as failure of track infrastructure, projectile car parts and clay/rocks, and collision of cars during races. These controls include concrete barricade segregation between spectators and the track, fencing to prevent debris flying into stands, barrier height compliance with Speedway Australia requirements in design, vehicle safety check, fencing adequacy to contain vehicles in the case of collision, track radian specified to ensure fence height is secure. This is not a novel hazard. The hazard cannot be eliminated due to the nature of operations and is not reasonably practicable to be reduced any further as all credible controls have been applied.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	**Hazard**	**Sub-System**	**Potential Causes**	**Potential Consequences**	**Consequence**	**Likelihood**	**Ranking**	**Safety Control ID**	**Hazard Control**	**Hazard Control Owner**	**Hazard Control Status**	**Safety Control Verification Evidence**	**SFAIRP Argument**	**Hazard Status**
PHA-12	Transition of people before and after the event (i.e. Overcrowding on event days leading to crush injuries)	Civil & Utilities, Building	CA 1: Alcoholised drivers driving in car park and related roads CA 2: Disagreement with race scoring result CA 3: Presence of children CA 4: Patience control of slow moving vehicle	CO 1: Injury, assault and strip, fit and fall CO 2: Assault CO 3: Strip, slip and falls leading to injury	Major - C3	Likely - L2	B - High	PHA-12-02	Limitation of the people at the venue (Ticketing booth) [administrative]	O&M	Open	Event Plan Section 3.11	The risk of injury to public due to overcrowding and people movement before and after events will be reduced SFAIRP to an acceptable level through the implementation of controls consistent with AS standards and operational best practice. These controls address causes such as drivers under the influence of alcohol, disagreements between public, presence of children and improper management of slow moving traffic. These controls include compliance with BCA standards in design clearances, control of public capacity at events including ticketing, wayfinding signage, landscaping design to facilitate safe movement, designated footpaths, marshals patrolling event access. This is not a novel hazard. The hazard cannot be eliminated due to the nature of operational and is not reasonably practicable to be reduced any further as all credible controls have been applied.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
								PHA-12-06	Spectator control staff presence by the Operator	O&M	Open	Event Plan Section 3 Section 4		
								PHA-12-08	Playground available during the event	O&M	Open	Event Plan Section 3.11		

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	Hazard	Sub-System	Potential Causes	Potential Consequences	Consequence	Likelihood	Ranking	Safety Control ID	Hazard Control	Hazard Control Owner	Hazard Control Status	Safety Control Verification Evidence	SFAIRP Argument	Hazard Status
PHA-13	Intervention of Emergency responders during big events	Civil & Utilities, Track, Building	CA 1: Big event attracts a large amount of public CA 2: Collision of race cars CA 3: Fainting, fall, injury of spectators CA 4: Overcrowded public leading to breathing issue CA 5: Over-consumption of alcohol CA 6: Low or no presence of emergency services during events	CO 1: Low response of emergency services in the case a traumatic incident occurs during event CO 2: Low response in case of multiple emergency services request CO 3: Aggravation of the injured person condition	Severe - C2	Possible - L3	A - Very High	PHA-13-04	Spectator control staff presence by the Operator	O&M	Open	Event Plan Table 2	The risk of injury/death from low response from emergency providers during events will be reduced SFAIRP through the implementation of controls consistent with BCA and AS standards and operational best practice. These controls address causes such as large public gathering delaying response, collision of multiple cars, injury of spectators in crowd and overcrowding, over consumption of alcohol and reduced presence of emergency personnel. These controls include compliance to BCA standards in design, snatch gap access for emergency services, removable concrete barrier, managed egress of spectators, operator managed emergency access, gated access to competitor area, allowance for emergency service access in carpark including parking bay in carpark and ticketing booth, medical room provisions and wayfinding. This is not a novel hazard. The hazard cannot be eliminated due to the nature of operations and is not reasonably practicable to be reduced any further as all credible controls have been applied.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
								PHA-13-05	Emergency vehicle route from southern entry road to be managed by the Operator	O&M	Open	Event Plan Section 5		
								PHA-13-06	Emergency management plan to detail air ambulance access to infield	O&M	Open	Event Plan Section 5		
								PHA-13-08	On-site medical team during competition, ambulance on site (positioned in competitor pit area)	O&M	Open	Racing Rules Section 3.3 Event Plan Section 5		

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	**Hazard**	**Sub-System**	**Potential Causes**	**Potential Consequences**	**Consequence**	**Likelihood**	**Ranking**	**Safety Control ID**	**Hazard Control**	**Hazard Control Owner**	**Hazard Control Status**	**Safety Control Verification Evidence**	**SFAIRP Argument**	**Hazard Status**
PHA-15	Presence of people and staffs inside the track race before, during and after the event	Track	CA 1: Presence of media inside the track during the event CA 2: Presence of management staff inside the track during the event CA 3: Inside the staffs inside the track during the event	CO 1: Harm or injury to the staffs in case of vehicles collision CO 2: Attraction of spectators to get inside the racetrack	Severe - C2	Possible - L3	A - Very High	PHA-15-01	Controlled presence of persons on the infield during competition (including approved and authorised race officials and infield marshals, other authorised / permitted persons)	O&M	Open	Racing Rules Section 4.27	The risk of fatalities from presence of people and staff inside race track during Events will be reduced SFAIRP through the implementation of controls consistent with AS standards and operational best practice. These controls address causes such as presence of media during Event, presence of management staff and race staff inside track. These controls include approved and controlled access inside track with sufficient clearances to track. This is not a novel hazard. The hazard cannot be eliminated due to the nature of operations and is not reasonably practicable to be reduced any further as all credible controls have been applied.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	**Hazard**	**Sub-System**	**Potential Causes**	**Potential Consequences**	**Consequence**	**Likelihood**	**Ranking**	**Safety Control ID**	**Hazard Control**	**Hazard Control Owner**	**Hazard Control Status**	**Safety Control Verification Evidence**	**SFAIRP Argument**	**Hazard Status**
PHA-16	Spectator can access the pit area	Building, Track	CA 1: Spectator of 17yo or more with a premium ticket can access the Pit Area	CO 1: Person distracted by advertising, race, excitement of the event leading to injury	Major - C3	Possible - L3	B - High	PHA-16-02	General public access to Competitor Pit area restricted during competition to those above age 16 that have purchased an additional pass (ticket) for pit access. (Ages under 16 will be those with Speedway Australia licences competing in the event)	O&M	Open	Track Manual Section 17.3 Event Plan Section 4	The risk of injury to spectators accessing the Pit Area will be reduced SFAIRP through the implementation of controls consistent with AS standards and operational best practice. These controls include approved and controlled access, pass and induction at gate during the event. This is not a novel hazard. The hazard cannot be eliminated due to the nature of operation and is not reasonably practicable to be reduced any further as all credible controls have been applied.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
								PHA-16-03	Operator to manage access into the pit area (fencing and gates are included in the design)	O&M	Open	Track Manual Section 17.3 Event Plan Section 4		
PHA-17	Increased level of dust from the racetrack	Track	CA 1: The racetrack in clay causes dust propagation CA 2: The racetrack is made off clay which dusty during the race	CO 1: Driver visibility compromised by dust/environment or clay CO 2: Clay/rocks are flung by racing cars onto the stands CO 3: Dust impacting visibility of the dragway driver and dragway motor performance	Major - C3	Possible - L3	**B - High**	PHA-17-03	Track curation	O&M	Open	Event Plan Section 3.4	The risk of injury to driver or spectator from increased level of dust on track will be reduced SFAIRP through the implementation of controls consistent with AS standards and operation best practice. These controls include mesh fencing at circuit side to protect spectators, dust screens where applicable, track curation to limit excess debris, signage warning on safety fence and information providing upon ticketing and entry. This is not a novel hazard. The hazard cannot be eliminated due to the nature of operation and is not reasonably practicable to be reduced any further as all credible controls have been applied.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
								PHA-17-05	Information of hazard to be provided on ticketing and/or entry signage	O&M	Open	Event Plan Section 6.2		

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	**Hazard**	**Sub-System**	**Potential Causes**	**Potential Consequences**	**Consequence**	**Likelihood**	**Ranking**	**Safety Control ID**	**Hazard Control**	**Hazard Control Owner**	**Hazard Control Status**	**Safety Control Verification Evidence**	**SFAIRP Argument**	**Hazard Status**
PHA-18	Fragmented clay pieces impacting spectators	Building, Track	CA 1: The racetrack in clay causes dust propagation CA 2: The racetrack is made off clay which dusty during the race	CO 1: Pieces of clay can cause injury to spectators	Major - C3	Possible - L3	B - High	PHA-18-05	Information of hazard to be provided on ticketing and/or entry signage	O&M	Open	Event Plan Section 6.2	The risk of injury to spectators from fragmented clay pieces from track will be reduced SFAIRP through the implementation of controls consistent with BCA and AS standards and operational best practice. These controls include signage warning around safety fence, compliance with BCA standards where applicable, safety fence mesh to protect spectators, offset seating from clear zone and information on hazards upon ticketing and entry. This is not a novel hazard. The hazard cannot be eliminated due to the nature of operations and is not reasonably practicable to be reduced any further as all credible controls have been applied.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	**Hazard**	**Sub-System**	**Potential Causes**	**Potential Consequences**	**Consequence**	**Likelihood**	**Ranking**	**Safety Control ID**	**Hazard Control**	**Hazard Control Owner**	**Hazard Control Status**	**Safety Control Verification Evidence**	**SFAIRP Argument**	**Hazard Status**
PHA-19	Impact of race vehicle to the fence during an race accident	Track	CA 1: Poor adhesion to track surface (including spill on track) CA 2: Track condition CA 3: Car breaking/acceleration/steering failure CA 4: Driver visibility compromised by dust/environment or clay CA 5: Driver not fit for work CA 6: Miscommunication leading to unexpected movement CA 7: Driver competency	CO 1: Driver incident CO 2: Car collision CO 3: Damage to track/surrounding infrastructure CO 4: Track official/Pitt Marshall incident CO 5: Staff/Maintenance worker incident	Severe - C2	Possible - L3	A - Very High	PHA-19-05	Track curation	O&M	Open	Event Plan Section 3.4	The risk of driver or staff injury/fatality from collision between vehicle and fence during accident will be reduced SFAIRP through the implementation of controls consistent with AS standards and operational best practice. The controls address causes such as poor adhesion to track surface, poor track and vehicle condition, compromised driver visibility due to clay, driver not fit for work, miscommunication between race control and driver and incompetency of driver. These controls include compliance to FIM/FIA standards in design, circuit fencing design as per Australian Speedway 5 star standard, deflection zone of fencing to absorb vehicle impact load, secondary fencing to prevent spectator access and track curation to prevent excess debris. This is not a novel hazard. The hazard cannot be eliminated due to the nature of operations and is not reasonably practicable to be reduced any further as all credible controls have been applied.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
								PHA-19-07	Vehicles are safety checked either through self-certification, club/division vehicle inspections, or pre and post-event scrutineering	O&M	Open	Racing Rules Section 5.6 Section 9.7 Section 10.7 Section 4.28		

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	**Hazard**	**Sub-System**	**Potential Causes**	**Potential Consequences**	**Consequence**	**Likelihood**	**Ranking**	**Safety Control ID**	**Hazard Control**	**Hazard Control Owner**	**Hazard Control Status**	**Safety Control Verification Evidence**	**SFAIRP Argument**	**Hazard Status**
PHA-20	Unauthorised access to the racetrack	Building, Track	CA 1: Prohibited areas not adequately monitored/fenced CA 2: Intruder access CA 3: Non-authorised public access to pits	CO 1: Spectator/public incident CO 2: Driver incident/collision CO 3: Track official/Pitt Marshall incident	Severe - C2	Unlikely - L4	B - High	PHA-20-02	Race track access controlled by grid marshal	O&M	Open	Event Plan Section 4	The risk of driver or spectator injury/fatality from unauthorised access onto race track will be reduced SFAIRP through the implementation of controls consistent with AS standards and operational best practice. The controls address causes such as inadequate monitoring or fencing of prohibited areas, intruder access and non-authorised access into pit areas. These controls include fencing around perimeter of controlled access areas, race track access patrolled by marshals, physical gate and administrative access control and fencing around racetrack to prevent intruder entry. This is not a novel hazard. The hazard cannot be eliminated due to the nature of operations and is not reasonably practicable to be reduced any further as all credible controls have been applied. To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
								PHA-20-03	Physical gate/administrative access	O&M	Open	Event Plan Section 4		

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	**Hazard**	**Sub-System**	**Potential Causes**	**Potential Consequences**	**Consequence**	**Likelihood**	**Ranking**	**Safety Control ID**	**Hazard Control**	**Hazard Control Owner**	**Hazard Control Status**	**Safety Control Verification Evidence**	**SFAIRP Argument**	**Hazard Status**
PHA-21	Fire or Smoke or Explosion	Civil & Utilities, Track, Building	CA 1: Fuel fire - during refuelling, due to spill, smoking at proximity of flammable goods etc. CA 2: Electrical fire from faulty equipment CA 3: Adjacent dragway event fire CA 4: Vehicle collision/overheating leads to fire CA 5: Vandalism/Unauthorised access CA 6: Inadequate fire control equipment CA 7: Fireworks related fire CA 8: Hot cars exiting the race CA 9: Hot works in the pit areas CA 10: No or unavailable fire control equipment	CO 1: Fire & Smoke CO 2: Death or injury	Catastrophic - C1	Possible - L3	A - Very High	PHA-21-03	Operation plan risk assessment	O&M	Open	Sydney Metro / Safety Assurance review of the operators Operational Plans	The risk of staff and spectator fatalities from fire, smoke or explosion will be reduced SFAIRP through the implementation of controls consistent with BCA and AS standards and operational best practice. These controls include fencing of track to maintain segregation, compliance to BCA standards, operation plan risk assessment, graffiti resistant treatment, fire engineering report incorporated into design, fireworks operated by licensed personnel, bag searches to prevent entry of harmful materials. This is not a novel hazard. The hazard cannot be eliminated due to the nature of operations and is not reasonably practicable to be reduced any further as all credible controls have been applied.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
								PHA-21-06	Firework operated by firework specialist/provider	O&M	Open	In line with appropriate standards and guidelines and operational best practice.		
								PHA-21-07	Bag searches preventing harmful materials entering facility with members of the public	O&M	Open	In line with appropriate standards and guidelines and operational best practice.		

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	**Hazard**	**Sub-System**	**Potential Causes**	**Potential Consequences**	**Consequence**	**Likelihood**	**Ranking**	**Safety Control ID**	**Hazard Control**	**Hazard Control Owner**	**Hazard Control Status**	**Safety Control Verification Evidence**	**SFAIRP Argument**	**Hazard Status**
PHA-22	Firework material installed and pre-big event	Building, Track	CA 1: Big event require firework to celebrate the big event CA 2: Large amount of public will remain until the end of the event to watch the firework CA 3: Firework installation team will install the firework material	CO 1: Uncontrolled firework can cause fire to the spectators and staffs CO 2: Uncontrolled firework can cause explosion caused by storage of flammable and dangerous goods CO 3: Firework can cause disruption to spectators and cause slips, strip and falls	Catastrophic - C1	Possible - L3	A - Very High	PHA-22-01	Nil fireworks storage provision to be provided on site. If operator implements fireworks storage on site at some future time, storage will be in appropriate hazard containment boxes (SP to detail)	O&M	Open	In line with appropriate standards and guidelines and operational best practice by fireworks contractor.	The risk of staff spectator fatalities from fireworks will be reduced SFAIRP through the implementation of controls consistent with AS standards and operational best practice. These controls address causes of uncontrolled fireworks coordination and storage of flammable and dangerous goods in close proximity. These controls include no fireworks provision on site, no fireworks storage within facility, licensed operator managing fireworks and operational risk assessment by fireworks operator prior to storage and use. This is not a novel hazard. The hazard cannot be eliminated due to the nature of operation and is not reasonably practicable to be reduced any further as all credible controls have been applied.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
								PHA-22-03	Operator to prohibit fireworks storage within facility	O&M	Cancelled	N/A		
								PHA-22-04	Fireworks operator to be licenced	O&M	Open	In line with appropriate standards and guidelines and operational best practice by fireworks contractor.		
								PHA-22-05	Operational risk assessment to be carried out by fireworks operator	O&M	Open			

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	**Hazard**	**Sub-System**	**Potential Causes**	**Potential Consequences**	**Consequence**	**Likelihood**	**Ranking**	**Safety Control ID**	**Hazard Control**	**Hazard Control Owner**	**Hazard Control Status**	**Safety Control Verification Evidence**	**SFAIRP Argument**	**Hazard Status**
PHA-23	Slip, trips and fall within the grandstand and spectator area	Building	CA 1: Poor sighting or visibility on Access / Egress paths CA 2: Inadequate lighting illumination on walkway CA 3: No safe access/egress/refuge CA 4: Unclear or obstructed safe Access / Egress CA 6: Drainage capacity not maintained or not sufficient leading to wet or damp/slippery CA 7: Overcrowding CA 8: Excess water from weather event, fire main failure etc. CA 9: Poor or slippery walking surface, Slippery walking surface from contamination of walking surface, Unsuitable surface finishes / material selection, Spilt food or drink CA 10: Infirm or disabled person has difficulty accessing stand CA 11: Delayed response to incident CA 12: Person distracted by advertising, race, excitement of the event, music etc. CA 13: Wayfinding unclear leading to congestion around stairs CA 14: Person under influence of drugs Inc. alcohol CA 15: Failure or inadequate congestion management CA 16: Large items block walkways (e.g. prams, luggage, oversize, overweight etc.) CA 17: Maintenance workers undertaking tasks during event times/Maintenance equipment left in area CA 18: Poor access routes for disabled persons (blind, wheelchair bound etc.) CA 19: Kerbs, steps, dips present trip hazard CA 20: Pooling of water on walkways	CO 1: Spectator/public incident CO 2: Staff/Maintenance worker incident	Major - C3	Likely - L2	B - High	PHA-23-08	No dwell areas (i.e. on grandstand stair entrances) to be enforced	O&M	Open	Event Plan Section 3.11	The risk of maintainer and spectator injury from slip trip and falls in grandstand and spectator areas will be reduced SFAIRP through the implementation of controls consistent with AS standards and operational best practice. These controls address causes of poor sighting on access and egress paths, inadequate illumination on walkways, no safe access/egress/refuge, inadequate drainage capacity, overcrowding, excess water from wet weather, slippery surface, unsuitable material finishes, inadquate disability access, delayed response to incident, unclear wayfinding, maintenance work taken without proper isolation, person under influence of drugs and alcohol or failure of congestion management. These controls include clear access and egress routes, adequate luminescence and emergency lighting provision, removal of rubbish and debris and appropriate provision of rubbish bins, maintenance program to ensure clear walkways, stairways compliant with BCA standards including handrails, suitable surface finish on walkways, photo luminescent stair nosing where appropriate, lighting on steps, pedestrian delineation including disabled viewing areas, no dwell areas, adequate drainage. This is not a novel hazard. The hazard cannot be eliminated due to the nature of operations and is not reasonably practicable to be reduced any further as all credible controls have been applied.	Resolved through Design, and to be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
								PHA-23-14	Facility staff to remove rubbish/obstacles from pedestrian paths during events	O&M	Open	Event Plan Section 3.10 Section 3.11		
								PHA-23-15	Appropriate provision of rubbish bins throughout facility	O&M	Open	Event Plan Section 3.10 Section 3.11		

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	**Hazard**	**Sub-System**	**Potential Causes**	**Potential Consequences**	**Consequence**	**Likelihood**	**Ranking**	**Safety Control ID**	**Hazard Control**	**Hazard Control Owner**	**Hazard Control Status**	**Safety Control Verification Evidence**	**SFAIRP Argument**	**Hazard Status**
To be appropriately managed throughout Speedway operations.	Water Truck (or other maintenance vehicles) can tumble due to the angled racetrack	Civil & Utilities, Track	CA 1: Angled racetrack	CO 1: Accident of tumbled truck into the racetrack	Major - C3	Unlikely - L4	B - High	PHA-24-01	Track curation	O&M	Open	Event Plan Section 3.4	The risk of a tumbled truck onto raceway due to angled track will be reduced SFAIRP to an acceptable level through the implementation of controls consistent with AS standards and operational best practice. These controls include track curation due safe angles, appropriate track gradient and appropriate truck driver training and induction prior to accessing race track. This is not a novel hazard. The hazard cannot be eliminated due to the nature of operations and maintenance and is not reasonably practicable to be reduced any further as all credible controls have been applied.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
								PHA-24-03	Truck driver training and induction	O&M	Open	Event Plan Section 7		
								PHA-24-04	The operator shall ensure that grading is completed prior to watering	O&M	Open	Event Plan Section 3.4		
								PHA-24-05	The operator shall ensure watering occurs from low areas in the centre of the track to high areas last	O&M	Open	Event Plan Section 3.4		
PHA-25	Slow response of medical assistance on non-event days	Civil & Utilities, Building	CA 1: Low or no presence of emergency services during no event	CO 1: Low response of emergency services in the case a traumatic incident occurs during event exacerbating public/competitor injury	Severe - C2	Possible - L3	A - Very High	PHA-25-03	Up default position of the gate of the competitor area	O&M	Open	Event Plan Section 3.3	The risk of exacerbated public injury or death due to slow response of medical assistance on non-event days will be reduced SFAIRP through the implementation of controls consistent with AS standards and operational best practice. These controls include dedicated ambulance bay and adequate clear zone, up default position of gate in competitor area, dual access to north and south of site, internal event medical response capability and manual operation provision of competitor area gate. This is not a novel hazard. The hazard cannot be eliminated due to the nature of operations and is not reasonably practicable to be reduced any further as all credible controls have been applied.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
								PHA-25-05	Internal event medical response capability	O&M	Open	Event Plan Section 5		
								PHA-25-06	Manual operation of the competitor area gate	O&M	Open	Event Plan Section 3.3		
								PHA-25-07	Emergency management plan	O&M	Open	Event Plan Section 5		

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	**Hazard**	**Sub-System**	**Potential Causes**	**Potential Consequences**	**Consequence**	**Likelihood**	**Ranking**	**Safety Control ID**	**Hazard Control**	**Hazard Control Owner**	**Hazard Control Status**	**Safety Control Verification Evidence**	**SFAIRP Argument**	**Hazard Status**
PHA-26	Proximity of dragway during events (dust, noise, debris)	Civil & Utilities, Track	CA 1: Inadequate dust mitigation measures CA 2: Spectator distracted by the race spectacle, noise etc	CO 1: Visibility impacting Dragway car driver leading to collision CO 2: Impact on Dragway car motor performance CO 3: Damage to track/surrounding infrastructure (Dragway)	Major - C3	Likely - L2	B - High	PHA-26-02	Track curation	O&M	Open	Event Plan Section 3.4	The risk of driver or spectator injury due to collision as a result of excess dust and noise will be reduced SFAIRP through the implementation of controls consistent with AS standards and operational best practice. These controls include dust screens implemented where applicable, track curation to minimise excess debris, PA announcements contained in speedway, 1-way communication with race control, signage on exit road and managed access control by marshals. This is not a novel hazard. The hazard cannot be eliminated due to the nature of operation and is not reasonably practicable to be reduced any further as all credible controls have been applied. The residual risk will need to be managed by the operator and maintainer.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
								PHA-26-04	Driver only has a 1-way communication with race control	O&M	Open	Racing Rules Section 3.4		
								PHA-26-06	Exit road managed/controlled by Marshalls	O&M	Open	Event Plan Section 4		
PHA-28	Welding in the pit area	Civil & Utilities	Welding requirement	In the presence of dangerous liquid, there are risk of fire and explosion	Major - C3	Possible - L3	B - High	PHA-28-01	Welding to take place within designated welding area - three phase power in garages, refuelling to be excluded from area (refer SA Rules & Regulations)	O&M	Open	Racing Rules Section 3	The risk of fire resultant from welding activity is reduced SFAIRP through the management of this hot works activity in a designated area that is segregated from flammable liquids/gases. No further measures were identified that may be implemented and a residual risk exists to be managed by the operator.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	**Hazard**	**Sub-System**	**Potential Causes**	**Potential Consequences**	**Consequence**	**Likelihood**	**Ranking**	**Safety Control ID**	**Hazard Control**	**Hazard Control Owner**	**Hazard Control Status**	**Safety Control Verification Evidence**	**SFAIRP Argument**	**Hazard Status**
PHA-29	Staff being assaulted	Civil & Utilities, Building	CA 1: Person(s) under the influence of drugs (inc. alcohol) CA 2: Malicious intent	CO 1: Security staff injury CO 2: Public injury	Major - C3	Possible - L3	B - High	PHA-29-04	Natural surveillance	O&M	Open	Event Plan Section 6	The risk of security or public injury due to assault will be reduced SFAIRP through the implementation of controls consistent with AS standards and operational best practice. These controls include specific welding delineated area, adequate lighting, CCTV coverage, natural surveillance by personnel, crime prevention consultation incorporated in design, office location up at grandstand for surveillance provision, temporary lighting provision in overflow car park when required and radio communication between staff. This is not a novel hazard. The hazard cannot be eliminated due to the nature of operations and is not reasonably practicable to be reduced any further as all credible controls have been applied.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
								PHA-29-08	Radio communication provision for staff	O&M	Open	Event Plan Section 6		

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	Hazard	Sub-System	Potential Causes	Potential Consequences	Consequence	Likelihood	Ranking	Safety Control ID	Hazard Control	Hazard Control Owner	Hazard Control Status	Safety Control Verification Evidence	SFAIRP Argument	Hazard Status
SM_PSH#05	Racing Vehicle catches fire	Civil & Utilities, Track	CA 1: Collision between race vehicles or against fence CA 2: Intruder/non-authorised access into the pit area (Criminal) CA 3: Poor maintained race vehicle CA 4: Intruder/non-authorised access into the racetrack (Criminal)	CO 1: Death of driver CO 2: Behaviour in other race drivers causing accident CO 3: Impact on spectator closer to the racetrack CO 4: Impact of emergency services	Severe - C2	Unlikely - L4	B - High	SM_PSH#05-01	Vehicle design - compliance with SA specification, rules and regulations. Clubs / Divisions self-enforce vehicle safety and compliance (some with Log Book). Self-declaration by competitors (Scrutineering indemnity).	O&M	Open	Racing Rules Section 3.1	The risk of driver fatality from vehicle catching fire will be reduced SFAIRP through the implementation of controls consistent with AS standards and operational best practice. These controls address causes of collision between vehicles, intruder illegal access into pit area or race track, poorly maintained race vehicle. These controls include vehicle design compliance, pre-race vehicle inspection and maintenance, clear zone between circuit fencing and spectator fencing, concrete track barrier, track marshals, first responder fire extinguisher provision, pit area access control during races, appropriate driver PPE, perimeter fencing where appropriate to restrict illegal access, compliance of driving standards, driver competency, fire security inside cage of vehicle. This is not a novel hazard. The hazard cannot be eliminated due to the nature of operations and is not reasonably practicable to be reduced any further as all credible controls have been applied.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
								SM_PSH#05-02	Pre-race vehicle inspections / self-certification	O&M	Open	Racing Rules Section 5.6		
								SM_PSH#05-05	Track marshals	O&M	Open	Racing Rules Section 5		
								SM_PSH#05-06	First responder fire extinguisher provision	O&M	Open	Racing Rules Section 3.3		
								SM_PSH#05-07	Pit area access control during racing	O&M	Open	Racing Rules Section 4.2.7		
								SM_PSH#05-08	Driver equipment mandatory and checked (helmet, gloves, etc) in accordance with Speedway Australia rules and regulations	O&M	Open	Racing Rules Section 14		
								SM_PSH#05-11	Compliance of driving standards	O&M	Open	Racing Rules Section 4		
								SM_PSH#05-12	Approved type and attachment of Fuel cell in the vehicles	O&M	Open	Racing Rules Section 3.1		
								SM_PSH#05-14	Fire extinguisher to be equipped by the marshal	O&M	Open	Racing Rules Section 3.1		
								SM_PSH#05-15	Driver competency: removed from race or banned	O&M	Open	Racing Rules Section 4		

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	Hazard	Sub-System	Potential Causes	Potential Consequences	Consequence	Likelihood	Ranking	Safety Control ID	Hazard Control	Hazard Control Owner	Hazard Control Status	Safety Control Verification Evidence	SFAIRP Argument	Hazard Status
SM_PSH#10	Slips, trips and falls when conducting maintenance activities	Civil & Utilities	CA 1: Poor sighting or visibility on Access / Egress paths CA 2: Unclear or obstructed safe Access / Egress path trackside, poor access past equipment CA 3: No safe access to equipment CA 4: Drainage capacity not maintained or not sufficient leading to wet or damp/slippery walkways CA 5: Inadequate lighting illumination on walkway CA 6: Staff fatigue reduces performance CA 7: Unsuitable or incorrect maintenance equipment supplied (Inc. PPE) CA 8: Staff not familiar with area CA 9: Unrealistic maintenance time for activity causes maintainer to take short cuts or hurry to complete tasks CA 10: Poor walking surface	CO 1: Staff/Maintenance worker incident	Major - C3	Possible - L3	B - High	SM_PSH#10-02	Clear paths to be provided to ground level maintained assets	O&M	Open	WHSMS Section 5	The risk of staff/maintainer injury from slip trip or fall during maintenance will be reduced SFAIRP through the implementation of controls consistent with AS standards and operational best practice. These controls address causes of poor visibility on access/egress pats, unclear safe access/egress path trackside, no safe access to equipment, insufficient drainage capacity leading to slippery walkways, inadequate illumination of walkways, unsuitable PPE. These controls include provision of pit lids for level surface, clear paths around maintained assets, ease of access for substation and generator, sufficient lighting provision as per standard, handrails and stairs between grandstand and competitor access, SQEP maintenance personnel training and management, site induction where appropriate, tank access clearance and grandstand roof access hatches and ladders. This is not a novel hazard. The hazard cannot be eliminated due to the nature of maintenance and is not reasonably practicable to be reduced any further as all credible controls have been applied.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
								SM_PSH#10-06	SQEP maintenance personnel	O&M	Open	WHSMS Section 5		
								SM_PSH#10-07	Site induction for maintenance personnel where appropriate	O&M	Open	WHSMS Section 6		

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	Hazard	Sub-System	Potential Causes	Potential Consequences	Consequence	Likelihood	Ranking	Safety Control ID	Hazard Control	Hazard Control Owner	Hazard Control Status	Safety Control Verification Evidence	SFAIRP Argument	Hazard Status
SM_PSH#12	Degradation or structural failure of civil infrastructure (track infrastructure, stands)	Building	CA 1: Weather impacts/water ingress CA 2: Vandalism or hostile / malicious act / unauthorised access to tunnels CA 3: Modification to infrastructure CA 4: Fire damage CA 5: Inadequate maintenance/asset management CA 6: Structural loading exceedance CA 7: Maintenance vehicle impact CA 8: Cable/infra theft CA 9: Vibration from vehicle movements CA 10: Construction defects CA 11: Incorrect material selection for structure CA 12: Earthquake CA 13: Flooding	CO 1: Spectators injury or death CO 2: Staff/Maintenance worker injury or death	Catastrophic - C1	Rare - L5	A - Very High	SM_PSH#12-12	Maintenance of infra to be carried out by Speedway operator personnel in accordance with the appropriate asset management regime	O&M	Open	Resolved through design	The risk of staff/spectator injury/fatalities from degradation or structural failure of civil infrastructure will be reduced SFAIRP through the implementation of controls consistent with BCA and AS standards and operation best practice. These controls address causes of weather impact and water ingress, vandalism or hostile acts, inadequate modification to infrastructure, fire damage, inadequate asset management practices, inadequate structural loading, cable/infra theft, vehicle vibration, incorrect material selection or earthquake or flooding. These controls include design as per BCA specifications and AS standards including adequate structural integrity, adequate maintenance manual and training for asset management, significant loading integrity to account for earthquake scenario as practicable, appropriate drainage for rain fall events as practicable, adequate fire ratings and waterproofing requirements incorporated in design, contained cabling, and appropriate SQEP maintenance personnel undertaking asset management. This is not a novel hazard. The hazard cannot be eliminated due to the nature of operations and maintenance and is not reasonably practicable to be reduced any further as all credible controls have been applied.	Resolved through Design, and to be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	Hazard	Sub-System	Potential Causes	Potential Consequences	Consequence	Likelihood	Ranking	Safety Control ID	Hazard Control	Hazard Control Owner	Hazard Control Status	Safety Control Verification Evidence	SFAIRP Argument	Hazard Status
SM_PSH#14	Interaction with wildlife/product of wildlife (i.e. waste management, open cable tray, ventilation access attracting animals and animals on racetrack)	Civil & Utilities, Building,	CA 1: Animal or bird waste products, Build-up of dirt and grime, Slippery walking surface from contamination in (grease, oil etc.) CA 2: Swooping birds or aggressive behaviour by animals CA 3: Inadequate rubbish management, Inadequate cleaning or housekeeping attracts wildlife, Build-up of Food items/scraps CA 4: Open cable trays attract animals / rats CA 5: Animals trapped in ventilation shafts, tunnels, stations CA 6: Animal on Speedway track CA 7: Inadequate design allows animals to nest, perch or build home on railway land, accumulation of excrement.	CO 1: Strip, slip and falls CO 2: Maintenance personnel injury (bite/poison) CO 3: Public injury (bite/poison)	Moderate - C4	Likely - L2	B - High	SM_PSH#14-03	Sufficient refuse bins to be provided throughout the facility	O&M	Open	Event Plan Section 3.10	The risk of maintainer/member of public injury from interaction with wildlife/animal product will be reduced SFAIRP through the implementation of controls consistent with AS standards and operation best practice. These controls address causes of animal waste product build-up on surface, aggressive animal behaviour, inadequate rubbish management. These controls include roof access hatches with fall arrest system, sufficient rubbish bin provision, assessment management regime to manage vermin, refuse collection post event cleaning and structure design to prevent vermin infestation. This is not a novel hazard. The hazard cannot be eliminated due to the nature of operation and is not reasonably practicable to be reduced any further as all credible controls have been applied.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
								SM_PSH#14-04	Asset management regime to address vermin	O&M	Open	Event Plan Section 3.10		
								SM_PSH#14-05	Refuse collection post event	O&M	Open	Event Plan Section 3.10		
								SM_PSH#14-06	Post event cleaning	O&M	Open	Event Plan Section 3.9 Section 3.10		

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	**Hazard**	**Sub-System**	**Potential Causes**	**Potential Consequences**	**Consequence**	**Likelihood**	**Ranking**	**Safety Control ID**	**Hazard Control**	**Hazard Control Owner**	**Hazard Control Status**	**Safety Control Verification Evidence**	**SFAIRP Argument**	**Hazard Status**
SM_PSH#15	Unauthorised vehicle (car, drone, motorbike, bicycle) entry to pits/trackway	Civil & Utilities, Track	CA 1: Inadequate wayfinding signage CA 2: Failure of security system CA 3: Vandalism or hostile / malicious act, Criminal (terrorist) behaviour by public / antisocial behaviour	CO 1: Driver incident CO 2: Car collision CO 3: Injury to pedestrians CO 4: Damage to track/surrounding infrastructure	Major - C3	Likely - L2	B - High	SM_PSH#15-04	Security staff	O&M	Open	Event Plan Section 4 Section 6	The risk of driver/member of public injury from unauthorised vehicle access into entry pit will be reduced SFAIRP through the implementation of controls consistent with AS standards and operational best practice. These controls address causes of inadequate wayfinding signage, failure of security system, vandalism or hostile behaviour. These controls include controlled access configuration into pit, drone surveillance capacity, CCTV coverage, security staff at appropriate locations, hostile vehicle measures where applicable, appropriate wayfinding and signage and territorial reinforcement through fencing. This is not a novel hazard. The hazard cannot be eliminated due to the nature of operations and is not reasonably practicable to be reduced any further as all credible controls have been applied.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	**Hazard**	**Sub-System**	**Potential Causes**	**Potential Consequences**	**Consequence**	**Likelihood**	**Ranking**	**Safety Control ID**	**Hazard Control**	**Hazard Control Owner**	**Hazard Control Status**	**Safety Control Verification Evidence**	**SFAIRP Argument**	**Hazard Status**
SM_PSH#16	Exposure to rotating machinery (pumps, fans etc.)	Building, track	CA 1: Unguarded machinery CA 2: Lack of competency to maintain rotating machinery CA 3: Rotating machinery not indicated CA 4: Unable to isolate rotating equipment or machinery locally CA 5: Equipment or machinery turned back on whilst maintenance people are close by, e.g. maintainer, passenger or public CA 6: Unauthorised modification to maintenance machinery or equipment CA 7: Sudden movement of machinery under maintenance	CO 1: Injury of death of Staff/Maintenance worker	Major - C3	Possible - L3	B - High	SM_PSH#16-01	AS424 system machinery safety standards (Adult and children protection) to be applied where practicable	O&M	Open	WHSMS Section 5	The risk of maintainer injury/death from exposure to rotating machinery will be reduced SFAIRP through the implementation of controls consistent with AS424 standards and operational best practice. These controls address causes of unguarded machinery, lack of maintainer competency, insufficient indication of rotating machinery, inadequate isolation, unauthorised modification and unsafe maintenance practice. These controls include system machinery designed to safety standards, access limitations, suitable maintenance facilities with adequate separation, designated welding area, delineation of high risk permanent equipment, adequate staff induction and sufficient lighting and pit area visibility. This is not a novel hazard. The hazard cannot be eliminated due to the nature of maintenance and is not reasonably practicable to be reduced any further as all credible controls have been applied.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
								SM_PSH#16-02	Access limitation to gate access (locks)	O&M	Open	Event Plan Section 4		
								SM_PSH#16-04	Welding areas to be allocated	O&M	Open	WHSMS Section 5		
								SM_PSH#16-05	Delineation of high risk permanent equipment	O&M	Open	WHSMS Section 5		
								SM_PSH#16-06	Site staff to be trained/inducted in order to familiarise with machinery hazard	O&M	Open	WHSMS Section 3.3		

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	**Hazard**	**Sub-System**	**Potential Causes**	**Potential Consequences**	**Consequence**	**Likelihood**	**Ranking**	**Safety Control ID**	**Hazard Control**	**Hazard Control Owner**	**Hazard Control Status**	**Safety Control Verification Evidence**	**SFAIRP Argument**	**Hazard Status**
SM_PSH#17	Handling of large, heavy or unsuitable loads	Civil & Utilities	CA 1: Equipment, Spares, tools required to be carried excessive distances CA 2: Staff use short cuts, Inc. distance of maintainer parking from site CA 3: Access route unsuitable for transportation of large or heavy objects	CO 1: Staff/Maintenance worker incident CO 2: Damage to track/surrounding infrastructure CO 3: Crushing injury	Moderate - C4	Possible - L3	B - High	SM_PSH#17-03	Staff training	O&M	Open	WHSMS Section 6 Section 9	All Speedway and Event staff will undergo a detailed induction process and necessary train for their area of work at the Site. All contractors and service provided will be required to operate in accordance with the WHS guidelines relevant to their services.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	Hazard	Sub-System	Potential Causes	Potential Consequences	Consequence	Likelihood	Ranking	Safety Control ID	Hazard Control	Hazard Control Owner	Hazard Control Status	Safety Control Verification Evidence	SFAIRP Argument	Hazard Status
SM_PSH#18	Undertaking maintenance tasks at a height (dropped objects/fall from height)	Civil & Utilities, Track	CA 1: Lack of protection from weather whilst undertaking maintenance tasks CA 2: Location of equipment for maintenance, in hazardous location (at height, in red zone, close to live equipment etc.) CA 3: Insufficient allowance for use of Elevated Work Platform CA 4: Poor surface to work from (at angle, slippery, rough etc.) CA 5: Unauthorised or uncontrolled access to elevated work sites CA 6: Unprotected voids or pits CA 7: Lack of competency to work at height CA 8: Failure to follow maintenance procedures CA 9: Maintenance / Access platform not adequately protecting worker CA 10: Hatches, skylights unable to support maintainer CA 11: Unable to position working at height equipment in a safe location CA 12: Use of incorrect equipment / PPE for work at height	CO 1: Fall injury to maintenance personnel CO 2: Falling object strikes maintenance personnel or public	Severe - C2	Possible - L3	A - Very High	SM_PSH#18-06	Access to maintenance sites shall be restricted to authorised persons	O&M	Open	WHSMS Section 3 Section 4	The risk of maintainer or member of public fatality during working from height will be reduced SFAIRP through the implementation of controls consistent with AS standards and operational best practice. These controls address causes of lack of protection from weather, equipment located at height, insufficient allowance for EWP, poor surface condition, uncontrolled access, unprotected voids, lack of work from height competency, inadequate access platform protection, inadequate hatch integrity and incorrect PPE. These controls include adequate shielding from weather where practicable, roof access and fall arrest system, limited work from height requirements through design, sufficient space for EWP, level surface with adequate grip, covered pits and voids, appropriate maintainer training and competency management, adequate loads for hatches and covers, correct PPE and segregated maintenance areas. This is not a novel hazard. The hazard cannot be eliminated due to the nature of maintenance and is not reasonably practicable to be reduced any further as all credible controls have been applied.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
								SM_PSH#18-09	Work at height to be carried out by competent personnel	O&M	Open	WHSMS Section 3 Section 4		
								SM_PSH#18-10	Maintenance manuals to detail assets that are maintained at height	O&M	Open	Asset Register - provided by Sydney Metro		
								SM_PSH#18-12	Maintenance activity to be deconflicted from event regime	O&M	Open	WHSMS Section 3 Section 4		
								SM_PSH#18-13	The correct PPE for maintaining supplied assets shall be specified	O&M	Open	WHSMS Section 5		

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	Hazard	Sub-System	Potential Causes	Potential Consequences	Consequence	Likelihood	Ranking	Safety Control ID	Hazard Control	Hazard Control Owner	Hazard Control Status	Safety Control Verification Evidence	SFAIRP Argument	Hazard Status
SM_PSH#21	Exposure to confined space or restricted working space	Civil & Utilities	CA 1: Confined space working (lack clean air, difficult working conditions etc.) CA 2: Lack of competency in confined space working CA 3: Unauthorised or uncontrolled access to confined spaces CA 4: Maintainable equipment located in confined or restricted working locations	CO 1: Staff/Maintenance worker incident	Severe - C2	Possible - L3	A - Very High	SM_PSH#21-04	Maintenance to be carried out by competent personnel	O&M	Open	WHSMS Section 3 Section 4	The risk of staff/maintenance worker injury/fatality in confined spaces due to lack of clean air, lack of competency for confined space access and uncontrolled access will be reduced SFAIRP through the implementation of controls consistent with AS standards and operational best practice. These include appropriate warning signage for confined spaces, locking mechanisms to prevent uncontrolled access and competency assessment of maintenance personnel. This is not a novel hazard. The hazard cannot be eliminated due to the nature of maintenance and is not reasonably practicable to be reduced any further as all credible controls have been applied.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
SM_PSH#22	Contact with live parts causing shock and burns (i.e. electricity, hot debris, etc)	Civil & Utilities, Track	CA 1: Working on live equipment CA 2: Faulty electrical equipment CA 3: Arching CA 4: Inadequate lightning protection on stands/infrastructure CA 5: Not observing SAD from overhead powerlines (including HV corridor adjacent to carpark)	CO 1: Staff/Maintenance worker incident	Severe - C2	Possible - L3	A - Very High	SM_PSH#22-02	Marshalls will be equipped with safety gloves in the infield	O&M	Open	Racing Rules Section 3.6 Section 3.7	The risk of electric shock to staff/maintenance worker from live equipment due to faulty equipment, arching, inadequate lightning protections will be reduced SFAIRP through the implementation of controls consistent with AS standards and operational best practice. These include secured access to substation and generator, safety gloves PPE, appropriate lightning protection system design for infrastructure, adequate earthing and bonding configuration and sufficient road height clearance from power lines. This is not a novel hazard. The hazard cannot be eliminated due to the nature of operation and is not reasonably practicable to be reduced any further as all credible controls have been applied.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	**Hazard**	**Sub-System**	**Potential Causes**	**Potential Consequences**	**Consequence**	**Likelihood**	**Ranking**	**Safety Control ID**	**Hazard Control**	**Hazard Control Owner**	**Hazard Control Status**	**Safety Control Verification Evidence**	**SFAIRP Argument**	**Hazard Status**
SSHA-02	Bushire	Civil & Utilities	CA 1: Climatic conditions CA 2: Uncontrolled bushfire in property vicinity CA 3: Large amounts of polystyrene on site	CO 1: Injuries to public and/or staff	Catastrophic - C1	Possible - L3	A - Very High	SSHA-02-02	Appropriate vegetation maintenance	O&M	Open	In line with appropriate standards and guidelines and operational best practice.	The risk of bushfire leading to fatalities of staff due to climatic conditions or uncontrolled fire in property vicinity will be reduced SFAIRP through the implementation of controls consistent with AS standards and operational best practice. These include minimisation of fire prone vegetation within facility, appropriate vegetation maintenance and adequate event management. This is not a novel hazard. The hazard cannot be eliminated due to the nature of climatic conditions and is not reasonably practicable to be reduced any further as all credible controls have been applied.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
								SSHA-02-03	Event management to address operation during risk of bushfire	O&M	Open	Event Plan Section 5.3		
SSHA-03	Loss of seperation between vehicle and edge of retaining wall	Civil & Utilities	CA 1: Vehicle excessive speed when transiting ring road in proximity to retaining wall CA 2: Vehicle loses traction on ring road in proximity of retaining wall CA 3: Loss of control of vehicle when overtaking obstacle in proximity of retaining wall	CO 1: Vehicle departs ring road and falls from height CO 2: Death or serious injury to vehicle occupants	Catastrophic - C1	Possible - L3	A - Very High	SSHA-04-07	Traffic management to be maintained during event via marshals/staff	O&M	Open	Event Plan Section 4	The risk of loss of separation between vehicle and edge of retaining wall leading to injury and death will be reduced SFAIRP through implementation of controls consistent with AS, and AustRoads standards and operational best practice. These include signage to inform speed limit, surface finish of sufficient tension, delineation of ring road, sufficient lighting, vehicle barrier along retaining wall edge, separate pedestrian passage, traffic management during events as well as wayfinding. These controls address potential scenarios of excessive speed when transiting ring road, loss of vehicle traction and vehicle control whilst overtaking obstacle on ring road. This is not a novel hazard. The hazard cannot be eliminated due to the nature of vehicle movement along speedway and is not reasonably practicable to be reduced any further as all credible controls have been applied.	

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	**Hazard**	**Sub-System**	**Potential Causes**	**Potential Consequences**	**Consequence**	**Likelihood**	**Ranking**	**Safety Control ID**	**Hazard Control**	**Hazard Control Owner**	**Hazard Control Status**	**Safety Control Verification Evidence**	**SFAIRP Argument**	**Hazard Status**
OSHA-02	Electrical maintainer enters confined space		CA1: Electrical assets located in pits CA2: Poor ventilation inside substation	CO1: Fatality due to asphyxiation	Severe - C2	Unlikely - L4	B - High	OSHA-02-02	The operator shall implement confined space procedures in accordance with requirements under the WHS act	O&M	Open	WHSMS Section 3	This hazard has been reduced SFAIRP as is reasonably practicable during the design phase.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
OSHA-05	Water maintainer enters confined space (pits, sumps, and detention basins)		CA1 : Drains and sumps difficult to access	CO1: Fatality due to asphyxiation	Severe - C2	Unlikely - L4	B - High	OSHA-05-02	The operator shall implement confined space procedures in accordance with requirements under the WHS act	O&M	Open	WHSMS Section 3	This hazard has been reduced SFAIRP as is reasonably practicable during the design phase.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	**Hazard**	**Sub-System**	**Potential Causes**	**Potential Consequences**	**Consequence**	**Likelihood**	**Ranking**	**Safety Control ID**	**Hazard Control**	**Hazard Control Owner**	**Hazard Control Status**	**Safety Control Verification Evidence**	**SFAIRP Argument**	**Hazard Status**
OSHA-10	Entanglement in moving components of sewer pump		CA1: Pump moving parts are exposed CA2: Pump moving parts are operated during maintenance task	CO1: major injury (loss of limb) due to entanglement in moving parts of pump	Major - C3	Possible - L3	B - High	OSHA-10-03	The maintainer shall ensure the pump is isolated (and not capable of operation) prior to commencing maintenance tasks	O&M	Open	WHSMS Section 3	This hazard has been reduced SFAIRP as is reasonably practicable during the design phase.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
OSHA-11	Sewer maintainer struck by vehicle/plant (In vicinity of sewer pit in competitor area)		CA1: Poor delineation between vehicle and pit CA2: Drivers fail to see maintainer in pit	CO1: Fatality due to being struck by operating vehicle/mobile plant	Severe - C2	Unlikely - L4	B - High	OSHA-11-02	The maintainer shall ensure that sewer pit maintenance is not undertaken during events of periods of high traffic in the areas	O&M	Open	OEMP Section 3.7	Hazard has identified all reasonably practicable controls identified in design. Any controls identified in workshops which were not included in the design were determined to not be reasonably practicable. As a result, this hazard has been reduced SFAIRP as is reasonably practicable at the end of the design phase.	
								OSHA-11-03	The maintainer shall erect temporary barriers and signage when pit is being accessed.	O&M	Open	WHSMS Section 3		
OSHA-14	Person struck by road vehicle on rear access road		CA1: Vehicle movement on access road during event CA2: Large crowds on access road during event	CO1: Fatality due to being struck by operating vehicle/mobile plant	Severe - C2	Likely - L2	A - Very High	OSHA-14-02	The operator shall ensure that road is closed with barrier erected prior to commencement of event and is not removed until spectators have left the facility at the conclusion of an event	O&M	Open	Event Plan Section 4 OTTMP Section 3.5 Section 4	This hazard has been reduced SFAIRP as is reasonably practicable during the design phase.	

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	**Hazard**	**Sub-System**	**Potential Causes**	**Potential Consequences**	**Consequence**	**Likelihood**	**Ranking**	**Safety Control ID**	**Hazard Control**	**Hazard Control Owner**	**Hazard Control Status**	**Safety Control Verification Evidence**	**SFAIRP Argument**	**Hazard Status**
OSHA-15	Crush injury due to over crowding		CA1: Large number of persons attending events CA2: Limited access/egress routes	CO1: Major injury due to crush	Major - C3	Unlikely - L4	B - High	OSHA-15-01	The operator shall ensure that road is closed with barrier erected prior to commencement of event and is not removed until spectators have left the facility at the conclusion of an event	O&M	Open	Event Plan Section 4 OTTMP Section 3.5 Section 4	This hazard has been reduced SFAIRP as is reasonably practicable during the design phase.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
OSHA-16	Loss of seperation between spectator and racing vehicle		CA1: Poor interface between persons and vehicles	CO1: Fatality due to being struck by operating vehicle	Severe - C2	Unlikely - L4	B - High	OSHA-16-02	The competitor areas shall be fenced and locked off to spectators during race event	O&M	Open	Event Plan Section 4 OTTMP Section 4	This hazard has been reduced SFAIRP as is reasonably practicable during the design phase.	
								OSHA-16-03	The operator shall ensure that access to competitor areas are restricted during competition to competitors and officials and general public aged above 16 who have purchased a Pit Access pass	O&M	Open	Event Plan Section 4 OTTMP Section 4		
OSHA-17	Loss of seperation between Race official and racing vehicle		CA1: Poor interface between persons and vehicles	CO1: Fatality due to being struck by operating vehicle/mobile plant	Severe - C2	Possible - L3	A - Very High	OSHA-17-02	The operator shall ensure that all race officials are licenced and accredited for the roles they perform	O&M	Open	Racing Rules Section 5	This hazard has been reduced SFAIRP as is reasonably practicable during the design phase.	
								OSHA-17-03	The operator shall ensure that all officials possess and are wearing the correct PPE for their task	O&M	Open	Racing Rules Section 14		

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	Hazard	Sub-System	Potential Causes	Potential Consequences	Consequence	Likelihood	Ranking	Safety Control ID	Hazard Control	Hazard Control Owner	Hazard Control Status	Safety Control Verification Evidence	SFAIRP Argument	Hazard Status
OSHA-20	Externally provided plant/machinery causes burns/cuts		CA1: Tenant/Contractor brings unsuitable plant to site	CO1: Major injury to worker due to plant and machinery	Severe - C2	Rare - L5	B - High	OSHA-20-01	The operator shall ensure that machinery, plant and equipment to be installed by tenants is subject to risk assessment and is suitable for use in the site	O&M	Open	WHSMS Section 6	This hazard has been reduced SFAIRP as is reasonably practicable during the design phase.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
								OSHA-20-02	The operator shall ensure that tenants and fit outs comply with WHS and FLS legislative requirements	O&M	Open	OEMP Section 7.3		
OSHA-21	Landscaper struck by vehicle during vegetation maintenance		CA1: Vegetation in proximity to roads	CO1: Fatality due to being struck by operating vehicle/mobile plant	Severe - C2	Possible - L3	A - Very High	OSHA-21-02	The operator shall conduct landscaping tasks during non-events days	O&M	Open	OEMP Section 7.3	This hazard has been reduced SFAIRP as is reasonably practicable during the design phase.	
OSHA-22	Persons fall from height when maintaining dust barrier		CA1: Dust barrier mounted on high poles CA2: Inadequate space to access bolts/tie downs for shade cloth	CO1: Fatality due to fall from height	Severe - C2	Possible - L3	A - Very High	OSHA-22-03	The operator shall ensure that maintainers use EWPs to access barrier to complete maintenance tasks	O&M	Open	OEMP Section 6.7	This hazard has been reduced SFAIRP as is reasonably practicable during the design phase.	

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	**Hazard**	**Sub-System**	**Potential Causes**	**Potential Consequences**	**Consequence**	**Likelihood**	**Ranking**	**Safety Control ID**	**Hazard Control**	**Hazard Control Owner**	**Hazard Control Status**	**Safety Control Verification Evidence**	**SFAIRP Argument**	**Hazard Status**
OSHA-23	Persons fall from height down embankment		CA1: Maintenance of embankment CA2: Poor access to handrails to complete maintenance tasks	CO1: Fatality due to fall from height	Severe - C2	Possible - L3	A - Very High	OSHA-23-02	Handrails to be maintained on grandstand side	O&M	Open	Design in accordance with BCA requirements	This hazard has been reduced SFAIRP as is reasonably practicable during the design phase.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
OSHA-25	Person exposed to source of electricity when maintaining HVAC		CA1: HVAC units in energised state when maintained	CO1: Fatality due to electrocution	Severe - C2	Unlikely - L4	B - High	OSHA-25-02	The operator shall ensure that HVAC units are isolated and deenergised prior to maintenance tasks	O&M	Open	WHSMS Section 7	This hazard has been reduced SFAIRP as is reasonably practicable during the design phase.	
OSHA-28	Loss of seperation between persons and vehicles/plant on rear access road		CA1: No dedicated loading/unloading bays CA2: Vehicles stopping on roadways CA3: Poor segregation of plant and persons	CO1: Fatality due to being struck by operating vehicle/mobile plant	Severe - C2	Possible - L3	A - Very High	OSHA-28-02	The operator shall ensure that deliveries and pick-ups for HV are completed outside events/busy periods	O&M	Open	Event Plan Section 3.9	This hazard has been reduced SFAIRP as is reasonably practicable during the design phase.	
								OSHA-28-03	The operator shall use trolleys and dolly's to transport stores and goods from vehicles to storage locations	O&M	Open	Event Plan Section 3.9		

Table 16: Operational Hazard Log (continued)

Risk Identification					Initial Risk Rating			Safety Control					Hazard Status (with Safety Controls)	
Hazard ID	**Hazard**	**Sub-System**	**Potential Causes**	**Potential Consequences**	**Consequence**	**Likelihood**	**Ranking**	**Safety Control ID**	**Hazard Control**	**Hazard Control Owner**	**Hazard Control Status**	**Safety Control Verification Evidence**	**SFAIRP Argument**	**Hazard Status**
OSHA-29	Person slip, trip and fall when moving around speedway area during inactive period		CA1: Poor illumination due to speedway being inactive CA2: Security and emergency response staff responding to incidents	CO1; major injury due to slip, trip and fall	Major - C3	Possible - L3	B - High	OSHA-29-01	Operator to use lighting during off-peak periods to illuminate walkways and work areas - Solar powered in Car Park A. Operator to determine approach for lighting in other areas dormant as appropriate	O&M	Open	Resolved through Design	This hazard has been reduced SFAIRP as is reasonably practicable during the design phase.	To be appropriately managed throughout Speedway operations in accordance with the relevant rules, guidelines and best operational practice.
OSHA-33	Fire within speedway		CA1: Poor access for emergency services who are unable to respond to an fire	CO1: fatality due to fire	Severe - C2	Rare - L5	B - High	OSHA-33-03	The operator shall secure the speedway road access gates with locks that emergency services can easily cut through if required	O&M	Open	Event Plan Section 5	This hazard has been reduced SFAIRP as is reasonably practicable during the design phase.	
DCSiD-01	Injury to access gate maintainer	All	CA1: Access gate located on main thoroughfare CA2: Moving parts and electricity	CO1: Maintainer struck by moving vehicle CO2: Maintainer entanglement in pinch points	Severe - C2	Rare - L5	B - High	DCSiD-01-01	The O&M shall schedule preventative and corrective maintenance outside of race/event days	O&M	Open	OEMP Section 7.3	The hazards has identified controls such as procurement of a COTS product eliminating the need for design. The use of COTS products will ensure a proven system is used. The hazard is only able to be managed SFAIRP if the O&M plans preventative and corrective maintenance during non-race days to minimise the vehicle activity.	

7.2 Environmental Controls Plans

Environmental Control Plans relative to the key issues associated with Speedway operations are detailed in the Sub-Plans and/or other OEMP support documents.

7.3 Environmental Schedules

Environmental Schedules relative to the key issues associated with Speedway operations are detailed in the OMPs and Event Plan (and also provided in Appendix D) and include:

- Site Inspection Checklist;
- Non-compliance and Corrective Action Report;
- Environmental Incident Management Framework;
- Complaints Register;
- Environmental Training Register;
- Waste Register;
- Methanol Safety Data Sheet; and
- Automotive Diesel Fuel Safety Data Sheet.

7.4 OEMP Review

7.4.1 OEMP Reviews

The OEMP, Sub-Plans and other OEMP support documents will be checked, reviewed and updated annually or as required if there are any significant changes in operations, organisational structure, reporting lines or legislation. The primary driver of future OEMP reviews will be the OMPs.

7.4.2 Records

Unless otherwise specified in the OEMP or Sub-Plans, the Speedway operator will be responsible for managing environmental records and information relating to the OEMP, including:

- The OEMP and Sub-Plans;
- OMP reports and data;
- General operations and maintenance activities (where required);
- Induction and training details;
- Environmental incident reports and actions;
- Complaints register;
- Compliance and Audit report findings and follow-up actions; and
- Waste management records (through a contracted private waste company).

Records will be held for a minimum of 5 years, and all relevant agencies will be provided with access to the records upon request.

Appendix A

SSI 100048 Notice of Decision

Notice of decision

Section 2.22 and clause 20 of Schedule 1 of the *Environmental Planning and Assessment Act 1979*

Application type	State significant infrastructure
Application number and project name	SSI 10048 Sydney International Speedway
Applicant	Sydney Metro
Consent Authority	Minister for Planning and Public Spaces

Decision

The Minister for Planning and Public Spaces has, under s5.19 of the *Environmental Planning and Assessment Act 1979* (**the Act**) approved the infrastructure application subject to the recommended conditions.

A copy of the infrastructure approval and conditions is available here.

A copy of the Planning Secretary's Assessment Report is available here.

Date of decision

23 December 2020

Reasons for decision

The following matters were taken into consideration in making this decision:

- the matters listed in the statutory context section of the Planning Secretary's assessment report
- the objects of the Act
- the considerations under s 7.14(2) and 7.16(3) of the *Biodiversity Conservation Act 2016 (NSW)*;
- all information submitted to the Department during the assessment of the application
- the findings and recommendations in the Planning Secretary's Assessment Report; and
- the views of the community about the project (see **Attachment 1**).

The findings and recommendations set out in the Planning Secretary's Assessment Report were accepted and adopted as the reasons for making this decision.

The key reasons for approving the application are as follows:

- key benefits provided by the project include:
    - the creation of a motorplex for the NSW motorsport racing community
    - a new world class speedway to cater for local, regional, national and international racing events to grow speedway racing in NSW
    - allowing for speedway racing to relocate before removal of the current speedway facility at Clyde is resumed for Sydney Metro West construction (if approved)
    - supporting the operation of existing commercial facilities within the Western Sydney Parklands Precinct 5: Eastern Creek Motor Sports.
- the project is consistent with a range of NSW Government policies and strategies, including:
    - *A Metropolis of Three Cities – the Greater Sydney Region Plan* (Greater Sydney Commission 2018)
    - *Central District Plan* (Greater Sydney Commission 2018)
    - State Environmental Planning Policy (Western Sydney Parklands); and
    - Western Sydney Parklands Plan of Management 2030
- the impacts on the community and the environment can be appropriately minimised, managed or offset to an acceptable level, in accordance with applicable NSW Government policies and standards
- the issues raised by the community during consultation and in submissions have been considered and adequately addressed through the Proponent's response to submissions, changes to the project and the recommended conditions of approval
- weighing all relevant considerations, the project is in the public interest.

Attachment 1 – Consideration of Community Views

The Environmental Impact Statement was publicly exhibited from 19 August 2020 to 16 September 2020 (29 days) and 37 submissions were received, of which nine were from State and local agencies, five from special interest groups and organisations, and 23 from community submitters.

The key issues raised by the community (including in submissions) and considered in the Planning Secretary's Assessment Report and by the decision maker include traffic and parking, noise, dust deposition and biodiversity impacts. Other issues are addressed in detail in the Planning Secretary's Assessment Report.

Issue	***Consideration***
Traffic and transport • consideration of public transport/turn-up and go services to and from course requested. • parking capacity compared to the venue capacity. • parking capacity for concurrent events at the speedway and dragway. • the capacity of the pit area and pit bays provided to manage the number of vehicles that would be present during an event. • dedicated parking for competitors and officials should be provided.	*Assessment* • Public transport and on-demand service provision would be investigated as part of measures to manage major events. Public transport may be implemented by the speedway operator during major concurrent events. • Sufficient parking would be provided for spectators and competitors during both minor and major speedway events and for minor concurrent events. The operators of the WSPT/speedway and dragway have agreed times throughout the year, during which they would have exclusive use of all carparking provided. • Parking would be designed in accordance with relevant design, engineering and safety guidelines. • Pit areas have been designed to accommodate 150 competitors, with approximately 30-40 competitors using semi-trailers to transport vehicles. This is comparable with the current venue. • During concurrent major events, traffic management measures and carpark sharing would be managed through a Major Events Operation Plan and could include temporary road closures, use of traffic controllers, shuttle services or public transport and other measures to ensure the orderly access and egress. *Recommended Conditions/Response* • The Proponent must not operate concurrent events until the Major Events Operation Plan has been developed.
Noise and vibration *Construction* • Construction noise should cease by 10pm and an outline of construction hours was requested. *Operation* • Requests for noise curfews during events to reduce noise impact to nearby neighbourhoods. • Noise restrictions on the speedway would require events to end by 10pm and would impact upon the running of events.	*Assessment* • Construction is proposed 24 hours a day and 7 days a week. Expected noise impacts would unlikely exceed noise management levels at residential or sensitive receivers due to the significant distance to closest receivers. • Events would occur between 6 pm – 10 pm, however there may be infrequent occasions where incidents on the track or track maintenance activities result in racing extending beyond 10 pm. This is consistent with events held at the current location by the dragway at the motorsport park. Noise generated by speedway events is expected to be lower than those generated by dragway events. • Acoustic treatment is proposed for affected residents to the south of Precinct 5 where target levels may be exceeded. *Recommended Conditions/Response* • Noise impacts associated with the Sydney International speedway would be mitigated through the installation of at-property noise treatment. All permanent noise treatment must be installed as soon as practicable, where it would not be affected by construction, to provide benefits during construction and operation. • Active and ongoing consultation, at source and at property mitigation, and coordinating and scheduling work to provide respite must be applied to manage noise impacts. • Operational noise mitigation measures are subject to review and compliance monitoring once events commence and completed within 12 months.

Issue	*Consideration*
Dust deposition • The speedway track may increase dust deposition in the dragway braking zone and affect safe operation. • Impacts of clay choice and binding agent for dust suppression on track performance and safety.	*Assessment* • A dust screen and tree planting would be installed between the speedway and dragway to attenuate dust and minimise deposition on the dragway. • Active dust management is proposed during construction and operation, including watering of the speedway. • Permanent dust monitoring stations would be installed across the project site and at the dragway to establish dust deposition trigger levels in consultation with the dragway operator and appropriate proactive and reactive measures developed to ensure safe operating conditions. *Recommended Conditions/Response* • The Proponent has committed to undertaking track material sampling and testing of clay types to determine an appropriate track surface taking into consideration safety and performance with guidance from Speedway Australia and WSPT/speedway operator. • Construction and operation of the speedway must ensure the safety of dragway competitors and spectators.
Project design • The design, location and setback of spectator seating and viewing areas are not optimal to speedway racing. • The design does not cater for other motor-sport disciplines. • The design and length of the track may cause potential issues for both spectators and drivers, such as harder corner braking. • Consider an underground tunnel from the pit area to the infield. • Seating capacity of the speedway does not reflect the benefits of the relocation. • The grandstand should be easily accessible by a variety of abilities.	*Assessment* • The Proponent has changed the grandstand and seating by removing a large covered area and replaced it with grass adjacent to the proposed fenced children's playground. • The design allows for a variety of vehicles and motorcycles to use the track. The speedway operator and the Western Sydney Parklands Trust would be responsible for determining the use of the site by other motor-sport disciplines. • The design was developed in consultation with Speedway Australia and uses national and international best practice and is compliant with Speedway Australia's 5-star track standards. The design also allows alteration of the track bank desired. • A tunnel access would result in drainage and vehicle access issues due to elevation differences between the pit and infield. The current design allows for safe and uninterrupted access between the pit area and the infield. *Recommended Conditions/Response* • The project would be designed to comply with the requirements of the *Disability Discrimination Act 1992*. • The project must be designed and built in consultation with the Western Sydney Parklands Trust and Council. The design is required to have regards to the Western Sydney Parklands SEPP, the *Western Sydney Parklands Urban Design Manual* (2020), *Better Placed* (NSW Government Architect, 2017) and the principles of green infrastructure and outcomes in the draft Greener Places policy (NSW Government Architect, 2020).
Socio-economic impacts • Stopping speedway events when dust trigger levels are exceeded may result in events not being completed. • Construction will impact racetracks in Construction Area 7. • Education should be provided on speedway in conjunction with facilities connected to the sport. • Speedway provides opportunities to ensure local businesses benefit from construction. • Site should be used for venue hire, track hire, powered sites for caravans and motorhomes to allow the speedway operator other income sources outside of raceways.	*Assessment* • Dust levels would be monitored during construction and trigger levels which when reached would require other reactive actions to be implemented to ensure the safety of dragway operations. • Trigger levels and actions would be developed in consultation with Sydney Dragway. • The project would potentially provide additional benefits to local businesses on Peter Brock Drive servicing the construction industry and speedway racing • The racetracks used in Construction Area 7 were sub-let by the dragway to third parties. Sydney Dragway has now surrendered the lease to this area. Any arrangements are between the dragway operator and other parties and outside of the scope of this project. Ability to provide access for these uses are subject to the master planning work being led by the Western Sydney Parklands Trust. • Construction of the speedway is expected to generate up to 150 full time jobs. *Recommended Conditions/Response* • Proactive measures such a mesh fence and planting of a vegetative screen between the speedway and the dragway would occur be constructed early and other ongoing active measures such as watering of

Issue	Consideration
	the speedway track and dust monitoring would be the responsibility of the speedway operator and a requirement of the lease with Western Sydney Parklands. These measures could also include stopping speedway events until safe conditions can be assured as an option of last resort, however events occurring concurrently would be limited. • Future use of the speedway, including for education and venue hire would be managed by the speedway operator and the Western Sydney Parklands Trust and is outside the scope of this application.
Visual impact • Negative visual impact of the stockpile in Construction Area 7 on nearby businesses.	*Assessment* • The Proponent has revised the proposed construction methodology which has resulted in the reduction in height and scale of the stockpile in Construction Area 7. The stockpile would not be out of context with the surrounding stockpiles associated with commercial operations adjacent, including the Austral Brickworks. *Recommended Conditions/Response* • The revised stockpile height of approximately 3-4 metres would have a negligible visual impact to nearby businesses.
Greenhouse gas, climate change and energy • Support for inclusion of solar power, smart lighting. • Absence of wind generators was noted, and storage batteries were recommended.	*Assessment* • Solar would be the most appropriate renewable energy source for the development and that wind generators and battery storage was not considered feasible. • Further solar capacity has been identified, with an additional 400 kW to be provided on the pit garage roofs. *Recommended Conditions/Response* • The Department supports the proposed installation of energy efficient and renewable energy systems.
Environmental management • On-going environmental management is supported, including litter control, noise and odour monitoring and additional planting of trees.	*Assessment* • Ongoing operational maintenance and environmental management would be guided by an operational environmental management plan. • Noise monitoring would be undertaken to identify impacts to receivers and ensure that mitigation achieves the anticipated outcomes. • The Proponent has committed to planting approximately 1000 new trees to offset the loss of 148 canopy trees. This will also offset potential heat island effects created by additional hard surfaces. *Recommended Conditions/Responses* • Industry best practice measures to manage air quality, noise and waste management would be employed as outlined in the EIS and management plans developed with appropriate management measures for the issues of concern included for both construction and operation.

Appendix B

SSI 10048 Instrument of Approval

Infrastructure approval

Section 5.19 of the *Environmental Planning & Assessment Act 1979*

I grant approval to the carrying out of the State significant infrastructure (SSI) referred to in Schedule 1, subject to the conditions in Schedule 2.

The Hon. Rob Stokes MP
Minister for Planning and Public Spaces

Sydney 23rd December, 2020

SCHEDULE 1

Application no.:	SSI 10048
Proponent:	Sydney Metro
Approval Authority:	Minister for Planning and Public Spaces
Land:	Lot 1 DP 1077822; Lots A, B & C DP 408966; and Lot 2 DP 1062965
Description of State Significant Infrastructure:	Construction and operation of the Sydney International Speedway including: • A speedway racetrack for cars and bikes • Pit area and new access from Ferrers Road • A grandstand and open terraced seating • Ticketing infrastructure for both the Speedway and adjoining motorsport facilities • New carparking locations for use by Sydney International Speedway and adjoining motorsport facility patrons, and • Operational support infrastructure, including a stormwater management system and mesh dust management screens.
Declaration as State Significant Infrastructure	The proposal is State Significant Infrastructure by virtue of Schedule 4, clause 6 of *State Environmental Planning Policy (State and Regional Development) 2011*.

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DEFINITIONS

The definitions below apply to terms used in this approval, unless otherwise stated or the context indicates otherwise.

Table 1: Definitions relevant to all SSI projects

Term	Definition
Aboriginal object	The same meaning as in the *National Parks and Wildlife Act 1974* (NSW).
Ancillary facility	A temporary facility for construction of the SSI including an office and amenities compound, construction compound, material crushing and screening plant, materials storage compound, maintenance workshop, testing laboratory and material stockpile area
ANZECC	Australian and New Zealand Environment and Conservation Council
AR	Amendment Report submitted to the Planning Secretary under clause 192 of the *Environmental Planning and Assessment Regulation 2000*
At-property treatment	Includes building treatments and courtyard walls. Building treatments may include but are not limited to ventilation, glazing, window and door seals, sealing of vents and underfloor areas, shutters and secondary glazing
CALD	Culturally and Linguistically Diverse
CEMP	Construction Environmental Management Plan
Completion of construction	The date upon which construction is completed and all construction related requirements of the Planning Secretary (if any) have been met. If construction is staged, completion of construction is the date upon which construction is completed and all construction related requirements of the Planning Secretary (if any) have been met, in respect of all stages of construction
Construction	Includes all work required to construct the SSI as described in the documents listed in **Condition A1**, including commissioning trials of equipment and temporary use of any part of the SSI, but excluding the following **Low Impact Work** which has commenced prior to approval of the CEMP. (a) survey work including carrying out general alignment survey, installing survey controls (including installation of global positioning systems (GPS)), installing repeater stations, carrying out surveys of existing and future utilities and building and road dilapidation surveys; (b) investigations including investigative drilling, contamination investigations and excavation*;* (c) operation of ancillary facilities if the ER has determined the operational activities will have minimal impact on the environment and community; (d) minor clearing and relocation of native vegetation, as identified in the documents listed in **Condition A1**; (e) installation of mitigation measures including erosion and sediment controls, temporary exclusion fencing for sensitive areas and acoustic treatments; (f) property acquisition adjustment work including installation of property fencing, and relocation and adjustments of utilities to property including water supply and electricity;

Term	Definition
	(g) relocation and connection of utilities where the relocation or connection has a minor impact to the environment as determined by the ER; (h) archaeological testing under the *Code of practice for archaeological investigation of Aboriginal objects in NSW (DECCW, 2010)* or archaeological monitoring undertaken in association with [(a)]-[(h)] above to ensure that there is no impact on heritage items; (i) other activities determined by the ER to have minimal environmental impact which may include construction of minor access roads, temporary relocation of pedestrian and cycle paths and the provision of property access; and (j) maintenance of existing buildings and structures required to facilitate the carrying out of the SSI. However, where heritage items on the State heritage register, areas of known or expected archaeological potential, or threatened species or threatened ecological communities (within the meaning of the *Biodiversity Conservation Act 2016*) are affected by any low impact work, that work is construction, unless otherwise determined by the Planning Secretary in consultation with EESG, Heritage NSW or DPI Fisheries (in the case of impact upon fish, aquatic invertebrates or marine vegetation). Where low impact works have already commenced, these are considered to remain as low impact works and are managed in accordance with the framework under which they commenced.
Construction Boundary	The area physically affected by work as described in the documents listed in **Condition A1**
Council	Blacktown City Council
DAWE	Commonwealth Department of Agriculture, Water and Environment (former Department of the Environment and Energy)
Department	NSW Department of Planning, Industry and Environment
DECC	Former NSW Department of Environment and Climate Change
EESG	Environment, Energy and Science Group of the Department of Planning, Industry and Environment (former NSW Office of Environment and Heritage)
EIS	The Environmental Impact Statement submitted to the Planning Secretary seeking approval to carry out the development described in it, as revised if required by the Planning Secretary under the EP&A Act, and including any additional information provided by the Proponent in support of the application for approval of the project
EMS	Environmental Management System
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence under the POEO Act
ER	The Environmental Representative for the SSI
Environment	Includes all aspects of the surroundings of humans, whether affecting any human as an individual or in his or her social groupings

Term	Definition
Environmental Representative Protocol	The document of the same title published by the Department of Planning and Environment dated October 2018
Heavy Vehicle	Has the same meaning as in the *Heavy Vehicle National Law (NSW)*
Heritage item	A place, building, work, relic, archaeological site, tree, movable object or precinct of heritage significance, that is listed under one or more of the following registers: the State Heritage Register under the *Heritage Act 1977* (NSW), a state agency heritage and conservation register under section 170 of the *Heritage Act 1977* (NSW), a Local Environmental Plan under the EP&A Act, the World, National or Commonwealth Heritage lists under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth), and an "Aboriginal object" or "Aboriginal place" as defined in section 5 of the *National Parks and Wildlife Act 1974* (NSW)
Heritage NSW	Heritage NSW, Department of Premier and Cabinet
Highly noise affected	As defined in the Interim Construction Noise Guideline (DECC, 2009)
Highly noise intensive works	Works which are defined as annoying under the Interim Construction Noise Guideline (DECC, 2009) including: (a) use of power saws, such as used for cutting timber, rail lines, masonry, road pavement or steel work; (b) grinding metal, concrete or masonry; (c) rock drilling; (d) line drilling; (e) vibratory rolling; (f) bitumen milling or profiling; (g) jackhammering, rock hammering or rock breaking; and (h) impact piling
ICNG	Interim Construction Noise Guideline (DECC, 2009)
Incident	An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance with the terms of this approval. ***Note**: "material harm" is defined in this approval.*
Land	Has the same meaning as the definition of the term in section 1.4 of the EP&A Act
Landowner	Has the same meaning as "owner" in the *Local Government Act 1993* and in relation to a building means the owner of the building
LOTE	Language Other than English
Local road	Any road that is not defined as a classified road under the *Roads Act 1993*

Term	Definition
Material harm	is harm that: (a) involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or (b) results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment).
Minister	NSW Minister for Planning and Public Spaces
NML	Noise Management Level as defined in the *Interim Construction Noise Guideline* (DECC, 2009)
NSW Heritage Council	Heritage Council of NSW (or delegate)
Non-compliance	An occurrence, set of circumstances or development that is a breach of this approval
OEMP	Operational Environmental Management Plan
Operation	The carrying out of the SSI (whether in full or in part) upon the completion of construction. *Note: There may be overlap between the carrying out of construction and operation if the phases of the development are staged. Commissioning trials of equipment and temporary use of any part of the SSI are within the definition of construction.*
Planning Secretary	Planning Secretary of the Department (or nominee, whether nominated before or after the date on which this approval was granted)
POEO Act	*Protection of the Environment Operations Act 1997* (NSW)
Proponent	The person identified as such in Schedule 1 of this approval and any other person carrying out any part of the SSI from time to time
Relic	Has the same meaning as the definition of the term in section 4 of the *Heritage Act 1977* (NSW)
RAPs	Registered Aboriginal Parties
Relevant roads authority	The same meaning as the roads authority defined in the Roads Act 1993 (NSW).
Response to Submissions	The Proponent's response to issues raised in submissions received in relation to the application for approval for the SSI under the EP&A Act
SSI	The State Significant Infrastructure, as generally described in Schedule 1 of this approval, the carrying out of which is approved under the terms of this approval
Sensitive land uses	Includes residences, educational institutions (including preschools, schools, universities, TAFE colleges), health care facilities (including nursing homes, hospitals), religious facilities (including churches), childcare centres and passive recreation areas (including outdoor grounds used for teaching). Receivers that may be considered to be sensitive include commercial premises (including film and television studios, research facilities, entertainment spaces, temporary accommodation such as caravan parks and camping grounds, restaurants, office premises, and retail spaces), and industrial premises as identified by the Planning Secretary

Term	Definition
SES	NSW State Emergency Services
TMC	Transport Management Centre for NSW
Tree	Long lived woody perennial plant greater than (or usually greater than) 3 metres in height with one or relatively few main stems or trunks (AS4373-2007 Pruning of amenity trees)
Unexpected heritage find	An object or place that is discovered during the carrying out of the SSI and which may be a heritage item but was not identified in the documents listed in **Condition A1** or suspected to be present. An unexpected heritage find does not include human remains.
Work	Any physical work for the purpose of the SSI including construction and low impact work

SUMMARY OF REPORTING REQUIREMENTS

Reports and notifications that must be provided to the Planning Secretary under the terms of this approval are listed in **Table 2.** Note that under **condition A9** of this approval the Proponent may seek the Planning Secretary's agreement to a later timeframe for submission (other than in relation to the immediate written notification of an incident required under **condition A9**).

Table 2: Reports and Notifications that must be submitted to the Secretary

Condition	Report / Notification	Timing[1]	Purpose
Part A – Administrative			
A10	Staging Report	One month before commencement of construction (or operation if only staged operation is proposed) of the first of the proposed stages	Information
A19	Environmental Representative	Must be sought one month before the commencement of works	Approval
A22(i)	Environmental Representative reports	Within seven days following the end of each month for the duration of the ER's engagement	Information
A32	Independent Audit Reports	In accordance with the timeframes set out in the Independent Audit Post Approval Requirements (2020)	Information
A34	Written notification of incident	Immediately upon becoming aware of the incident. Subsequent written notification and an incident report are required seven days after the Proponent became aware of the incident and 30 days after the date on which the incident occurred, respectively	Information
Part B - Communication Information and Reporting			
B2	Complaints management system	Before the commencement of any work	Information
B5	Complaints Register	upon request from the Planning Secretary	Information
Part D - Operation Environmental Management			
D6/D7	OEMP and sub plans or EMS	One month before the commencement of operation	Information
Part E – Key Issues			
Traffic and Transport			
E6	Road Safety Audits	Upon request of the Planning Secretary	Information
Heritage			
E19	Unexpected Heritage Finds and Humans Remains Procedure	Two weeks before commencement of construction	Information
E21	Details of unexpected heritage finds	No later than 12 months after the completion of work if unexpected heritage finds are found	Information

[1] Where a project is staged, all required approvals must be obtained before the commencement of the relevant stage.

Condition	Report / Notification	Timing[1]	Purpose
Noise and Vibration			
E31	Report on non-implementation of operational noise mitigation measures	Before commencement of work that would impact identified sensitive receivers	Information
E32	Operational Noise Compliance Report	Within 60 days of completing the operational monitoring	Information
Soils			
E39	Site Audit Statement	One month before the commencement of operation	Information

Note: This Table 3 is not a term of this approval. If there is an inconsistency between a requirement in Table 3 and a requirement in a condition, the requirement of the condition prevails.

SCHEDULE 2

PART A

ADMINISTRATIVE CONDITIONS

GENERAL

A1 The Proponent must carry out the SSI in accordance with the terms of this approval and generally in accordance with the:
(a) *Sydney International Speedway – Environmental Impact Statement Volume 1 & 2* (the EIS) (dated August 2020);
(b) *Sydney International Speedway – Submissions Report* (the Submissions Report, dated November 2020)*;* and
(c) *Sydney International Speedway – Amendment Report* (the AR, dated November 2020).

A2 The SSI must only be carried out in accordance with all procedures, commitments, preventative actions, performance criteria and mitigation measures set out in in accordance with the documents listed in **Condition A1** unless otherwise specified in, or required under, this approval.

A3 In the event of an inconsistency between:
(a) the terms of this approval and any document listed in **Condition A1** inclusive, the terms of this approval will prevail to the extent of the inconsistency; and
(b) any document listed in **Condition A1** inclusive, the most recent document will prevail to the extent of the inconsistency.

***Note**: For the purpose of this condition, there will be an inconsistency between a term of this approval and any document if it is not possible to comply with both the term and the document.*

A4 In the event that there are differing interpretations of the terms of this approval, including in relation to a condition of this approval, the Planning Secretary's interpretation is final.

A5 The Proponent must comply with all written requirements or directions of the Planning Secretary, including in relation to:

(a) the environmental performance of the SSI;
(b) any document or correspondence in relation to the SSI;
(c) any notification given to the Planning Secretary under the terms of this approval;
(d) any audit of the construction or operation of the SSI;
(e) the terms of this approval and compliance with the terms of this approval (including anything required to be done under this approval);
(f) the carrying out of any additional monitoring or mitigation measures; and
(g) in respect of ongoing monitoring and management obligations, compliance with an updated or revised version of a guideline, protocol, Australian Standard or policy required to be complied with under this approval.

A6 Where the terms of this approval require a document or monitoring program to be prepared or a review to be undertaken in consultation with identified parties, evidence of the consultation undertaken must be submitted to the Planning Secretary with the document. The evidence must include:

(a) documentation of the engagement with the party identified in the condition of approval that has occurred before submitting the document for approval;
(b) a log of the dates of engagement or attempted engagement with the identified party and a summary of the issues raised by them;
(c) documentation of the follow-up with the identified party(s) where feedback has not been provided to confirm that they have none or have failed to provide feedback after repeated requests;
(d) outline of the issues raised by the identified party and how they have been addressed; and

(e) a description of the outstanding issues raised by the identified party and the reasons why they have not been addressed.

A7 This approval lapses five (5) years after the date on which it is granted, unless work has physically commenced on or before that date.

A8 References in the terms of this approval to any guideline, protocol, Australian Standard or policy are to such guidelines, protocols, Standards or policies in the form they are in as at the date of this approval.

A9 Any document that must be submitted within a timeframe specified in or under the terms of this approval may be submitted within a later timeframe agreed with the Planning Secretary. This condition does not apply to the immediate written notification required in respect of an incident under **Condition A34**.

STAGING

A10 The SSI may be constructed and operated in stages. Where staged construction or operation is proposed, a **Staging Report** (for either or both construction and operation as the case may be) must be prepared and submitted to the Planning Secretary for information. The **Staging Report** must be submitted to the Planning Secretary for information no later than one month before the commencement of construction of the first of the proposed stages of construction (or if only staged operation is proposed, one month before the commencement of operation of the first of the proposed stages of operation).

A11 The **Staging Report** must:

(a) if staged construction is proposed, set out how the construction of the whole of the SSI will be staged, including details of work and other activities to be carried out in each stage and the general timing of when construction of each stage will commence and finish;
(b) if staged operation is proposed, set out how the operation of the whole of the SSI will be staged, including details of work and other activities to be carried out in each stage and the general timing of when operation of each stage will commence and finish (if relevant);
(c) specify the relevant conditions that apply to each stage and how compliance with conditions will be achieved across and between each of the stages of the SSI; and
(d) set out mechanisms for managing any cumulative impacts arising from the proposed staging.

A12 The SSI must be staged in accordance with the **Staging Report,** as submitted to the Planning Secretary.

A13 Where staging is proposed, the terms of this approval that apply or are relevant to the work or activities to be carried out in a specific stage must be complied with at the relevant time for that stage.

A14 Where changes are proposed to the staging of construction or operation, a revised Staging Report must be prepared and submitted to the Planning Secretary for information.

ANCILLARY FACILITIES

Ancillary facilities

A15 Ancillary facilities that are not identified by description and location in the documents listed in **Condition A1** can only be established and used in each case if:

(a) they are located within or immediately adjacent to the construction boundary; and
(b) they are not located next to a sensitive receiver (including where an access road is between the facility and the receiver), unless the sensitive receiver landowner and occupier have given written acceptance to the carrying out of the relevant facility in the proposed location; and

(c) they have no impacts on heritage items (including areas of archaeological sensitivity), threatened species, populations or ecological communities beyond the impacts approved under the terms of this approval; and
(d) the establishment and use of the facility can be carried out and managed within the outcomes set out in the terms of this approval, including in relation to environmental, social and economic impacts.

***Note**: This condition does not apply to any facilities or work that are exempt or complying development, established prior to the commencement of construction under this approval or minor construction ancillary facilities established under **Condition A17**.*

Use of Construction Ancillary Facilities

A16 The use of a construction ancillary facility for construction must not commence until the **CEMP** required by **Condition C1**, relevant **CEMP Sub-plans** required by **Condition C3** and relevant **Construction Monitoring Programs** required by **Condition C8** have been approved by the **ER**. This condition does not apply to **Condition A17** or where the use of a construction ancillary facility is Low Impact Work.

Minor Construction Ancillary Facilities

A17 Lunch sheds, office sheds, portable toilet facilities, and the like, can be established where they satisfy the following criteria:

(a) are located within the construction boundary or adjacent to the construction boundary; and
(b) have been assessed by the **ER** to have -
    (i) minimal amenity impacts to surrounding residences and businesses, after consideration of matters such as compliance with the *Interim Construction Noise Guideline* (DECC, 2009), traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts, and
    (ii) minimal environmental impact with respect to waste management and flooding, and
    (iii) no impacts on biodiversity, soil and water, and heritage items beyond those already approved under other terms of this approval.

Boundary screening

A18 Boundary screening must be erected around the construction boundary and all ancillary facilities that are adjacent to sensitive receivers for the duration of construction of the SSI unless otherwise agreed with relevant Council, and affected residents, business operators or landowners.

ENVIRONMENT REPRESENTATIVE

A19 Work must not commence until an **Environmental Representative (ER)** has been approved by the Planning Secretary and engaged by the Proponent.

A20 The proposed **ER** must be a suitably qualified and experienced person who was not involved in the preparation of the documents listed in **Condition A1**, and is independent from the design and construction personnel for the SSI and those involved in the delivery of it.

A21 The Proponent may engage more than one **ER** for the SSI, in which case the functions to be exercised by an **ER** under the terms of this approval may be carried out by any **ER** that is approved by the Planning Secretary for the purposes of the SSI. The **ER** must meet the requirements of the Environmental Representative Protocol (Department of Planning and Environment, October 2018). The appointment of the **ER** must have regard to the Department's guideline Seeking approval from the Department for the appointment of independent experts (DPIE, 2020).

A22 For the duration of the work until the commencement of operation, or as agreed with the Planning Secretary, the approved **ER** must:

(a) receive and respond to communication from the Planning Secretary in relation to the environmental performance of the SSI;

(b) consider and inform the Planning Secretary on matters specified in the terms of this approval;
(c) consider and recommend to the Proponent any improvements that may be made to work practices to avoid or minimise adverse impact to the environment and to the community;
(d) approve documents and any updates to documents identified in **Conditions A10, C1, C3** and **C8** and any other documents that are identified by the Planning Secretary, after verifying all relevant matters set out in this approval pertaining to those documents have been met, and make a written statement to the Planning Secretary to this effect;
(e) regularly monitor the implementation of the documents listed in **Conditions A10, C1, C3** and **C8** to ensure implementation is being carried out in accordance with the document and the terms of this approval;
(f) as may be requested by the Secretary, help plan, attend or undertake audits of the development commissioned by the Department including scoping audits, programming audits, briefings and site visits, but not independent environmental audits required under **Condition A29** of this approval;
(g) as may be requested by the Planning Secretary, assist the Department in the resolution of community complaints received directly by the Department;
(h) consider the impacts of minor ancillary facilities comprising lunch sheds, office sheds and portable toilet facilities as required by **Condition A17** of this approval; and
(i) prepare and submit to the Planning Secretary and other relevant regulatory agencies, for information, an **Environmental Representative Monthly Report** providing the information set out in the Environmental Representative Protocol under the heading "Environmental Representative Monthly Reports." The **Environmental Representative Monthly Report** must be submitted within seven (7) days following the end of each month for the duration of the ER's engagement for the SSI, or as otherwise agreed by the Planning Secretary.

A23 The Proponent must provide the **ER** with all documentation requested by the **ER** in order for the **ER** to perform their functions specified in **Condition A22** (including preparation of the **ER** monthly report), as well as:

(a) the complaints register (to be provided on a weekly basis or as requested); and
(b) a copy of any assessment carried out by the Proponent of whether proposed work is consistent with the approval (which must be provided to the **ER** before the commencement of the subject work).

A24 The Planning Secretary may at any time commission an audit of an **ER's** exercise of its functions under **Condition A22**. The Proponent must:

(a) facilitate and assist the Planning Secretary in any such audit; and
(b) make it a term of their engagement of an **ER** that the **ER** facilitate and assist the Planning Secretary in any such audit.

COMPLIANCE REPORTING REQUIREMENTS

A25 Compliance Reports of the project must be carried out in accordance with the *Compliance Reporting Post Approval Requirements* (2020).

A26 Notwithstanding the requirements of the *Compliance Reporting Post Approval Requirements* (2020), the Planning Secretary may approve a request for ongoing independent operational compliance reports to be ceased, where it has been demonstrated to the Planning Secretary's satisfaction that an operational compliance report has demonstrated operational compliance.

NOTIFICATION OF COMMENCEMENT

A27 The Department must be notified in writing of the dates of commencement of construction and operation at least two (2) weeks before those dates.

A28 If the construction or operation of the SSI to be staged, the Department must be notified in writing at least one month before the commencement of each stage, of the date of the commencement of that stage.

AUDITING

A29 Independent Audits of the development must be conducted and carried out in accordance with the *Independent Audit Post Approval Requirements (2020)*.

A30 Proposed independent auditors must be agreed to in writing by the Planning Secretary prior to the commencement of an Independent Audit.

A31 The Planning Secretary may require the initial and subsequent Independent Audits to be undertaken at different times to those specified in the *Compliance Reporting Post Approval Requirements (2020)* , upon giving at least four weeks' notice (or timing as stipulated by the Planning Secretary) to the Proponent of the date upon which the audit must be commenced.

A32 Independent Audit Reports and the Proponent's response to audit findings must be submitted to the Planning Secretary within two months of undertaking the independent audit site inspection as outlined in the *Independent Audit Post Approval Requirements (2020)*, unless otherwise agreed by the Planning Secretary.

A33 Notwithstanding the requirements of the *Independent Audit Post Approval Requirements (2020)*, the Planning Secretary may approve a request for ongoing independent operational audits to be ceased, where it has been demonstrated to the Planning Secretary's satisfaction that independent operational audits have demonstrated operational compliance.

INCIDENT NOTIFICATION, REPORTING AND RESPONSE

A34 The Planning Secretary must be notified in writing via the Major Projects Website immediately after the Proponent becomes aware of an incident. The notification must identify the SSI (including the application number and the name of the SSI if it has one) and set out the location and nature of the incident. Subsequent notification requirements must be given, and reports submitted in accordance with the requirements set out in Appendix A.

NON-COMPLIANCE NOTIFICATION

A35 The Planning Secretary must be notified in writing via the Major Projects Website within seven days after the Proponent becomes aware of any non-compliance.

A36 A non-compliance notification must identify the SSI and the application number for it, set out the condition of approval that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be undertaken to address the non-compliance.

Note: *A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.*

IDENTIFICATION OF WORKFORCE AND COMPOUNDS

A37 The SSI name, application number, telephone number, postal address and email address required under **Condition B3** of this approval must be available on site boundary fencing / hoarding at each ancillary facility subject to **Conditions A15, A16 and A18** before the commencement of construction. This information must also be provided on the website required under **Condition B6**.

PART B

COMMUNITY INFORMATION AND REPORTING

COMMUNITY INFORMATION, CONSULTATION AND INVOLVEMENT

Communication Strategy

B1 The **Overarching Community Communications Strategy** as provided in the documents listed **Condition A1** must be implemented until the project is handed over to the Western Sydney Parklands Trust.

COMPLAINTS MANAGEMENT SYSTEM

B2 A **Complaints Management System** must be prepared and implemented before the commencement of any work and maintained for the duration of construction and for a minimum for 12 months following completion of construction of the SSI.

B3 The following information must be available to facilitate community enquiries and manage complaints before the commencement of work and for 12 months following the completion of construction:

(a) a 24- hour telephone number for the registration of complaints and enquiries about the SSI;
(b) a postal address to which written complaints and enquires may be sent;
(c) an email address to which electronic complaints and enquiries may be transmitted; and
(d) a process for complaints unable to be resolved.

This information must be accessible to all in the community regardless of age, ethnicity, disability or literacy level.

B4 A Complaints Register must be maintained recording information on all complaints received about the SSI during the carrying out of any work and for a minimum of 12 months following the completion of construction. The Complaints Register must record the:

(a) number of complaints received;
(b) number of people in the household affected in relation to a complaint;
(c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect; and
(d) means by which the complaint was addressed and whether resolution was reached, with or without mediation.

B5 The **Complaints Register** must be provided to the Planning Secretary upon request, within the timeframe stated in the request. Personal details of complainants must be provided where this is consistent with the Proponent's privacy statement, notice or policy.

Note: Complainants must be advised that the Complaints Register may be forwarded to Government agencies to allow them to undertake their regulatory duties.

PROVISION OF ELECTRONIC INFORMATION

B6 A website or webpage providing information in relation to the SSI must be established before commencement of work and maintained for the duration of construction, and for a minimum of 12 months following the completion of all stages of construction. Up-to-date information (excluding confidential, private and/or commercial information or other documents as agreed to by the Planning Secretary) must be published before the relevant work commencing and maintained on the website or dedicated pages including:

(a) information on the current implementation status of the SSI;

(b) a copy of the documents listed in **Condition A1** and **Condition A2** of this approval, and any documentation relating to any modifications made to the SSI or the terms of this approval;
(c) a copy of this approval in its original form, a current consolidated copy of this approval (that is, including any approved modifications to its terms), and copies of any approval granted by the Minister to a modification of the terms of this approval, or links to the referenced documents where available;
(d) a copy of each statutory approval, licence or permit required and obtained in relation to the SSI, or where the issuing agency maintains a website of approvals, licences or permits, a link to that website;
(e) a current copy of each document required under the terms of this approval, which must be published within one week of its approval or before the commencement of any work to which they relate or before their implementation, as the case may be; and
(f) a copy of the compliance and audit reports required under **Condition A25,** and **Conditions A29 and A31** of this approval.

PART C

CONSTRUCTION ENVIRONMENTAL MANAGEMENT

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

C1 A **Construction Environmental Management Plan** (**CEMP**) must be prepared in accordance with the Construction Environmental Management Framework (CEMF) included in the documents listed in **Condition A1** to detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in **Condition A1** will be implemented and achieved during construction.

C2 The **CEMP** must be prepared and submitted to the **ER** for approval no later than one (1) month before the commencement of construction, unless otherwise agreed by the ER. Where construction is staged, submission must be no later than one (1) month before the commencement of that stage, unless otherwise agreed by the ER.

C3 The following **CEMP Sub-plans** must be prepared in consultation with the relevant government agencies identified for each **CEMP Sub-plan**:

Table 3 CEMP Sub-plans

	Required CEMP Sub-plan	Relevant government agencies to be consulted for each CEMP Sub-plan
(a)	Traffic and Transport	Relevant Road Authorities, Western Sydney Parklands Trust
(c)	Flora and Fauna	EESG, Western Sydney Parklands Trust and Council
(d)	Air Quality (inc. dust)	Western Sydney Parklands Trust, WaterNSW and Council
(e)	Soil and Surface Water	EESG, Western Sydney Parklands Trust, Sydney Water, WaterNSW and Council

C4 The **CEMP Sub-plans** must be prepared in accordance with the **CEMF**.

C5 Details of all issues raised by an agency relevant to development of a **CEMP Sub-plan** as a result of consultation**,** including copies of all correspondence from those agencies, must be provided with the relevant **CEMP Sub-Plan**.

C6 Any of the **CEMP Sub-plans** may be submitted to the **ER** along with, or subsequent to, the submission of the **CEMP** but in any event, no later than one (1) month before construction, unless as otherwise agreed by the ER.

C7 Construction must not commence until the **CEMP** and all **CEMP Sub-plans** have been approved by the ER. The **CEMP** and **CEMP Sub-plans**, as approved by the **ER**, including any amendments approved by the **ER** must be implemented for the duration of construction. Where construction of the SSI is staged, construction of a stage must not commence until the CEMP and sub-plans for that stage have been approved by the **ER.**

CONSTRUCTION MONITORING PROGRAMS

C8 The following **Construction Monitoring Programs** must be prepared in consultation with the relevant government agencies identified for each to compare actual performance of construction of the SSI against the performance predicted in the documents listed in **Condition A1** or in the **CEMP**:

Table 4 – Construction Monitoring Programs

	Required Construction Monitoring Programs	Relevant government agencies to be consulted for each Construction Monitoring Program
(a)	Dust	Western Sydney Parklands Trust, WaterNSW, and Council
(b)	Soil and Water	Western Sydney Parklands Trust, Sydney Water, Council

C9 Each **Construction Monitoring Program** must provide:

(a) details of baseline data available;
(b) details of baseline data to be obtained and when;
(c) details of all monitoring of the project to be undertaken;
(d) the parameters of the project to be monitored;
(e) the frequency of monitoring to be undertaken;
(f) the location of monitoring;
(g) the reporting of monitoring results;
(h) procedures to identify and implement additional mitigation measures where results of monitoring are unsatisfactory;
(i) any consultation to be undertaken in relation to the monitoring programs; and
(j) details of all information requested by an agency including copies of all correspondence from those agencies.

C10 The **Construction Monitoring Programs** must be submitted to the **ER** for approval at least one (1) month before the commencement of construction, unless otherwise agreed by the **ER**.

C11 Construction must not commence until the **ER** has approved all of the required **Construction Monitoring Programs**, and all relevant baseline data for the specific construction activity has been collected, unless otherwise agreed by the Planning Secretary.

C12 The **Construction Monitoring Programs**, as approved by the **ER** must be implemented for the duration of construction and for any longer period set out in the monitoring program or specified by the Planning Secretary, whichever is the greater.

C13 The results of the **Construction Monitoring Programs** must be submitted to the Planning Secretary, and relevant regulatory agencies, for information in the form of a **Construction Monitoring Report** at the frequency identified in the relevant **Construction Monitoring Program**.

Note: *Where a relevant **CEMP Sub-plan** exists, the relevant **Construction Monitoring Program** may be incorporated into that **CEMP Sub-plan.***

PART D

OPERATIONAL ENVIRONMENTAL MANAGEMENT

OPERATIONAL ENVIRONMENTAL MANAGEMENT

D1 An **Operational Environmental Management Plan (OEMP)** must be prepared in accordance with the *Environmental Management Plan Guideline for Infrastructure Projects (Department Planning, Industry and Environment 2020)*. The OEMP must detail how the performance outcomes, commitments and mitigation measures made and identified in the documents listed in **Condition A1** will be implemented and achieved during operation. This condition (**Condition D1**) does not apply if **Condition D2** of this approval applies.

D2 An **OEMP** is not required for the SSI if the Proponent has an **Environmental Management System** (**EMS**) or equivalent as agreed with the Planning Secretary, and demonstrates, to the satisfaction of the Planning Secretary, that through the **EMS** or equivalent:

(a) the performance outcomes, commitments and mitigation measures, made and identified in the documents listed in **Condition A1**, and specified relevant terms of this approval can be achieved;
(b) issues identified through ongoing risk analysis can be managed; and
(c) procedures are in place for rectifying any non-compliance with this approval identified during compliance auditing, incident management or any other time during operation.

D3 Where an **OEMP** is required, the Proponent must include the following **OEMP Sub-plans** in the **OEMP**:

Table 5 OEMP Sub-plans

	Required OEMP Sub-plan	Relevant government agencies to be consulted for each OEMP Sub-plan
(a)	Dust	Office of Sport and WaterNSW
(b)	Traffic and Transport	Relevant Road Authorities
(c)	Noise and Vibration	Council

*Note: the Traffic and Transport sub-plan does not apply to major concurrent events with other venues in the motorsport precinct where a Major Events Operation Plan (or other equivalent document) as required by **Condition E8** applies.*

D4 Each of the **OEMP Sub-plans** must include the information set out in **Condition D1** of this approval.

D5 The **OEMP Sub-plans** must be developed in consultation with relevant government agencies as identified in **Condition D3**. Details of all information requested by an agency to be included in an **OEMP Sub-plan** as a result of consultation**,** including copies of all correspondence from those agencies, must be provided with the relevant **OEMP Sub-Plan**.

D6 The **OEMP Sub-plans** must be submitted to the Planning Secretary as part of the **OEMP**.

D7 The **OEMP** or **EMS** or equivalent as agreed with the Planning Secretary, must be submitted to the Planning Secretary for information no later than one (1) month before the commencement of operation.

D8 The **OEMP** or **EMS** or equivalent as agreed with the Planning Secretary, as submitted to the Planning Secretary and amended from time to time, must be implemented for the duration of operation and the **OEMP** or **EMS** or equivalent must be made publicly available before the commencement of operation.

OPERATIONAL MONITORING PROGRAM

D9 The following **Operational Monitoring Programs** must be prepared in consultation with the relevant authorities identified for each **Operational Monitoring Program** to compare actual operational performance against predicted performance.

Table 6 Operational Monitoring Programs

	Required Operational Monitoring Programs	Relevant authority(s) and council(s) to be consulted for each Operational Monitoring Program
(a)	Dust	Office of Sport and WaterNSW
(b)	Traffic and Transport	Council and the Transport Management Centre

D10 Each operational monitoring program must include:
(a) details of baseline data;
(b) details of all monitoring of the project to be undertaken;
(c) the parameters of the project to be monitored;
(d) the frequency of monitoring to be undertaken;
(e) the location of monitoring;
(f) the reporting of monitoring and analysis results against relevant criteria;
(g) details of the methods that will be employed to analyse the monitoring data;
(h) procedures to identify and implement additional mitigation measures where results of monitoring are unsatisfactory; and
(i) any consultation to be undertaken in relation to the monitoring programs.

D11 The **Operational Monitoring Program(s)** must be submitted to the Planning Secretary at least one month before the commencement of operation.

D12 Operation must not commence until the Planning Secretary has been provided with all of the required **Operational Monitoring Programs**, and all relevant baseline data has been collected.

D13 The **Operational Monitoring Programs** must be implemented for the duration identified in the terms of this approval. Where no duration is specified in this approval, they must be implemented for the duration specified in the relevant **Operational Monitoring Program** or as specified by the Planning Secretary, whichever is the greater.

D14 The results of the **Operational Monitoring Programs** must be submitted to the Planning Secretary, and relevant regulatory authorities, for information in the form of an **Operational Monitoring Report** at the frequency identified in the in the terms of this approval. Where no frequency is identified in this approval, the results must be submitted at the frequency identified in the relevant **Operational Monitoring Program**.

D15 Where a relevant **OEMP Sub-plan** exists, the relevant **Operational Monitoring Program** may be **incorporated** into that **OEMP Sub-plan**.

PART E

KEY ISSUE CONDITIONS

TRAFFIC AND TRANSPORT

E1 All requests to Council for approval to use local roads, which are not identified for use in the documents listed in **Condition A1**, must include a traffic and pedestrian impact assessment, and a swept path analysis if requested. The findings of the traffic and pedestrian impact assessment must inform the Traffic and Transport **CEMP Sub-plan (Condition C3)**, and:

(a) demonstrate that the use of local roads will not compromise the safety of the public and have no more than minimal amenity impacts;
(b) provide details as to the date of completion of the road dilapidation surveys for the subject local roads; and
(c) describe the measures that will be implemented to avoid where practicable, the use of local roads past schools, aged care facilities and childcare facilities during peak times for operation.

E2 Before use of Ferrers Road or any local road by a heavy vehicle for construction of the SSI, a **Road Dilapidation Report** must be prepared for the relevant road. A copy of the **Road Dilapidation Report** must be provided to the relevant Council within three weeks of completion of the survey and at least two weeks before the road is used by heavy vehicles associated with the construction of the SSI.

E3 If damage to roads occurs as a result of the construction of the SSI, the Proponent must either (at the landowner's discretion):

(a) compensate the landowner for the damage so caused. The amount of compensation may be agreed with the landowner, but compensation must be paid even if no agreement is reached; or
(b) rectify the damage to restore the road to at least the condition it was in pre-construction (as identified in the **Road Dilapidation Report**) within 3 months after the completion of construction, or as agreed by the Planning Secretary.

E4 During construction, all reasonably practicable measures must be implemented to maintain pedestrian and vehicular access to, and parking in the vicinity of, businesses and affected properties within the Eastern Creek Motor Sports Precinct 5 as identified in the Western Sydney Parklands Plan of Management 2030. Disruptions must be avoided, and where avoidance is not possible, minimised. Where disruption cannot be minimised, alternative pedestrian and vehicular access, and parking arrangements must be developed in consultation with affected businesses and implemented before the disruption. Adequate signage and directions to businesses must be provided before, and for the duration of, any disruption.

Road Safety

E5 The SSI (including new or modified local roads, parking, pedestrian and cycle infrastructure) must be designed to meet relevant design, engineering and safety guidelines, including the Austroads Guide to Traffic Management.

E6 An independent **Road Safety Audit** of detailed design plans of new or modified local road, parking, pedestrian and cycle infrastructure provided as part of the SSI must be undertaken by an appropriately qualified and experienced person before construction to ensure that they meet the requirements of relevant design, engineering and safety guidelines, including Austroads Guide to Traffic Management. Audit findings and recommendations must be actioned before construction of the relevant infrastructure and must be made available to the Planning Secretary on request.

EVENTS MANAGEMENT

E7 Scheduling of events (both minor, major and concurrent) must be managed to reduce noise, traffic and dust impacts.

E8 No concurrent events at the Sydney International Speedway and the Western Sydney International Dragway are permitted to occur until a Major Events Operations Plan (as identified in the documents listed in **Condition A1**) has been prepared to address traffic management, parking, noise and dust management. The plan must be implemented for all concurrent events.

AIR QUALITY

E9 In addition to the commitments to develop performance outcomes and mitigation measures for air quality specified in the documents listed in **Condition A1**, all reasonably practicable measures must be implemented to minimise the emission of dust and other air pollutants during the construction and operation of the SSI.

E10 The commitments to develop performance outcomes and mitigation measures for air quality specified in the documents listed in **Condition A1** must be implemented during construction and operation of the SSI to ensure the operational safety of the Western Sydney International Dragway.

E11 Operational air quality mitigation measures as identified in the documents listed in **Condition A1** that will not be physically affected by work, must be established as soon as practicable during construction.

BIODIVERSITY

E12 The clearing of native vegetation must be minimised with the objective of reducing impacts to threatened ecological communities and threatened species habitat.

Biodiversity Credits

E13 Before any vegetation clearing or tree removal that must be offset, the Proponent must purchase and retire Biodiversity credits specified in Table 1 below. The retirement of credits must be carried out in accordance with the offset rules of the *Biodiversity Conservation Act 2016* (BC Act). This can be achieved by:

(a) Biodiversity Stewardship Agreement under the BC Act; or
(b) making payments into an offset fund that has been established by the NSW Government; or
(c) providing suitable supplementary measures.

Table 7: Biodiversity Credits to be Retired

Credit Type	Number of credits
Ecosystem Credits	
Grey Box – Forest Red Gum grassy woodland on flats of the Cumberland Plain, Sydney Basin Bioregion (Plant Community Type 849) – Moderate	1
Grey Box - Forest Red Gum grassy woodland on shale of the southern Cumberland Plain, Sydney Basin Bioregion (Plant Community Type 850) – Poor	2

Credit Type	Number of credits
Grey Box - Forest Red Gum grassy woodland on shale of the southern Cumberland Plain, Sydney Basin Bioregion (Plant Community Type 850) – Revegetation	1
Phragmites australis and ***Typha orientalis*** coastal freshwater wetlands of the Sydney Basin Bioregion (1071) – Drainage line	1

E14 The Proponent must submit evidence of the retirement of credits required by **Condition E13** to the Planning Secretary for information within one month of receiving the evidence of the retirement of credits and/or a certificate confirming payment under section 63 of the BC Act 2016 before any vegetation clearing or tree removal that must be offset.

FLOODING

E15 Measures identified in the documents listed in **Condition A1** to maintain or improve flood characteristics must be incorporated into the detailed design of the SSI. For the purposes of this condition, "maintain" means:

(a) a maximum increase in inundation levels upstream of the SSI of 50 mm in a 1% AEP rainfall event;
(b) no increase in flood inundation levels in the Warragamba Pipelines corridor;
(c) a maximum increase in inundation time of one hour in a 1% AEP rainfall event;
(d) no impact on emergency management; and
(e) no impact on essential services and infrastructure.

E16 **Condition E15(a)** does not apply in relation to detention of water between Carpark C and Carpark D as identified in the documents listed in **Condition A1** as a result of drainage changes to prevent overtopping of Ferrers Road in the 1% AEP event.

E17 Flood information developed during detailed design, such as flood reports, models and geographic information system outputs, and work as executed information from a registered surveyor certifying finished ground levels, the dimensions and finished levels of all structures constructed as part of the SSI within flood prone land, must be provided to the council, EESG and the SES in order to assist in preparing relevant documents and to reflect changes in flood behaviour as a result of the SSI. The Council, EESG and the SES must be notified in writing that the information is available no later than one (1) month following the completion of construction. Information requested by the Council, EESG or the SES must be provided no later than six (6) months following the completion of construction or within another timeframe agreed with the council, EESG and the SES.

HERITAGE

Unexpected Heritage Finds

E18 An **Unexpected Heritage Finds and Human Remains Procedure** must be prepared to manage unexpected heritage finds in accordance with any guidelines and standards prepared by the Heritage Council of NSW or Heritage NSW.

E19 The **Unexpected Heritage Finds and Human Remains Procedure** must be prepared by a suitably qualified and experienced heritage specialist and submitted to the Planning Secretary for information no later than two weeks before the commencement of construction.

E20 The **Unexpected Heritage Finds and Human Remains Procedure**, as submitted to the Planning Secretary, must be implemented for the duration of construction.

E21 If any unexpected heritage finds are identified during the work described in the documents listed in **Condition A1,** details of any archival recording, further historical research either undertaken, or to be carried out and archaeological excavations (with artefact analysis and identification of a final repository for finds), must be documented in accordance with any guidelines and standards required by the Heritage Council of NSW and Heritage NSW. These details must be provided to the Planning Secretary and relevant Government agencies for information no later than 12 months after the completion of the work.

Note: Human remains that are found unexpectedly during the carrying out of work may be under the jurisdiction of the NSW State Coroner and must be reported to the NSW Police immediately.

NOISE AND VIBRATION

Land Use Survey

E22 A detailed land use survey must be undertaken to confirm sensitive land uses (including critical working areas such as operating theatres and precision laboratories) potentially exposed to construction noise and vibration, construction ground-borne noise and operational noise. The results of the survey must be included in the **Noise and Vibration Impact Statement** required by **Condition E27**.

Construction Hours

E23 Work must only be undertaken during the following construction hours:

(a) 7:00am to 6:00pm Mondays to Fridays, inclusive;
(b) 8:00am to 6:00pm Saturdays; and
(c) at no time on Sundays or public holidays.

Variation to Work Hours

E24 Notwithstanding **Conditions E23** work may be undertaken outside the hours specified in the following circumstances:

(a) **Emergencies**, including:
  (i) for the delivery of materials required by the NSW Police Force or other authority for safety reasons; or
  (ii) where it is required in an emergency to avoid injury or the loss of life, to avoid damage or loss of property or to prevent environmental harm.

On becoming aware of the need for emergency work in accordance with (a) the Proponent must notify the **ER**, the Planning Secretary and the EPA of the reasons for such work. The Proponent must use best endeavours to notify all noise and/or vibration affected sensitive receivers of the likely impact and duration of those work.

(b) **Low impact**, including:
  (i) construction that causes $L_{Aeq(15\ minute)}$ noise levels:
    - no more than 5 dB(A) above the rating background level at any residence in accordance with the *Interim Construction Noise Guideline* (DECC, 2009), or
    - no more than the 'Noise affected' noise management levels specified in Table 3 of the *Interim Construction Noise Guideline* (DECC, 2009) at other sensitive land uses; or
  (ii) construction that causes $L_{AFmax(15\ minute)}$ noise levels no more than 15 dB(A) above the rating background level at any residence; or
  (iii) construction that causes:
    - continuous or impulsive vibration values, measured at the most affected residence are no more than the preferred values for human exposure to vibration, specified in Table 2.2 of *Assessing Vibration: a technical guideline* (DEC, 2006), or
    - intermittent vibration values measured at the most affected residence are no more than the preferred values for human exposure to vibration, specified in Table 2.4 of *Assessing Vibration: a technical guideline* (DEC, 2006);

(c) **By Agreement**, including:
   (i) negotiated agreements with directly affected residents and sensitive land uses.

E25 Where a negotiated agreement is proposed in order to undertake out-of-hours work, the Proponent must identify appropriate respite periods for the out-of-hours work in consultation with the community at each affected location on a regular basis. This consultation must include (but not be limited to) providing the community with:

(a) a schedule of likely out-of-hours work for a period no less than three (3) months;
(b) the potential work, location and duration;
(c) the noise characteristics and likely noise levels of the work; and
(d) likely mitigation and management measures.

The outcomes of the community consultation, the identified respite periods and the scheduling of the likely out-of-hour work must be provided to the Planning Secretary upon request.

Highly Noise Intensive Work

E26 Highly noise intensive work that result in an exceedance of the applicable NML at the same receiver must only be undertaken:

(a) between the hours of 8:00 am to 6:00 pm Monday to Friday;
(b) between the hours of 8:00 am to 6:00 pm Saturday; and
(c) if continuously, then not exceeding three (3) hours, with a minimum cessation of work of not less than one (1) hour.

For the purposes of this condition, 'continuously' includes any period during which there is less than one (1) hour between ceasing and recommencing any of the work that is subject of this condition.

Construction Noise Management

E27 A detailed **Noise and Vibration Impact Statement** must be prepared based on realistic construction scenarios, plant and equipment, and site layout and include**:**
(a) rating background levels identified from background noise monitoring;
(b) noise management levels for each sensitive receiver;
(c) mitigation measures incorporated, including shielding effects of ancillary infrastructure or topography, and justification for selection where multiple options are available;
(d) comparison of impacts against the NMLs identified in (c);
(e) the extent of exceedances;
(f) the likelihood of sleep disturbance or impact to ecological processes (such as foraging or other activities of nocturnal species known to be present in Prospect Nature Reserve);
(g) the duration of work outside of standard construction hours;
(h) noise mitigation to be adopted and implemented

The detailed **Noise and Vibration Impact Statement** must be prepared in consultation with the relevant council and submitted to the **ER** one month prior to the commencement of construction, unless otherwise agreed by **ER**.

Noise and Vibration Mitigation

E28 Mitigation measures must be implemented with the aim of achieving the following construction noise management levels and vibration criteria:

(a) construction 'Noise affected' noise management levels established using the *Interim Construction Noise Guideline* (DECC, 2009);
(b) vibration criteria established using the *Assessing vibration: a technical guideline* (DEC, 2006) (for human exposure); and
(c) BS 7385 Part 2-1993 "*Evaluation and measurement for vibration in buildings Part 2*" as they are "applicable to Australian conditions".

Any work identified as exceeding the noise management levels and/or vibration criteria must be managed in accordance with the **Noise and Vibration Impact Statement.**

Note: The Interim Construction Noise Guideline identifies 'particularly annoying' activities that require the addition of 5 dB(A) to the predicted level before comparing to the construction Noise Management Level.

Noise Mitigation - Operational Noise Mitigation Measures

E29 At-property treatment must be provided to the properties identified in Table 38 of the Noise and Vibration Technical Paper (dated July 2020), unless otherwise agreed by the Planning Secretary.

E30 Operational noise mitigation measures as identified in the documents listed in **Condition A1** that will not be physically affected by work, must be implemented within three (3) months of the commencement of construction in the vicinity of the impacted receiver to minimise construction noise impacts, and detailed in the **Noise and Vibration Impact Statement** for the SSI.

E31 Where implementation of operational noise mitigation measures is not proposed in accordance with **Condition E30**, the Proponent must submit to the Planning Secretary a report providing justification as to why they will not be implemented, along with details of temporary measures that would be implemented to reduce construction noise impacts, until such time that the operational noise mitigation measures identified in the documents listed in **Condition A1** are implemented. The report must be submitted to the Planning Secretary before the commencement of construction that would affect the identified sensitive receivers.

E32 Within 12 months of the commencement of operation of the SSI, the Proponent must undertake monitoring of operational noise to compare actual noise performance of the SSI against the noise performance predicted in the documents listed in **Condition A1**.

The Proponent must prepare an **Operational Noise Compliance Report** to document this monitoring. The Report must include, but not necessarily be limited to:

(a) noise monitoring to assess compliance with the operational noise levels predicted in the documents listed in **Condition A1**;
(b) methodology, location and frequency of noise monitoring undertaken, including monitoring sites at which SSI noise levels are ascertained, with specific reference to locations indicative of impacts on receivers;
(c) details of any complaints and enquiries received in relation to operational noise generated by the SSI between the date of commencement of operation and the date the report was prepared;
(d) any required recalibrations of the noise model taking into consideration factors such as noise monitoring and types of race vehicles;
(e) an assessment of the performance and effectiveness of applied noise mitigation measures together with a review and if necessary, reassessment of mitigation measures; and
(f) identification of additional measures to those identified in the documents listed in **Condition A1**, that are to be implemented with the objective of meeting the criteria outlined in the *Noise Guide for Local Government* (EPA, 2013), when these measures would be implemented and how their effectiveness would be measured and reported to the Planning Secretary, Western Sydney Parklands Trust and Council.

The **Operational Noise Compliance Report** must be submitted to the Planning Secretary within 60 days of completing the operational noise monitoring and made publicly available.

Note: Any additional mitigation measures required must be implemented within 12 months of the commencement of operation.

SOCIO-ECONOMIC, LAND USE AND PROPERTY

E33 The Proponent must identify the utilities and services (hereafter "services") potentially affected by Construction to determine requirements for adjustment, relocation, diversion, protection

and/or support. Alterations to services must be determined by negotiation between the Proponent and the service providers. The Proponent in consultation with service providers must ensure that disruption to services resulting from the construction of the SSI are avoided and advised to customers.

SOILS

E34 All reasonably practicable erosion and sediment controls must be installed and appropriately maintained to minimise water pollution. When implementing such controls, any relevant guidance in the *Managing Urban Stormwater* series must be considered.

E35 The permanent stockpile to be located on Lot 1 DP 1077822 must be designed and treated to ensure a stable landform and that existing drainage paths from the Warragamba pipeline corridor are not impeded.

Contaminated sites

E36 An **Unexpected Contaminated Land and Asbestos Finds Procedure** must be prepared before the commencement of construction and must be followed should unexpected contaminated land or asbestos (or suspected contaminated land or asbestos) be excavated or otherwise discovered during construction.

E37 The **Unexpected Contaminated Land and Asbestos Finds Procedure** must be implemented throughout construction.

E38 The Proponent must engage a NSW EPA accredited Site Auditor to ensure that any work required in relation to soil, groundwater, or ground gas contamination is appropriately managed.

E39 The Proponent must obtain a Section A1 Site Audit Statement – or a Section A2 Site Audit Statement accompanied by an Environment Management Plan – from the Site Auditor and submit it to the Environmental Representative and to the Planning Secretary before the commencement of operation. The Site Audit Statement must certify the site is suitable for the proposed use.

UTILITIES MANAGEMENT

E40 Nothing in this approval permits the carrying out of any utility work that is not described in the documents listed in **Condition A1**.

URBAN DESIGN, VISUAL AMENITY AND SUSTAINABILITY

E41 The SSI must be designed and built, in consultation with the Western Sydney Parklands Trust and Council, having regards to the:
(a) Western Sydney Parklands SEPP;
(b) *Western Sydney Parklands Urban Design Manual* (2020), including sustainability considerations;
(c) good design outcomes in *Better Placed* (NSW Government Architect, 2017); and
(d) principles of green infrastructure and outcomes in draft Greener Places (NSW Government Architect, 2020).

Lighting and Security

E42 The Proponent must construct and operate the SSI with the objective of minimising light spill to surrounding properties and effects on foraging behaviour or flight paths of nocturnal bird and bats known to utilise Prospect Nature Reserve All lighting associated with the construction and operation of the SSI must be consistent with the requirements of *AS/NZS 4282:2019 Control of the obtrusive effects of outdoor lighting* ,relevant Australian Standards in the series *AS/NZ 1158 – Lighting for Roads and Public Spaces* and give consideration to the *National Light Pollution Guidelines for Wildlife including Marine Turtles, Seabirds and Migratory Shorebirds* (Commonwealth of Australia 2020). Additionally, the Proponent must mitigate residual night

lighting impacts to protect existing or approved (as at the date of this approval) properties adjacent to the SSI and must consult with affected landowners.

Operational Maintenance

E43 The ongoing maintenance and operation costs of urban design, open space, landscaping and recreational items and work implemented as part of this approval remain the Proponent's responsibility until satisfactory arrangements have been put in place for the transfer of the asset to the relevant authority. Before the transfer of assets, the Proponent must maintain items and work to at least the design standards outlined in the Western Sydney Parklands SEPP and must notify the Planning Secretary of the transfer of assets two weeks before the proposed transfer.

Urban Heat Island Effects and Sustainability

E44 The Proponent must ensure that the SSI design minimises impacts to visual amenity, the increase in impervious surfaces and maximises shade to avoid heat island effects.

WASTE

E45 Waste generated during construction and operation must be dealt with in accordance with the following priorities:

(a) waste generation must be avoided and where avoidance is not reasonably practicable, waste generation must be reduced;
(b) where avoiding or reducing waste is not possible, waste must be re-used, recycled, or recovered; and
(c) where re-using, recycling or recovering waste is not possible, waste must be treated or disposed of.

E46 Waste must only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the *Protection of the Environment Operations (Waste) Regulation 2014*, or to any other place that can lawfully accept such waste.

E47 All waste must be classified in accordance with the EPA's *Waste Classification Guidelines*, with appropriate records and disposal dockets retained for audit purposes.

WATER

E48 The SSI must be designed, constructed and operated so as to maintain the *NSW Water Quality Objectives* where they are being achieved as at the date of this approval, and contribute towards achievement of the *NSW Water Quality Objectives* over time where they are not being achieved as at the date of this approval, unless an EPL in force in respect of the SSI contains different requirements in relation to the *NSW Water Quality Objectives*, in which case those requirements must be complied with.

E49 All new or modified drainage systems associated with the construction and operation of the SSI (including but not limited to, watercourse crossings, stream diversions, drainage swales and depressions) must be designed and carried out in accordance with Sydney Water standards and any relevant guidelines, to meet capacity constraints of council and Sydney Water's drainage systems, minimise impacts on the receiving environment and be designed by a suitably qualified and experienced person.

E50 The stockpile on Lot 1 DP 1077822 must be designed and constructed to ensure that no additional surface run off enters the Warragamba pipeline corridor.

E51 If damage to the Warragamba pipeline corridor or associated bulk water supply infrastructure occurs as a result of the construction of the SSI, the Proponent must either (at the landowner's discretion):

(a) compensate the landowner for the damage so caused. The amount of compensation may be agreed with the landowner, but compensation must be paid even if no agreement is reached; or
(b) rectify the damage to restore the road to at least the condition it was in pre-construction.

Appendix A

WRITTEN INCIDENT NOTIFICATION AND REPORTING REQUIREMENTS

1. A written incident notification addressing the requirements set out below must be submitted to the Planning Secretary via the Major Projects website within seven days after the Proponent becomes aware of an incident. Notification is required to be given under this Appendix even if the Proponent fails to give the notification required under **Condition A34** or, having given such notification, subsequently forms the view that an incident has not occurred, unless otherwise agreed by the Planning Secretary.
2. Written notification of an incident must:
   (a) identify the SSI and application number;
   (b) provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);
   (c) identify how the incident was detected;
   (d) identify when the Proponent became aware of the incident;
   (e) identify any actual or potential non-compliance with terms of approval;
   (f) describe what immediate steps were taken in relation to the incident;
   (g) identify further action(s) that will be taken in relation to the incident; and
   (h) identify a project contact for further communication regarding the incident.
3. Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Planning Secretary, the Proponent must provide the Planning Secretary and any relevant public authorities (as determined by the Planning Secretary) with a detailed report on the incident addressing all requirements below, and such further reports as may be requested.
4. The Incident Report must include:
   (a) a summary of the incident;
   (b) outcomes of an incident investigation, including identification of the cause of the incident;
   (c) details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and
   (d) details of any communication with other stakeholders regarding the incident.

Appendix C

Guidelines for the Preparation of Environmental Management Plans

Department of
Infrastructure, Planning and Natural Resources

Guideline for the Preparation of Environmental Management Plans

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ISBN 0 7347 5466 3

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Foreword

This Guideline was prepared to assist government agencies, contractors, developers and other stakeholders prepare effective environmental management plans (EMPs).

There is a reliance on the EMP to ensure that a project's actual environmental impacts are consistent with those evaluated in the environmental impact assessment (EIA) process. The EMP is therefore fundamental to the EIA process and should ensure that commitments given at a project's planning and assessment stage are carried through to the construction and/or operation stage.

The Guideline may also be useful to an EMP's users as well as its preparers. Councils may wish to use this document as a guide when requiring that an EMP be prepared as part of a development consent. The general public may use the Guideline when reviewing EMPs for projects or activities that may affect them.

This EMP Guideline was developed in consultation with government agencies, contractors and industry groups.

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Glossary of Terms

conditions of approval	Obligations imposed on an activity assessed under Part 5 of the *Environmental Planning & Assessment Act 1979*.
conditions of consent	Obligations imposed on a development assessed under Part 4 of the *Environmental Planning & Assessment Act 1979*.
construction environmental management plan (CEMP)	A site or project specific plan developed to ensure that appropriate environmental management practices are followed during the construction phase of a project.
construction method statement (CMS)	A component of a Framework EMP that addresses environmental management issues relevant to a specific site and/or activity.
environmental aspect	Element of an organisation's activities, products or services that can interact with the environment.
environmental impact	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's activities, products or services.
environmental management plan (EMP)	A site or project specific plan developed to ensure that appropriate environmental management practices are followed during the construction and/or operation of a project.
environmental management representative (EMR)	A person generally appointed for large projects to independently review, audit and endorse a project's environmental activities.
environmental management system (EMS)	The part of an organisation's overall management system that includes organisational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy.
environmental policy	Statement by an organisation of its intentions and principles for environmental performance.
framework EMP	An overarching EMP providing environmental management information relevant to an entire project.
government agency	NSW Government department, authority or state owned corporation.
minister	Minister administering the *Environmental Planning and Assessment Act 1979*

operation environmental management plan (OEMP)	A site or project specific plan developed to ensure that appropriate environmental management practices are followed during the operation phase of a project.
organisation	Company, corporation, firm, enterprise, authority or institution, or part or combination thereof, whether incorporated or not, public or private, that has its own functions and administration.
project	Term used in this document to refer to any design, construction or operation activity associated with a development under Part 4 of the *Environmental Planning and Assessment Act 1979* (the Act) or an activity under Part 5 of the Act.
proponent	For the purposes of this EMP Guideline 'proponent' is used to refer to both an applicant for a development application under Part 4 of the *Environmental Planning and Assessment Act 1979* (the Act) and also a proponent for an activity under Part 5 of the Act

1 Introduction

1.1 Background

The Department of Infrastructure, Planning and Natural Resources (DIPNR) prepared this *Guideline for the Preparation of Environmental Management Plans* (EMP Guideline) to assist government agencies, contractors, developers and other stakeholders prepare effective environmental management plans (EMPs).

Project proponents, including government agencies, are often required to prepare a project specific EMP as a condition of approval or consent. There is a reliance on the EMP to ensure that a project's actual environmental impacts are consistent with those evaluated in the environmental impact assessment (EIA) process. The EMP is therefore fundamental to the EIA process and should ensure that commitments given at a project's planning and assessment stage are carried out in the construction and/or operation stage.

The primary purpose of the EMP Guideline is to ensure a minimum standard and consistent approach to EMP preparation. Use of this guideline will improve the contribution that an EMP can make to the effectiveness of the EIA process and assist in ensuring that commitments made in a project's EIA are implemented.

This EMP Guideline was developed in consultation with government agencies, contractors and industry groups.

1.2 What is an EMP?

An EMP is a site or project specific plan developed to ensure that appropriate environmental management practices are followed during a project's construction and/or operation.

An effective EMP should ensure:

- application of best practice environmental management to a project
- the implementation of a project's EIA including its conditions of approval or consent
- compliance with environmental legislation, and
- that environmental risks associated with a project are properly managed.

2 Scope and Purpose

2.1 Purpose

A criticism of the EIA process is that once approval or consent for a project is obtained, the implementation of identified environmental controls is not subject to the same scrutiny. As a result, a project's construction and operation impacts may not be consistent with earlier predictions or commitments. One method of improving the effectiveness of the EIA process is to strengthen a project's EMP.

The purpose of the EMP Guideline is to:

- assist proponents in the preparation of an effective and user-friendly EMP
- improve the contribution that an EMP can make to the effectiveness of the environmental management process
- ensure a minimum standard and consistent approach to the preparation of EMPs
- ensure that the commitments made as part of the project's EIA are implemented throughout the project life, and
- ensure that environmental management detail is captured and documented at all stages of a project.

The EMP Guideline provides assistance in the preparation and implementation of an EMP. It is not prescriptive or detailed but provides a broad framework and direction. Application of the guideline will require tailoring of EMPs to ensure they are project and site specific.

2.2 Scope

The EMP Guideline was prepared primarily for proponents of projects requiring consent or approval from the Minister. It is intended to cover both construction and operation. The Guideline may also be useful to an EMP's users as well as its preparers. Councils may wish to use this document as a guide when requiring that an EMP be prepared as part of a development consent. The general public may use the Guideline when reviewing EMPs for projects or activities that may affect them.

The scope of an EMP will vary depending on the scale and nature of a project. The EMP Guideline is applicable to a range of projects and activities. For example it may be used for large linear projects, such as the construction and operation of freeways, or it may be used for smaller site-based projects or activities such as the construction and operation of a mine or factory.

This EMP Guideline is not a:

- template for an EMP
- guide to implementation of the Australian Standards for environmental management (AS/NZS ISO 14000 series), or
- replacement for other NSW Government guidelines or specifications for environmental management such as the NSW Government document *Environmental Management Systems – Guidelines* (NSW Department of Public Works and Services, 1998). That document identifies a requirement that all government projects or activities "will require the preparation of an appropriate site-specific Environmental Management Plan (EMP) prior to the commencement of the relevant site works".

2.3 Other Related Documents and Requirements

EMPs generally form one component of an organisation's and/or project's environmental management documentation. EMPs should not be prepared in isolation but be consistent and integrated with existing environmental documentation such as:

- an organisation's environmental management system (EMS), and
- a project's environmental impact assessment (EIA) and approval or consent documentation.

2.3.1 Environmental Management System

Many organisations have developed an EMS. An EMS provides the means to identify, manage and monitor environmental risk associated with an organisation's activities, products and services. Such systems focus on pollution prevention, resource management, and continuous improvement in environmental performance and provide the means to demonstrate ongoing environmental compliance.

The basic elements of an EMS, as outlined in the Australian Standards for environmental management (AS/NZS ISO 14000 series), are similar to the key elements that make up an EMP (refer to *Section 4* of this EMP Guideline). Where an organisation has an EMS it would be expected that an EMP would be consistent with, and incorporate key components of, their EMS.

2.3.2 EIA Documentation

The environmental impact of development and land use proposals in NSW is required to be assessed in accordance with the *Environmental Planning & Assessment Act 1979* (EP&A Act). Parts 4 and 5 of the EP&A Act are relevant to the EMP Guideline. Under these two parts an EIA document must be prepared and used as the basis for a project's environmental assessment.

The Minister has a consent or approval role for some projects assessed under Part 4, and for all projects assessed under Division 4 Part 5 of the EP&A Act. Details of the differences between these types of project can be found on DIPNR's website (www.dipnr.nsw.gov.au). When approving a project the Minister may impose conditions on the approval (Division 4 Part 5 projects) or conditions of consent (Part 4 projects).

The EIA documentation that will need to be considered when preparing an EMP may include:

- an environmental impact statement (EIS), or statement of environmental effects (SEE), or review of environmental factors (REF)
- a representations report (relevant for Division 4 Part 5 projects only)
- concurrence reports from other agencies or local councils
- conditions of approval or consent, and
- any other approval, licence or permit required.

Requirements and commitments specified or made in these documents must be incorporated into an EMP. If undertaken correctly this would ensure that the resultant impacts of a project's construction and operation are consistent with its approval or consent.

For Division 4 Part 5 projects requiring an EIS, a proponent must prepare a representations report as part of its request for approval. A representations report allows a proponent to consider issues raised in representations to the EIS exhibition and, where appropriate, further define the project and its environmental, social and economic controls.

Conditions from approvals, licences and permits required from other government agencies will also need to be considered in the EMP. These agencies may include:

- the Department of Environment and Conservation
- the Department of Primary Industries, and
- the NSW Heritage Office.

Appendix A provides a chart illustrating the post-approval process and provides an indication of the documentation that will need to be considered when preparing an EMP.

3 EMP Preparation

3.1 Why Prepare an EMP?

EMPs are valuable tools to:

- define details of who, what, where and when environmental management and mitigation measures are to be implemented
- provide government agencies and their contractors, developers and other stakeholders better on-site environmental management control over the life of a project
- allow proponents to ensure their contractors fulfil environmental obligations on their behalf, and
- demonstrate due diligence.

In addition, EMPs are often required as part of tendering for projects and are essential for some types of government projects.

3.2 When Should an EMP be Prepared?

A construction EMP is generally developed about the same time as the detailed design and related activities are undertaken. Each process should influence the other. An operation EMP should be developed before commencing operation of an activity or development.

The broad steps for the preparation of an EMP in relation to the post-approval process are illustrated in the flowchart contained in **Appendix A**. The flowchart summarises the implementation of environmental requirements for a project from approval or consent through to construction, operation and decommissioning.

It is important to note that an EMP is a "living" document that should be focused on continual improvement (refer to *Section 3.5*) and should be updated as necessary.

3.3 Who Should be Consulted?

Specific impacts and associated environmental control measures may not be fully described at the EIA stage of a project. For this reason, government agencies that have environmental protection responsibilities may need to be consulted as part of an EMP's preparation. Any agency consultation undertaken at this stage should be limited to that required by specific conditions, or clarify specific issues, or obtain other approvals, licences or permits.

Authorities that typically need to be consulted include:

- Department of Environment and Conservation
- the Department of Primary Industries
- NSW Heritage Office, and
- local councils.

During the preparation of an EMP, all relevant parties should be consulted as early as possible to facilitate a reasoned response.

Broader community involvement in the EMP may also be appropriate, depending on the type of project. Community liaison groups are often established for larger projects. These groups may comment on the specific environmental management measures to be considered in an EMP.

In all cases, the specific requirements arising from environmental assessment and consultation should be established and defined as early as possible for inclusion in the EMP.

3.4 Who Should Prepare, Certify and Approve an EMP?

A project's proponent (whether government agency, developer or industry) retains primary responsibility for the environmental performance of its projects or activities. As such, the proponent is responsible for ensuring the preparation, certification, approval and implementation of an acceptable EMP whether for construction or operation.

During a project's construction and/or operation the preparation and implementation of an EMP is often passed onto a contractor by a contract specification. While an EMP might be prepared and implemented by a contractor the responsibility for implementing the conditions of approval or consent lies with the proponent.

Conditions of approval or consent generally require that an EMP be approved before commencing construction and operation. The time required to obtain an approval often depends on the quality of the documentation provided.

The certification and approval requirements for an EMP should be recognised before the document is prepared to ensure that sufficient time is allowed.

3.5 Should an EMP be Reviewed?

An EMP is not static. It is a working document that requires review and amendment during the life of a project. Making changes to an EMP is an important aspect of improving a project's environmental management. The EMP review process is also a valuable means of continually improving the effectiveness of current and future EMPs.

Review timings depend on the nature and scale of the project but would typically be undertaken:

- when there is a change in the scope of the project
- following significant environmental incidents
- when there is a need to improve performance in an area of environmental impact
- at the completion of environmental audits, and
- at the end of a project (to allow for improvements in subsequent projects).

The review process should include looking at the environmental controls and procedures in use to make sure they remain effective. Reasons for making changes to the EMP should be documented. A copy of the original EMP document and subsequent versions should be kept for the project records.

The EMP should state under what circumstances an updated EMP should be re-submitted to an approval or consent body, for review and approval. A requirement to submit updated EMPs to the relevant authority may also be stipulated in conditions of approval or consent.

4 Model EMP

4.1 Types of EMPs

EMPs can be prepared at different times in a project's life. Usually these are prepared as:

- Construction EMPs (CEMPs), and
- Operation EMPs (OEMPs).

CEMPs are developed to ensure that appropriate environmental management practices are followed during a project's construction. OEMPs are developed to ensure that appropriate environmental management practices are followed during a project's operation and decommissioning. This EMP Guideline can be used for both CEMPs and OEMPs.

4.2 EMP Structure

The scope and content of an EMP will be a function of both the significance of a project's potential environmental impacts and also a project's size. Consequently it is not possible (or desirable) to prepare an EMP template as part of these guidelines. There are, however, common elements that should be included in all CEMPs or OEMPs. The following sections identify and describe these common EMP elements. Some discussion is also provided for variations in an EMP for different sized projects.

All EMPs should include information covering the four elements shown in **Figure 4-1**. A description of information and issues that may need to be addressed under each element is provided in *Section 4.3*. **Figure 4-1** is also provided in the format of a checklist in **Appendix B** which can be used to ensure that the EMP addresses these common elements.

Each of the four elements may have different end users and their preparation should be tailored to suit. **Table 4-1** identifies potential end users.

Table 4-1 Users of the EMP Document

EMP Element	Main End User
Background	All stakeholders – internal and external Community groups Approval or Consent Authority
Environmental Management	Proponent's management and supervisory staff Approval or Consent Authority
Implementation	Proponent's management and supervisory staff Construction Staff and Site Staff Community groups Operations Staff Approval or Consent Authority
Monitor and Review	Proponent's management and supervisory staff Approval or Consent Authority

Background

- Introduction
- Project Description
- EMP Context
- EMP Objectives
- Environmental Policy

Environmental Management

- Environmental Management Structure and Responsibility
- Approval and Licensing Requirements
- Reporting
- Environmental Training
- Emergency Contacts and Response

Implementation

- Risk Assessment
- Environmental Management Activities and Controls
- Environmental Management Plans or Maps
- Environmental Schedules

Monitor and Review

- Environmental Monitoring
- Environmental Auditing
- Corrective Action
- EMP Review

Figure 4-1 Information to be included in an EMP

4.3 EMP Document Description

This section provides a detailed description of information and issues that may need to be addressed under each EMP element. The EMP format should be adapted to suit a project's specific issues and requirements.

4.3.1 Background

4.3.1.1 Introduction

An introduction may be appropriate for large or publicly available EMPs. It can be used to provide a brief description of the project's background including its objectives and the steps that led to the selected project. It could also identify the key players involved.

4.3.1.2 Project Description

A project description should be provided in enough detail to define the nature and scope of the project. It should include the following:

Location

The site location should be described and a plan indicating the location of the activities provided. A general description of the environment of the site and surrounds would also be useful.

Construction/Operation Activities

A description of the construction and/or operation activities to be undertaken should be provided. This may include:

- a brief description of construction/operation processes
- working or operating hours, including details of any activities required to be undertaken outside of these hours
- employment numbers and type
- the plant and equipment to be used, and
- the location of site facilities and work compounds.

Timing and Scheduling

Anticipated commencement and completion dates should be listed. If the project is to be completed in stages then separate dates for each stage should be provided.

4.3.1.3 EMP Context

This section should describe how the EMP fits into the overall planning process for the project. This will involve providing a list of the project's environmental studies (e.g. EIS/REF/SEE) and any approval or consent documentation.

Any government agency or other stakeholder consultation that has been undertaken during the preparation of the EMP should be summarised. A summary of how the outcomes of the consultation outcomes were incorporated into the EMP should also be provided.

Some proponent's may have existing environmental management documents, such as an environmental management system (EMS). This section should also indicate the relationship of the EMP with such documents.

4.3.1.4 EMP Objectives

This may be a point form list of what the EMP is trying to achieve. It can include objectives that relate to general site management, special site features and best practice environmental management. The objectives should be project specific and not broad policy statements.

4.3.1.5 Environmental Policy

Where relevant, a proponent's environmental policy should be provided.

4.3.2 Environmental Management

4.3.2.1 Environmental Management Structure and Responsibility

An EMP should provide a clear organisation structure for the project including the names and positions of personnel responsible for environmental management. A description of the roles and responsibilities of each identified person should also be documented. The roles and responsibilities of subcontractors should also be identified.

A person should be nominated with the specific task of ensuring that the EMP is implemented and maintained. This is generally a project's manager or an organisation's environmental manager.

An approval or consent authority may require that an Environmental Management Representative (EMR) be appointed during construction of large projects. The role of the EMR should be specifically identified in a project's environmental management structure.

4.3.2.2 Approval and Licensing Requirements

A project's regulatory framework must be identified. An EMP should include relevant requirements to ensure they are considered, including:

- listing the conditions of approval or consent. It may be useful to include these as a matrix indicating where in the EMP each condition of approval or consent is addressed
- provision of a table listing the legislation relevant to the project and any licences, approvals or permits required to be obtained under that legislation. The table should identify the relevant section(s) of the legislation and specific triggers
- identifying the person (or role) responsible for obtaining the licences, approvals and permits and when they should be obtained and renewed, and
- describing any other requirements that apply to the project e.g. voluntary agreements, stakeholder agreements, EMS requirements, etc.

4.3.2.3 Reporting

A description of the reporting requirements for the project should be provided and include:

- a list of reports required, for example:
  - construction monitoring
  - non-compliance
  - corrective action
  - complaints management
  - auditing
  - pre-construction and pre-operation compliance, and
  - any reports required by government agencies
- a description of a typical report content
- personnel responsible for preparing the reports and when they are to be prepared
- communications protocols establishing who is responsible for distributing information, what is to be distributed and to whom, and the frequency of communication, and
- document control procedures.

4.3.2.4 Environmental Training

All employees should undergo general environmental awareness training and training about their responsibilities under the EMP. The training should ensure that all employees understand their obligation to exercise due diligence for environmental matters. Employees in this instance means all people working on-site including contractors and subcontractors.

Environmental training should include:

- a site induction
- familiarisation with the requirements of the EMP
- environmental emergency response training
- familiarisation with site environmental controls, and
- targeted environmental training for specific personnel. For example, plant operators may require specific training in dust minimisation.

The need for additional or revised training should be identified and implemented from the outputs of monitoring and reviewing the EMP.

Records of all training should be maintained and should include:

- who was trained
- when the person was trained
- the name of the trainer, and
- a general description of the training content.

4.3.2.5 Emergency Contacts and Response

The EMP should nominate a contact person(s) for emergencies that will be available 24 hours a day, seven days a week, and who has the authority to stop or direct works. It should also document the procedures to be followed in the event of an environmental

emergency. An environmental emergency is any event that causes or has the potential to cause material harm to the environment. These procedures need to include:

- the names and contact details (including all-hours telephone numbers) for emergency response personnel
- response personnel responsibilities
- contact details for emergency services (ambulance, fire brigade, spill clean-up services)
- the location of on-site information on hazardous materials, including Material Safety Data Sheets and spill containment materials
- steps to follow to minimise damage and control an environmental emergency, and
- instructions and contact details for notifying relevant government agencies, local councils and, if necessary, nearby residents.

4.3.3 Implementation

4.3.3.1 Risk Assessment

The type and level of risk assessment will vary depending upon the stage of a project (i.e. whether design, construction or operation). Documents or investigations that contain risk assessment information include:

- EIA document (i.e. EIS/SEE/REF)
- representations report
- assessment or decision report
- conditions of approval or consent
- detailed design, and
- construction methodology.

Their relevance to the EMP risk assessment would vary according to the project's stage. There are also several Australian standards that discuss risk assessment.

This section of the EMP should generally follow the following steps:

1) provide a list of the activities to be carried out. This should describe all project activities including those undertaken by subcontractors or suppliers together with ancillary works such as materials transport to and from the site and site establishment
2) identify the actual and potential environmental impacts associated with each activity
3) identify which environmental impacts are significant. Methods for risk assessment should be selected that are appropriate to the project and the existing EIA
4) use this information to design the environmental management activities, controls and monitoring to prevent or minimise those environmental impacts appropriately, and
5) state how often, and when, this risk assessment will be carried out.

The function of the risk assessment is not to repeat or supersede a project's EIA or its conditions of approval or consent. Rather it is to ensure that these are effectively translated into actual construction or operation techniques.

4.3.3.2 Environmental Management Activities and Controls

An EMP should specify all the environmental management activities, mitigation and control measures that will be used to prevent or minimise environmental impacts. It should include the detailed mitigation measures identified from the risk assessment. This is usually the largest section of an EMP.

This section must assign responsibility for control measures to specific personnel and provide timeframes for their implementation. It may also specify the monitoring measures associated with the control measure. Where monitoring measures are identified the EMP should state the minimum performance level or criterion to be achieved. Quantitative criteria are preferred but this may not always be possible in which case qualitative criteria may be used.

4.3.3.3 Environmental Control Plans or Maps

Environmental control plans or maps are a particularly useful on-site reference tool and should be included in every EMP. An example is a plan (or plans) indicating the location of the following:

- environmentally sensitive areas on and adjacent to the site
- waterways including drains
- erosion and sediment control measures
- works areas, machinery or vehicle parking, spoil dumps, fuel and chemical stores
- vegetation that requires protection
- restrictions on traffic movement, and
- monitoring locations.

Plans may also form the basic implementation section of an EMP for a specific site. An example of an environmentally sensitive area plan produced as part of a CEMP is provided in **Appendix C**.

4.3.3.4 Environmental Schedules

Environmental management schedules are copies of forms, reports or registers used during a project's day-to-day environmental management. Examples include:

- Site Inspection Checklist
- Non-compliance and Corrective Action Report
- Complaints Report
- Environmental Incident Report
- Environmental Training Register
- Waste Register, and
- Monitoring Checklist.

Relevant schedules must be included in the EMP.

4.3.4 Monitoring and Review

4.3.4.1 Environmental Monitoring

This section of the EMP should explain how environmental management activities and controls will be monitored.

A monitoring checklist should be developed specifying when the environmental control activities need to be carried out, who is responsible and what methods will be used to measure effectiveness. It should include space for sign-off to verify that the control action was undertaken and is working effectively. The checklist should also specify if, and when, follow-up action is required and who is responsible.

Details of how monitoring records will be collated, distributed and stored should also be provided.

4.3.4.2 Environmental Auditing

The EMP should describe the program and procedures for periodic auditing of the EMP's implementation and effectiveness. The audits should determine whether or not the EMP was properly implemented and maintained and provide information for the EMP review.

The audit program and procedures should cover both internal and external auditing requirements, including scope, frequency and methods, as well as the responsibilities and requirements for conducting audits and reporting results.

The frequency of audits should reflect the level of significance of environmental impacts and the results of previous audits.

4.3.4.3 Corrective Action

The EMP should define procedures for dealing with non-compliance with environmental management controls, environmental incidents and emergencies. The procedures should also define who is responsible and has the authority for handling and investigating non-compliance, taking action and completing corrective and preventative action.

Schedules should be developed for recording environmental incidents, non-compliance and corrective and preventative actions.

4.3.4.4 EMP Review

This section should describe how the EMP will be reviewed; including looking at the environmental controls and procedures to make sure they are still applicable to the activities being carried out. It should include:

- when/how often this will be done (refer to *Section 3.5*)
- who will be responsible for reviewing the EMP, recording decisions and the reasons for them, and making subsequent changes
- how the site/project team will be informed of those changes, and
- when the reviewed EMP should be submitted to the approval or consent authority.

4.4 Project Size and Complexity

4.4.1 Introduction

The size and the complexity of a project will influence how an EMP is presented, the format of the information and the level of information that is included. **Table 4-2** summarises different formats that may be used. This information is further detailed in the following sections.

For small projects (for example projects small in area with no complex environmental issues) the structure of the EMP may be organised using checklists or a site or issues based format. For large projects (for example involving multiple sites and/or complex environmental issues) there are a range of EMP formats. These could be based on each stage and/or each site.

Whichever EMP format is used the documentation should be as short and simple as possible, to facilitate easy use in the field, and provide practical and accessible information. Wherever possible, plans and/or checklists should be used in preference to written descriptions.

Table 4-2 EMP Formats

Size of Project	Format of EMP	Example of Environmental Management Activities and Controls section of EMP
Small	Template EMP and checklist format	**Appendix D(i)**
	Site based - categorise environmental impacts and controls under each site	**Appendix D(ii)**
	Issues based - categorise environmental impacts and controls under environmental issues headings	**Appendix D(iii)**
Large	Stage-based approach - categorise environmental impacts and controls under each stage of the project	**Appendix D(iv)**
	Combined issues, stage and site-based approach - categorise environmental impacts and controls under issues, or stage, or site headings	-

4.4.2 Small Projects - Template EMP and Checklists

For small projects it may be adequate to adopt a template/checklist format for an EMP. Template and checklist EMPs may also be useful for projects that require the same type of work to be undertaken at different locations, for example weed removal activities. Such activities generally result in similar environmental impacts and require implementation of similar environmental controls and management measures regardless of the location.

A template EMP may include much of the generic information required to be included in 'Background' and 'Environmental Management' elements of the EMP that is similar for each site. Space may be provided for tailored 'Implementation' and 'Monitoring and Review' sections (i.e. site specific information such as environmental activities and controls, plans, monitoring and review details).

Checklists are often developed for use during site inspections. They should include a list of control measures to be implemented, space for indicating if the controls were implemented and space for comments. Checklists should also be signed and dated by the person completing the inspection.

An example of an environmental checklist that could be used in the 'Implementation' section of a template EMP for weed removal activities is included in **Appendix D(i)**. The checklist provided in the Appendix does not represent the entire EMP.

4.4.3 Small Projects - Site-based Format

For small projects (construction or operation) the structure of the 'Implementation' element of the EMP can be organised using a site-based format. This involves combining all environmental issues and impacts into one environmental management table for each site. The table should include who is responsible for the implementation of individual controls, at what stage in the project the controls should be implemented, space for sign-off and dating to verify that the controls were implemented and sources or references for the control. Where practical the location of control measures, monitoring locations and the like should be indicated on a plan.

An example of a site-based table format for the 'Implementation' section of an EMP is provided in **Appendix D(ii)**.

4.4.4 Small Projects - Issues-based Format

For small projects or for projects that do not have specific stages or multiple sites, the structure of the 'Implementation' section may be organised using an issues-based format. The issues-based format involves organising the environmental impacts, management activities and controls information under each identified environmental issue.

Typical environmental issues include:

- erosion and sedimentation
- water quality
- groundwater
- air quality
- flora and fauna
- rehabilitation
- indigenous heritage
- non-indigenous heritage
- noise and vibration
- waste
- hazardous materials, and
- traffic.

Tables should be created for each identified environmental issue and the relevant control measures included. The table should also include who is responsible, the timing/frequency of implementation of controls, space for sign-off and dating to verify implementation and sources/references. Plans should be used where practical.

An example of an issues-based table format for the 'Implementation' section of an EMP is provided in **Appendix D(iii)**.

4.4.5 Large Projects - Stage-based Format

For large projects, carried out over extended periods, the 'Implementation' section of the EMP may be developed using a stage-based format. The stage-based format involves documenting the environmental issues and control measures for each stage of a project. For example, a separate table could be set-up for the pre-construction stage, construction stage and the post-construction stage. This can create some repetition but is useful in large projects as each table provides a separate checklist for each stage in a project's progression.

An example of a stage-based table to be used as part of the 'Implementation' element of an EMP is provided in **Appendix D(iv)**.

4.4.6 Large Projects - Combined Format

4.4.6.1 Description

For large, linear projects, such as construction of a road tunnel or railway, a combination of issues, stage and site-based formats is useful. This essentially involves breaking-up the different elements of an EMP into separate documents to make the environmental management document more manageable and user-friendly. Conditions of approval or consent for such projects may require that this approach be adopted.

The following discussion relates to construction activity but the logic could be equally applied in an operation EMP.

The combined format involves the preparation of:

- a construction framework EMP
- issue specific sub-plans, and
- site or activity specific construction method statements (CMS).

This document structure is illustrated in **Figure 4-2**. The following sections provide a general overview of the structure and content of each document.

The contents of the construction framework EMP and the sub-plans and construction method statements can vary depending on how the documents are structured. The following outlines provide a general guide. Similarly the need for issue specific sub-plans will depend on the project and level of information provided in the construction framework EMP.

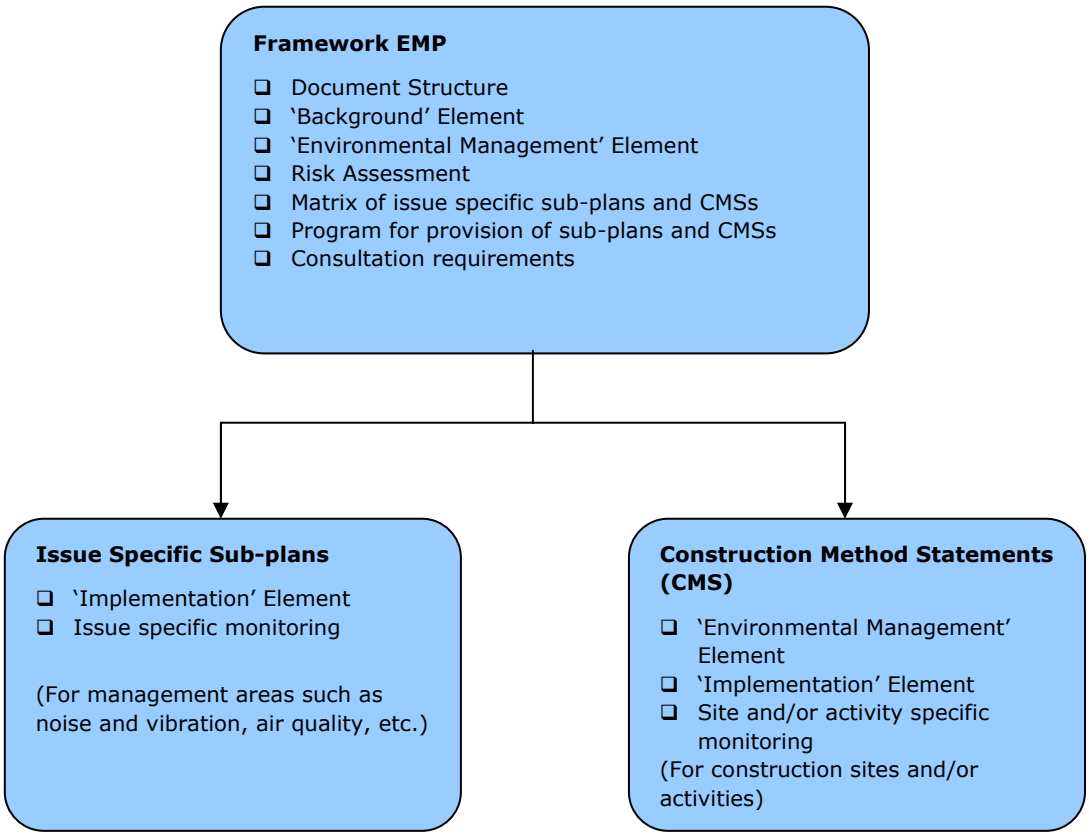


Figure 4-2 Document Structure for Combined Format

4.4.6.2 Construction Framework EMP

The Construction Framework EMP should provide the overarching environmental management information relevant to a project. It should include all the information described in the 'Background' and 'Environmental Management' EMP sections as well as:

- document structure and relationship to the sub-plans and CMSs
- matrix of sub-plans and the CMSs to be prepared
- individual risk assessments on each CMS
- timeframes for preparation, implementation, review and completion of sub-plans and CMSs
- details of the community consultation process, roles and responsibilities, and
- parts of the 'Monitoring and Review' EMP section, including information detailing project environmental auditing, corrective action, document control and EMP review.

4.4.6.3 Issue Specific Sub-Plans

Issue specific sub-plans should contain information relevant to key environmental management issues. Individual sub-plans could be prepared for issues such as:

- erosion and sedimentation
- water quality
- groundwater
- air quality
- flora and fauna
- rehabilitation
- indigenous heritage
- non-indigenous heritage
- noise and vibration
- waste
- hazardous materials, and
- traffic.

The sub-plans should contain the information in the 'Implementation' section of the EMP (*Section 4.3.3*) and should contain information as described in *Section 4.4.4*. They should include detailed information relating to environmental monitoring of the specific issue and contingency planning for exceedances.

4.4.6.4 Construction Method Statements (CMS)

Separate CMSs can be prepared for specific construction sites and/or activities (such as tunnelling, rock breaking, etc). They should include relevant information from the 'Environmental Management' (*Section 4.3.2*) and 'Monitoring and Review' (*Section 4.3.4*) EMP sections and all of the information from the 'Implementation' (*Section 4.3.3*) EMP sections. CMSs can be as simple as a plan.

5 Role of DIPNR

Conditions of approval or consent issued by the Minister often require that construction or operation EMPs be prepared for a project. A further requirement may be that these documents be approved by the Director General of DIPNR (or delegate) before the activity occurs. In its examination of an EMP DIPNR would consider factors such as:

- the adequacy of the response to any condition of approval or consent
- how commitments made in a project's EIA were incorporated into a project
- the roles and responsibilities of personnel responsible for implementing the EMP
- the ease of use of the EMP documentation, and
- a proponent's prior performance on similar projects.

Conditions of approval or consent may require that an Environmental Management Representative (EMR) be appointed during the construction of large or complex projects. This person performs an independent (of the proponent and contractor) review role for an EMP's preparation and implementation. An EMR's specific duties would be described in a condition of approval or consent but would typically involve the following activities:

- considering and advising DIPNR and the proponent on matters specified in the conditions and a project's compliance
- reviewing the CEMP
- periodically monitoring the proponent's activities to evaluate compliance with the CEMP
- recommending to a proponent to stop work immediately if an unacceptable impact on the environment is occurring or is likely to occur, and
- providing regular reports to DIPNR on matters relevant to the carrying out the EMR role.

6 Key Success Factors

Key success factors for preparing and implementing an effective EMP were identified from stakeholder consultation during the EMP Guideline's preparation. **Table 6-1** provides a summary of the factors stakeholders thought were important components of an EMP. These factors could be used as a further checklist of an EMP's adequacy and usability.

Table 6-1 Key Success Factors Checklist

Indicator	Check(Y/N)
EMP Structure	
A management tool showing how environmental impacts will be controlled?	
Well defined, clear document structure?	
Clearly and concisely written?	
Prescriptive?	
Realistic?	
Written for its users (i.e. construction and operation personnel)?	
Site specific?	
Easy to update?	
A dynamic assessment tool?	
Auditable?	
Prepared in parallel with detailed project design?	
EMP Content	
Only relevant detail?	
Environmental objectives and/or performance criteria?	
Allocation of responsibility?	
Clear identification of environmental controls, including responsibility and timing?	
Definition of parameters which trigger review?	
Environmental training requirements?	
Environmental Policy?	
Checklists?	
Reporting and auditing requirements?	
Explanation of relationship of EMP to other environmental management documents (e.g. EMS)?	
Project specific approvals and licensing requirements?	
Links to relevant approval and consent conditions?	
EMP as a Management Tool	
Reflect level of available information?	
Draws on commitments from the EIA process?	
Contain an environmental risk assessment?	
Use plans to illustrate requirements – e.g. sensitive sites and location of controls?	
Define relationship between EMP and EMS?	
Identify areas of uncertainty and contain contingency plans to cover uncertainty?	

7 Information Sources

A wide variety of information is available discussing an EMP's content and preparation. Details of some relevant websites are contained in **Table 7-1** while relevant Australian Standards include:

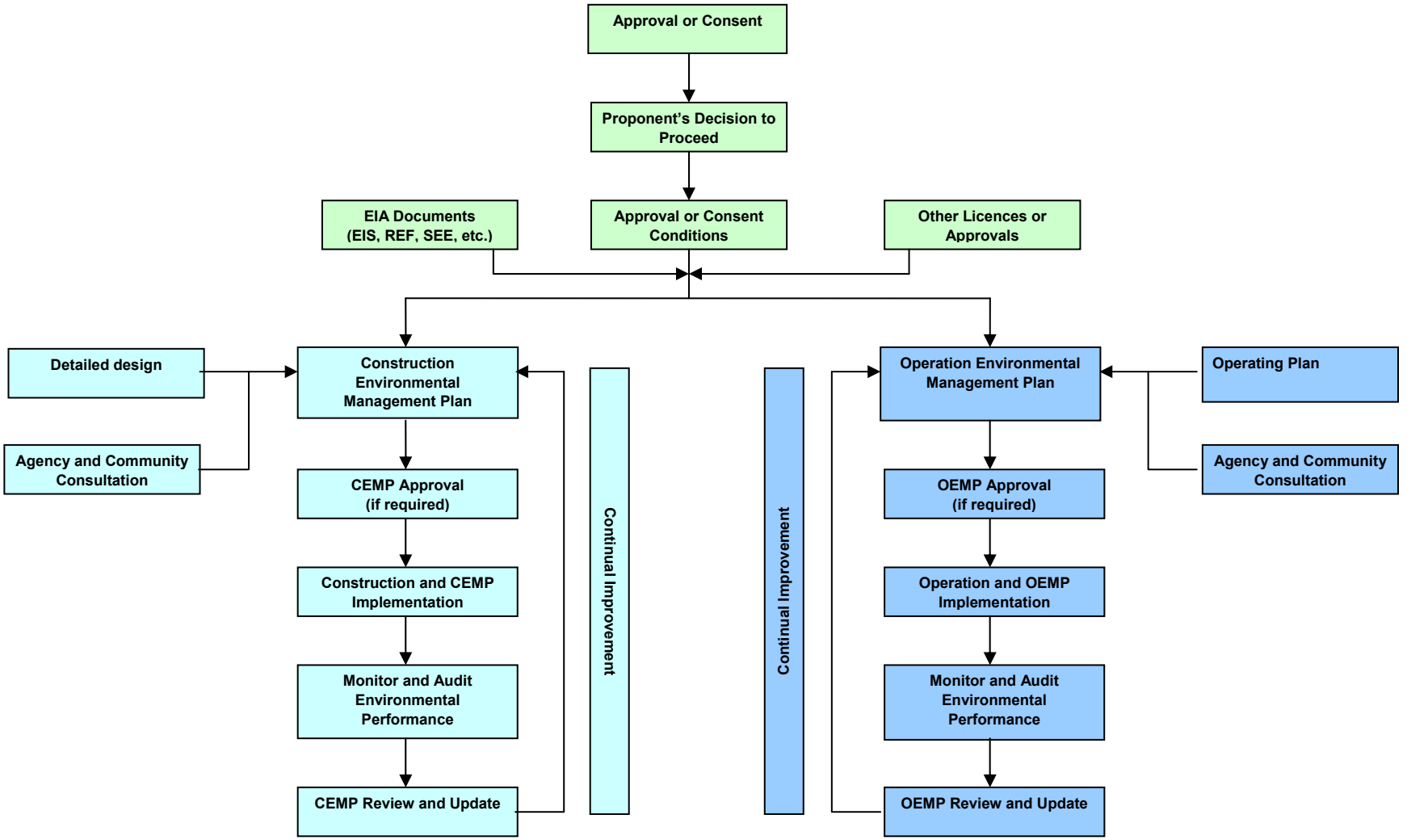
- Australian Standard/New Zealand Standard (AS/NZS) International Organisation for Standardisation (ISO) 14000 Series (including AS/NZS ISO 14001 *Environmental management systems – Specification with guidance for use*)
- AS/NZS ISO 19011:2003: *Guidelines for quality and/or environmental management systems auditing*
- AS/NZS 4360:1999 *Risk management*, and
- HB 203-2000: *Environmental risk management - Principles and process*.

Table 7-1 Websites with EMP Information

Source	Outline	Contact, correct at July 2004
Construction Agency Coordination Committee (CACC)	The CACC brings together the NSW Government's construction agencies to develop, implement and promote improved practices and standards to government construction procurement.	www.construction.nsw.gov.au
Victorian Environment Protection Authority	Environmental Guidelines for Major Construction Sites, February 1996	www.epa.vic.gov.au
Transport SA	Environmental management plan guidelines for construction	www.transport.sa.gov.au
Landcom – The Blue Book	Managing urban stormwater: soils and construction (the 'blue book'). The aim is to improve the management of urban water quality	www.landcom.nsw.gov.au
Landcom	A Guide for Landcom's Project Managers and Civil Contractors (EMP Guide)	www.landcom.nsw.gov.au
NSW Department of Infrastructure, Planning and Natural Resources	Standard Brief Conditions for the Provision of Project Management Services. Appendix N: Guidelines for the Preparation of a Review of Environmental Factors and an Operational Environmental Management Plan	www.dipnr.nsw.gov.au (natural resource management section)
Queensland Environmental Protection Agency	Environmental Management of Mining Guideline 10.	www.epa.qld.gov.au
VicRoads	Project Management Guidelines – Environmental Protection	www.vicroads.vic.gov.au
Roads & Traffic Authority	Environment Protection (Environmental Plan_ Guidelines Specifications G35 &G36)	www.rta.nsw.gov.au
NSW Environment Protection Authority	Model EMP: Environmental Management Plan for Landscaping Works	www.epa.nsw.gov.au
NSW Environment Protection Authority	Environmental Best Management Practice Guideline for Concreting Contractors	www.epa.nsw.gov.au
Australian Government Department of Agriculture, Fisheries and Forestry	Australia's National Framework for Environmental Management Systems in Agriculture	www.affa.gov.au

Appendix A

Post-Approval EMP Process



POST-APPROVAL EMP PROCESS

Appendix B

EMP Content Checklist

Does Your EMP Contain	Yes	No
Background (EMP Guideline Section 4.3.1)		
Introduction		
Project Description		
EMP Context		
EMP Objectives		
Environmental Policy		
Environmental Management (EMP Guideline Section 4.3.2)		
Environmental Management Structure & Responsibility		
Approval and Licensing Requirements		
Reporting		
Environmental Training		
Emergency Contacts and Response		
Implementation (EMP Guideline Section 4.3.3)		
Risk Assessment		
Environmental Management Activities and Controls		
Environmental Control Plans or Maps		
Environmental Schedules		
Monitoring and Review (EMP Guideline Section 4.3.4)		
Environmental Monitoring		
Environmental Auditing		
Corrective Action		
EMP Review		

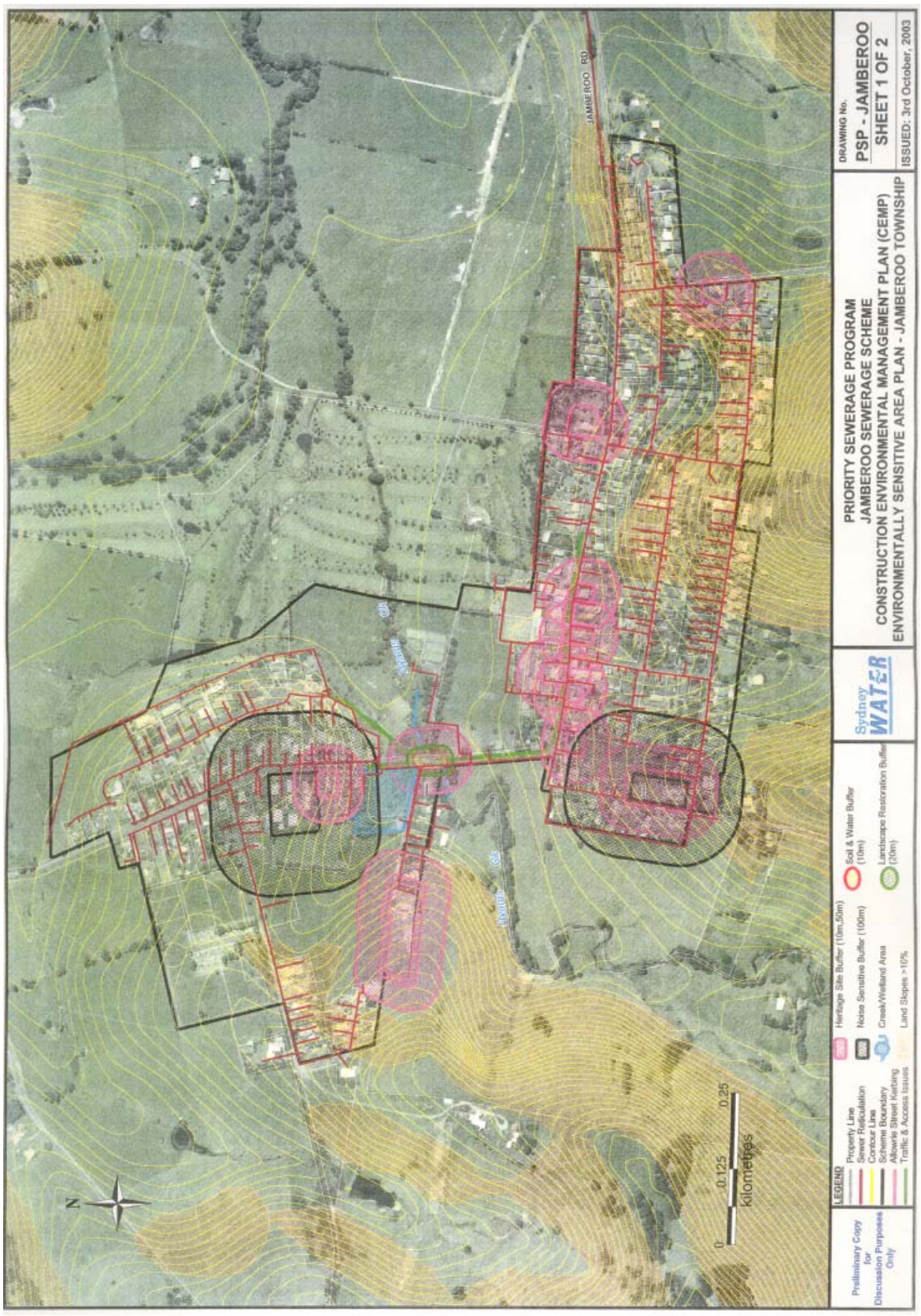
Note: This checklist highlights the main components of an EMP. It is not an EMP template.

EMP CONTENT CHECKLIST

Appendix C

Site Plan Example

DIPNR thanks Sydney Water for its permission to reproduce this “Environmentally Sensitive Area Plan”, sourced from Sydney Water’s Priority Sewerage Program - Jamberoo Sewerage Scheme. The plan presented in the Appendix is reduced in size from that used by construction personnel.



SITE PLAN EXAMPLE

Appendix D

Example EMP Implementation Sections

Note: These examples are intended to indicate broad formats and typical levels of detail for the 'Implementation' section of an EMP. Detailed information relevant to specific issues shown in the examples should not necessarily be regarded as correct.

(i) Small Project Checklist
Environmental Management Activities and Controls:
Weed Removal Activities

Project Name:			
Project Location:			
Environmental Controls:	*Yes*	*No*	*Comments*
Air Quality			
Are vehicles being restricted to sealed or dedicated areas?			
Is machinery complying with emission standards (i.e. emissions not visible for more than 10 seconds)?			
Are truck and vehicle speeds below 20km/hr on unsealed access tracks?			
Soils and Hydrogeology			
Are geotextile fences installed in appropriate locations and secure?			
Are geotextile fences clean and well-maintained?			
Is overburden being placed upslope as a protective bund?			
Noise Control			
Is all site work being conducted inside prescribed hours (i.e. between 7am-6pm Mon to Fri, 8am-1pm Sat, no work Sunday or Public Holidays)?			
Hazardous Goods			
Are MSDS available?			
Are spill kits on-site and complete?			
Are all chemicals, fuel and wastes being kept in sealed containers and not in drainage lines?			
Waste Management			
Is all cut vegetation being retained on-site in piles?			
Are plant containers and other waste being removed from site daily?			
Is the site left in a tidy and safe condition every day?			
Subcontractors			
Have all subcontractors completed a site induction?			
Are all subcontractors complying with the EMP?			

Complete a Non-compliance Report/Corrective Action Report for any "NO" answers.

Name of person inspecting site:	
Signature:	
Date and time of site inspection:	

(ii) Small Project Site-based Table

Environmental Management Activities and Controls: Quarry Operations

Environmental Management Control	Person Responsible	Timing / Frequency	Completed (Initials/Date)	Reference / Notes
General Site Issues				
Conduct site induction training for all personnel to alert them to sensitive work areas, explain the requirements of the EMP, outline an individual's responsibilities and inform all workers of emergency response procedures. Documented evidence of such training is to be available before commencing work on-site.	Environmental Manager	Before commencing work then ongoing for new employees / contractors		EMP Section 2.4
Ensure all operations are undertaken in accordance with the Environment Protection Licence (EPL) obtained under the provisions of the *Protection of the Environment Operations Act 1997*.	All site personnel	Ongoing during operations		EMP Section 2.2
Ensure emergency procedures are displayed in a prominent position within the site working area.	Safety Manager	Before commencing work		EMP Section 2.5
Allocate a person for the dissemination of general information on the site operations. Identify a contact person(s) and contact numbers for receiving comments or complaints from the community.	Environmental Manager	Before commencing work		EMP Section 1.1
Establish a register of complaints before work commences and maintain for the full duration of the work. The register shall record details of complaints, complainant contact information and action taken to address complaints.	Environmental Manager	Before commencing work		Consent Condition 5.1
Conduct audits of the EMP at least once a month. These will involve reviewing all documents, records and monitoring results to ensure compliance with the EMP.	Environmental Manager	Monthly		EMP Section 4.2
Indigenous Heritage				
If any Aboriginal archaeological sites or artefacts are discovered during the works, ensure work ceases immediately in the vicinity and that the DEC is contacted for further advice and action.	Site Supervisor	Ongoing during operations		EIS Section 4.10.1, Consent Condition 3.53

Environmental Management Control	Person Responsible	Timing / Frequency	Completed (Initials/Date)	Reference / Notes
Air Quality				
To prevent dust emissions from vehicles ensure that all vehicles entering or leaving the site and carrying a load that may generate dust are covered to prevent dust emissions at all times, except during loading and unloading.	Site Supervisor	Ongoing during operations		Consent Condition 3.6
Install, operate, and maintain dust control measures and/or equipment on the following: - all processing equipment - internal haul roads and disturbed areas - truck loading areas, and - all stockpiles including raw material, product, topsoil, and overburden.	Site Supervisor	Ongoing during operations		Consent Condition 3.7
Ensure a mobile water tanker equipped with a pump and sprays is used to suppress dust from unsealed roads when in use.	Site Supervisor	Ongoing during operations		Consent Condition 3.8
Flora and Fauna				
Fence the boundary of the construction zone to prevent construction plant and equipment entering adjacent vegetated areas.	Site Supervisor	Before commencing work		EIS Section 4.7.1
Restrict the removal of trees and other vegetation to the minimum required for quarry activities, the processing plant, and areas necessary for fire control.	Site Supervisor	Ongoing during operations		EIS Section 4.7.1, Consent Condition 3.11
Rehabilitate and revegetate works of extracted strips progressively.	Site Supervisor	Ongoing during operations		EIS Section 4.7.1, Consent Condition 3.12
Establish a riparian zone, revegetated with local native species, along the length of the reconstructed ephemeral waterway in the quarry.	Environmental Manager	Post-quarrying activities		EIS Section 4.7.1, Consent Condition 3.17

Environmental Management Control	Person Responsible	Timing / Frequency	Completed (Initials/Date)	Reference / Notes
Water Quality				
Prepare a Soil and Water Management Plan (SWMP) before commencing work. The SWMP shall provide for: - the prompt completion of works relating to drainage and sediment control to minimise exposure time of disturbed areas - the provision of sediment and filter traps, in advance of and in conjunction with earthworks operations, to prevent contaminated run-off leaving the site, and - scour protection / energy dissipation measures in drainage lines below drainage outlets. All controls are to be designed and installed in accordance with *Managing Urban Stormwater: Soil and Construction, Department of Housing 1998*. This plan is implemented and maintained for the period of quarrying and subsequent rehabilitation.	Environmental Manager	Before commencing work		EIS Section 4.8.1, Consent Condition 3.19
Ensure erosion and sedimentation control measures are installed before commencing land disturbance, and remain in place until the erosion hazard reverts to its pre-existing level.	Site Supervisor	Before commencing work then ongoing		EIS Section 4.9.1
Ensure drainage through and from areas of disturbance is designed to minimise surface flow velocities. Where appropriate, surface water flows from disturbed areas (including stockpile sites) are to be directed to sediment control facilities. Run-off from outside the work area is to be diverted around the disturbed catchment or through the area without mixing with site run-off, to prevent overloading erosion control structures.	Site Supervisor	Ongoing during operations		EIS Section 4.9.1
Ensure discharge of stormwater from the site is clear of sediment and pollution in accordance with the provisions of the *Protection of the Environment Operations Act 1997* and the EPL for the quarry.	Environmental Manager	Ongoing during operations		Consent Condition 3.24

Environmental Management Control	Person Responsible	Timing / Frequency	Completed (Initials/Date)	Reference / Notes
Noise				
Ensure activities are restricted to the following hours: - 7:00 am to 6:00 pm Monday to Friday - 8:00 am to 1:00 pm Saturday - No work on Sundays or public holidays.	Site Supervisor	Ongoing during operations		Consent Condition 3.40
Ensure noise from the site does not exceed the following at any residence not owned by the quarry: - an $L_{Aeq(15\ minute)}$ of 44 dB(A) between 7am and 6pm Monday to Saturday, and - an $L_{Aeq(15\ minute)}$ of 37 dB(A) between 6am and 7am Monday to Saturday;	Environmental Manager	Ongoing during operations		Consent Condition 3.41
Waste Management				
Ensure waste is disposed in compliance with the requirements of *Waste Avoidance and Resource Recovery Act, 2001* at a waste facility licensed to accept the type of waste presented.	Site Supervisor	Ongoing during operations		EIS Section 4.11.1

(iii) Small Project Issues-based Table

Environmental Management Activities and Controls: Demolition Works – Noise

Noise				
Environmental Management Control	**Person Responsible**	**Timing / Frequency**	**Completed (Initials/Date)**	**Reference / Notes**
Ensure construction or demolition activities are restricted to the following hours: - 7:00 am to 6:00 pm Monday to Friday - 8:00 am to 1:00 pm Saturday - No work on Sundays or public holidays	Site Supervisor	During demolition		SEE Section 4.11, Consent Condition 10
If the hours of demolition and construction activities need to be varied, ensure prior written approval is obtained from the local council. Any request to alter construction hours should include: - a clear justification of the need for the work - details of the type of activity and the extended hours, and - an analysis of the resultant noise levels at residences in the vicinity of the site.	Site Supervisor	During demolition		Consent Condition 11
Before commencing work, send a letter to all residents and industrial/commercial users whose premises may be affected by demolition noise. Ensure the letter includes: - hours of operation and duration of the demolition work, and - contact details for more information and/or to register complaints.	Environmental Manager	Before demolition		Consent Condition 12
Ensure that all noise complaints are recorded in a logbook. Ensure all complaints are investigated and concerns addressed.	Environmental Manager	During demolition		Consent Condition 13
Ensure high efficiency mufflers are used on all construction equipment and manufacturer's noise control equipment is intact. All equipment used on site shall have evidence of compliance with recommended noise levels outlined in AS2436, 1981.	Site Supervisor	Before and during demolition		SEE Section 4.11
Ensure all construction equipment is well maintained.	Site Supervisor	During demolition		SEE Section 4.11

(iv) Major Project Stage-based Table

Environmental Management Activities and Controls: Road Construction

Stage: Pre-construction

Environmental Management Controls	Person Responsible	Completed (Initials/Date)	Reference / Notes
Stage: Pre-construction			
Miscellaneous Issues			
Before commencing construction, and then at three-monthly intervals, advertise in relevant local newspapers, the nature of works proposed for the forthcoming three (3) months, the areas in which these works are proposed to occur, the hours of operation and a contact telephone number.	Communications Officer		Approval Condition 11
Nominate a person(s) to serve as the Environmental Management Representative (EMR) for the Director-General's approval at least three (3) months before construction commences.	Environmental Manager		Approval Condition 18
Prepare site induction training for all personnel to alert them to sensitive work areas, explain the requirements of the EMP, outline an individual's responsibilities and inform all workers of emergency response procedures.	Environmental Manager		EIS Section 4.1
Complaints Management			
Establish and publicise a 24 hour toll-free complaints contact telephone number. The aim of the complaints line is to enable any member of the public reach a person who can arrange appropriate response/corrective action to their complaint within two hours.	Communications Officer		Approval Condition 9
Establish a system to: - receive, record, track and respond to complaints - ensure that a verbal response is provided to the complainant within two hours (unless the complainant agrees otherwise) - provide a written response within seven calendar days if the complaint cannot be resolved verbally, and - ensure information on all complaints received and response times is available to the EMR daily and on request to relevant government agencies.	Communications Officer		Approval Condition 10
Nominate an appropriate person(s) to implement and manage the Complaints Management System. Ensure the name and contact details of this person(s) is provided to the Council, the Director-General and relevant agencies upon appointment and at least one week before construction commences.	Communications Officer		Approval Condition 10

Environmental Management Controls	Person Responsible	Completed (Initials/Date)	Reference / Notes
Traffic			
Prepare a road dilapidation report before construction commences and after construction is complete for all non-arterial roads likely to be used by construction traffic. Provide a copy of the report to the Council.	Engineering Manager		EIS Section 5.6 Approval Condition 26
Consult with Council to develop management techniques for construction traffic on local roads.	Engineering Manager		Approval Condition 27
Air Quality			
Identify dust sensitive land uses/industries and consult with them about the proposed mitigation measures.	Environmental Manager		Approval Condition 45
Design monitoring system for dust deposition and TSP and commence monitoring before construction commences.	Environmental Manager		EIS Section 5.8 Approval Condition 46
Noise			
Ensure all plant, vehicles and machinery proposed to be used during construction have evidence of compliance with recommended noise levels outlined in AS2436, 1981.	Environmental Manager		EIS Section 5.9
Ensure all temporary noise barriers are erected before commencing construction (refer to EIS Section 5.9).	Environmental Manager		EIS Section 5.9
Flora and Fauna			
Ensure construction footprints are surveyed and marked using poly-web fencing or other such measures, before commencing vegetation clearing.	Environmental Manager		EIS Section 5.10 Approval Condition 91
Where possible seed of locally native species is to be collected before commencing construction and/or during construction to provide seed stock for revegetation purposes to the satisfaction of a qualified bushland regenerator.	Environmental Manager		EIS Section 5.10 Approval Condition 94
Indigenous & Non-Indigenous Heritage			
Ensure temporary protective fencing is placed around sites considered to be archaeologically sensitive and for which Consent to Destroy Permits are not being obtained.	Environmental Manager		EIS Section 5.11 Approval Condition 102
Prepare Plans of Management for any historically significant items potentially affected by the Project. Plans of Management shall be prepared in consultation with the Council and NSW Heritage Office.	Environmental Manager		EIS Section 5.11 Approval Condition 103

Environmental Management Controls	Person Responsible	Completed (Initials/Date)	Reference / Notes
Water Quality			
Prepare a Soil and Water Management Plan (SWMP) before commencing work. The SWMP shall provide for: - the prompt completion of works relating to drainage and sediment control to minimise exposure time of disturbed areas - the provision of sediment and filter traps, in advance of and in conjunction with earthworks operations, to prevent contaminated run-off leaving the site, and - scour protection/energy dissipation measures in drainage lines below drainage outlets. All controls are to be designed and installed in accordance with *Managing Urban Stormwater: Soil and Construction, Department of Housing 1998*. This plan is implemented and maintained for the period of quarrying and subsequent rehabilitation.	Environmental Manager		EIS Section 5.16 Approval Condition 105
Ensure erosion and sedimentation control measures are installed before commencing land disturbance, and remain in place until the erosion hazard reverts to its pre-existing level.	Site Supervisor		EIS Section 5.16
Hazard Management			
Ensure storage areas for fuels, oils and chemicals on-site: - comply with the requirements of relevant authorities - are surrounded by impervious bund walls to contain 120% of the maximum possible spillage volume - are not within 20 metres of any areas of concentrated water flows, or poorly drained areas, and - are not within the drip line of trees.	Site Supervisor		EIS Section 5.19
An emergency procedure for chemical spills and other potential incidents shall be developed before work commences.	Site Supervisor		EIS Section 5.19
Ensure hydrophobic material, for the mopping up of any hydrocarbons in the event of a spill, is stored on-site and that relevant personnel are trained in its use.	Site Supervisor		EIS Section 5.19

Appendix D

Environmental Schedules

Appendix D1: Site Inspection Checklist

Appendix D2: Non-compliance and Corrective Action Report (see also Speedway WHSMS Section 8)

Appendix D3: Environmental Incident Register (see also Speedway WHSMS Section 8.5)

Appendix D4: Complaints Register (see also OEMP Section 6.4)

Appendix D5: Environmental Training Register (see also OEMP Section 5.3)

Appendix D6: Waste Register (see also Event Plan)

Appendix D7: Methanol Safety Data Sheet

Appendix D8: Automotive Diesel Fuel Safety Data Sheet

Appendix D1: Pre-Event Inspection Checklist

TRACK OPERATOR PRE-EVENT CHECK LIST

GENERAL FACILITY

- ☐ Grounds clean & tidy
- ☐ All lighting operational
- ☐ Grass / Lawns mown
- ☐ Spectator access clear & identifiable
- ☐ Walkways smooth with steady gradients
- ☐ Signage clear & visible (directions, disclaimers)
- ☐ Ticket booth clear & visible
- ☐ Fire Exits clearly marked
- ☐ All Exits clearly marked
- ☐ Perimeter & Pit fencing intact
- ☐ All general lighting operational
- ☐ Toilets clean & operative (incl. soap/towel)
- ☐ Canteens clean & supplies stocked
- ☐ Media facilities set up
- ☐ Rubbish bins clean & in place
- ☐ Grandstands safe with handrails / ramps
- ☐ Seating secure & clean
- ☐ Corporate suites set up & clean

Comments:

TRACK & INFIELD

- ☐ Track pole-line marked & identifiable
- ☐ Infield mown & clear
- ☐ Safety fence clean & maintained
- ☐ Signage clear & clean
- ☐ Return road clear
- ☐ Area for Safety/Crash equipment marked
- ☐ Racing / Timing / Flood lights operational
- ☐ All flags accounted for & ready
- ☐ Track prep completed before scheduled start
- ☐ Auxiliary equipment removed from infield
- ☐ Start/Finish line clearly marked (fence & infield)
- ☐ White line powder (flour) ready to use
- ☐ Pit gates operational

Comments:

SAFETY CREW / CLEAN UP EQUIPMENT

- ☐ Ambulance / Paramedic
- ☐ Fire crew / Fire extinguishers
- ☐ Crash Crew / Tow trucks
- ☐ Safety glasses / gloves
- ☐ Shovels
- ☐ Sand for oil / fuel clean up

Comments:

RACING OFFICIALS

- ☐ Race Director
- ☐ Clerk of Course
- ☐ Chief / Club Steward
- ☐ Assistant Stewards / Observers
- ☐ Scrutineer/s
- ☐ Weigh Scale Officials
- ☐ Pit gate operator/s
- ☐ Timing System Operator
- ☐ Lap Scorers
- ☐ Commentator
- ☐ Pit Marshal with assistants (divisional marshals)
- ☐ Fire Crew coordinator
- ☐ Crash Crew coordinator
- ☐ Medical Personnel

Comments:

Appendix D1: Site Inspection Checklist (continued)

ON-SITE STAFF

- ☐ Ticket Booth staff
- ☐ Pit Gate staff
- ☐ Canteen staff
- ☐ Security Guards
- ☐ Track Prep / Maintenance staff
- ☐ General Maintenance staff

Comments:

EVENT MANAGEMENT

- ☐ Entry lists
- ☐ Event Schedule for pit management
- ☐ Ensure not too many events programmed
- ☐ Event Programs for patrons
- ☐ Pit bands / tickets
- ☐ Sign on / One-Day Pit Licenses
- ☐ Sign on / Indemnity waiver forms
- ☐ Trophies/Sashes/Promotional Material
- ☐ Start of event is on time
- ☐ Ensure to keep event on time throughout night
- ☐ White line powder (flour) ready to use

Comments:

OTHER VENUE-SPECIFIC ITEMS

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

Comments:

Appendix D2: Non-Compliance and Corrective Action Report

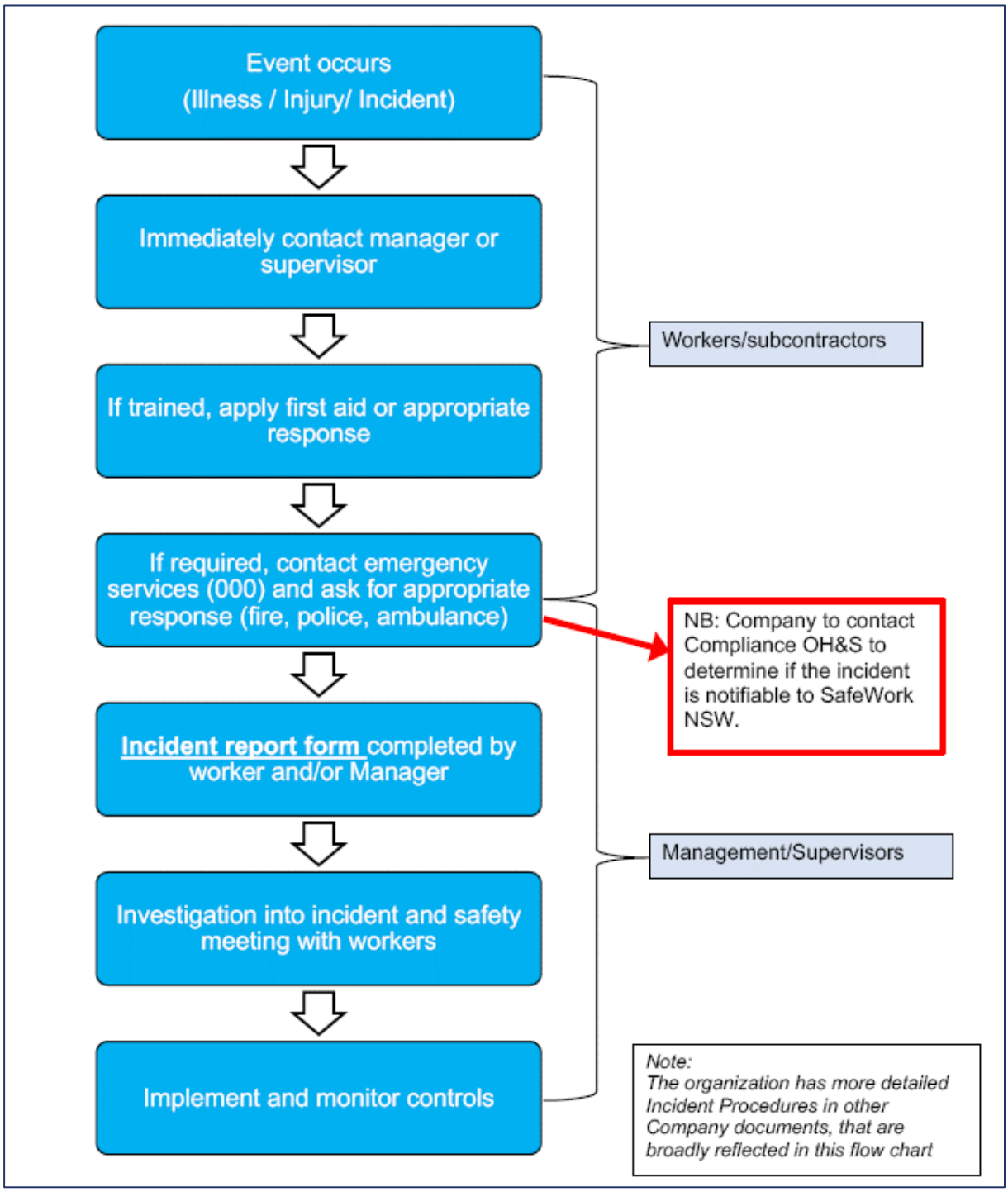
Date Raised:		**Raised By:**			
Location:					
Type of Issue (Tick one):	Safety ☐	Environmental ☐	Legal Notices ☐	Supplier/ Service Provider ☐	Other: ☐
	Near Miss ☐	Internal Audit Finding ☐	Product/ Service Issue ☐	Non-Conformance ☐	
Description of the issue/situation/incident. What was/is the impact?					
Root Cause Analysis:					
Corrective Action Taken:					
Effectiveness of Corrective Action/s Taken (has the corrective action/s resolved the issue?):					
Details of meeting where issue was discussed:					
Reviewed by:		**Signed:**		**Date:**	
Closed out by:		**Signed:**		**Date:**	

Appendix D2: Non-Compliance and Corrective Action Report (continued)

Date	Details of Corrective Action	Root Cause	Person Responsible for Implementation	Date of Closure

Appendix D3: Incident Management Framework

Incident Management Flowchart



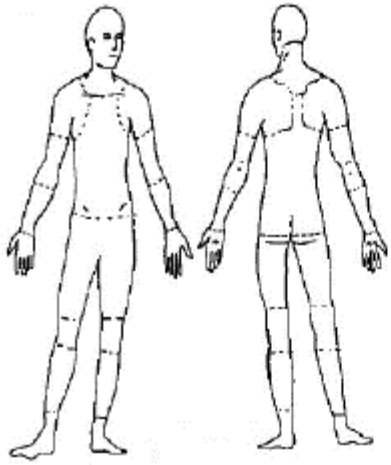
Appendix D3: Incident Management Framework (continued)

Incident Report Form

Step 1 – Reporting Details

I am reporting:	Damage ☐ Near Miss ☐ Service Strike ☐ Illness ☐ Injury ☐		
If injury, what sub-category?	First Aid Injury ☐	Medical Treatment Injury ☐	
Restricted Work Injury ☐	Lost Time Injury ☐		
Name of Person Involved:			
Contact Number:	D.O.B.	Gender: M ☐ F ☐	
Emergency Contact (Name, Contact Number):			
Job Title:	Supervisor:		
Date of Incident:	Time of Incident:		
Address of Incident:			
Task being performed at the time:			
First Person informed of incident:			
Witness Names & Contact Numbers:			
Witness comments:			

Step 2 – Injury Details
(Indicate area affected)



Nature of Injury	Tick
Abrasion	☐
Amputation	☐
Bite	☐
Broken Bone	☐
Bruise	☐
Burn (Chemical)	☐
Burn (Heat)	☐
Burn (Electrical)	☐
Concussion	☐
Dislocation	☐
Fracture	☐
Laceration	☐
Strain/Sprain/Tears	☐
Other	☐

Appendix D3: Incident Management Framework (continued)

Incident Report Form

Describe the incident: (List the events leading up to and including the incident, including all details such as work conditions extent of damage, who has been notified)
Why did Incident Occur? (List all relevant factors which may have caused the incident**)**
Treatment Given: (List all treatment given to patient e.g. first aid, medical)
Has the insurer been notified Yes ☐ No ☐

Step 4 Corrective Actions

What Corrective Action Will be Taken:			
Name of Person Completing Report:			
Signature:		**Date:**	
Signature of Person Involved:		**Date:**	

Reviewed by Senior Management	Yes ☐	No ☐

Appendix	Photographs Witness Statements Drawings	Counselling Provided for Workers Other Information

Appendix D3: Incident Management Framework (continued)

Incident Register

Date of Incident	Incident Type (damage/ illness/ injury/ near miss)	Injury Category (First Aid/ MTI/LTI)	Incident Summary	Location	Corrective Actions	Date of Closure

Appendix D4: Complaints Register (Example)

Complaints Register									
Date	Time	Name	Phone or email contact details	Complaint type	Response action	Actioned by	Status	Date	Complainant satisfaction

Appendix D5: Environmental Training Register (Example)

WHS FORM 07: WORKER TRAINING, INSTRUCTION AND/OR INFORMATION REGISTER

Name: _____ **Date employment started:** _____

Examples of training, instruction and/or information:

- WHS general induction for construction work
- high risk work licences
- load shifting
- use of hazardous chemicals
- trade or contractor licence
- work activity training
- tools and equipment
- site-specific induction
- induction booklet

Please write clearly.

Type of training, instruction and/or information	Licence or card number (if applicable)	Person providing training, instruction and/or information	Date issued	Licence or card expiry or renewal date (if applicable)

Appendix D6: Waste Register (Example)

Waste Material	Estimated Quantity	On-Site Reuse	Off-Site Recycling or Reuse	Disposal
Cleared/Trimmed Vegetation				
Batteries				
Oils/Hydrocarbons				
Waste Water				
Sewage Mixed Waste				
Packaging				
Metal Waste				
Biological Waste				
Other				

Appendix D7

Methanol Safety Data Sheet

SAFETY DATA SHEET

SECTION 1 IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

Product Identifier	**METHANOL**
Other Names	Methyl alcohol, wood alcohol, woodspirit, carbinol
Manufacturer's Product Code	16230
Recommended Use	Solvent, general chemical

Details of Supplier/Manufacturer

Company:	Recochem Inc. ABN: 69 010 485 999
Address:	1809 Lytton Road, Lytton, Queensland 4178
Phone:	(07) 3308 5200 Fax: (07) 3308 5201
Website:	www.recochem.com.au

Emergency Telephone Numbers

Business Hours:	(07) 3308 5200
After Hours:	1300 131 001
Poisons Information:	Australia: 13 11 26 New Zealand: 0800 764 766

SECTION 2 HAZARDS IDENTIFICATION

Hazardous chemical	*according to classification by Safe Work Australia*
Dangerous goods	*according to the Australian Code for the Transport of Dangerous Goods by Road and Rail*

Signal Word	**DANGER**

GHS Classification	Pictogram	Hazard statement
Flammable Liquids, Category 2	FLAME	H225 Highly flammable liquid and vapour
Acute Toxicity - Oral, Category 3	SKULL AND CROSSBONES	H301 Toxic if swallowed
Acute Toxicity - Dermal, Category 3		H311 Toxic in contact with skin
Acute Toxicity - Inhalation, Category 3		H331 Toxic if inhaled

Specific Target Organ Toxicity (Single exposure), Category 1	HEALTH HAZARD	H370 Causes damage to organs through inhalation, in contact with skin and if swallowed

Precautionary statements:

GENERAL	
P101	If medical advice is needed, have product container or label at hand
P102	Keep out of reach of children
P103	Read label before use
PREVENTATIVE	
P210	Keep away from heat/sparks/open flames/hot surfaces. – No smoking
P233	Keep container tightly closed
P240	Ground/bond container and receiving equipment
P241	Use explosion-proof electrical/ventilation/lighting equipment
P242	Use only non-sparking tools
P243	Take precautionary measures against static discharge
P260	Do not breathe mist/vapours/spray
P261	Avoid breathing mist/vapours/spray
P264	Wash thoroughly after handling
P270	Do not eat drink or smoke when using this product
P271	Use only outdoors or in a well-ventilated area
P280	Wear protective gloves/eye protection/face protection
RESPONSE	
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P302 + P352	IF ON SKIN: Wash with plenty of soap and water
P303 + P361 + P353	IF ON SKIN (or hair): Take off contaminated clothing and wash before reuse. Rinse skin with water/shower
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P307 + P311	IF exposed: Call a POISON CENTER or doctor/physician
P311	Call a POISON CENTER or doctor/physician
P312	Call a POISON CENTER or doctor/physician if you feel unwell
P330	Rinse mouth
P361	Remove/Take off immediately all contaminated clothing
P363	Wash contaminated clothing before reuse
P370 + P378	In case of fire: Use foam/water spray/fog for extinction
STORAGE	
P403 + P233	Store in a well-ventilated place. Keep container tightly closed
P403 + P235	Store in a well-ventilated place. Keep cool
P405	Store locked up
DISPOSAL	
P501	Dispose of contents/container in accordance with local regulations

SECTION 3 COMPOSITION AND INFORMATION ON INGREDIENTS

Ingredients Names and Proportions

Chemical Entity	CAS Number	Proportion (%)
Methanol	67-56-1	> 99

SECTION 4 FIRST AID MEASURES

Description of necessary first aid measures

Inhalation:	Keep victim calm and remove to fresh air if safe to do so. If rapid recovery does not occur, transport to nearest medical facility for additional treatment. Remove contaminated clothing.
Skin Contact:	If skin contact occurs, remove contaminated clothing and immediately flush skin thoroughly with large amounts of water and follow by washing with soap if available. Transport to nearest medical facility for additional treatment if necessary.
Eye Contact:	If in eyes, hold eyes open, flood with large amounts of water for at least 15 minutes. Transport to nearest medical facility for additional treatment if necessary.
Ingestion:	If swallowed, do NOT induce vomiting. Rinse mouth with water. Obtain medical treatment immediately. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

Symptoms caused by exposure

Inhalation:	Inhalation of vapours can result in headaches, dizziness, and possible nausea. Inhalation of higher concentrations can produce central nervous system depression and unconsciousness.
Skin:	May include burning sensation and/or a dried cracked appearance.
Eye:	May include burning sensation, redness, swelling and/or blurred vision.
Ingestion:	Effects of a small intake may include excitation, euphoria, headache, dizziness, drowsiness, blurred vision, and fatigue. Ingestion of a large amount may lead to severe acute intoxication, tremours, convulsion, loss of consciousness, coma, respiratory arrest and death. Aspiration in to lung may cause pneumonitis

Medical attention and special treatment

Treat symptomatically.

SECTION 5 FIRE FIGHTING MEASURES

Suitable extinguishing equipment

Alcohol stable foam, water spray or fog. Dry chemical powder, carbon dioxide for small fires only. Do not use water in a jet.

Specific hazards arising from the chemical

Carbon monoxide and/or Carbon dioxide may be evolved.

Special protective equipment and precautions for fire fighters

Wear full protective clothing and self-contained breathing apparatus. Hazchem code ●2WE.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Avoid contact with spilled or released material. Shut off leaks, if possible without personal risks. Isolate hazard area and deny entry to unnecessary or unprotected personnel. Remove all sources of ignition in the surrounding area. Take precautionary measure against static discharge. Ensure electrical continuity by bonding and earthing all equipment.

Environmental precautions

Use appropriate containment to avoid environmental contamination. Prevent from spreading and entering waterway using sand, earth or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Ventilate contaminated area thoroughly.

Methods and materials for containment and cleaning up

For small spills (< 1 drum), transfer by mechanical means to a labelled, sealable container for product recovery or safe disposal. Allow any residues to evaporate or use an appropriate absorbent material and dispose of safely.

For larger spills (> 1 drum), transfer by means such as a vacuum truck to a salvage tank for recovery or disposal. Do not flush residues with water. Retain as contaminated waste. Allow any residues to evaporate or use an appropriate absorbent material and dispose of safely.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Highly flammable product. Avoid breathing vapours. Handle and open containers with care in a well-ventilated area. Ensure that the workplace is ventilated such that the Occupational Exposure limit is not exceeded. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Do not eat, drink or smoke in contaminated areas. Electrostatic charges may be generated during transfer. Electrostatic discharge may cause fire. Ensure electrical continuity by earthing all equipment. Flameproof equipment necessary in area where chemical is being used. Vapours may accumulate in low or confined areas.

Conditions for safe storage, including any incompatibilities

Bulk storage tanks should be bunded. Store in a well-ventilated area, away from sunlight, ignition sources and other sources of heat. Do not store near strong oxidants.

SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure control measures

From National Occupational Health & Safety Commission (NOHSC) Worksafe Australia -
Methanol: 262mg/m3 (200ppm) TWA (8hr), 328/ m3 (250ppm) STEL

Biological monitoring

No biological limit allocated.

Engineering controls

Ensure that adequate ventilation is provided. Maintain air concentrations below recommended exposure standards. Avoid generating and inhaling mists and vapours. Keep containers closed when not in use.

Individual protection measures

Eye and face protection:	Wear safety goggles.
Skin protection:	Use solvent resistant gloves, nitrile for longer term protection or PVC and neoprene for incidental splashes.
Respiratory protection:	If work practices do not maintain airborne level below the exposure standard, use appropriate respiratory protection equipment. When using respirators, select an appropriate combination of mask and filter. Select a filter for organic gases and vapours (boiling point > 65°C). Respirators should comply with AS1716 or an equivalent approved by a state/territory authority.
Thermal hazards:	Not applicable.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Colourless clear liquid
Odour:	Alcoholic
Odour threshold (ppm):	Data not available
pH:	Data not available
Melting point/freezing point (°C):	-98
Initial boiling point and boiling range (°C):	64.5
Flash point (°C):	11
Evaporation rate (Butyl acetate = 1):	Data not available
Flammability:	Highly flammable
Upper/lower flammability or explosive limits (%):	6 - 36
Vapour pressure (mmHg @ 20°C):	100
Vapour density (air = 1, @ 15°C):	1.1
Density (g/ml @ 15°C):	0.79
Solubility (kg/m^3):	Miscible
Partition coefficient: n-octanol/water:	Data not available
Auto-ignition temperature (°C):	385
Decomposition temperature (°C):	Data not available
Kinematic viscosity (mm^2/s @ 20°C):	Data not available

SECTION 10 STABILITY AND REACTIVITY

Reactivity

Stable under normal conditions of use.

Chemical stability

Stable under normal conditions of use.

Possibility of hazardous reactions

Stable under normal conditions of use.

Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

Incompatible materials

Oxidising agents.

Hazardous decomposition products

Burning can produce carbon monoxide and/or carbon dioxide.

SECTION 11 TOXICOLOGICAL INFORMATION

Acute toxicity:	LDLo Oral (human) = 143 mg/kg LD50 Oral (rat) > 2000mg/kg
Skin corrosion/irritation:	Mild irritant. Prolonged contact may cause defatting of skin which can lead to dermatitis. Can be absorbed through the skin with resultant toxic effects
Serious eye damage/irritation:	Vapours may irritate the eyes. Liquid or mists may severely irritate or damage the eyes
Respiratory or skin sensitisation:	Not expected to be a sensitiser
Germ cell mutagenicity:	Not expected to be a mutagen
Carcinogenicity:	Not expected to be a carcinogen
Reproductive toxicity:	Not expected to impair reproduction
Specific Target Organ Toxicity (STOT) – single exposure:	Inhalation of vapours can result in headaches, dizziness, and possible nausea. Inhalation of higher concentrations can produce central nervous system depression and unconsciousness.
Specific Target Organ Toxicity (STOT) – repeated exposure:	Chronic exposure to concentrations greater than 1000ppm can result in permanent blindness and metabolic acidosis.
Aspiration hazard:	Not considered an aspiration hazard

SECTION 12 ECOLOGICAL INFORMATION

Ecotoxicity

Acute toxicity:

Fish –	Low toxicity: LC/EC/IC50 > 1000mg/l
Aquatic invertebrate –	Low toxicity: LC/EC/IC50 > 1000mg/l
Algae –	Low toxicity: LC/EC/IC50 > 1000mg/l
Microorganisms –	Data not available

Chronic toxicity:

Fish –	Data not available
Aquatic invertebrate –	Data not available
Algae –	Data not available
Microorganisms –	Data not available

Persistence and degradability

Biodegradable.

Bioaccumulative potential

Does not bioaccumulate significantly.

Mobility in soil

Miscible with water.

Other adverse effects

Data not available.

SECTION 13 DISPOSAL CONSIDERATIONS

Ensure waste disposal conforms to local waste disposal regulations.

SECTION 14 TRANSPORT INFORMATION

UN number:	1230
Proper shipping name:	Methanol
Australian Dangerous Goods class:	3 (sub-risk 6.1)
Australian Dangerous Goods packing group:	II
Hazchem code:	●2WE

SECTION 15 REGULATORY INFORMATION

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP), Poisons Schedule:	6
Australian Inventory of Chemical Substances (AICS):	Listed
Dangerous Goods Initial Emergency Response Guide (SAA/SNZ HB76):	16

SECTION 16 OTHER INFORMATION

Date of preparation:	23/05/2017
Revision number:	7
Changes in this revision:	Corrected typos

This SDS summarises product safety information at the date of issue, to the best of our knowledge, as a general guide. Recochem cannot anticipate or control the conditions under which the product is used, so prior to usage each user must assess and control the risks associated with their use of the product. Users should also consult the relevant legislation governing the use and storage of this product. We make no warranties, express or implied, and assume no liability in connection with any use of information contained within this document. If clarification or further information is needed, the user should contact Recochem on (07) 3308 5200.

Appendix D8

Automotive Design Fuel Safety Data Sheet

SAFETY DATA SHEET

Automotive Diesel Fuel

Section 1. Identification

GHS product identifier Automotive Diesel Fuel

Other means of identification ☑10, BP 10 ppm diesel fuel, Ultra Low Sulphur diesel fuel, Automotive Diesel fuel, AD20, AD40, Alpine Diesel and Biodiesel up to B5.

Product code 0000002718

SDS no. 0000002718

Historic SDS no. AD0K1

Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/ mixture Fuel for compression ignition diesel engines.

Manufacturer

Supplier

BP Australia Pty Ltd
Level 17, 717 Bourke Street
Docklands, Victoria 3008
ABN 53 004 085 616

www.bp.com.au

Technical Helpline Number: 1300 139 700

EMERGENCY TELEPHONE NUMBER 1800 638 556

Section 2. Hazard(s) identification

Classification of the substance or mixture

☑LAMMABLE LIQUIDS - Category 4
ACUTE TOXICITY (inhalation) - Category 4
SKIN CORROSION/IRRITATION - Category 2
CARCINOGENICITY - Category 2
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE (bone marrow, liver, thymus) - Category 2
ASPIRATION HAZARD - Category 1

GHS label elements

Hazard pictograms

Signal word DANGER

Hazard statements

H227 - Combustible liquid.
H332 - Harmful if inhaled.
H315 - Causes skin irritation.
H351 - Suspected of causing cancer.
H304 - May be fatal if swallowed and enters airways.
H373 - May cause damage to organs through prolonged or repeated exposure. (bone marrow, liver, thymus)

Precautionary statements

General

P103 - Read label before use.
P102 - Keep out of reach of children.
P101 - If medical advice is needed, have product container or label at hand.

Section 2. Hazard(s) identification

Prevention

P201 - Obtain special instructions before use.
P260 - Do not breathe vapour.
P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240 - Ground/bond container and receiving equipment.
P273 - Avoid release to the environment.

Response

P314 - Get medical attention if you feel unwell.
P308 + P313 - IF exposed or concerned: Get medical attention.
P304 + P340 + P312 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.
P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.
P302 + P352 + P362 + P363 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse.
P332 + P313 - If skin irritation occurs: Get medical attention.

Storage

P405 - Store locked up.
P403 - Store in a well-ventilated place.
P235 - Keep cool.

Disposal

P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements

Not applicable.

Other hazards which do not result in classification

This material may contain significant quantities of polycyclic aromatic hydrocarbons, some of which have been shown by experimental studies to induce skin cancer.
Note: High Pressure Applications
Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency.
See 'Notes to physician' under First-Aid Measures, Section 4 of this Safety Data Sheet.

Section 3. Composition and ingredient information

Substance/mixture Mixture

May contain Fatty Acid Methyl Esters (FAME). May also contain small quantities of proprietary performance additives. Contains small quantities of polycyclic aromatic hydrocarbons (PAHs).

Ingredient name	% (w/w)	CAS number
Fuels, diesel	> 95	68334-30-5
Alkanes, C10-20-branched and linear	0 - 20	928771-01-1

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.

Inhalation

If inhaled, remove to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention.

Section 4. First aid measures

Skin contact

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Drench contaminated clothing with water before removing. This is necessary to avoid the risk of sparks from static electricity that could ignite contaminated clothing. Contaminated clothing is a fire hazard. Contaminated leather, particularly footwear, must be discarded. Clean shoes thoroughly before reuse. Get medical attention.

Ingestion

Do not induce vomiting. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Aspiration hazard if swallowed. Can enter lungs and cause damage. Get medical attention immediately.

Most important symptoms/effects, acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician

Treatment should in general be symptomatic and directed to relieving any effects. Product can be aspirated on swallowing or following regurgitation of stomach contents, and can cause severe and potentially fatal chemical pneumonitis, which will require urgent treatment. Because of the risk of aspiration, induction of vomiting and gastric lavage should be avoided. Gastric lavage should be undertaken only after endotracheal intubation. Monitor for cardiac dysrhythmias.

Note: High Pressure Applications
Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency. Injuries may not appear serious at first but within a few hours tissue becomes swollen, discoloured and extremely painful with extensive subcutaneous necrosis.
Surgical exploration should be undertaken without delay. Thorough and extensive debridement of the wound and underlying tissue is necessary to minimise tissue loss and prevent or limit permanent damage. Note that high pressure may force the product considerable distances along tissue planes.

Specific treatments

No specific treatment.

Protection of first-aiders

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media

In case of fire, use water fog, foam, dry chemical or carbon dioxide extinguisher or spray.

Unsuitable extinguishing media

Do not use water jet.

Specific hazards arising from the chemical

Combustible liquid. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.

Hazardous thermal decomposition products

Combustion products may include the following:
carbon oxides (CO, CO_2) (carbon monoxide, carbon dioxide)
other hazardous substances.

Special protective actions for fire-fighters

No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Section 5. Firefighting measures

Special protective equipment for fire-fighters Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

Hazchem code 3z

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Immediately contact emergency personnel. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling. Eliminate all ignition sources.

For emergency responders Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained breathing apparatus. Wear a suitable chemical protective suit. Chemical resistant boots. See also the information in "For non-emergency personnel".

Environmental precautions Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and material for containment and cleaning up

Small spill Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres.

Large spill Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Dike spill area and do not allow product to reach sewage system and surface or ground water. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Use spark-proof tools and explosion-proof equipment. Contaminated absorbent material may pose the same hazard as the spilt product. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

Precautions for safe handling

Protective measures Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not swallow. Aspiration hazard if swallowed. Can enter lungs and cause damage. Never siphon by mouth. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not reuse container. Avoid contact of spilt material and runoff with soil and surface waterways.

Section 7. Handling and storage

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Store and use only in equipment/containers designed for use with this product. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Take precautions to avoid static electrical discharge and all ignition sources during filling, ullaging and sampling from storage tanks. Do not enter storage tanks. If entry to vessels is necessary, follow permit to work procedures. When the product is pumped (e.g. during filling, discharge or ullaging) and when sampling, there is a risk of static discharge. Ensure equipment used is properly earthed or bonded to the tank structure. Use of explosion-protected electrical, ventilating, lighting and all material-handling equipment should be considered. Explosive air/vapour mixtures may form at ambient temperatures on contact with hot surfaces. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.

Product contaminated rags, paper or material used to absorb spillages, represent a fire hazard, and should not be allowed to accumulate. Dispose of safely immediately after use. Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work.

Classified as a C1 (COMBUSTIBLE LIQUID) for the purpose of storage and handling, in accordance with the requirements of AS 1940. Refer to State Regulations for storage and transport requirements.

Section 8. Exposure controls and personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Fuels, diesel	**ACGIH TLV (United States). Absorbed through skin.** TWA: 100 mg/m³, (measured as total hydrocarbons) 8 hours. Issued/Revised: 1/2007 Form: Inhalable fraction and vapor

Appropriate engineering controls

All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained.
Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.
Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits.

Section 8. Exposure controls and personal protection

The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Chemical splash goggles.

Skin protection

Hand protection

Wear chemical resistant gloves.

Protective gloves must give suitable protection against mechanical risks (i.e. abrasion, blade cut and puncture). Protective gloves will deteriorate over time due to physical and chemical damage. Inspect and replace gloves on a regular basis. The frequency of replacement will depend upon the circumstances of use.

Recommended: Nitrile gloves.

Skin protection

Recommended: overall
Use of protective clothing is good industrial practice.
Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required.
Wear suitable protective clothing.
Footwear highly resistant to chemicals.
When there is a risk of ignition wear inherently fire resistant protective clothes and gloves.
When there is a risk of ignition from static electricity, wear anti-static protective clothing. For greatest effectiveness against static electricity, overalls, boots and gloves should all be anti-static.
When the risk of skin exposure is high (from experience this could apply to the following tasks: cleaning work, maintenance and service, filling and transfer, taking samples and cleaning up spillages) then a chemical protective suit and boots will be required.
Work clothing / overalls should be laundered on a regular basis. Laundering of contaminated work clothing should only be done by professional cleaners who have been told about the hazards of the contamination. Always keep contaminated work clothing away from uncontaminated work clothing and uncontaminated personal clothes.

Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

Use with adequate ventilation.
If there is a requirement for the use of a respiratory protective device, but the use of breathing apparatus (independent of ambient atmosphere) is not required, then a suitable filtering device must be worn.
The filter class must be suitable for the maximum contaminant concentration (gas/ vapour/aerosol/particulates) that may arise when handling the product.

Recommended: If ventilation is inadequate, use respirator that will protect against organic vapour and dust/mist.

Section 8. Exposure controls and personal protection

Refer to standards: Respiratory protection:AS/NZS 1715 and AS/NZS 1716
Gloves:AS/NZS 2161.1
Eye protection:AS/NZS 1336 and AS/NZS 1337

Section 9. Physical and chemical properties

Appearance

Physical state Liquid.

Colour Water white to straw including fluorescent green, blue or yellow.

Odour Mild

Odour threshold 0.7 ppm (Based on Fuels, diesel)

pH Not applicable. Based on Solubility in Water (Very slightly soluble in water)

Melting point -29 to -18°C (-20.2 to -0.4°F) (Based on Fuels, diesel)

Boiling point 180 to 380°C (356 to 716°F)

Flash point Closed cup: >61.5°C (>142.7°F) [Pensky-Martens.]

Evaporation rate Not relevant/applicable due to nature of the product. Based on low volatility

Flammability (solid, gas) Not applicable. Based on - Physical state

Lower and upper explosive (flammable) limits Lower: 0.5%
Upper: 7.5%

Vapour pressure 0.1 kPa (0.755 mm Hg) (Based on Concawe Category: Vacuum Gas Oils, Hydrocracked Gas Oils & Distillate Fuels (VHGO))

Vapour density Not available.

Relative density 0.83

Density 820 to 850 kg/m³ (0.82 to 0.85 g/cm³) at 15°C

Solubility Very slightly soluble in water

Partition coefficient: n-octanol/water Not applicable. Based on Fuels, diesel - Substance is a hydrocarbon UVCB. Standard tests for this endpoint are intended for single substances and are not appropriate for this complex substance.

Auto-ignition temperature 240°C (464°F) (Based on Fuels, diesel)

Decomposition temperature Not observed to decompose by final boiling point: 380°C (716°F)

Viscosity Kinematic: 2 to 4.5 mm^2/s (2 to 4.5 cSt) at 40°C

Section 10. Stability and reactivity

Reactivity No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.

Chemical stability The product is stable.

Possibility of hazardous reactions Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerisation will not occur.

Conditions to avoid Avoid all possible sources of ignition (spark or flame). Avoid excessive heat.

Incompatible materials Reactive or incompatible with the following materials: oxidising materials.

Hazardous decomposition products Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure

Section 11. Toxicological information

Fuels, diesel	LC50 Inhalation Dusts and mists	Rat	4.1 mg/l	4 hours
	LD50 Dermal	Rabbit	>4300 mg/kg	-
	LD50 Dermal	Rabbit	>4300 mg/kg	-
	LD50 Oral	Rat	17900 mg/kg	-
	LD50 Oral	Rat	7600 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Fuels, diesel	Skin - Irritation	Rabbit	-	-	-
	Skin - Irritation	Rabbit	-	-	-
	Eyes - Non-irritating to the eyes.	Rabbit	-	-	-
	Eyes - Non-irritating to the eyes.	Rabbit	-	-	-

Skin Causes skin irritation.

Sensitisation

Product/ingredient name	Route of exposure	Species	Result
Fuels, diesel	skin	Guinea pig	Not sensitising
	skin	Guinea pig	Not sensitising

Mutagenicity

Product/ingredient name	Test	Experiment	Result
Fuels, diesel	OECD 471	Experiment: In vitro Subject: Non-mammalian species	Positive
	Equivalent to OECD 476	Experiment: In vitro Subject: Mammalian-Animal Cell: Germ	Negative
	not guideline	Experiment: In vivo Subject: Unspecified Cell: Somatic	Negative

Conclusion/Summary Not classified. Based on available data, the classification criteria are not met.

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Fuels, diesel	Positive - Dermal - Unspecified	Mouse	-	2 years

Conclusion/Summary Suspected of causing cancer.

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Developmental toxin	Species	Dose	Exposure
Fuels, diesel	-	-	Negative	Rat	Dermal	20 days
	-	-	Negative	Rat	Dermal	10 days
	-	-	Negative	Rat	Dermal	10 days

Conclusion/Summary
Development: Not classified. Based on available data, the classification criteria are not met.
Fertility: Not classified. Based on available data, the classification criteria are not met.
Effects on or via lactation: Not classified. Based on available data, the classification criteria are not met.

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs

Fuels, diesel	Category 2	Not determined	bone marrow, liver and thymus

Aspiration hazard

Name	Result
Fuels, diesel	ASPIRATION HAZARD - Category 1
Alkanes, C10-20-branched and linear	ASPIRATION HAZARD - Category 1

Information on likely routes of exposure Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact No known significant effects or critical hazards.

Inhalation Harmful if inhaled.

Skin contact Causes skin irritation.

Ingestion Irritating to mouth, throat and stomach. Aspiration hazard if swallowed -- harmful or fatal if liquid is aspirated into lungs.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Skin contact Adverse symptoms may include the following:
irritation
redness

Ingestion Adverse symptoms may include the following:
nausea or vomiting

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Eye contact Vapour, mist or fume may cause eye irritation. Exposure to vapour, mist or fume may cause stinging, redness and watering of the eyes.

Inhalation Vapour, mists or fumes may contain polycyclic aromatic hydrocarbons some of which are known to produce skin cancer. Vapour, mists or fumes may contain polycyclic aromatic hydrocarbons some of which are known to produce skin cancer. Vapour, mist or fume may irritate the nose, mouth and respiratory tract.

Skin contact As with all such products containing potentially harmful levels of polycyclic aromatic hydrocarbons, prolonged or repeated skin contact may eventually result in dermatitis or more serious irreversible skin disorders including cancer.

Ingestion If swallowed, may irritate the mouth, throat and digestive system. If swallowed, may cause abdominal pain, stomach cramps, nausea, vomiting, diarrhoea, dizziness and drowsiness.

General May cause damage to organs through prolonged or repeated exposure. Vapour, mists or fumes may contain polycyclic aromatic hydrocarbons some of which are known to produce skin cancer. Vapour, mists or fumes may contain polycyclic aromatic hydrocarbons some of which are known to produce skin cancer.

Carcinogenicity Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity No known significant effects or critical hazards.

Teratogenicity No known significant effects or critical hazards.

Section 11. Toxicological information

Developmental effects No known significant effects or critical hazards.

Fertility effects No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Inhalation (dusts and mists)	1.89 mg/l

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Fuels, diesel	EL50 >1000 mg/l Nominal Fresh water	Micro-organism	40 hours
	NOELR 3.217 mg/l Nominal Fresh water	Micro-organism	40 hours
	Acute EL50 22 mg/l Nominal Fresh water	Algae	72 hours
	Acute EL50 210 mg/l Nominal Fresh water	Daphnia	48 hours
	Acute EL50 68 mg/l Nominal Fresh water	Daphnia	48 hours
	Acute ErL50 78 mg/l Nominal Fresh water	Algae	72 hours
	Acute LL50 65 mg/l Nominal Fresh water	Fish	96 hours
	Acute LL50 21 mg/l Nominal Fresh water	Fish	96 hours
	Acute NOELR 10 mg/l Nominal Fresh water	Algae	72 hours
	Acute NOELR 1 mg/l Nominal Fresh water	Algae	72 hours
	Acute NOELR 46 mg/l Nominal Fresh water	Daphnia	48 hours
	Chronic NOEL 0.083 mg/l Nominal Fresh water	Fish	14 days
	Chronic NOELR 0.2 mg/l Nominal Fresh water	Daphnia	21 days

Conclusion/Summary Toxic to aquatic life with long lasting effects.

Persistence and degradability

Expected to be biodegradable.

Product/ingredient name	Test	Result	Dose	Inoculum
Fuels, diesel	OECD 301 F	60 % - Readily - 28 days	30 mg/l	-
	OECD 301 F	57.5 % - Not readily - 28 days	25 mg/l	-
	Equivalent to EPA OTS 796.3100	35 % - Not readily - 28 days	5 mg/l	-

Conclusion/Summary Non-persistent per IMO criteria

Bioaccumulative potential

This product is not expected to bioaccumulate through food chains in the environment.

Section 12. Ecological information

Mobility in soil

Soil/water partition coefficient (K_{OC}) Not available.

Mobility Spillages may penetrate the soil causing ground water contamination. This material may accumulate in sediments.

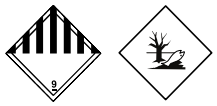
Other ecological information Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

Section 13. Disposal considerations

Disposal methods The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapour from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Special Precautions for Landfill or Incineration Empty packages may contain some remaining product. Hazard warning labels are a guide to the safe handling of empty packaging and should not be removed.

Section 14. Transport information

	ADG	IMDG	IATA
UN number	Not regulated.	UN3082	UN3082
UN proper shipping name	-	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fuels, diesel). Marine pollutant	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fuels, diesel)
Transport hazard class(es)	-	9 	9
Packing group	-	III	III
Environmental hazards	No.	Yes.	Yes.
Additional information	**Remarks** Combustible liquid Class C1 (AS 1940). **Hazchem code** 3Z **Initial emergency response guide** 47	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. **Emergency schedules** F-A, S-F	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

Section 14. Transport information

Special precautions for user Not available.

Transport in bulk according to Annex II of Marpol and the IBC Code

Proper shipping name MARPOL Annex 1 rules apply for bulk shipments by sea.
Category: gas oils, including ship's bunkers

Section 15. Regulatory information

Standard Uniform Schedule of Medicine and Poisons

Not scheduled

Consumer products - This product is exempt per Appendix A of the SUSMP.
Industrial Products - Labelling requirements for SUSMP do not apply to a poison that is packed and sold solely for industrial, laboratory or manufacturing use. However, this product is labelled in accordance with NOSHC National Code of Practice for labelling of workplace substances.

Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

Montreal Protocol (Annexes A, B, C, E)

Ingredient name	List name	Status
Not listed.		

Stockholm Convention on Persistent Organic Pollutants

Ingredient name	List name	Status
Not listed.		

Rotterdam Convention on Prior Informed Consent (PIC)

Ingredient name	List name	Status
Not listed.		

International lists

National inventory

REACH Status	For the REACH status of this product please consult your company contact, as identified in Section 1.
Australia inventory (AICS)	All components are listed or exempted.
Canada inventory	All components are listed or exempted.
China inventory (IECSC)	Not determined.
Japan inventory (ENCS)	Not determined.
Korea inventory (KECI)	Not determined.
Philippines inventory (PICCS)	Not determined.
Taiwan Chemical Substances Inventory (TCSI)	All components are listed or exempted.
United States inventory (TSCA 8b)	All components are active or exempted.

Section 16. Any other relevant information

History

Date of printing	8/6/2019
Date of issue/Date of revision	8/6/2019
Date of previous issue	5/25/2016
Version	3
Prepared by	Product Stewardship

Key to abbreviations

ADG = Australian Dangerous Goods
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
NOHSC = National Occupational Health and Safety Commission
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation [Regulation (EC) No. 1907/2006]
STEL = Short term exposure limit
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations
TWA = Time weighted average
VOC = Volatile Organic Compound
SADT = Self-Accelerating Decomposition Temperature
Varies = may contain one or more of the following 64741-88-4, 64741-89-5, 64741-95-3, 64741-96-4, 64742-01-4, 64742-44-5, 64742-45-6, 64742-52-5, 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-57-0, 64742-58-1, 64742-62-7, 64742-63-8, 64742-65-0, 64742-70-7, 72623-85-9, 72623-86-0, 72623-87-1

Procedure used to derive the classification

Classification	Justification
Flam. Liq. 4, H227	On basis of test data
Acute Tox. 4, H332	Calculation method
Skin Irrit. 2, H315	Calculation method
Carc. 2, H351	Calculation method
STOT RE 2, H373 (bone marrow, liver, thymus)	Calculation method
Asp. Tox. 1, H304	Calculation method

Indicates information that has changed from previously issued version.

Notice to reader

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Appendix E

Operational Air Quality Management Plan

Attached as a separate document.

Appendix F

Operational Traffic & Transport Management Plan

Attached as a separate document.

Appendix G

Operational Noise Management Plan

Attached as a separate document.

Appendix H

Operational Water Quality Monitoring Program

Attached as a separate document.

Appendix I

Event Management Plan

Eastern Creek Speedway

Event Management Plan

Document Control

Project No: 0214

Project: Sydney International Speedway

Client: Speedway Promotions

File Reference: P0214r7v9 Eastern Creek Speedway Event Management Plan

Revision History

Revision	Date	Details	Approved by
v1	17/08/2021	Draft 1	A. Reisch
v2	7/09/2021	Draft 2	A. Reisch
v3	24/09/2021	Draft 4	A. Reisch
v4	24/09/2021	Final Draft 1	A. Reisch
v5	27/09/2021	Final Draft 2	A. Reisch
v6	27/09/2021	Final Draft 3	A. Reisch
v7	07/10/2021	Final Draft 4	A. Reisch
v8	12/11/2021	Final 1	A. Reisch
v9	17/11/2021	Final 2	A. Reisch

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Appendix A: Speedway Promotions Work Health & Safety Management System

Appendix B: Speedway Australia Pre-Event Checklist

Appendix C: Sydney Speedway Grandstand Building Fire Engineering Report

1 Introduction

1.1 Overview

This Event Management Plan has been prepared to support future operations at the Eastern Creek Speedway (the **Speedway**), Ferrers Road, Eastern Creek (the **Site**).

1.2 Background

The previous speedway site, located on Government-owned land at Clyde, was required to house a future stabling and maintenance facility for the Sydney Metro West project, a State significant project for New South Wales. Sydney Metro has therefore developed the new Speedway on land owned by Western Sydney Parklands Trust (**WSPT**) and managed by the Greater Sydney Parklands (**GSP**).

1.3 Site Location

The Site is located within GSP's Precinct 5: Eastern Creek Motor Sports (**Motor Sports Precinct**) which lies within the Blacktown Local Government Area in the Central River City sub-region of Greater Sydney, approximately six kilometres south-west of Blacktown City Centre, and 32 kilometres west of the Sydney Central Business District. The location of the Site in its regional and local context is shown in the figures below.

Figure 1: Site Location Regional Context

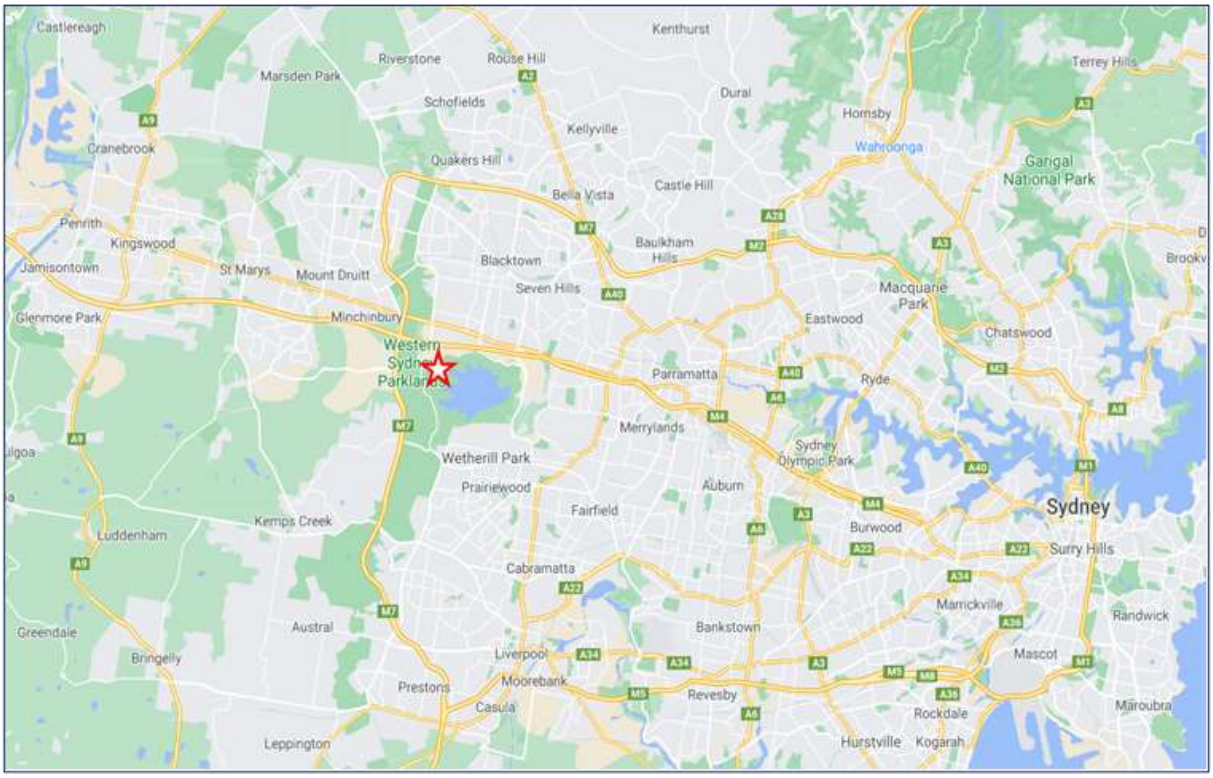
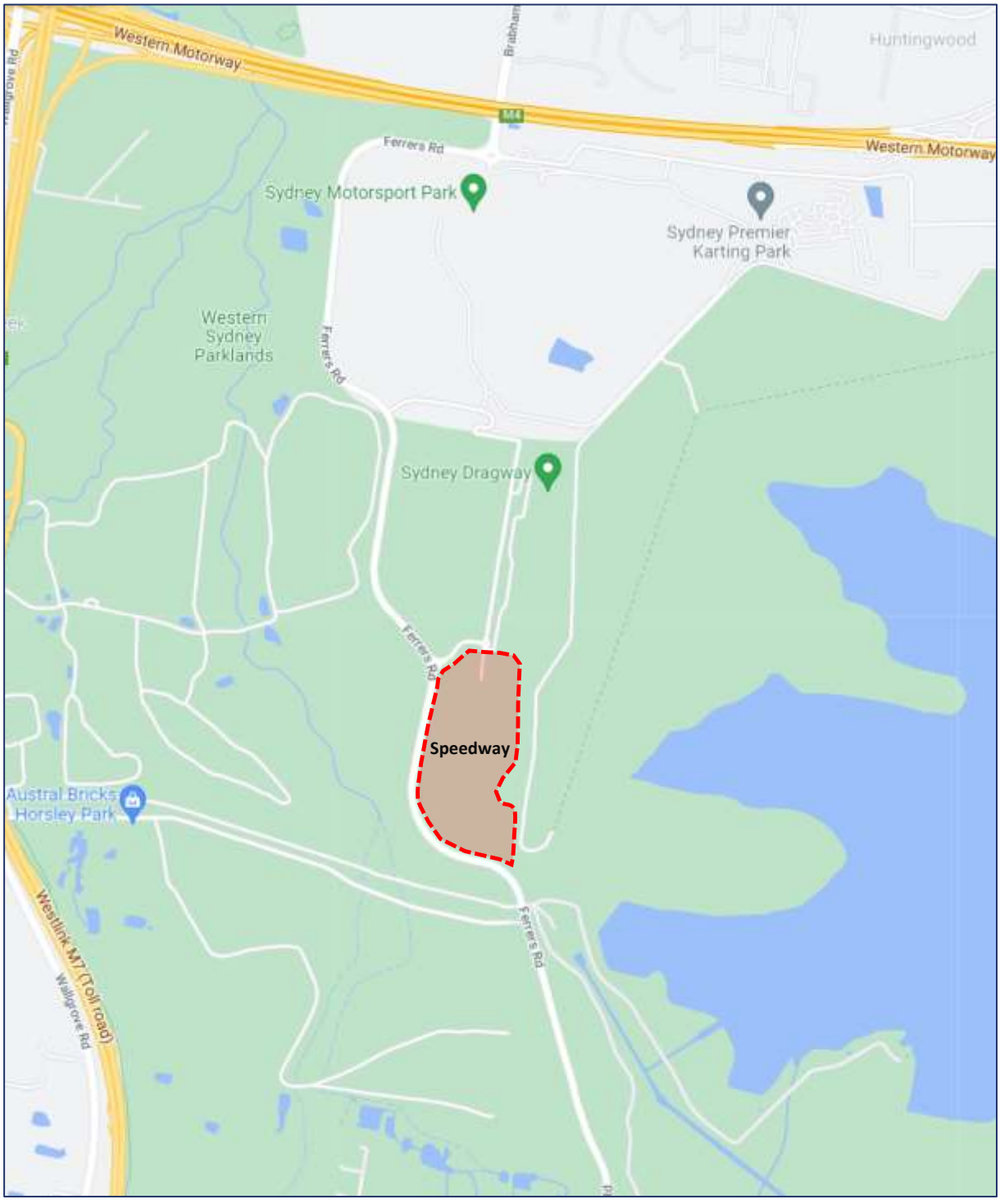


Figure 2: Site Location Local Context



1.4 Speedway Overview

The Speedway provides:

- A world-class clay-based racetrack for speedway cars including sprintcars, wingless sprints, Midgets, V8 Dirt Modifieds and Formula 500 cars;

- Grandstand and terraced seating accommodating up to 7,000 spectators;
- Public amenities, corporate boxes, food, beverage and merchandise outlets;
- Dedicated on-site parking for Speedway competitors and spectators;
- A dedicated competitor **Pit Area** to service the speedway, including workshops, garages and trackside support areas;
- All entry to the Site via the existing Speedway intersection to Ferrers Road (**Intersection 1**); and
- All departures from the Speedway's spectator car parks via Intersection 1, and all departures from the Pit Area and Car Park B via the new intersection to Ferrers Road (**Intersection 2**).

The Speedway Site Plan is shown in Figure 3.

Figure 3: Speedway Plan

Source: Sydney Metro

2 Speedway Events

The Speedway Approval allows the Speedway to be operational year-round, though most Speedway Events are to be held during the typical speedway racing season (September to May). The Speedway has the ability to be used for a variety of dirt track racing events, including those previously held at the Sydney Speedway at Clyde.

On average, it is expected that the Speedway will host:

- 10 Major Events per year, attracting approximately 4,000 to 6,000 spectators;
- 30 – 35 Average Events per year, attracting approximately up to 3,000 spectators;
- 10 Minor Events per year, attracting approximately up to 1,500 spectators; and
- Practice sessions, typically for competitors and teams, across the year.

Major Events will typically be held on Saturdays, and Minor Events will typically be held on weekends (Saturdays and Sundays); for all Events, gates will open to spectators at 1:00pm, with the main races occurring between 6:00pm and 11:00pm.

There are generally 60 to 120 competitors per Event, with each competitor to be provided with parking for their racing vehicle(s), and for larger vehicles transporting the racing vehicle(s) to and from the Speedway (see also Section 4.1.1).

The typical schedule for a Speedway Event Day is shown in Table 1.

Table 1: Speedway Event Day Schedule

Speedway Event Item	Schedule
Competitor Access	1:00pm – 4:00pm
Event Staff Arrival	Prior to 1:00pm
Car Parks Open to Public	1:00pm
Pre-Event Entertainment	1:00pm – 4:00pm
Pre-Event Races	4:00pm - 6:00pm
Main Race Events	6:00pm - 11:00pm
Spectator Departures	11:00pm - 12:00pm
Speedway Close	12:30pm

Source: Speedway Promotions

3 Operational Procedures

3.1 Event Day Roles and Responsibilities

Roles and Responsibilities for Speedway and Event Day staff are summarised in Table 2.

Table 2: Speedway Event Day Roles and Responsibilities

Role	Responsibility
Speedway Operator	• Overall responsibility for the environmental performance of Event operations • Operational environmental management and impact mitigation for Event operations, unless specifically stated otherwise • On-site operations during Events as detailed in the relevant Sub-Plans and Event Plan • Coordination with emergency services in the preparation for, and during, Events • Maintaining/archiving relevant environmental and monitoring data as required for Compliance Reports, Audits and Operational Monitoring Programs • Environmental training • Complaints management • Incident management • Waste Management
Event Manager	• All Site operations during Events • All Speedway and Event staff • Making the final decision in regard to event changes, or (in consultation with the Race Director and/or Chief Steward) and as to whether the Emergency Plan needs be activated • Leading an Event Day Briefing for all Speedway and Event staff prior to each event • Opening and closing of the Speedway prior to and following an event
Security Manager	• Activating the Emergency Plan and then coordinating with emergency services where required further to consultation with the Event Manager
Speedway and Event Staff	• General management and safety of spectators prior to, during and after an Event, including car park directions and pedestrian wayfinding • Controlling access to Pit Road and the Pit Area
Chief Steward	• In charge of the relevant Racing Division for the applicable Race Meeting • Sole authority for that Racing Division, for the interpretation and enforcement of the Speedway Australia Racing Rules & Regulations, in all respects • Power to direct or instruct such all Speedway Officials in the conduct of their duties
Race Director Clerk of the Course	• Response directly to the Chief Steward for the safe and efficient ‘’on track’ operation of the Race Meeting in accordance with the Speedway Australia Racing Rules & Regulations
Race Secretary Pit Marshal	• Responsible directly to the Chief Steward for the ‘’off track’’ operation of the Race Meeting (e.g. the Pit Area) in accordance with the list of duties under Rule 5.9 of the SA Racing Rules
Medical Staff	• Qualified medical staff will be positioned at key locations across the Speedway at all Events
Volunteer Officials	• Responsible directly to the Chief Steward and/or Clerk of Course • General safety of all spectators, staff and competitors prior to, during and after an Event.

3.2 General Responsibilities

All Speedway and Event staff and general contractors appointed by the Speedway operator will be formally advised of their obligations under the OEMP, and the significance of the OEMP minimising environmental impacts during Speedway operations (see also Section 3.3).

3.3 Environmental Training

3.3.1 Speedway and Event Staff

All Speedway and Event staff will undergo general environmental training along with training for their specific role in Speedway operations, so that all staff understand their obligation to exercise due diligence in regard to environmental matters. While it is acknowledged that the ability of Speedway and Event staff to exercise any significant actions to minimise environmental impacts is limited given the nature of Speedway operations, environmental training will as a minimum include the following:

- A Site induction, detailing the key parts of the Site that requirement management prior to, during and following a Speedway event, and the specific responsibilities of difference staff members.
- The key environmental objectives for Speedway operations as detailed in the OEMP, focusing on:
  - Traffic and parking management, including the safe movement of vehicles and pedestrians across the Site, and access restrictions in Pit Road and the Pit Area;
  - Minimising to the extent possible noise impacts associated with the operation of the car parks; and
  - Ensuring that senior staff and race officials are fully aware of the procedures in regard to air quality monitoring during events, and benchmark dust levels where races are required to be halted until appropriate air quality is achieved.
- Appropriate clothing (Hi-Vis) and identification to be worn at all times.
- The location of fire extinguishers and appliances across the Site.
- The location of medical facilities across the Site.
- Emergency exit locations and assembly points.
- The Emergency Response Plan (**Emergency Plan,** see Section 5).

The Speedway operator will be responsible for all Speedway and Event staff training, and maintain detailed records of all training, to include:

- Name of staff member;
- When the staff member was trained, and by whom; and
- The Speedway operations for which they were trained, and general outlined of the training for those operations.

3.3.2 Race Officials and Staff

All Race officials and staff will similarly undergo general environmental training along with training for their specific role in Speedway operations, so that all staff understand their obligation to exercise due diligence for environmental matters.

Along with all of the training components required for Speedway and Event staff as detailed in Section 3.3.1, additional special training and instructions will be provided to key safety staff, including fire marshals, paramedics and medical staff, tow truck and push car drivers, and all other infield personnel. This additional training will focus on:

- Incident management, including appropriate actions to be undertaken in the event of a crash; spectator or competitor injury; fire control; hazardous material spills and other emergency situations;
- The appropriate clothing to be worn by all race officials and staff depending on their location across the Speedway;
- The Speedway Australia Racing Rules & Regulations (**Speedway Australia Racing Rules**);
- The Speedway Australia Track Operations Manual's (**Speedway Australia Track Manual**) requirements and controls;
- The Speedway Work, Health & Safety Management System (**Speedway WHSMS**) requirements and controls; and
- The Emergency Plan.

Environmental training for race officials and staff will be the responsibility of the Speedway operator and Speedway Australia through the specific training and qualification protocols detailed in the Speedway Australia Racing Rules, and the Speedway Australia Track Manual. Both the Speedway Australia Racing Rules and Speedway Australia Track Manual are provided as appendices to the OEMP, and are available on the Speedway Australia website (www.speedwayaustralia.org).

3.3.3 Competitors

All competitors will be provided with summary documentation reflecting their obligations to safety and environmental awareness while participating in Events. All competitors will necessarily be required to comply with the stringent requirements of all parts of the Speedway Australia Racing Rules and Speedway Australia Track Manual, and also adhere to competitor requirements and responsibilities detailed in the Event Plan.

3.4 Track Curation and Preparation

The Speedway track is watered and prepared prior to the event day, and monitored on the event day prior to races commencing. Methods of preparation may include:

- Scarifying;
- Watering;

- Ripping; and/or
- Grading

Prior to and during racing, any clay laid on the track is checked and where required screened for rocks or debris; visual inspection of track for debris is undertaken on a regular basis.

In line with the environmental management requirement for air quality control, in the event of excessive dust being generated by the racing activities, racing is ceased and the track is watered and re-graded where necessary.

3.5 Event Day Reporting

The Speedway operator will be required to keep a log of Event day information (such as attendance numbers) and (where relevant) operational issues. In addition, all Speedway Australia Racing Officials are issued with a Speedway Australia Log Book when they are issued with their Speedway Australia Officials Licence; the Log Book is used to record all Official training completed and also as a record of participation at events.

3.6 Complaints

Complaints received during an Event will be collected via email, phone or through the Speedway operator's website; where complaints are received, they will be managed in accordance with the actions detailed in Table 3.

Table 3: Complaint Management

Issue	Action	Escalation
Anti-Social Behaviour	Advise onsite security staff to investigate	If behaviour escalates, advise NSW Police
Illegal Parking	Advise onsite security staff to investigate	If the issue is causing a traffic or safety issue, advise NSW Police
Crowd Swell	Advise onsite security staff to manage, including providing announcements and instructions, and continue to monitor through CCTV	If the issue is causing a safety issue, advise Emergency Services
Dust	Dust monitors located on dragway & speedway	Stop race meeting until dust levels have returned to acceptable levels
Noise	Advise Event Manager and investigate noise levels using on-site noise monitors	Post-Event assessment of noise levels and potential mitigation measures with the Proponent

3.7 Communications Protocols

The Speedway operator will work closely with GSP, the surrounding community and stakeholders to ensure information pertaining to upcoming events is communicated. This will include:

- Maintaining an 'upcoming events' section of the stadium website and social media posts;

- Working with GSP, TfNSW, NSW Police and other authorities as required; and
- Advising GSP and other venues within the Motorsports Park of any operating changes that may impact those other venues.

3.8 Food and Beverage

In the short term, food and beverage providers will be situated in Car Park A immediately adjacent to the Speedway entry point (as shown in Figure 4 below); this location provides the nearest access for spectators to food and beverages providers, as well as a large open space for spectators to access/queue for food and beverages. Once Speedway operations have settled, food and beverages kiosks will be provided within the Speedway itself.

3.9 Deliveries and Contractors

All service providers will be required to use appropriate caution (e.g. the use of trolleys and the like) in line with the relevant Occupation Health & Safety (**OH&S**) guidelines. All servicing and delivery requirements for the Speedway will be completed outside of Event peak periods where the Site is open to the general public.

3.10 Waste Management

Speedway and Event staff will monitor all spectator areas to remove rubbish/obstacles from pedestrian paths across the Site, and rubbish bins (including general and recyclable) will be provided across the Site; waste streams will be segregated to avoid cross-contamination of materials and maximise recycling opportunities. Waste collection facilities are located in the southern part of the Site adjacent to the maintenance sheds.

Waste collection will be undertaken by a private contractor. The private contractor will be required to prepare a Waste Management Plan in accordance with the Waste Avoidance and Resource Recovery Act 2001, and detail how waste streams will be segregated to avoid cross-contamination of materials and maximise recycling opportunities. The private contractor will also maintain a Waste Register to track waste through the operation of the Speedway, details of which would be made available to the Speedway operator and/or relevant authorities upon request.

3.11 General Spectator Provisions

In line with standard speedway operations:

- Safety eyewear / goggles will be made available to spectators for purchase;
- Maximum capacity for spectators - as per approved capacity limits - will be set for all Event Ticket Sales;
- The Playground will be unlocked prior to the opening of the spectator gates for an Event, and will be locked no later than 30 minutes following the conclusion of an Event; and

- Speedway and Event staff will monitor all pedestrian paths and grandstand stairs throughout Events to ensure that they provide no dwell environments and to remove any impediments to safe and efficient pedestrian access.

3.12 Pre-Event Checklist

A comprehensive Pre-Event Checklist has been prepared by the Speedway Operator in accordance with the Speedway Australia Rules & Regulations and Track Operations Manual. The Pre-Event Checklist is reproduced in Appendix B.

4 Event Traffic & Parking Management

The key Event Day management plan components are shown in Figure 4 and Figure 5 for the northern and southern portions of the Site respectively, and are discussed in further detail in sections below.

Figure 4: Northern Speedway Site Event Day Management

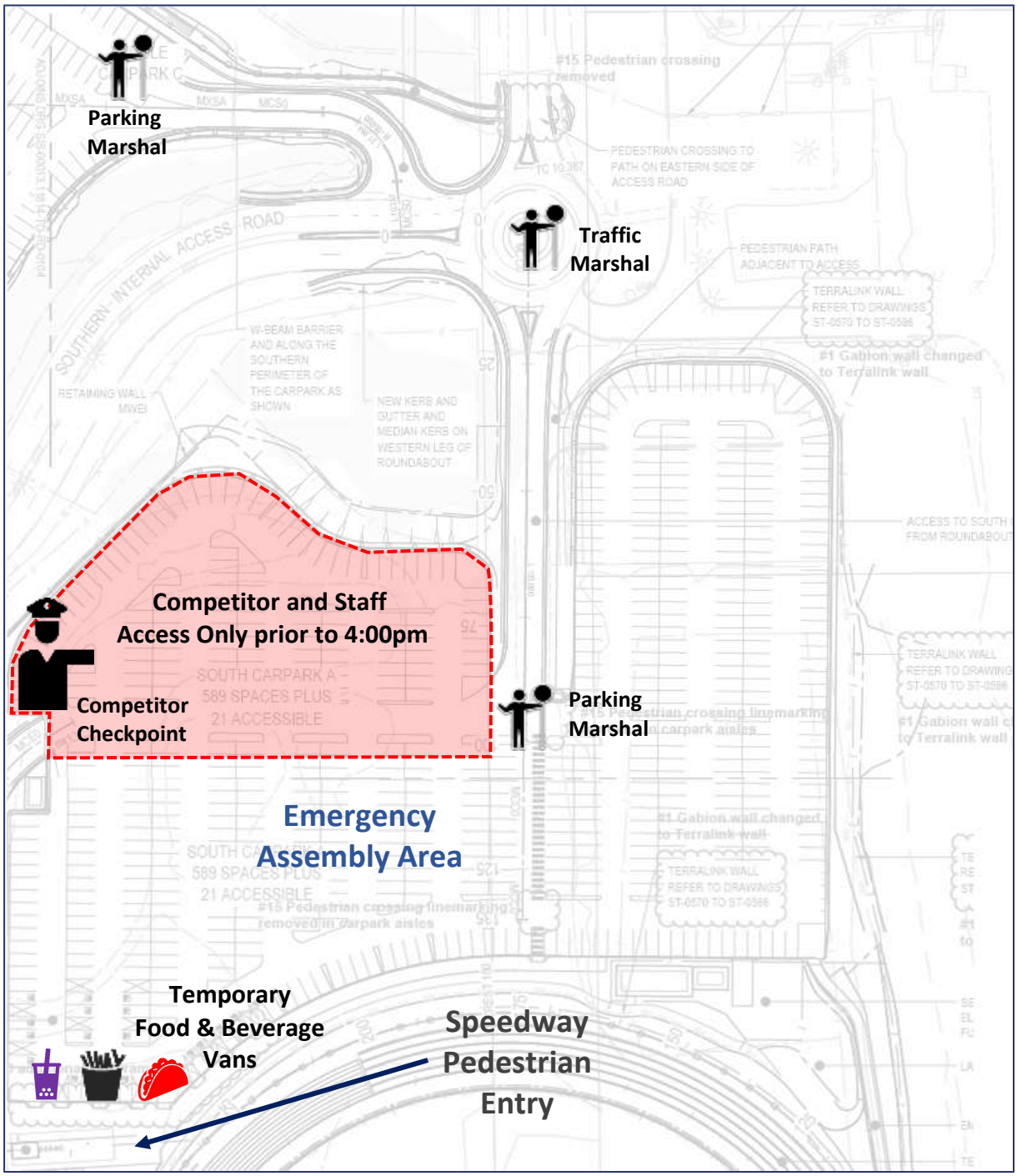
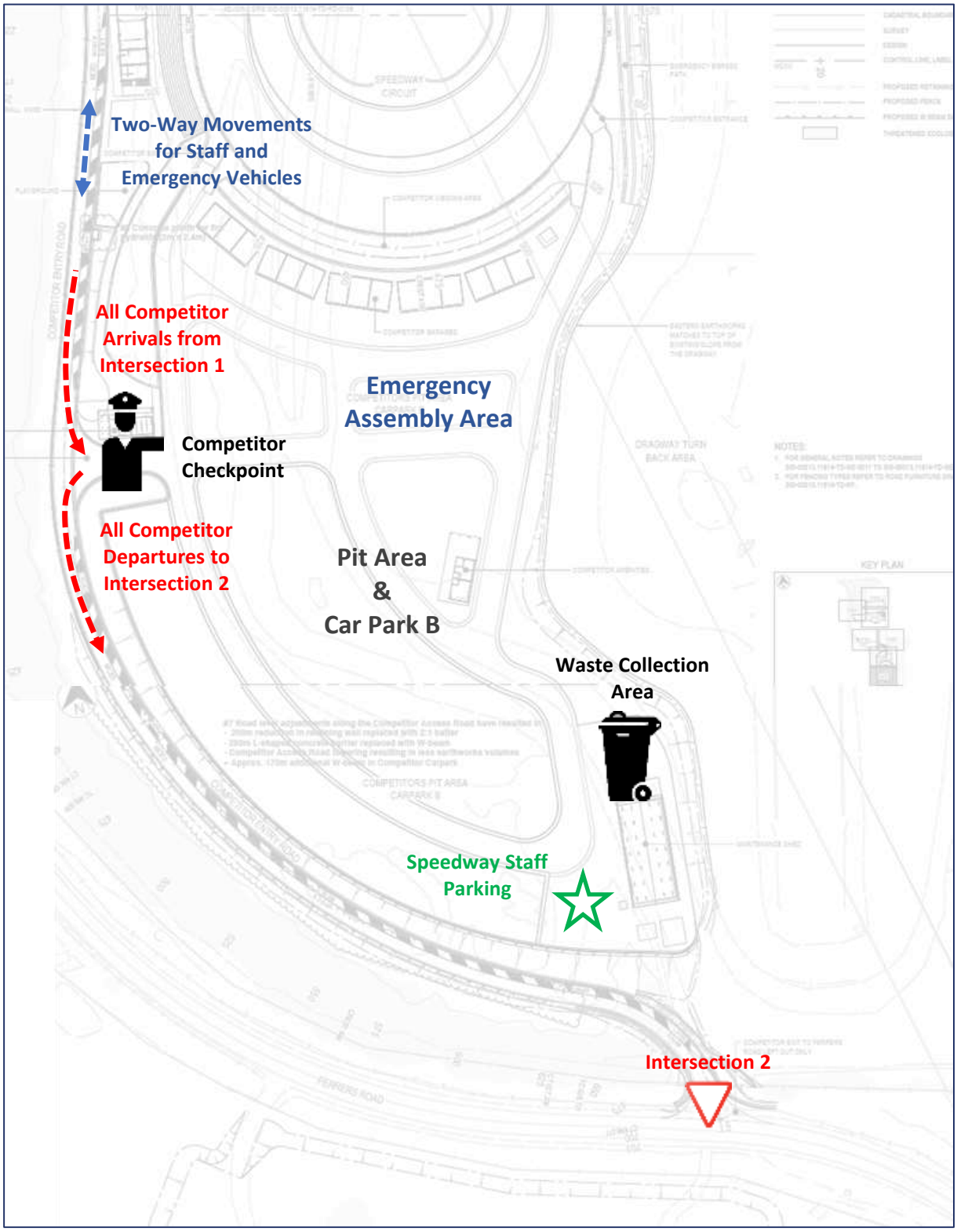


Figure 5: Southern Speedway Site Event Day Management



4.1 Vehicle Access

4.1.1 Competitor Access

All competitor access will be from Intersection 1, through Car Park A and then via **Pit Road**, which runs between Car Park A and the control point to the Pit Area and Car Park B. All departures from the Pit Area and Car Park B will be via Intersection 2; no competitors are to depart to the north via Pit Road to Car Park A and then Intersection 1.

A small section of Car Park A providing access to Pit Road (see Figure 4) will not be used for spectator parking prior to 4:00pm to allow safe and efficient access for large competitor vehicles. Any large competitor vehicles (over 10m) arriving at the Site after this section of Car Park A has been opened to spectators will be required to enter the Site via Intersection 2 (under Speedway Staff supervision)

4.1.2 Spectator Access

Spectator access will be provided via Intersection 1, and then to Car Park A and – where required during a large Event – Car Park C. All departures from Car Park A and Car Park C will be via Intersection 1.

4.2 Pedestrian Access

No pedestrian access will be provided between the Site and Ferrers Road; all spectators are to use the Speedway and Dragway car parks, and then designated pedestrian paths linking to the Speedway itself.

4.3 Emergency Vehicle Access

Emergency vehicle access will be provided to all parts of the Site via all intersections to Ferrers Road, then through internal roads and car parks as required. Pit Road will be available to emergency service vehicles for two-way access at all times.

Emergency services responding to the Speedway can do so from either the north or south of the Site. From the north, emergency service vehicles would turn onto Brabham Drive from the Great Western Highway and travel 1.13 kms to the roundabout, then take the first exit on to Ferrers Road and travel approximately 1.5 kms to enter the Speedway via Intersection 1.

Emergency services responding from the south would turn onto Wallgrove Road and take Chandos Road for approximately 1.7 km, then turn left into Ferrers Road and travel approximately 2 kms to the to enter the Speedway via Intersection 1. Under exceptional circumstances, emergency services vehicles would also be able to enter the Site via Intersection 2.

A Security guard will be positioned at the internal roundabout east of Intersection 1 to meet the responding emergency services and direct them to the appropriate location.

5 Emergency Response Plan

5.1 Purpose

The purpose of the Emergency Plan is to detail the processes and arrangements by which to respond to an incident or emergency at the Speedway, specifically so as to:

- Minimise injuries, the loss of life and/or damage to property;
- Prevent or minimise the spread of any on-site incident to off-site; and
- Restore the Speedway to normal operations in a timely and orderly manner.

The majority of actions and strategies detailed in the Emergency Plan mirror those detailed in the SA Rules & Regulations, and will largely be implemented by Speedway management and staff under the guidance of the Speedway Security Manager, noting that the Emergency Plan provides for emergency trained Speedway staff to assume the primary response role for incidents or emergencies occurring on-site that:

- Are within the capabilities of internal resources to control;
- Have no external impact; and
- Do not necessitate the deployment of resources from external emergency agencies.

The Emergency Plan also provides for the Speedway operators and staff to act in a support role in circumstances where external emergency agencies are required to be deployed to the Site.

A comprehensive Fire Engineering Report (**Fire Plan**, attached as Appendix C) has also been prepared which provides detailed guidance in regard to the fire and general emergency plans and strategies by which to monitor and manage emergencies, including the evacuation of spectators, competitors and all Speedway and Event staff.

5.2 Speedway Operator Training and Familiarisation

It is important to note the provisions of the Emergency Plan have not been finalised as the Speedway operator will not have access to the completed Speedway until mid-December 2021; this Familiarisation Week is a specifically planned period for the Proponent and Speedway operator to review the risk management assessment (provided in the OEMP) and further refine (where required) risk management and mitigation protocols as well as Speedway and Event staff processes and procedures.

Further to this familiarisation, the Emergency Plan will be updated/revised as required to include the key operational controls in accordance with AS 3745, including (but not limited to) the following.

- Procedures for the safety of people in buildings, structures and workplaces during emergencies;
- The appointment of an Emergency Planning Committee and setting up of an Emergency Control Group, anticipated to include WSPT, Speedway operator, Event Manager and senior Speedway Australia staff as a minimum;

- Methods for good house-keeping and fire prevention procedures such as maintaining clear evacuation routes;
- Maintenance schedule for all fire safety systems;
- Fire training standards for all relevant staff, including evacuation procedures;
- Waste management procedures by which no waste is stored/collected in proximity to columns; limiting fuel and ignition sources; and setting out regular checks to ensure there are no blockages to external hydrants and/or exits during events
- The maintenance and testing of fire and other safety systems, including mandatory requirements for building owners under the provisions of the Environmental Planning and Assessment Act 1979 and the Environmental Planning and Assessment Regulation 2000.

Notwithstanding the potential for updates and revisions to the Emergency Plan following these processes, sections below provide details of the principal Emergency Plan components, which are not anticipated to change significantly further to the familiarisation process.

5.3 Emergency Services

5.3.1 Awareness

All emergency services (Police, Fire and Ambulance) are aware of the Speedway location and will be supplied with a copy of the Emergency Plan. These emergency services will also be supplied with a calendar of Events to assist with their forward planning.

5.3.2 Emergency Services Contact Details

Emergency Services and operational contact details are provided in Table 4.

Table 4: Emergency Services Contact Details

Title	Name	Contact Number
Operator and Proponents		
Speedway Operator	(TBC prior to operations)	(07) 3277 7745 (Temporary)
Event Manager	(TBC prior to operations)	(07) 3277 7745 (Temporary)
Greater Sydney Parklands	N/A	(02) 9895 7500
Sydney Metro	N/A	1800 171 386
Emergency Services		
NSW Police	N/A	000 (Emergency) 131 444 (Non-Emergency)
Fire and Rescue NSW	N/A	000 (Emergency) 1300 729 579 (Non-Emergency)
NSW Ambulance	N/A	000 (Emergency) 1300 655 200 (Non-Emergency
External Parties		
EPA	N/A	(02) 9955 5000 131 555
SafeWork NSW	N/A	131 050
Blacktown City Council	N/A	(02) 9839 6000
Transport Management Centre	N/A	131 700
Speedway Australia	N/A	(08) 8139 0777

5.3.3 Emergency Services Locations

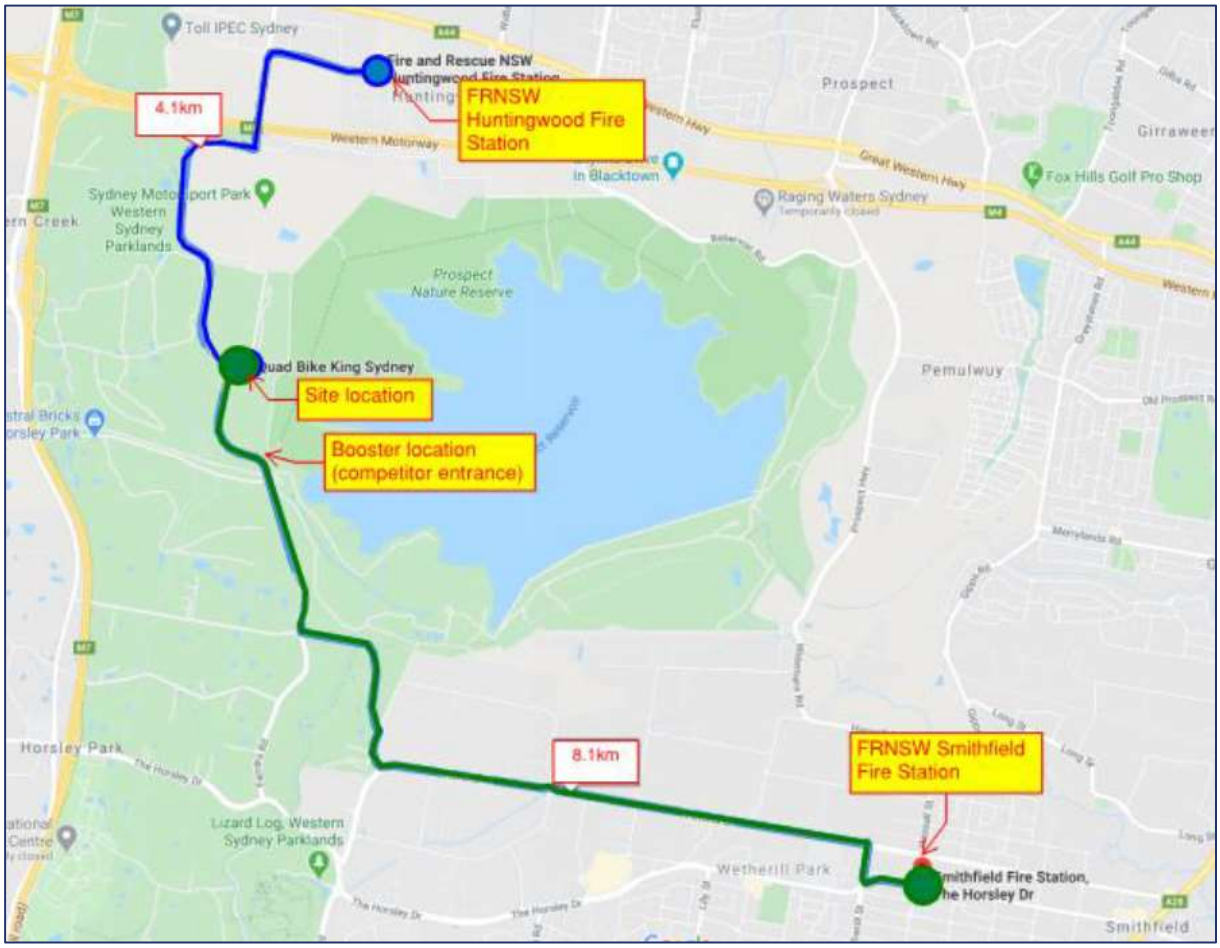
The Site is ideally located in regard to proximity to key emergency services, as detailed in Table 5.

Table 5: Emergency Services Locations

Ambulance Stations	Address	Distance
Colyton	Hewitt Street	10.7kms
Castle Hill	Gladstone Road	22.2kms
Kellyville	Memorial Ave	20.0kms
Northmead	Briens Road	15.1kms
Penrith	High Street	19.1kms
Riverstone	Cnr Hamilton St & Campbell St	21.4kms
Tregear	122-124 Ellsworth Dr	14.3kms
Police Stations	Address	Distance
Huntingwood	Liberty Road	3.5kms
Fire Stations	Address	Distance
Eastern Creek Rural	Rooty Hill Road South	5.2kms
Huntingwood	Huntingwood Drive	3.9kms
Hospitals	Address	Distance
Blacktown Hospital	Blacktown Road	10kms
Mount Druitt Hospital	Railway Street	8.8kms
Rescue Helicopter	There will be a Helicopter landing site marked on the track infield.	

With specific regard to fire emergencies, Huntingwood Fire Station and Smithfield Fire Station have, further to consultation with Fire & Rescue NSW (FRNSW), been identifies as the 2 key first responder stations; the routes between the stations and the Site are detailed in Figure 1 of the Fire Plan, which is reproduced below.

Figure 6: Local Fire Station Routes



Source: Fire Plan

5.4 Speedway Emergency Operations

Emergencies relating to Speedway operations are largely controlled and managed by trained Speedway and Speedway Australia qualified staff. Sections below provide a summary of the key roles, responsibilities and locations of these staff across the Speedway.

5.4.1 Staff Training Requirements

Specific emergency training requirements for Speedway and Event staff are detailed in Table 3 of the Fire Plan, which is reproduced below.

Table 6: Speedway and Event Emergency Training Requirements

Training Required	Staff Required
Notified of the location of fire hose reels and fire extinguishers throughout the building as part of the staff induction process and in annual fire and emergency safety training	All permanent staff and designated fire wardens
Informed of the management in use requirement for the storage of combustibles on the Ground Floor concourse to not encroach within 1.0m of the unprotected steel columns. Any storage within the space must be removed by staff throughout the lifetime of the building and bins must be emptied in a timely manner. This includes all areas with the Ground Floor including the amenities	All permanent staff, security and F&B staff.
Informed of booster location and that the brigade may arrive at the Competitor entrance as opposed to the main entrance in a fire event.	Speedway operator and Event Manager
Waste management plan to ensure no waste accumulates near the entry/exit or near external hydrants.	All permanent staff.

Source: Fire Plan

Additional specialised training is provided for all staff involved in the management and oversight of Speedway races, and are detailed in Section 4 of the Speedway Australia Track Manual.

5.4.2 Initial Emergency Management

Emergencies will in the first instance be managed by the Event Manager in consultation with the Race Director and/or Chief Steward, and in turn by the Speedway's emergency trained staff and then emergency services agencies as required.

5.4.3 Sector Marshal and Flag Points

The Sector Marshal and flag points are located at the race track start/finish line, the race track pit gate, at Turn 1 and Turn 4 on the race track perimeter and on the race track infield at Turn 2 and Turn 3. An emergency lighting system is also located at various points around the race track and is utilised in race crash or emergency situations.

5.4.4 Fire Extinguishers and Appliances

Fire extinguishers and appliances are located in various positions to provide coverage in an emergency. Fire extinguishers are positioned at Turn 1 and Turn 2 on the race track perimeter, and on the race track infield at Turn 3 and Turn 4. Extinguishers are also positioned at the start/finish line, at the pit gate, pit box and various locations throughout the pits.

A fire fighting vehicle will be located on the race track infield for the duration of the race meeting, and trained fire marshals will be stationed with the vehicle whilst racing is in progress.

5.4.5 Medical Facilities and Ambulance

A medical facility is located on the southern side of the circuit in the pit garage closest to the Main Speedway Office (located at Turn 1). Ambulance staff that are on duty during race meetings provide medical support at this facility to the Speedway competitors and spectators; an ambulance will be stationed in the pit area during race meetings, with direct access to the race track.

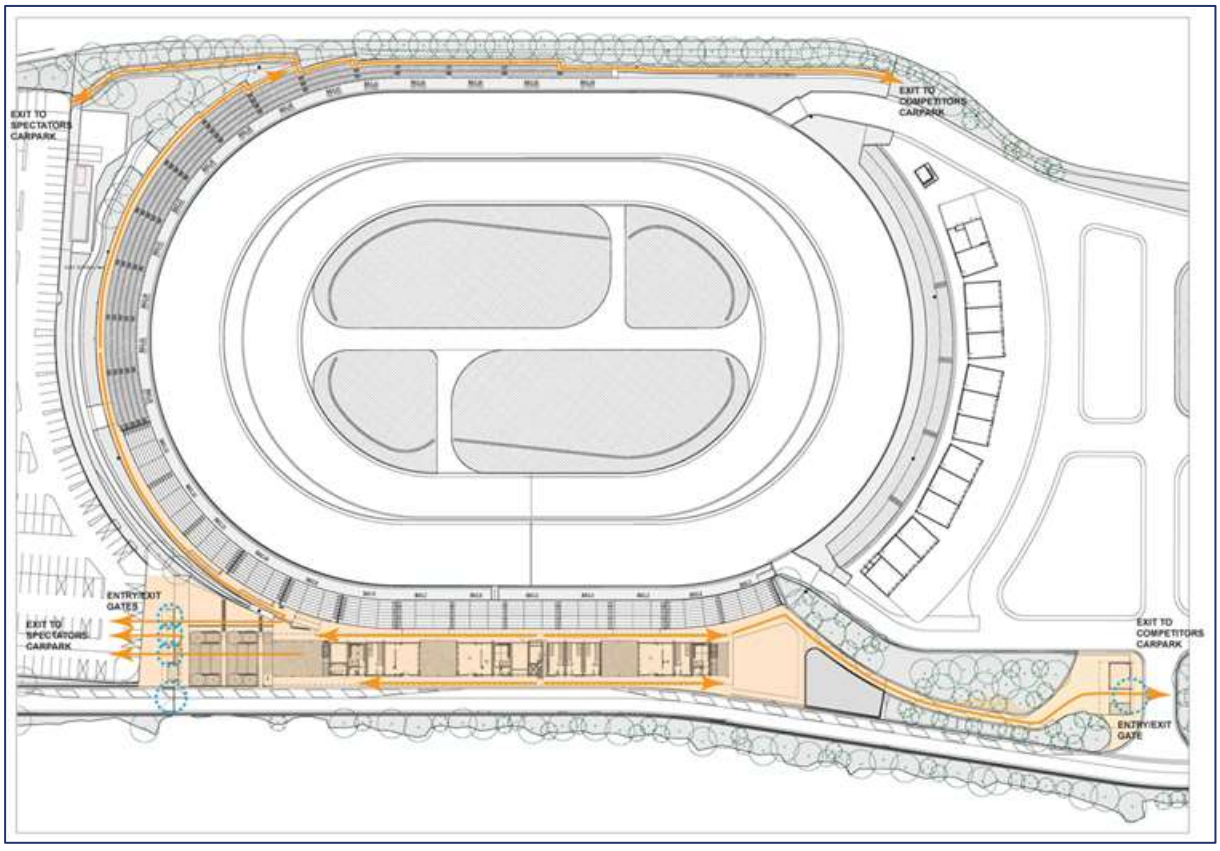
Additional qualified first aider staff will also be in attendance for all Events, and can be utilised if an emergency situation arises.

5.4.6 Emergency Exits and Assembly Points

Emergency exits are located behind the main grandstand/control tower on the western side of the race track, and additional emergency exits are located at both the northern and southern end of the track complex and from the pit area. All exits are marked accordingly.

Additional emergency access and assembly points are Car Park A, and a nominated area within the Pit Area and are clearly sign posted, as are evacuation routes from all spectator areas to these assembly points. These routes are shown in Figure 7, while the assembly points are shown in Figure 4 (Northern Assembly Point in Car Park A) and Figure 5 (Southern Assembly Point in Car Park B).

Figure 7: Emergency Plan Evacuation Routes



Source: Cox Architects

Audio broadcasts from race control and circuit announcers will notify spectators, track staff and competitors as to where their nearest emergency exits and assembly points are located in the event of an emergency, noting that all emergency exits have been design in accordance with the appropriate standards to accommodate the movement of spectators to emergency assembly areas (see also Section 5.6).

5.4.7 Bushfire

While the Site and surrounding land is classified as being bushfire prone, it is largely cleared of vegetation, and the adjacent sites provide an effective setback to vegetation (principally located to the east of the Site) to manage potential bushfire risks. While the risk of bushfire impacting the Speedway is therefore remote, in the event of a bushfire the Event Manager would maintain contact with FRNSW Rescue NSW and the Rural Fire Service (**RFS**) and act in accordance with the instructions of emergency services officers.

5.5 Emergency Vehicle Access

Emergency vehicle access will be provided to all parts of the Site via all access intersections to Ferrers Road, and all internal roads and car parks as required. Pit Road between Car Park A and the Pit Area will be available to emergency services for two-way access.

As discussed previously, emergency services responding to the Speedway can do so from either the north or south of the Site. From the north, emergency service vehicles would turn onto Brabham Drive from the Great Western Highway and travel 1.13 km to the roundabout, then take the first exit on to Ferrers Road and travel approximately 1.5 km to enter the Speedway via Intersection 1.

Emergency services responding from the south would turn onto Wallgrove Road and take Chandos Road for approximately 1.7 km, then turn left into Ferrers Road and travel approximately 2 km to the to enter the Speedway via Intersection 1. Under exceptional circumstances, emergency services vehicles would also be able to enter the Site via Intersection 2 (from the south).

A Security guard will be positioned at the internal roundabout east of Intersection 1 to meet the responding emergency services and direct them to the appropriate location; and if required at Intersection 2 to similarly direct emergency services.

5.6 Evacuation Plan

The Emergency Plan, in tandem and accordance with the Fire Plan, clearly establishes emergency procedures for the safe evacuation of the Speedway under exceptional circumstances, as detailed in the Fire Plan and summarised in sections below.

5.6.1 Evacuation Assessment

An initial evacuation assessment will be undertaken by the Event Manager and senior Speedway staff immediately upon being notified of an emergency. The Event Manager will then confirm the nature of the emergency and the appropriate emergency actions in accordance with the activation of relevant emergency sub-plans.

5.6.2 Staged Evacuation

Should it become necessary to evacuate part or all of the site, the decision will be made by the Event Manager or senior emergency services officer (if present); where it can be done safely and efficiently, phased evacuations would be carried out using the predetermined evacuation routes and external assembly areas.

5.6.3 Emergency Services Briefing

The Event Manager will coordinate with senior Speedway staff, and brief emergency services personnel on arrival as to the key characteristics of the emergency, and the status of the evacuation; at that time, coordination of the emergency response and evacuation will pass to the senior emergency services officer in attendance.

The Event Manager or Security Manager will log the progress of the emergency and evacuation and monitor and control radio traffic; security radio channels will be closed to unauthorised traffic.

5.6.4 Emergency Announcements

The Event Manager, further to consultation with senior emergency services personnel, may make announcements over the Speedway PA systems relating to the emergency and inform and direct spectators, competitors and staff as required. Pre-scripted emergency announcements will be made at the direction of the Event Manager; the use of such announcements would be strictly controlled and require the authorisation of the Event Manager or senior emergency services personnel.

5.6.5 Evacuation Assembly Areas

In an evacuation to the safe assembly areas, the Security Manager and senior Speedway staff will check that all persons are accounted for and report the results to emergency services.

5.6.6 End of Emergency

Emergency services will remain in control of the Site until the cause of the emergency has been fully identified and controlled, and the Site made safe.

5.6.7 Debriefing

As soon as is practical after an emergency operation, the Event Manager will conduct an operational debrief with all relevant Speedway staff and emergency services. Any recommendations determined during the debrief will be provided in a revised Emergency Plan.

5.6.8 Emergency Response Plan Revisions

Further to the above, the Emergency Plan will be regularly assessed and updated in consultation with the Speedway operator, Speedway Australia A Track & Safety Development Officer, and emergency services to ensure that it provides the most up to date and relevant information for emergency procedures.

5.7 Dress Code of Race Track Officials

5.7.1 Fire Marshals

All fire marshals will be in full protective clothing i.e. ISO Fire Suits or FIA/SFI-rated race Overalls/gloves/balaclavas, lace up leather footwear with an AS/NZS safety rating, along with protective eye and ear protection.

5.7.2 Paramedics and Medical Staff

All medical race track staff, including ambulance paramedics and other medical staff, will dress code in hi-visibility clothing, and as required for fire marshals if stationed in areas warranting such clothing.

5.7.3 Tow Truck and Push Car Drivers

Town truck and Push Car drivers will all wear identifiable high-vis overalls with gloves and closed leather boots mandatory.

5.7.4 Additional Infield Personnel

The number of personnel on the infield of the race track is strictly limited to essential personnel only. However, if there are other infield and race track staff, they will be suitably attired in a recognised uniform to clearly identify those personnel not involved in active fire or medical practices.

5.8 Operational Hazard Log

A comprehensive review of all potential hazards arising from the operation of the Speedway has been prepared by the Speedway operator in consultation with Sydney Metro, WSPT and TfNSW. The Hazard Log (provided in the OEMP) identifies these risks and details the management and mitigation measures by which these risks will be minimised to the greatest extent possible.

The Hazard Log will be updated as required throughout the operation of the Speedway should new risks, or improved/revised management and mitigation measures, be identified.

5.9 Incident Notifications

The Incident Notification process is detailed in Appendix A of the Speedway Approval, and is reproduced below, noting that the Speedway operator will be required to fully comply with this process.

1. *A written incident notification addressing the requirements set out below must be submittedto the Planning Secretary via the Major Projects website within seven days after the Proponent becomes aware of an incident. Notification is required to be given under this Appendix even if the Proponent fails to give the notification required under Condition A34 or, having given such notification, subsequently forms the view that an incident has not occurred, unless otherwise agreed by the Planning Secretary.*

2. *Written notification of an incident must:*
   a) *identify the SSI and application number;*
   b) *provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);*
   c) *identify how the incident was detected;*
   d) *identify when the Proponent became aware of the incident;*
   e) *identify any actual or potential non-compliance with terms of approval;*
   f) *describe what immediate steps were taken in relation to the incident;*
   g) *identify further action(s) that will be taken in relation to the incident; and*
   a) *identify a project contact for further communication regarding the incident.*

3. *Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Planning Secretary, the Proponent must provide the Planning Secretary and any relevant public authorities (as determined by the Planning Secretary) with a detailed report on the incident addressing all requirements below, and such further reports as may be requested.*

4. *The Incident Report must include:*
   a) *a summary of the incident;*
   b) *outcomes of an incident investigation, including identification of the cause of the incident;*
   c) *details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and*
   d) *details of any communication with other stakeholders regarding the incident.*

6 Security Management Plan

6.1 Purpose

The Speedway operator, in consultation with WSPT and NSW Police, will develop a Security Management Plan (**SMP**) for all security policies and procedures relating to Event days. The SMP will be specifically tailored to Speedway operations during all Events, and will be managed by the Speedway operator on Event days.

6.2 Event Day Security

6.2.1 Security Check Points

Security Check Points will be located at each of pedestrian entry point to the Speedway itself. Security checks are primarily to ensure that spectators are not bringing any banned substances into the Speedway (e.g. alcohol) but may extend to additional security considerations further to advice from NSW Police.

Each Security Check Point will include space for bag checks and hand-held detectors if required.

6.2.2 Terms and Conditions of Entry

The Speedway operator, in consultation with GSP, will develop a comprehensive set of Terms and Condition of Entry which will apply to all events at the Speedway. All Terms and Conditions will be displayed at entry points to the Speedway; with online ticket purchases; and on Speedway operator's website.

The risk of injury to driver or spectator from increased level of dust on track will be reduced So Far As is Reasonably Possible (**SFAIRP**) through the implementation of controls consistent with the relevant guidelines and policies, and operational best practice. These controls include mesh fencing at circuit side to protect spectators, dust screens where applicable, track curation to limit excess debris, signage warning on safety fence and information provided upon ticketing and entry.

6.2.3 CCTV

The Speedway has an extensive CCTV system, with on-site conditions monitored in the Speedway Control Room under the supervision of the Event Manager.

7 Driver Code of Conduct: Internal Roads

7.1 Objectives

The objectives of the Driver Code of Conduct are to:

- Minimise the impact of competitor vehicles travelling to, through and from the Site on the operation of the internal road network;
- Minimise conflict with other road users within the Site;
- Minimise external road traffic noise; and
- Ensure competitors use the designed routes to, through and from the Site.

7.2 Code of Conduct

All competitors accessing the Site must:

- Take reasonable care for his or her own personal health and safety;
- Not adversely, by way of actions or otherwise, impact on the health and safety of other persons;
- Obey all applicable road rules and laws at all times;
- Obey all signposted speed limits and comply with directions of traffic controllers where required;
- Operate their vehicles in a safe and professional manner, with consideration for all other road users;
- Hold a current Australian State or Territory issued driver's licence;
- Not use mobile devices when driving; and
- Have necessary identification documentation at hand and ready to present to Speedway staff at the Pit Area check points to delay unnecessary delays to other vehicles.

7.3 Crash or Incident Procedure

In the event of a crash or similar incident, the driver must:

- Stop your vehicle as close as possible to the scene, making sure (if possible) that you are not hindering traffic;
- Ensure your own safety first, then help any injured people and seek assistance immediately if required;
- Contact the Speedway Event Manager and wait for their attendance at the scene;
- An incident register will be maintained by the Speedway operators to assist in the orderly resolution of incidents. The register is to include:
    - Date and time of the incident.
    - How the incident came to the attention of the Speedway operator's;
    - A detailed description of the incident.
    - Actions taken at the time of the incident.

- Details of any injuries occurring as a result of the incident, and actions taken manage those injuries.

- Undertake a follow up investigation, and determine disciplinary procedure where required; and
- Ensure that the police are contacted under the following circumstances:
  - If there is a disagreement over the cause of the crash.
  - If there are injuries.
  - If you damage property other than your own.

Appendix A

Speedway Promotions Speedway Work Health & Safety System

Attached as OEMP Appendix J

Appendix B

Speedway Australia Pre-Event Checklist

TRACK OPERATOR PRE-EVENT CHECK LIST

SPEEDWAY AUSTRALIA

GENERAL FACILITY

- ☐ Grounds clean & tidy
- ☐ All lighting operational
- ☐ Grass / Lawns mown
- ☐ Spectator access clear & identifiable
- ☐ Walkways smooth with steady gradients
- ☐ Signage clear & visible (directions, disclaimers)
- ☐ Ticket booth clear & visible
- ☐ Fire Exits clearly marked
- ☐ All Exits clearly marked
- ☐ Perimeter & Pit fencing intact
- ☐ All general lighting operational
- ☐ Toilets clean & operative (incl. soap/towel)
- ☐ Canteens clean & supplies stocked
- ☐ Media facilities set up
- ☐ Rubbish bins clean & in place
- ☐ Grandstands safe with handrails / ramps
- ☐ Seating secure & clean
- ☐ Corporate suites set up & clean

Comments:

TRACK & INFIELD

- ☐ Track pole-line marked & identifiable
- ☐ Infield mown & clear
- ☐ Safety fence clean & maintained
- ☐ Signage clear & clean
- ☐ Return road clear
- ☐ Area for Safety/Crash equipment marked
- ☐ Racing / Timing / Flood lights operational
- ☐ All flags accounted for & ready
- ☐ Track prep completed before scheduled start
- ☐ Auxiliary equipment removed from infield
- ☐ Start/Finish line clearly marked (fence & infield)
- ☐ White line powder (flour) ready to use
- ☐ Pit gates operational

Comments:

SAFETY CREW / CLEAN UP EQUIPMENT

- ☐ Ambulance / Paramedic
- ☐ Fire crew / Fire extinguishers
- ☐ Crash Crew / Tow trucks
- ☐ Safety glasses / gloves
- ☐ Shovels
- ☐ Sand for oil / fuel clean up

Comments:

RACING OFFICIALS

- ☐ Race Director
- ☐ Clerk of Course
- ☐ Chief / Club Steward
- ☐ Assistant Stewards / Observers
- ☐ Scrutineer/s
- ☐ Weigh Scale Officials
- ☐ Pit gate operator/s
- ☐ Timing System Operator
- ☐ Lap Scorers
- ☐ Commentator
- ☐ Pit Marshal with assistants (divisional marshals)
- ☐ Fire Crew coordinator
- ☐ Crash Crew coordinator
- ☐ Medical Personnel

Comments:

TRACK OPERATOR PRE-EVENT CHECK LIST

ON-SITE STAFF

- ☐ Ticket Booth staff
- ☐ Pit Gate staff
- ☐ Canteen staff
- ☐ Security Guards
- ☐ Track Prep / Maintenance staff
- ☐ General Maintenance staff

Comments:

EVENT MANAGEMENT

- ☐ Entry lists
- ☐ Event Schedule for pit management
- ☐ Ensure not too many events programmed
- ☐ Event Programs for patrons
- ☐ Pit bands / tickets
- ☐ Sign on / One-Day Pit Licenses
- ☐ Sign on / Indemnity waiver forms
- ☐ Trophies/Sashes/Promotional Material
- ☐ Start of event is on time
- ☐ Ensure to keep event on time throughout night
- ☐ White line powder (flour) ready to use

Comments:

OTHER VENUE-SPECIFIC ITEMS

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

Comments:

Appendix C

Fire Engineering Report

Sydney Metro

Sydney Speedway Grandstand Building

Fire Engineering Report

02

Issue 5 | 10 November 2021

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 276189-00

Arup Australasia Pty Ltd ABN 76 625 912 665

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ARUP

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Document verification

ARUP

Job title		Sydney Speedway Grandstand Building		Job number 276189-00
Document title		Fire Engineering Report		File reference
Document ref		02		
Revision	Date	Filename	001_Sydney Speedway_FER_Issue.docx	
Draft 1	23 Sep 2020	Description	First draft	
			Prepared by	Checked by	Approved by
		Name	Tess Van Der Veen	Grant Wang	Alistair Morrison
		Signature			
Issue 1	29 Sep 2020	Filename	002_Sydney Speedway_FER_Issue.docx	
		Description	Updated with team comments	
			Prepared by	Checked by	Approved by
		Name	Tess Van Der Veen	Grant Wang	Alistair Morrison
		Signature			
Issue 2	21 April 2021	Filename	003_Sydney Speedway_FER_Issue 2.docx	
		Description	The report was updated to reflect the changes to the fire compartment lines and fire rating between levels.	
			Prepared by	Checked by	Approved by
		Name	Tess Van Der Veen / Grant Wang	Grant Wang	Alistair Morrison
		Signature			
Issue 3	28 Apr 2021	Filename	004_Sydney Speedway_FER_Issue 3.docx	
		Description	Minor update to the reference drawings for ‘Fire Line Update’	
			Prepared by	Checked by	Approved by
		Name	Tess Van Der Veen / Grant Wang	Grant Wang	Alistair Morrison
		Signature			
				Issue Document verification with document	✓

Document Verification

Job title		Sydney Speedway Grandstand Building			**Job number** 276189-00
Document title		Fire Engineering Report			**File reference**
Document ref		02			
Revision	**Date**	**Filename**	005_Sydney Speedway_FER_Issue 4.docx		
Issue 4	3 Jun 2021	**Description**	Minor update to the doors		
			Prepared by	Checked by	Approved by
		Name	Grant Wang / Tess Van Der Veen	Grant Wang	Alistair Morrison
		Signature			
Issue 5	10 Nov 2021	**Filename**	006_Sydney Speedway_FER_Issue 5.docx		
		Description	Updated to include additional performance solution; omission of emergency signage above select doors.		
			Prepared by	Checked by	Approved by
		Name	Tess Van Der Veen	Grant Wang	Alistair Morrison
		Signature			
		Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			
		Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			
				Issue Document Verification with Document	✓

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Appendices

Appendix A

Fire Safety Objectives

Appendix B

Assumptions and Limitations

Appendix C

Structural Fire Analysis

Appendix D

Radiative Heat Assessment

Appendix E

FRNSW FEBQ Comments

Appendix F

Fire Hazard Assessment

Executive Summary

Arup has been engaged to develop a performance-based fire safety strategy for the Sydney Speedway Grandstand.

The Grandstand is to be a new construction proposed to accompany the relocation of the Sydney Speedway to Eastern Creek, Sydney. The two-storey building shall be located along the Competitor Access Road west of the speedway track and is of Type B construction. The building is Class 9b and Class 6.

The design for the proposed building will generally follow the prescriptive Deemed-to-Satisfy (DtS) Provisions of the Building Code of Australia (BCA 2019) where appropriate. However, where the DtS provisions are either inappropriate, or prove overly onerous or restrictive to the design, it will be demonstrated that the Performance Requirements of the BCA are achieved by a performance-based, fire engineered, Performance Solution.

This Fire Engineering Report (FER) is prepared based on the documents detailed in Section 7.1 to specify the fire safety strategies, acceptance criteria, assessment methodologies and detailed assessments for the Performance Solutions associated with this project. This FER is to support the Construction Certificate for the Grandstand Building.

The DtS non-compliances identified by the Project BCA Consultant are listed in Section 4. Section 3 includes the required fire safety measures to support the Performance Solutions for each of the identified non-compliances. The builder, sub-contractors and designers are required to include this fire safety strategy in the design.

By satisfying the Performance Requirements of the BCA, an acceptable level of life safety can be achieved by the design.

The reader is also directed to read the Assumptions and Limitations in Appendix B.

1 Introduction

1.1 General

Arup has been engaged to develop a performance-based fire safety strategy for the Sydney Speedway Grandstand at Eastern Creek. The fire safety objective of this strategy is limited to achieving compliance with the Performance Requirements of the Building Code of Australia (BCA)[5]. Fundamentally this aims to protect life safety, prevent fire spread to adjacent buildings, and facilitate Fire Brigade operations.

The approach adopted by Arup is generally in accordance with the International Fire Engineering Guidelines[2] by adopting worldwide best practice and standards as outlined in Section 0.1.1 (of the IFEG) and using the document as general guidance on the analysis process without strictly following each individual sub-system as outlined in Section 1.3 of the IFEG which permits different approaches to demonstrate compliance. In addition, the approaches outlined the earlier Fire Engineering Guidelines[6], as well as the Society of Fire Safety Code of Practice[8] are adopted where appropriate.

Arup makes all reasonable efforts to incorporate practical and advanced fire protection concepts into its advice. It is to be recognised, however, that fire protection is not an exact science, and that no building design can guarantee freedom from either ignition or fire damage, and enhanced property protection strategies should be considered in consultation with the insurer's requirements.

The design for the proposed building will generally follow the prescriptive Deemed-to-Satisfy (DtS) Provisions of the BCA where appropriate. However, where the DtS provisions are either inappropriate, or prove overly onerous or restrictive to the design, it will be demonstrated that the Performance Requirements of the BCA are achieved by a performance-based, fire engineered, Performance Solution.

1.2 Purpose of this report and approvals process

This Fire Engineering Report (FER) is prepared based on the documents detailed in Section 7.1 to specify the fire safety strategies, acceptance criteria, assessment methodologies and detailed assessments for the Performance Solutions associated with this project. This FER is to support the Construction Certificate for the Stage 3 construction of new works on site.

The strategies, criteria and methodologies applied in the assessment have been discussed with project stakeholders, Fire & Rescue NSW (FRNSW) and appropriate regulatory authorities (e.g. Principal Certifying Authority) regarding their applicability and suitability during the FEBQ process involving submittal of a FEBQ to FRNSW on 2 July 2020. Comments from FRNSW on the FEBQ were received on the 19 August 2020 and are addressed within this report. For a summary of the FRNSW comments, the reader is referred to the FRNSW response to the FEBQ in Appendix E1.

1.3 Limitations of this report

This report does not assess the level of property protection, business interruption or environmental protection associated with the development. The assessment is limited to compliance with the Building Regulations, which excludes the above issues.

This report does not address insurance issues. It is recommended that relevant insurers are advised of the contents of this report, so that insurance issues can be appropriately addressed between the building owner and/or operator and their insurer.

Issues related to Occupational Health and Safety or community protection are outside the scope of this report, except where directly relevant to the Performance Solutions presented.

With regard to arson protection, the assessment considers only an amateur attack of limited proportions. Organised criminal or terrorist attacks have not been considered. The client has not indicated that the subject facility is considered to be a likely target for this type of attack and has not requested that it be included in the assessment. Appendix B provides more information on the limitations of this report, including arson protection.

1.4 Stakeholders

The stakeholders relevant to the fire strategy include the following representatives listed in Table 1.

Table 1 Stakeholders

Role	Company	Representative
Client	Sydney Metro	John Andrews
Principal Certifying Authority	Blackett Maguire and Goldsmith	Michael Potts
BCA Consultant	Steve Watson & Partners	Andrew Rys
Architect	Cox Architecture	Barnaby Hartford-Davis John Ferendinos
Fire Services Consultant	Warren Smith	David Bolt
Civil Engineer	Turnbull engineering	John Ekechukwu Ruth Hoog Antink Steve Andrew
Fire Brigade	FRNSW	Duke Ishmael
Fire Engineer	Arup	Alistair Morrison Grant Wang Tess Van Der Veen

2 Project Description

The Sydney Speedway Grandstand is a two-storey design of Type B construction, to be located on the western edge of the relocated speedway track. For a comprehensive description of the development, the reader is referred to the project documentation. The following brief description is provided to set the fire safety strategy in context.

2.1 Building description

Sydney Speedway will consist of the speedway track itself along with a new ticket building (booth), pit garages, competitor amenities, administration building and maintenance shed in addition to the new Grandstand.

The ticket building (booth) is a standalone single level building and is required to be Type C Construction. All other construction aside from the Grandstand is understood to meet the BCA DtS requirements and, as such, are not addressed in this FER.

The Grandstand is a new two storey building to be located along the western edge of the speedway racetrack. The Grandstand design consists of semi-modular construction, with prefabricated elements erected within a primary structural frame. Seating terraces are located around the northern end of the speedway track.

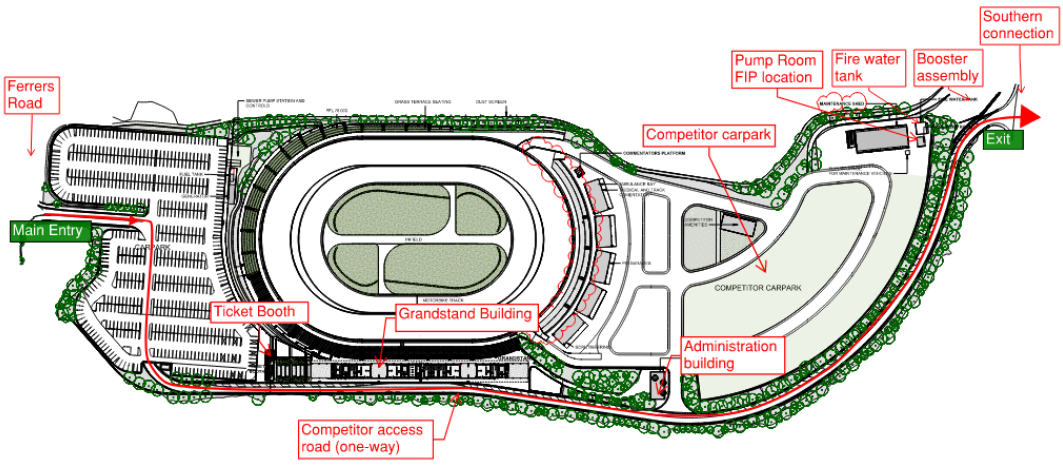

Figure 1 Site layout

The Grandstand has been identified as Type B construction with Class 6 and 9b spaces as identified in the preliminary BCA report by Steve Watson and Partners prepared for Cox Architecture dated 12 May 2020.

The Grandstand which has a rise in storeys of 2 and a floor area of 1100m^2 and 1145m^2 for the Ground Floor and Level 1 respectively, excluding the seating terraces which are located externally on the fill embankment.

The Ground Floor consists four food and beverage (F&B) outlets, male and female amenities, a plant room, merchandise room, MSB room, distribution board (DB) room and comms room (Figure 2).

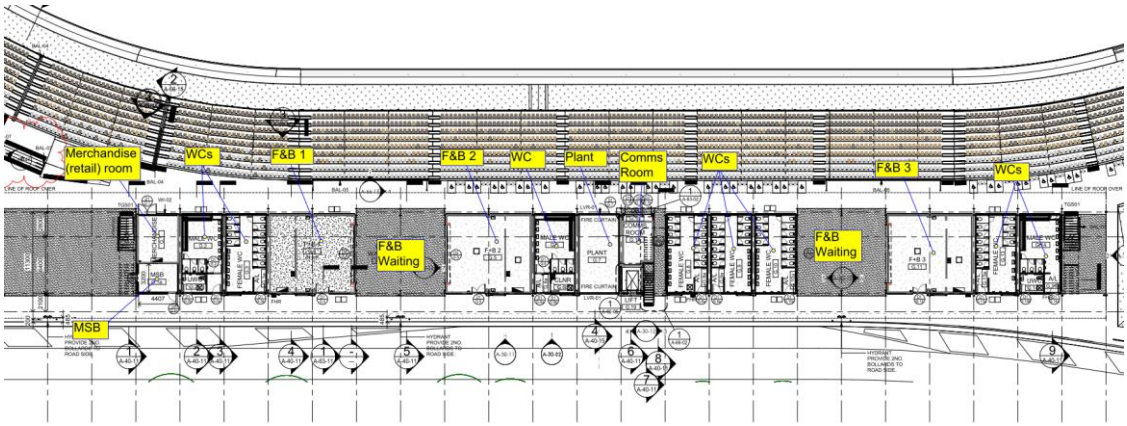

Figure 2 Ground Floor GA plan

Level 1 of the Grandstand contains corporate boxes and one tier of seating which is accessible from the corporate boxes. Egress from the tiered seating is through the corporate boxes into a circulation hallway. Level 1 is serviced by three exit stairs (see Figure 3).

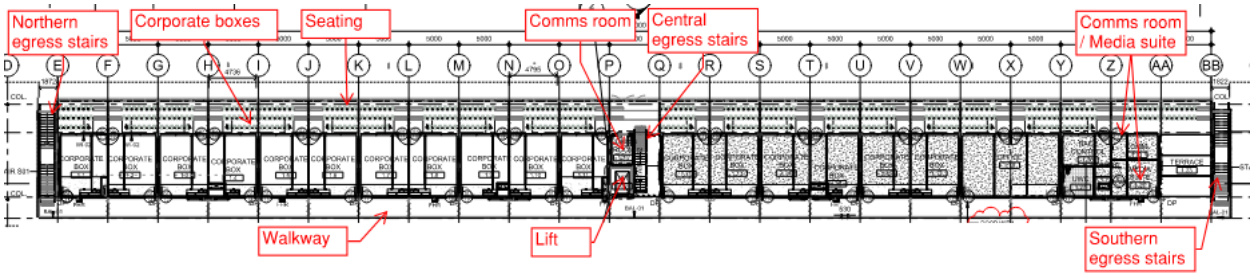

Figure 3 Level 1 GA Plan

The fire brigade access to the site is via the main entrance of Ferrers Road or via the Southern rear exit (Figure 1). A 7m wide road from the main entrance to the competitor carpark is the only access road through the site for competitors, staff, spectators and emergency services. The road will be ‘one-way’ only during standard operation but will be accessible from both points for emergency services personnel and vehicles.

2.2 Building characteristics

A summary of the key BCA building characteristics is provided in Table 2 below.

Table 2: Building description

Characteristic	Description
Rise in storeys	2
Effective height	4m
BCA classes of use	Class 9b, Class 6
DtS designation of type of construction	Type B
Nearest fire stations	The nearest fire stations include Huntingwood Fire Station and Smithfield Fire Station as shown in Figure 3 below.

Sydney Speedway will be serviced by Huntingwood Fire Station, 42 Huntingwood Drive, Huntingwood, located 4.1km from the main site entrance. As a secondary option, Smithfield Fire Station, 875 The Horsley Drive, Smithfield will service the site.

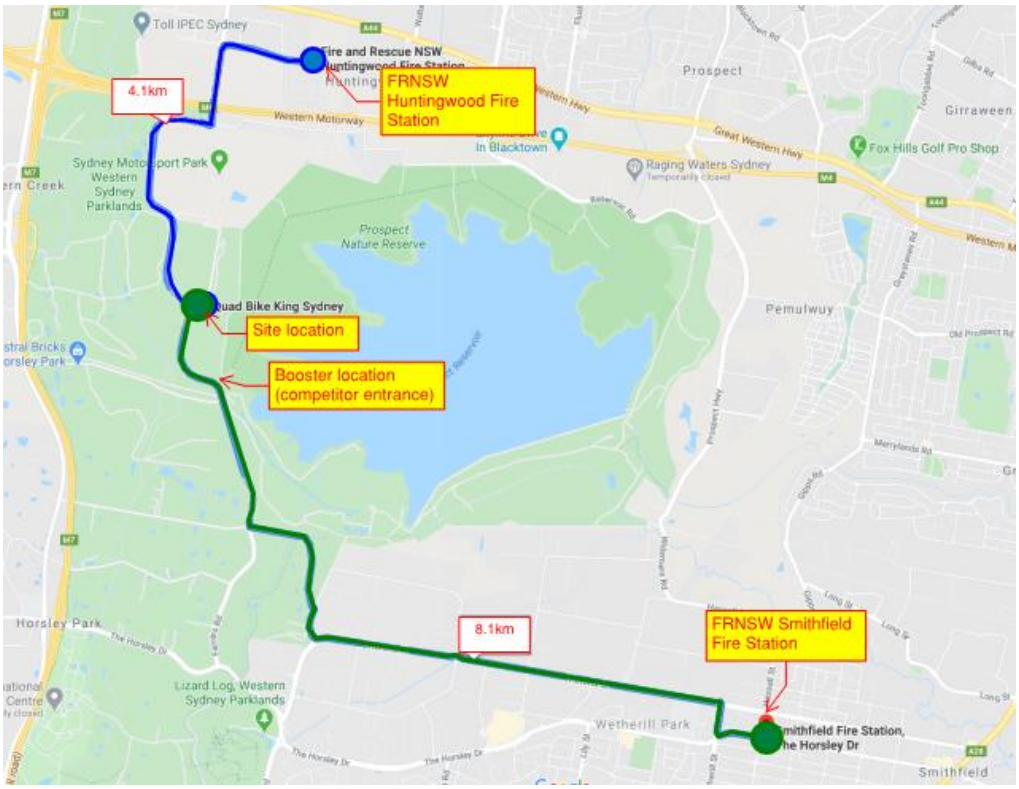

Figure 4: FRNSW Stations servicing Sydney Speedway, Eastern Creek

2.3 Occupant characteristics

2.3.1 Non-event mode

Occupants within the building in non-event mode are typically staff members, cleaners and maintenance personnel. All staff members are expected to be awake, alert and familiar with the building, including the exit locations and evacuation procedures.

2.3.2 Event mode – public area

The Grandstand is primarily used during events at the site. During event mode occupancy will be at a maximum. The following occupant characteristics are expected:

- The main occupancy group will consist of spectators. The total spectator capacity of the Grandstand is 3900, broken down into 400 people in the building component and 3500 in the outdoor seating component. Spectators will also transverse the space from the public carpark to the Grandstand. Spectators are expected to be awake and alert, however they could be visiting the stadium for the first time and therefore it is assumed that they are unfamiliar with the layout or evacuation procedures. Occupants mobility will be typical for a broad range of public and include people with a mobility impairment but who are able to self-evacuate or have an assistant who can help with evacuation (see Section 3.3.2 for mobility impaired egress strategy).
- Staff will be present throughout the building including ushers, security, management and food and beverage and merchandise workers. The speedway staff are predicted to be 5% of the total spectator population. Staff are expected to be familiar with the building and emergency procedures. Training shall be provided to assist others with egress from the building.
- Competitors will occupy the site but their presence in the Grandstand will be minimal. A competitor carpark is located at the southern end of the site.

3 Required Fire Safety Strategy

The purpose of the fire safety strategy is to detail the necessary design provisions such that the building can perform to an acceptable level of fire and life safety. A more comprehensive summary of the fire safety objectives is provided in Appendix A of this report.

The fire safety strategy developed in this report is only related to the Grandstand and the significant fire safety issues identified by the project BCA consultant in the report titled *BCA Assessment Report: Eastern Creek Speedway Report 2020/0186 R1.0* prepared by Steve Watson & Partners, dated May 2020.

The works are generally to be built in accordance with the DtS provisions of the BCA for fire safety. The exception to this is where the DtS provisions are altered

by the Performance Solutions (Section 4) outlined in this report and documented in the following sections.

Unless identified in this report, all other fire safety measures are to satisfy the BCA DtS provisions.

3.1 Design philosophy

The fire safety strategy is to provide a design that gives a satisfactory level of occupant life safety, protection to other property and can facilitate fire brigade intervention. Fire engineering allows an increased level of design innovation and flexibility over a strictly DtS design and can be used to design strategies that are particularly relevant to the fire safety risks of this development.

The key characteristics of the fire safety strategy involve fire resistance, means of escape, services and equipment, fire brigade intervention and fire safety management, as explained in detail in the following section.

Fire resistance is achieved through fire separation between Ground Floor spaces and the Ground floor to Level 1 ceiling or floor. As specified in Section 5.1, this is achieved by combination of the follows:

- Precast concrete slabs having an inherence FRL at least of 30/30/30;
- Fire rated enclosure having an FRL at least of -/30/30 to the rooms on the ground floor (except that no need fire rating for the walls along Grids 1 and 3 of the WCs);
- Fire rated ceiling having an FRL of -/30/30 to the F&B waiting areas on the ground floor;
- Cavities between hazard rooms form part of level 1 and are provided with fire rated penetrations in accordance with the DtS Provisions of the BCA from the rooms and the voids between the Ground floor modules.

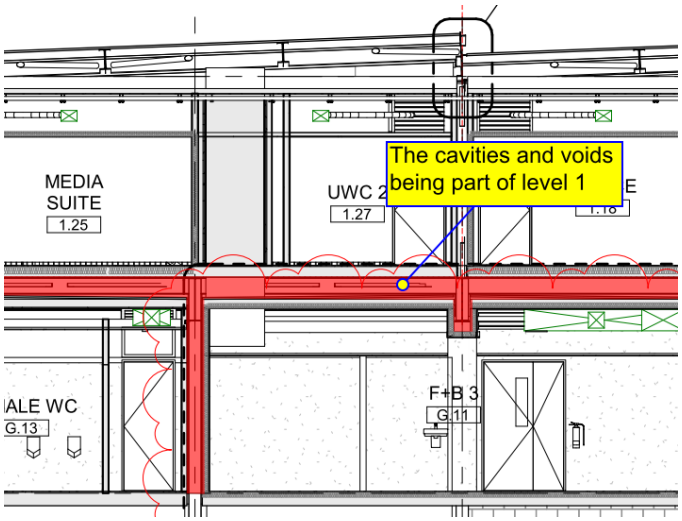

Figure 5 A portion of section showing the cavities and voids being part of level 1

A typical section which indicatively shows the F&B fire resistance arrangement is illustrated in Figure 6 below. More details are referred to the relevant architectural drawings for ‘fire line arrangement’.

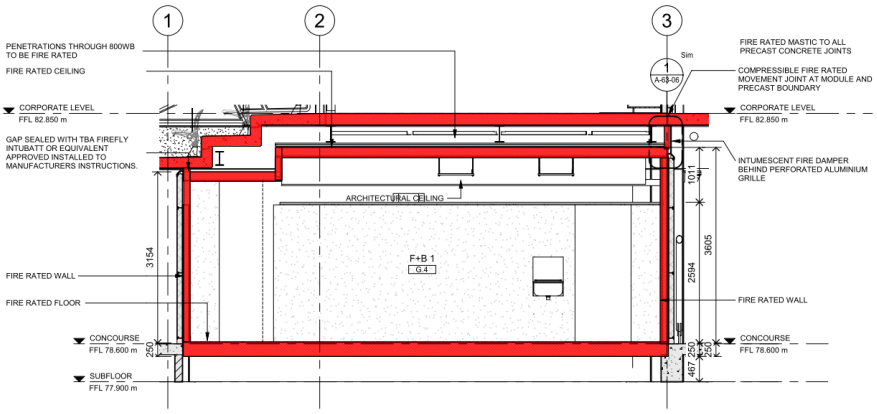

Figure 6 Typical Section indicatively shown F&B Fire Resistance Arrangement

Fire rated construction around hazard rooms (eg. F&B areas, merchandise, plant room, comms room) and WCs is intended to limit fire and smoke spread in addition to providing protection of Ground Floor steel columns and areas adjacent to essential egress routes. It is considered that the fire rated construction also provides the adequate protection to the people evacuating building from Level 1.

A non-required automatic thermal detection system in accordance with AS1670.1:2018 is to be provided throughout Ground Floor and Level 1. Due to the risk of spurious alarms in this area, thermal detection is proposed in lieu of smoke detection. This will provide early occupant warning compared to a DtS design that does not require a detection system. This provision assists in offsetting the extended travel distances on level 1 and the reduced fire rating to columns at ground floor.

Fire brigade intervention is assisted by signage and red strobes that provide visual cues to alert of the booster location at the rear entrance. The signage shall be provided throughout the site to direct emergency vehicles from the main entrance to the rear booster location. A mimic panel is to be provided at the competitor administration building and linked to the main FIP near the pumps and booster.

External hydrants are also provided to assist with intervention. Perimeter access and compartmentation shall assist the attending brigade to attack the fire without traversing a large distance through the building.

3.2 Fire resistance and compartmentation

The fire resistance and compartmentation strategy for the subject building is developed considering the semi-modular design.

The Level 1 floor of the Grandstand are to be constructed of precast concrete hollow-core slabs and precast concrete terrace seating plates on the bottom flange of steel beams. The steel beams are supported by steel columns (steel frames).

The central portion of the design (shown in Figure 7) is to be prefabricated, lightweight, modular floors. The hollow-core slabs and concrete terraces support the external seating are to achieve a minimum inherent FRL of 30/30/30. This inherent FRL is at least equivalent to a DtS design.

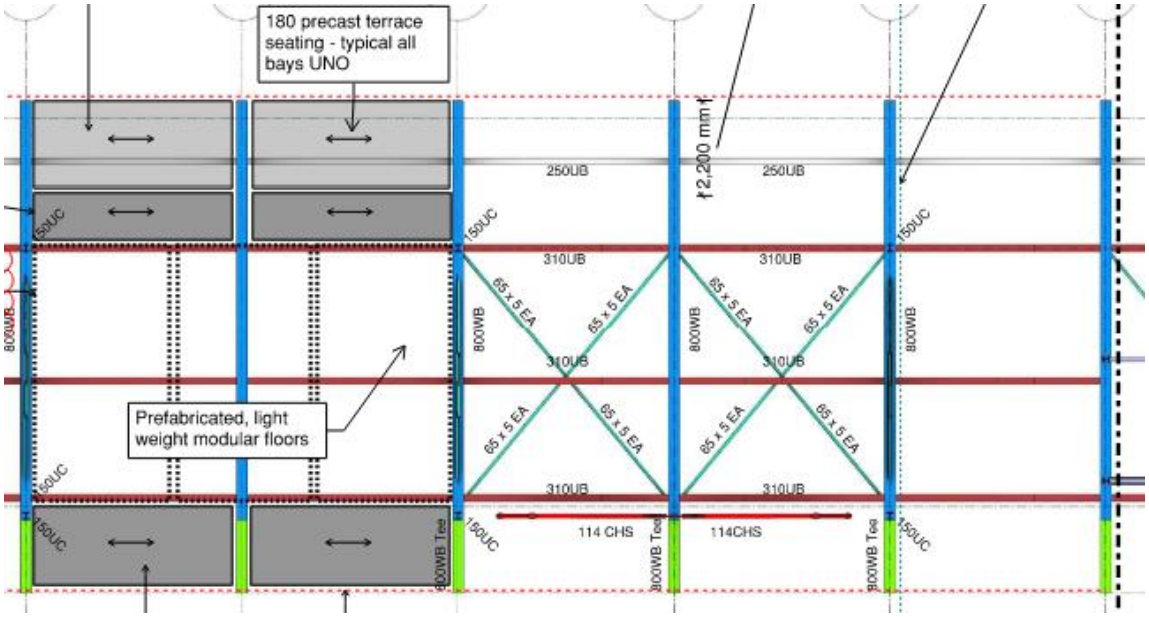

Figure 7 Structural arrangement - Level 1 floor

The fire resistance strategy requires fire rated sheeting as part of a tested, certified system to be applied to the underside of the floor framing as well as to the top of the floor joist (if required) to meet the required fire rating.

The fire resistance and compartmentation strategy has been developed in conjunction with the egress and fire brigade intervention strategy of the building as one holistic fire strategy.

A detailed assessment of the fire resistance and compartmentation is provided in Section 5.1.

3.2.1 Compartmentation

The compartmentation strategy includes separation between floors and high hazard Ground Floor rooms to assist in safe egress and limit fire and smoke spread.

High hazard rooms on the Ground Floor are to be fire separated to limit fire risk to the concourse area by fire rated bounding construction (walls, doors, shutters and dampers). This provision is in accordance with guidance in the ‘Green Guide’ to limit heat, fire and smoke spread[15]. The following rooms (shown in Figure 8) shall be fire rated from the internal side:

- Merchandise room and MSB room (-/30/30) due to the close proximity of these rooms to the egress path,
- WCs (-/30/30) in order to simplify the services penetrations (no fire rating for the walls below the ceiling along Grids 1 and 3);

- All F&B rooms and the plant room (-/30/30) due to the high hazard risk, and
- If the MSB, DB or Comms rooms on the Ground floor sustain emergency equipment, an FRL of -/120/120 shall be achieved from the internal side. If not, the FRL is required to be -/30/30 for the MSB, DB and Comms rooms due to the fire hazard associated with these rooms.

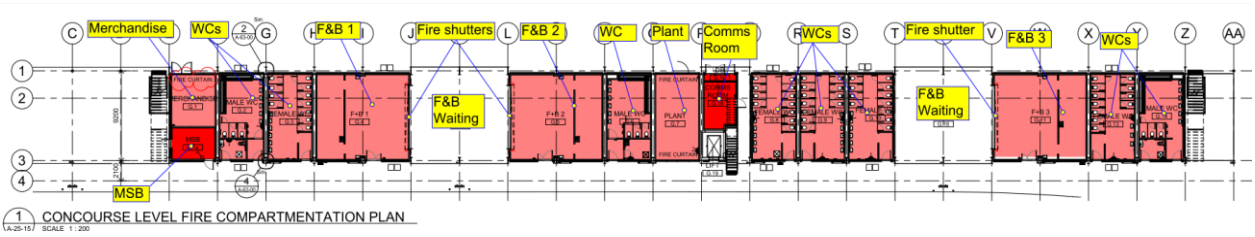

Figure 8 Ground Floor Compartmentation

Any gaps present between fire rated elements and between modular construction shall be sealed with a fire stopping system achieving an FRL of at least -/30/30. This includes gaps that are required to be sealed to maintain the fire resistance between storeys or between fire rated elements. The system shall comply with BCA clause C 3.15 and C3.16 and tested to 1530.4 and in the manner in which they are installed.

Construction joints between the pre-cast plats projecting beyond the fire rated walls beneath, as circled in Figure 9 below shall be fire stopped in accordance with Clause C3.16 of the BCA. The inherent FRL of the steel has been assessed as being appropriate to the risk in order to maintain structural stability during a design fire and therefore can be considered as having the required fire rating for the purposes of this strategy.

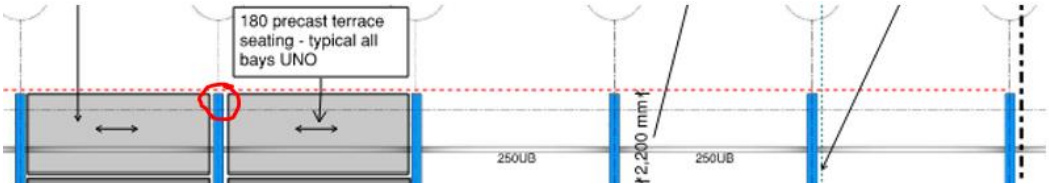

Figure 9 – typical construction joints between pre-cast plats requiring protection.

3.2.1.1 Fire Shutters

The fire shutters noted in this report must be tested as a complete system to achieve a -/30/- FRL rating and shall consist of one single and continuous module once installed (i.e. no overlapping sections). The bulkhead system shall also be fire rated to -/30/30 FRL from room side.

The shutters shall be restrained at the sides by side guiderails forming part of the system. The shutters shall comply in all respects with the design requirements of AS1905.2 and AS1530.4.

The shutters for F&B rooms must be capable of operating both manually and on activation of the fire alarm. As such, the shutter shall be linked to the internal thermal detection of the room and shall close upon activation. The shutter shall 'fail safe' in the closed position.

The shutter for the Merchandise room is provided on the egress route for the occupants in the room. This shutter is to be activated by a fusible link only.

The supplier shall provide evidence of compliance to show that the fire shutters meet both of the above Australian Standards. The evidence of compliance shall clearly state that maximum allowable size for the shutters and this maximum size shall be less than the installed sizes required.

The design and installation of each system is to fully meet the manufacturer's requirements for each tested system.

Consideration may need to be given to the provision of fixed furniture near the shutter for the Merchandise room to reduce the risk of the shutter being blocked by loose furniture.

The installer shall perform suitable tests to ensure that the shutter descend automatically in accordance with the Australian Standard. The supplier of each system shall also provide a 12-month manufacturer's warranty or extended as agreed.

3.2.2 Structural Fire Resistance

The structural fire resistance levels (FRLs) for the new building structure will generally meet the BCA DtS provisions for Type B construction, with the exception as noted below:

- The steel columns and steel frames supporting the Level 1 slab shall have no applied fire resistance and achieve only an inherent FRL of 20 minutes in lieu of 180/-/- required by the BCA. This non-compliance is addressed in Section 5.1.

The following measures are requirements of the fire safety strategy for structural fire resistance:

- All Ground Floor compartmentation shall achieve an FRL of -/30/30 from the internal side to minimise the risk of fire spread from these rooms to the unprotected steel structure. These rooms include F&B, merchandise, plant rooms and WCs on the Ground Floor (except that no fire rating is required for the walls along Grids 1 and 3 of the WCs).
- The MSB, DB and Comms rooms on the Ground Floor shall achieve an FRL of -/120/120 from the internal side if emergency equipment is sustained in these rooms. If not, the FRL is required to be -/30/30.
- All doors to the following compartments require self-closers to each door along the compartmentation line; merchandise, DB, comms, plant, F&B and MSB rooms. The door hold-open devices are to be provided to the doors for F&B. The devices are to be linked to the detection system to release.

- Doors to the WCs are not required to be fire doors.
- The three F&B spaces contain large service windows, opening out to an F&B waiting space. The Merchandise also contains glazed windows (or doors) to the circulation area. These windows are to be fitted with a fire rated shutter having an FRL of -/30/- that is required to 'fail safe' in the closed position. Thermal detection in the individual F&B space must activate the closure of the respective shutter.
- The external walls of the Type B building are to be designed and constructed to comply with the BCA DTS requirements, i.e. non-combustible material.
- To mitigate the risk of waste/litter accumulation (a fuel source) near the unprotected columns, no combustible material shall encroach the area within 1.0m of the unprotected steel columns highlighted in Figure 10.
- Management plans must include timely removal of the waste and no storage or litter within 1.0m of the steel columns. The bin locations are required to remain in accordance with the designed locations provided by Cox Architecture.

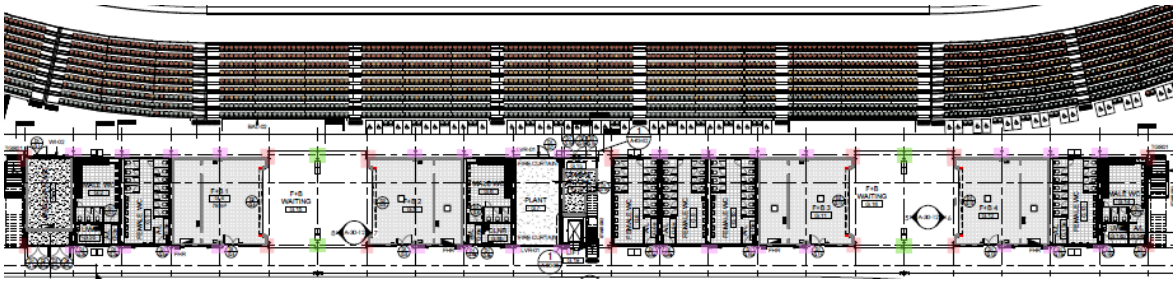

Figure 10 Indicative location of unprotected steel columns (highlighted)

3.2.3 Protection of Openings

Service penetrations through the floors are to be fire stopped to maintain the FRL of the floor. The fire stop system shall have been tested to AS1530.4 and AS4072.1 and be suitable for the application as demonstrated in the fire resistance test of its prototype and in accordance with Clause C3.15 of the BCA.

3.3 Means of Escape

3.3.1 Evacuation Strategy

The building shall rely on a simultaneous evacuation (one evacuation zone) that shall be initiated upon activation of the general fire alarm (GFA). Detection anywhere within the building shall active the GFA for the entire building.

Given the specific layout of the Grandstand, it is expected that concourse areas on the ground floor may serve as part of the evacuation routes. The evacuation strategy is to move people into the ground floor concourse from the viewing areas and further to outside of the venue.

Three stairs service level 1 and provide options for escape. It is noted that extended travel distances are present within the building on Level 1. This is addressed via a Performance Solution (see Section 5.2).

The "Green Guide" recommends that where concourses form part of an emergency evacuation route they should be designed as areas of very low fire risk, separated from catering and other outlets which may contain a fire risk with fire resistant construction of at least 30 minutes[15]. To maintain this requirement for evacuation from Level 1, the FRL of the ground floor areas adjacent to the stairs are examined. The merchandise and MSB room area fire separated by -/30/30 construction from the internal side given the fire risk in the room and its proximity to the egress path (see Section 3.2.2). The amenities located adjacent to the southern stairs is not subject to the same FRL requirements given the low risk nature of the space. Egress routes and areas shall be free from obstructions and be of low fire risk.

In addition, all doors within the path of travel and final egress doors, are to swing in the direction of escape in accordance with D2.20 of the BCA.

3.3.2 Mobility impaired egress

The BCA DtS provisions do not require any particular provisions for the evacuation of mobility impaired occupants but require accessibility for all occupants. Therefore, any measures taken to aid people with a mobility disability to evacuate will be over and above the DtS provisions.

However, there is an increased awareness and recognition that safe evacuation should be provided for all occupants in public buildings to meet the Performance Requirements of the BCA. Specific measures and requirements for evacuation of people with a mobility disability are outlined in a number of international regulations and standards, which use a combination of design and management to achieve safe evacuation.

Any mobility impaired occupants in need of assistance to travel through the flat areas or up to Level 1 are expected to be accompanied by an attendant. Attendants are however not expected to be able to assist occupants in a wheelchair down the stairs. Members of the Sydney Speedway staff would therefore be required to aid mobility impaired occupants to evacuate via Level 1 if stair evacuation is required. The benefits provided by the non-required automatic detection system are expected to further aid improved evacuation time of mobility impaired occupants in contrast to a DtS design. It is recommended that the Operator develop personal emergency evacuation plans in accordance with AS3745 to ensure procedures are developed and staff are trained in them. Evacuation chairs may be required to support this.

Further details are to be provided by the access consultant and Cox Architecture on the mobility egress strategy for Sydney Speedway.

3.4 Services and Equipment

3.4.1 Detection and Alarm

- A fire detection and alarm system will be provided throughout the Grandstand, in accordance with Specification E2.2a of the NCC and AS1670.1-2018. This is above the requirements of the DtS Provisions of the NCC.
- The detection system shall consist of thermal detection in lieu of a smoke detection system due to the risk of spurious alarms likely to be caused by dust and external smoke in the area. Detectors shall be located throughout the entirety of the building.
- Detection shall be linked to the door hold-open devices for the F&B doors required to maintain compartmentation.
- The building will have a simultaneous evacuation regime and any detection shall raise the alarm to alert all areas of the building.

3.4.2 Signage and Emergency Lighting

Exit signage and emergency lighting is to be provided in accordance with DtS Provisions from Part E4 of the BCA and AS 2293.1-2018 with the exception of the omission of exit signage in the corporate suites, amenities and merchandise rooms. This is addressed via a Performance Solution (Section 5.6).

The emergency and signage shall be provided as follows to assist with evacuation for the large number of occupants expected to be unfamiliar with the site:

- Emergency lighting throughout all the seating area and ‘internal areas’ of the Grandstand with emergency power back up through the UPS system, and
- Exit and directional signs in accordance with DtS provisions of the BCA to provide effective wayfinding in the environment of the concourse on the Ground Floor and Level 1 (Section 5.4).
- A block plan shall be provided at the mimic panel, FIP and Booster indicating the location of the main FIP and booster assembly.
- Red strobe lights shall be located at both the FIP and mimic panel locations to assist the attending brigade. The lights are to be activated by an alarm signal from the fire indicator panel.
- Clear signage is required to assist with wayfinding for emergency services from the main entrance to the booster and FIP. The signage is to be permanently affixed, weather resistant, high contrasting, clearly visible and readable at the expected viewing distance. The specific signage locations are detailed in Section 5.4.
- Signage shall be provided throughout the Ground Floor concourse to effectively ensure that storage is not undertaken by both tenants and patrons within 1.0m of the unprotected steel columns supporting Level 1. Signage shall read ‘**KEEP CLEAR – NO STORAGE PERMITTED**’ having capital letters 20mm high in colour contrasting its background. This measure shall be

included as an Essential Fire Safety Measure for the building and listed in the Fire Safety Schedule.

- It is recommended for one sign to be provided per two columns, within direct sight of the columns. Floor markings are to be provided indicating the 1.0m zone around the columns.
- Signage shall be provided adjacent to all fire shutters to require “no obstruction of shutter above" in letters 20mm high in a colour contrasting to the background.

3.4.3 Fire Hose Reels and Extinguishers

Fire hose reels are proposed to be provided in accordance with DTS provisions of the BCA, with the exception of coverage to the fire rated Ground Floor rooms where DtS coverage is not compatible with the compartmentation strategy. This is addressed via a Performance Solution (Section 5.5).

Fire Extinguishers are to be installed and designed in accordance with BCA E1.6 and AS2444-2001. Additional extinguishers (4.5kg ABE extinguishers) are to be provided within F&B rooms, merchandise, comms room, DB and plant room as those areas are not provided with FHR coverage. A water-based extinguisher is to be provided outside the merchandise room to assist with first response firefighting. This is addressed via a Performance Solution (Section 5.5).

3.5 Firefighting Provisions

3.5.1 Fire Hydrants

A fire hydrant system is to be provided in accordance with BCA Clause E1.3 and AS 2419.1-2005, except for the following non-compliance:

The external hydrants are located approximately 5.5m (2.7m to the F&B waiting area) from the building in lieu of 10m. See Figure 11 below. This is addressed as a Performance Solution in Section 5.3.

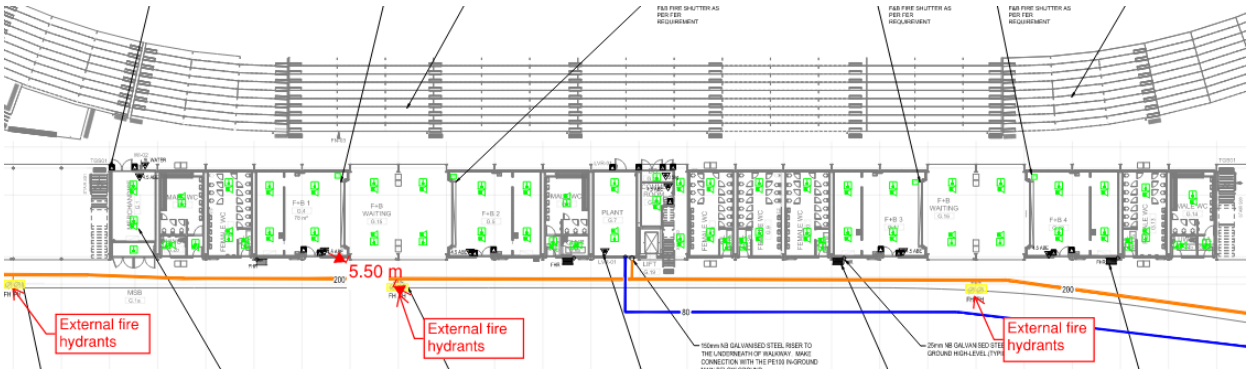

Figure 11: Indicative location of external hydrants relative to the building

3.5.2 Hydrant Booster

A hydrant booster assembly shall be provided at the southern end of the site near the Competitor Access Road exit in accordance with AS 2419.1-2005. This assembly is not within sight of the main entrance, which is addressed via a Performance Solution in Section 5.4. As part of this solution, the following is required:

- Signage for emergency services wayfinding as described in Section 3.4.2.
- Mimic fire panel provided in the competitor administration building and interlinked with the main FIP.
- The boom gates along the one-way access road to be manually opened upon general fire alarm to assist with brigade intervention.

The booster shall be in an accessible position where the fire brigade can park adjacent to the booster, complete with a hardstand within 8m of the booster. The hardstand area provides a safe working space for firefighters to exit the vehicle and move around the fire appliance.
As the booster feed is a large bore and the connections are semi rigid, the brigade is to be positioned such that pumping will not inhibit access to the site for further responders.

3.5.3 Fire Indicator Panel (FIP)

The fire indicator panel for the site shall be located external to the pumproom in a weatherproof enclosure. This location is not at the Designated Building Entry Point to the Speedway and is addressed in a Performance Solution (Section 5.4).

To satisfy the performance requirements, a mimic panel interlinked with the main FIP shall be provided in the administration building. Red strobe lights shall be provided at both the FIP and mimic panel locations. The lights will be activated by an alarm signal from the fire indicator panel that serves any on site automatic detection.

3.6 Fire Safety Management

The building is required to be managed under a fire safety policy which includes:

- An emergency management plan in accordance with AS 3745; including procedures for the safety of people in buildings including occupants with a mobility impairment, structures and workplaces during emergencies, the appointment of an Emergency Planning Committee and setting up of an Emergency Control Organization.
- Good housekeeping and fire prevention procedures such as maintaining clear evacuation routes.
- A list of the requirements as part of the FER shall be provided adjacent to the FIP and included in the AFSS to be incorporated as part of the yearly AFSS update.

Specific fire safety management requirements as part of this strategy include:

- Storage of combustibles shall not occur on the Ground Floor (in all areas including amenities) within 1.0m of unprotected steel columns supporting Level 1 (see Section C1.3 for justification). This includes implementation of the designed bin locations. This includes management procedures ensuring timely removal of waste to minimise accumulation of combustible material. This requirement shall be included in the Essential Fire Safety Measures for the building and are to be reviewed, with necessary inspections and rectification actions.

In addition to the above, the following items shall be included in the staff training requirements:

Table 3: Summary of staff training requirements

Training Requirement	Staff required
Notified of the location of fire hose reels and fire extinguishers throughout the building as part of annual fire safety training.	All permanent staff and designated fire wardens
Informed of the management in use requirement for the storage of combustibles on the Ground Floor concourse to not encroach within 1.0m of the unprotected steel columns. Any storage within the space must be removed by staff throughout the lifetime of the building and bins must be emptied in a timely manner. This includes all areas with the Ground Floor including the amenities.	All permanent staff, security and F&B staff.
Informed of booster location and that the brigade may arrive at the Competitor entrance as opposed to the main entrance in a fire event.	Building management.
Waste management plan to ensure no waste accumulates near the entry/exit or near external hydrants.	All permanent staff.

3.7 Maintenance of fire and other safety measures

The maintenance of fire and other safety systems is a mandatory requirement for building owners under the provisions of the Environmental Planning and Assessment Act 1979 and the Environmental Planning and Assessment Regulation 2000.

All fire safety measures required by relevant DtS Provisions or the Performance Solutions are considered to be essential to the performance of the Building Solution and should be maintained and perform in accordance with the nominated standard(s) on the Fire Safety Schedule.

AS1851-2012 is recommended to be followed for maintenance of all fire safety features in the building.

3.8 Fire brigade intervention

Fire Brigade intervention is first and foremost aimed at protecting life. Upon arrival, the first consideration is life safety. If occupants require assistance, rescue

operations will take priority. If occupants are considered to be out of immediate danger, brigade activities will focus on fighting the fire.

In the case of this building, the large enclosed volume and natural ventilation provisions are expected to maintain tenable conditions for the duration of egress. Early detection is provided in the back of house areas via automatic smoke detection, and trained staff shall activate manual call points in the event of a fire, thereby providing an alarm to all occupants. As all occupants should be awake, evacuation of occupants most at risk should be relatively quick. Consequently, it is likely that brigade activities will focus on fighting the fire.

The health and safety of fire fighters must be considered by the officer in charge at the time, however this is significantly addressed by the provision of the natural ventilation system, appropriate hydrant provisions and direct access to the public and back of house area.

4 DtS Non-compliances

The following non-compliances with the DtS provisions of the BCA have been identified to Arup by the Project Certifier.

Table 4: Summary of DtS non-compliances to be addressed via fire engineering Performance Solutions

Issue Number	Performance Solution	DtS Provisions	Performance Requirements
1	*Nil applied fire resistance is provided to selected steel columns and beams incorporating non-DtS fire separation between ground and level 1.*	*Table 4 and Clause 4.1(i) of Spec C1.1*	*CP1, CP2*
2, 3	*Extended travel distances on Level 1:50.5m to an exit, and 69m between alternative exits.*	*D1.4(c), D1.5*	*DP4, EP2.2*
4	*External fire hydrant locations to be within 10m of the building.*	*E1.3*	*EP1.3*
5	*The location of the booster and FIP will not be within sight of the main entrance.*	*E1.3, E2.2*	*EP1.3 and EP2.1*
6	*Omission of fire hose reels in fire rated rooms.*	*E1.4(f)*	*EP1.1*
7	*Omission of exit signs above doors from Corporate Suites, toilets and merchandise room*	*E4.5(d)*	*EP4.2*

5 Performance Solutions

5.1 Rationalisation of fire protection to steel structure

Issue 1	Reduction of FRL's to selected steel columns and beams supporting the Level 1 floor and external seating decks, with incorporation of non DtS fire separation between ground and level 1.
BCA Clause	Spec C1.1, Table 4 and Clause 4.1(i)
Performance Requirements	CP1, CP2
Method of Assessment	A comparative, qualitative and absolute, quantitative assessment in accordance with BCA Clauses A2.2(1)(a), A2.2(2)(b)(ii) and A2.2(2)(d).
Identified Hazards due to Non-compliance	The potential hazard associated with the proposed design is that a fire affecting an unprotected structural steel element may result in partial structural failure and potential for premature fire spread between levels in the event of fire the building.
Acceptance Criteria	To demonstrate the inherent fire resistance level of the unprotected steel structure and fire enclosure to the rooms on the ground floor is adequate for the potential fire risks within the building.
Required Fire Safety Measures	• Thermal detection designed in accordance with AS 1670.1-2018 provided throughout the entire building and designed to activate GFA. • Fire resistance is achieved through fire separation between Ground Floor spaces and the Ground floor to Level 1 ceiling or floor. This is achieved by combination of the followings: - Precast concrete slabs having an inherence FRL at least of 30/30/30; - Fire rated enclosure having an FRL at least of -/30/30 to the rooms on the ground floor (except that no need fire rating for the walls along Grids 1 and 3 of the WCs); - Fire rated ceiling having an FRL of -/30/30 to the F&B waiting areas on the ground floor; - Cavities between hazard rooms are provided with fire seals from the rooms and the voids between the Ground floor modules are part of level 1. • High hazard rooms on the Ground Floor shall achieve -/30/30 FRL from the internal side such that the structure outside this zone is shielded by the fire rated construction. If any rooms sustain emergency equipment, these must achieve an FRL of -/120/120. • Storage of bins and other good shall not occur within 1.0m of the unprotected steel columns.

	• Management in use strategy to control the positioning of excess combustible materials as outlined in Section 3.6.

5.1.1 Background

The F&B rooms on the ground floor is classified as Class 6 for retails. Specification C1.1, Table 4 of the BCA states that for a building of Type B construction, the FRL for Class 6 shall achieve no less than 180/-/- FRL.

Clause 4.1(i) of Specification C1.1 requires that in a Class 9b building, a floor separating storeys must (i) be constructed so that it is at least of the standard achieved by a floor/ceiling system incorporating a ceiling which has a resistance to the incipient spread of fire to the floor above itself of not less than 60 minutes; or (ii) have an FRL of at least 30/30/30; or (iii) have a fire protective covering on the underside of the of the floor, including beams incorporated in it, if the floor is combustible or of metal.

The steel columns supporting the Level 1 floor will not be applied with additional fire rating and will achieve an inherent FRL of approximately 20 minutes. The floor supported by these unprotected columns is precast concrete, hollow-core slabs for walkways and precast concrete terrace seating plates seated on the bottom flange of the steel beams. The steel beams are supported by the unprotected steel columns. The central portion of the level 1 floor is prefabricated lightweight modular floors.

The intent of the required FRL applied to the selected steel columns is for structural stability to be maintained during a fire event appropriate to the situation, including, fire size and location, function and use of the building, evacuation and fire brigade intervention.

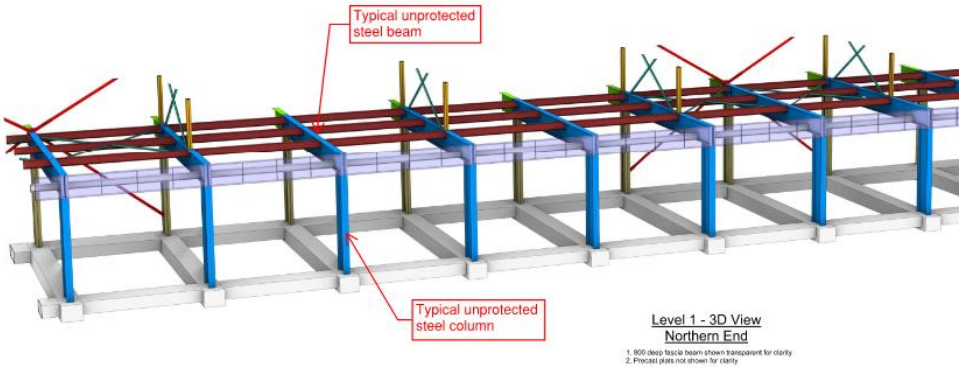

Figure 12 Steel structure render

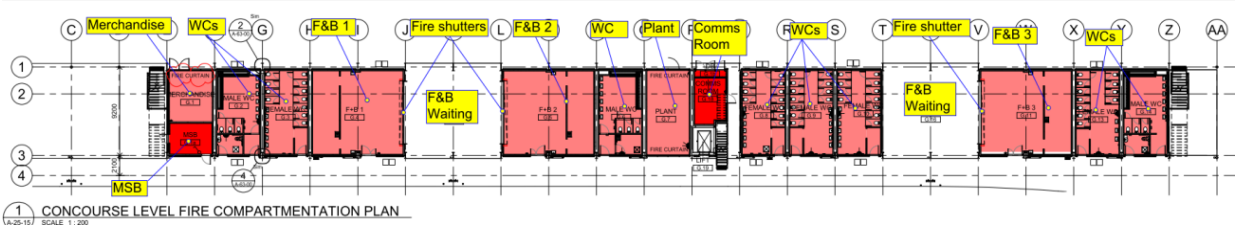

Figure 13 Ground Floor compartmentation

5.1.2 Qualitative Assessment

The solution is considered acceptable based on the following assessment:

- The unprotected steel columns supporting Level 1 could be exposed to heating from a localised fire, which has been reviewed based on the credible fire scenarios identified in Section 5.1.3. The potential fire adjacent to the structural element would not compromise the stability of the structure under fire loading conditions, in according to the structural fire engineering assessments.
- The Guide to Safety at Sports Ground, the 'Green Guide', categorises a high fire risk area as an area where combustible elements are present or where structural elements could promote the spread of fire, heat and smoke[15]. Some common sources of ignition are identified as cooking appliances, food warmers and electrical equipment (Section 15.13). Additionally, the spread of fire and smoke from areas adjacent to the egress path must be limited. As such, fire ratings are required for the selected high hazard rooms as follows:
    - The three F&B rooms and Merchandise room shall achieve an FRL of -/30/30 from the internal side due to the high fire risk associated with the space. The large trading windows of each F&B room facing out to the F&B waiting areas and the window and door to the merchandise, shall be fitted with a fire rated shutter achieving an FRL of -/30/-.
    - The shutters requires no insulation rating as the risk of fire spread to the other side is not significant. The F&B waiting area and the area outside the Merchandise are a transient, open space with limited combustible material. Occupants are not required to transverse the waiting space during evacuation and shall not be exposed to radiative heat through the shutter. Signage shall be provided adjacent to all fire shutters to require "no obstruction of shutter above" in letters 20mm high in a colour contrasting to the background.
    - In accordance with the guidance provided in the 'Green Guide', the shutters for F&B rooms must be capable of operating both manually and on activation of the fire alarm. As such, the shutter shall be linked to the internal thermal detection of the room and shall close upon activation. The shutter shall 'fail safe' in the closed position.

  - The shutter for the Merchandise room is provided on the egress route for the occupants in the room. This shutter is to be activated by a fusible link only.
  - The merchandise and MSB rooms are located adjacent to the northern egress stairs and, as such, are required to achieve an FRL of -/30/30 from the internal side. This provision will limit the risk of negative impact on occupants' egress due to fire and smoke spread from a fire within these rooms.
  - The plant room is considered to be high risk, and therefore required to be fire rated to achieve -/30/30 from the internal side.
  - If the MSB, DB or Comms rooms sustain emergency equipment, an FRL of -/120/120 shall be achieved from the internal side. If not, the FRL is required to be -/30/30 to minimise risk of exposure of the selected steel columns to fire and to maintain a safe egress route.

- In accordance with Clause C3.5 of the BCA, all doors to the fire rated rooms listed above shall have an FRL of -/30/30. The doors shall be fitted with self-closing. The door hold open devices to the F&B doors shall be linked to the detection system to release.
- The female and male amenities contain a low level of fire hazards with very limited fuel loads and ignition sources. Combustible materials of any significance to the structure are not expected limiting the possibility of fire spread. As such, a fire directly affecting these areas and subsequently the steel columns of nil applied fire protection is considered unlikely. This scenario is addressed in Section 5.1.3.3. In order to simplify the services penetrations, the female and male amenities are also enclosed in a fire rated enclose having an FRL of -/30/30, except that no fire rating is required for the walls along Grids 1 and 3 of the WCs.
- A DtS automatic thermal detection system shall be designed in accordance with AS 1670.1-2018 and with detection provided throughout the building. The detection system will be linked to the building Occupant Warning System (OWS), which will provide warning to all occupants simultaneously in the event of a fire. The provision of the detection and warning systems is above the minimum DtS requirements, which do not require any forms of automatic detection or warning at all in this two-storey building of Type B construction. Additionally, there is no ducted air-conditioning that would enable smoke spread between compartments.
- The inherent FRL of not less than 20 minutes for the steel columns and the shielding protection from the enclosing -/30/30 construction to hazard rooms will allow time for occupants to egress safely from Level 1 in the event of a fire in an F&B room long before 30 minutes of a standard fire exposure.
- To mitigate the risk of waste/litter accumulation near the unprotected columns that may serve as a fuel source, the design must include designated bin locations not less than 1.0m from the steel columns, as determined in Section C1.3. Management plans must include timely removal of the waste and no

storage or litter within 1m of the steel columns. The plans will also require no storage around the columns, limiting fuel and ignition sources.

- Signage shall be provided throughout the Ground Floor concourse to effectively ensure that storage is not undertaken by both tenants and patrons within 1.0m of the unprotected steel columns. Signage shall read '**KEEP CLEAR – NO STORAGE PERMITTED**' having capital letters 20mm high in colour contrasting its background. It is recommended for one sign to be provided per two columns, within direct sight of the columns. Floor markings are to be provided indicating the 1.0m zone around the columns. This measure shall be included as an Essential Fire Safety Measure for the building and listed in the Fire Safety Schedule.
- Fire resistance is achieved through fire separation between Ground Floor spaces and the Ground floor to Level 1 ceiling or floor. As per Section 5.1, this is achieved by combination of the following:
    - Precast concrete slabs having an inherent FRL at least of 30/30/30;
    - Fire rated enclosure having an FRL at least of -/30/30 to the rooms on the ground floor (except that no need fire rating for the walls along Grids 1 and 3 of the WCs);
    - Fire rated ceiling having an FRL of -/30/30 to the F&B waiting areas on the ground floor;
    - Interface of fire rated ceilings with steel beams to the open breezeway shall be closed with fire rated mastic tested to AS1530.1.
    - Cavities between hazard rooms are provided with fire stopping in accordance with the BCA DtS Provisions from the rooms and the voids between the Ground floor modules are part of level 1.

  Fire rated construction around hazard rooms (eg. F&B areas, merchandise, plant room, comms room) and WCs is intended to limit fire and smoke spread in addition to providing protection of Ground Floor steel columns and areas adjacent to essential egress routes. It is considered that the fire rated construction also provides the adequate protection to the people evacuating the building from Level 1.

  In the event of a room fire which is assumed as severe as the AS1530.4 Standard Fire, it is expected that the average air temperature within the cavities and voids would be up to 180^{o}C above ambient temperate after 30 minutes of fire exposure (i.e. the acceptance criterion for insulation in accordance with AS1530.4). It is therefore considered that the structural steel within the cavities and voids have been adequately protected compared with a DTS compliant design which allows the floor system to achieve an FRL of 30 minutes.

  In the event of a fire outside of a room, a quantitative assessment has been carried out below. It has been demonstrated that structural stability is maintained for the structural steel (beams and columns) exposed to a credible fire.

5.1.2.1 Requirement for Fire Shutters

The fire shutters noted in this report must be tested as a complete system to achieve a -/30/- FRL rating and shall consist of one single and continuous module once installed (i.e. no overlapping sections). The bulkhead system shall also be fire rated to -/30/30 FRL from room side.

The shutters shall be restrained at the sides by side guiderails forming part of the system. The shutters shall comply in all respects with the design requirements of AS1905.2 and AS1530.4.

The shutters for F&B rooms must be capable of operating both manually and on activation of the fire alarm. As such, the shutter shall be linked to the internal thermal detection of the room and shall close upon activation. The shutter shall 'fail safe' in the closed position.

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The supplier shall provide evidence of compliance to show that the fire shutters meet both of the above Australian Standards. The evidence of compliance shall clearly state that maximum allowable size for the shutters and this maximum size shall be less than the installed sizes required.

The design and installation of each system is to fully meet the manufacturer's requirements for each tested system.

Consideration may need to be given to the provision of fixed furniture near the shutter for the Merchandise room to reduce the risk of the shutter being blocked by loose furniture.

The installer shall perform suitable tests to ensure that the shutter descend automatically in accordance with the Australian Standard. The supplier of each system shall also provide a 12-month manufacturer's warranty or extended as agreed.

5.1.3 Quantitative Assessment

5.1.3.1 Methodology

The structural fire engineering analysis to verify the fire resistance of the steel structural elements of the link bridge to allow it to be unprotected consists of the following 3 stages:

1. Define credible design fires that would expose the structure to high temperatures;
2. Calculate the temperatures of the steel members due to the design fires;

3. Assessment of the structural adequacy on the basis of single element behaviour by comparing the calculated steel temperatures with the *limiting temperatures* (Section C1.1).
    - The *limiting temperature* is the temperature at which the steel element would fail, assuming no structural redundancy or load redistribution.
    - Single element analysis is considered a conservative approach for assessing the structural adequacy of the steel elements as it does not consider load transfer and redistribution to other cooler members.
    - The *limiting temperature* has been determined based on the load ratios of the structural members, by the structural engineer (Arup).

The element is considered to have sufficient structural adequacy if:

Steel temperature ≤ Limiting temperature

If the calculated steel temperature is greater than the limiting temperature, then the structural element is considered to have failed.

Elements whose steel temperatures exceed the limiting temperatures will be protected.

Note that the calculated temperatures are steady state temperatures and do not consider the transient heating and cooling effects.

The structural engineer (Arup) has provided the load ratios and corresponding limiting temperatures for the steel columns and beams as shown in Table 5. This is based on four-sided exposure of the member.

Table 5 Limiting temperatures

Structural Element	Load Ratio	Limiting Temperature
Columns	0.33	675°C
Beams	0.30	700°C

5.1.3.2 Scenario 1: Fire in Amenities

A severe fire occurring inside the toilets is considered unlikely as the ignition risks and the fuel load are low. The IFEG[6] recommends a fuel load of approximately zero for water closets. Notwithstanding this, the structure could be exposed to heating from a small localised fire within the amenities, which has been considered in the below assessment for conservatism. No first response firefighting efforts have been considered.

A worst-case credible design fire for the analysis is taken as a paper filled wastepaper basket fire with the following characteristics:

- Peak heat release rate = 0.12MW[21] for a waste-paper basket fire;
- Diameter = 0.29m[22] to represent the base of a waste-paper basket.
- The design fire location is immediately adjacent to a steel column.

Steel Column Assessment

The temperature of the steel column is compared to the limiting temperature to assess the impact of a bin fire from a typical unprotected steel column. The radiative heat analysis is detailed in Section C1.2.1 and the results are displayed in Table 7 below.

Table 6 Scenario 1 FlashOva Results

Height of radiating cylinder (flame height)	Width of radiating panel	Distance to steel structure	Heat flux received at point ($\dot{q}_r''$)	Temperature at point
1.3 / 2 = 0.65m	0.29m	0.29/2 + 0.5	20.98 kW/m²	507°C

The temperature at the steel columns is therefore 507°C. As plume temperature range is less than the limiting steel temperature (675°C), the column shall retain structural integrity in this fire scenario with the proposed (nil) level of fire protection.

Steel Beam Assessment

As per the methodology in Section C1.2, the flame height calculated to be 0.40m, well below the height of the beam (3.45m to the lower side of the beam).

As the structural component is not engulfed in flame, the plume temperature at the height of the component is calculated. The steel temperature is assumed to be equivalent to the plume temperature. The plume temperature correlation specified by BS EN1991-1-2 (Annex C, C.2) and is calculated to be 101.7°C (Section C1.2.2C1.2). As 101.7°C is less than the limiting temperature, the inherent fire resistance of the beam is sufficient to resist the design fire temperatures.

5.1.3.3 Scenario 2: Rubbish bin fire – circulation area, Ground Floor

A credible fire scenario of a rubbish bin fire within the circulation area on the Ground Floor is considered as Scenario 2. The design fire location is parallel to an unprotected column and directly beneath an unprotected beam. A rubbish bin fire in the circulation area on the ground floor is conservatively assumed to be a large, densely packed bin located close to the exposed steel structure.

Steel Column Assessment

The peak HRR of the fire is assumed to be 350kW for a large, densely packed trash bag. The radiative portion of the HRR is therefore 105kW. Based on the maximum heat release rate from one bin of 350kW, the reference radiative

fraction and an incident radiant flux for piloted ignition, the separation distance is considered to be 0.91 m. Thus, a separation distance of 1.0m from the perimeter room is considered appropriate (Section C1.3.1).

Furthermore, the temperature of the steel column is compared to the limiting temperature to assess the impact of a bin fire from a typical unprotected steel column. The radiative heat analysis is detailed in Section C1 and the results are displayed in Table 7 below (see Section C1.2 and C1.3 for methodology and input values).

The cylindrical flame was calculated based on the width (0.8m – 1.6m) and height of the flame length. It is assumed the flame temperature is 900°C based on the maximum temperature at the base of an axisymmetric plume, as recommended by BS EN 1991-1-2[20]. The corresponding emitting heat flux is therefore 107.4kW/m^2. The assessment is detailed in Section C1.3.

Table 7 Radiation assessment results

Height of radiating panel	Width of radiating panel	Distance to steel structure	Heat flux received at point ($\dot{q}''_r$)	Temperature at point
1.63 / 2 = 0.815m	0.8m	1.4m	22.3 kW/m²	519°C
0.82 / 2 = 0.41m	0.6m	1.8m	20.8 kW/m²	505°C

The temperature at the steel columns is therefore 519°C to 505°C. As plume temperature range is less than the limiting steel temperature (700°C), the column shall retain structural integrity in this fire scenario with the proposed (nil) level of fire protection.

Steel Beam Assessment

An assessment is undertaken to assess the risk of nil fire protection applied to the steel beams supporting Level 1. The worst credible design fire is considered to be a rubbish bin fire on the Ground Floor concourse, directly beneath the steel beam.

The flame height is calculated as per Annex C of BS EN 1991-1-2:2002 and based on the fire size (see Section C1.3.2). The flame diameter is taken as the width of the burning element, 0.8m to 1.6m. Using the maximum heat release rate of 350kW, the length of the flame is 1.63 to 0.82m.

The temperature in the plume is found from equation C.2, Annex C of BS EN 1991-1-2:2002 (equation shown in Section C1.2).As the beam is an 800UB, the height to the lower edge of the steel beam is 3.45m. The plume temperature at the steel beam is therefore 159.3°C to 117.4°C.

The load ratio of the unprotected steel beam in this scenario is determined to be 0.30 with a corresponding limiting temperature of 700°C. As plume temperature range is less than the limiting steel temperature (700°C), the beam is not calculated to fail in this scenario with the proposed (nil) level of fire protection.

5.1.4 Conclusion

Based on the above assessment, it is considered that the Performance Solution meets Performance Requirements CP1 and CP2.

5.2 Extended travel distances on Level 1

Issues 2 and 3	Extended travel distances on Level 1 up to: • 50.5m in lieu of 40m to an exit, and • 69m in lieu of 60m between alternative exits.
BCA Clause	D1.4(c), D1.5(c)
Performance Requirements	DP4, EP2.2
Method of Assessment	An absolute, quantitative, and qualitative assessment in accordance with BCA Clauses A2.2(1)(a) and A2.2(2)(b)(ii)
Identified Hazards due to Non-compliance	The additional travel distance could increase the time to escape and could potentially increase the exposure time to smoke and fire and the risk of a fire blocking an exit due to the delayed evacuation.
Acceptance Criteria	The design shall demonstrate that the provision of non-required automatic detection system provides a significant improvement over a DTS design without such systems, such that the risk associated with the relatively modest increase in travel distance is offset.
Required Fire Safety Measures	• Thermal detection designed in accordance with AS 1670.1-2018 shall be provided throughout the building. The detection system shall initiate the occupant warning system (OWS) upon activation. • Emergency lighting and exit signage shall be provided in accordance with BCA Part E4 and AS/NZS 2293.1-2018 to aid wayfinding. This excludes the corporate suites, amenities and merchandise room where exit signs shall be omitted. • DtS fire separation shall be provided between Level 1 and the Ground Floor to achieve an FRL of 30/30/30 or resistance to insipient fire spread of fire not less than -/60/60. This is achieved by a fire rated Level 1 floor or a fire rated ceiling below the Level 1 floor.

5.2.1 Background

Clause D1.4(c) of the BCA requires the maximum travel distance in a Class 5 – 9 building to be 40m where two exits are available. Clause D1.5(c)(iii) specifies that for all Classes with exception of Class 2, 3 and 9a, the alternative exits must be no more than 60m apart.

The intent of this provision is to maximise occupant safety by ensuring a nearby exit is available and may be reached by the occupants in a reasonable time before the onset of untenable conditions. The BCA places a limit on the allowable distance between exits to ensure that, in the event that an exit in inaccessible, access to another exit will be available within a reasonable distance.

Level 1 of the Grandstand comprises of 17 corporate boxes in addition to an office and communication/media rooms. The level 1 is serviced by three exit stairs, and occupants are expected to have two available exits from any point on the floor. Two of which are available for occupants at any point on this level. The maximum travel distance from within a corporate box is 50.5m measured from the associated seating tiers (Figure 14).

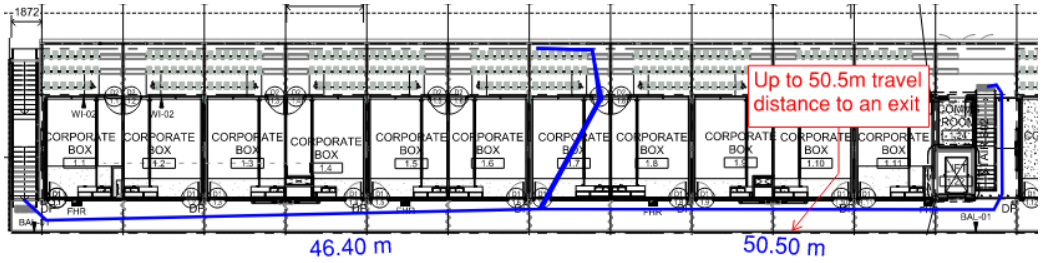

Figure 14 Level 1 extended travel distance

The design also includes extended travel distances via the point of choice between alternative exits of up to 69m. An indicative mark up of this area is shown in Figure 15 and Figure 16.

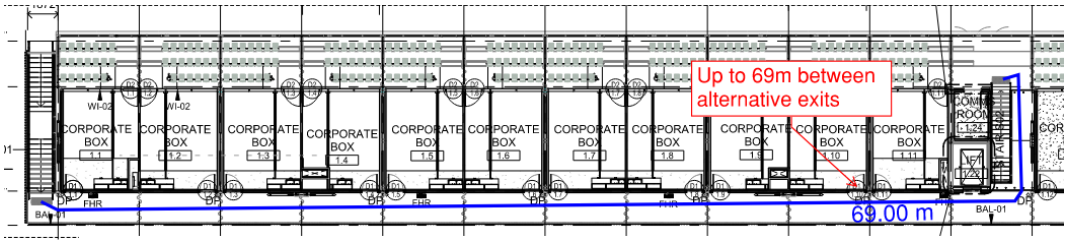

Figure 15 Level 1 travel distance between alternative exits, plan 1

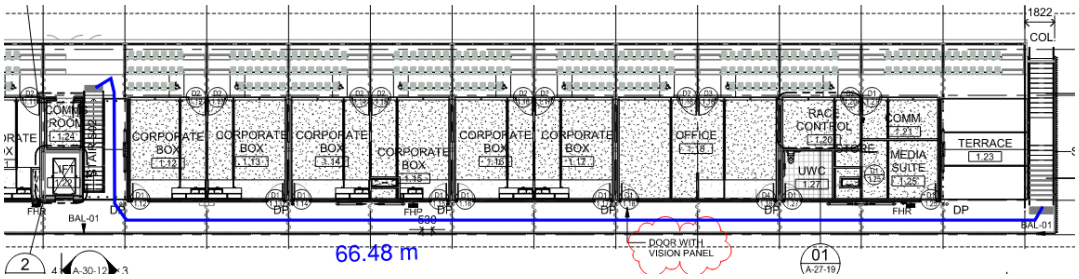

Figure 16 Level 1 travel distance between alternative exits, plan 2

5.2.2 Assessment

The Performance Solution is considered acceptable on the following basis:

- A non-required automatic thermal detection designed in accordance to AS 1670.1-2018 shall be provided throughout the building. The system shall be linked to the occupant warning system (OWS), which will provide warning to all occupants simultaneously in the event of a fire. The provision of the detection and warning systems is over and above the minimum DtS requirements, which do not require any forms of automatic detection or warning at all in this building. The benefits of the system are further described in Section 5.2.2.1.
- The additional risk when exits are located at a distance from each other is that wayfinding may become more complicated, and occupants may not be able to easily find their way to an exit. However, for the case of the subject building, the alternative egress paths which offer a choice of escape are considered to be

obvious to occupants as there is only one path of travel – the main walkway. The exit paths shall be signed to direct occupants to the exits in the event of a fire. Therefore, wayfinding between the exits is not considered to adversely impact occupants' egress.

- As the path of travel follows an open walkway, occupants are likely to notice egress to an exit is inhibited before reaching the final exit and therefore, would be expected to exit towards and alternative exit rather than travelling the whole distance towards where a potential incident is located. In the event of the central exit being unavailable due to a hazard not visible from the egress corridor, occupants will still have a choice of two exits, the northern and southern stair, for egress.
- As one side of the Level 1 walkway is open, in the event of a fire, smoke is expected to spill out of the walkway and not collate in a smoke reservoir. The delay in smoke collecting within the space will result in a longer period of visibility and tenability for evacuating occupants.
- The extended path of travel is through a transient walkway that is required to remain clear of any storage or combustibles. The minimal fuel load is unlikely to contribute to ignition or development in the walkway/egress path and impede egress towards a chosen exit.
- Alternatively, the DtS conditions of the BCA assume 40m to an exit and 60m to the next available exit, a total distance of 100m. The Level 1 travel distances measured in this way results in a 119.5m distance, 19.5m in excess. However, given the straight and open walkway, it is assumed that occupants can make an informed choice of travel direction from the point of choice as opposed to travelling to one exit before retreating. Therefore, the 69m distance addressed in this assessment is based a scenario involving travel throughout the entire length of the walkway to reach an alternative exit. Notwithstanding, the benefits of the detection system shall offset the 25 second delay caused by the 19.5m excess travel distance.

5.2.2.1 Benefits of automatic detection system

The enhanced detection provided by the non-required automatic detection system is considered to offset the extended travel distances based on the following RSET assessment.

The required safety egress time (RSET) can be expressed in the following equation[4]:

$$RSET = t_{det} + t_{pre} + t_{flow}$$

Where:

t_{det} is the alarm / detection time

t_{pre} is the pre-movement time

t_{flow} is the flow / movement time

Detection Time, t_{det}

The detection time used in the fire engineering analysis is based on activation of the installed fire safety systems, i.e. the automatic thermal detection system, or alarm raised by an occupant.

The detection and warning systems provide a significant improvement over a strictly DtS compliant design in terms of occupant life safety and egress.

For a fire in a DtS Design, occupants remote from the fire may be completely unaware of the fire event until they are personally warned by other occupants have seen the fire, or they receive fire cues by visual or olfactory means (such as smoke spread to their area of the building).

By the time this warning occurs in a DtS design, the fire could have grown to a substantial size, meaning that occupants are more likely to encounter untenable conditions along their egress path. The time saved is highly dependent on the fire location but is expected to result in a minimum 30 second improvement to a DtS design.

Pre-movement Time (t_{pre})

The pre-movement time depends on two parts; coping time and recognition time. During the coping time, occupants will become aware of the situation and in the recognition time they will decide how to react.

The pre-movement time varies based on a number of factors such as type of occupancy, characteristics of occupants, size and geometry of building, etc.

Without a warning and detection system, occupants rely on manual activation of an alarm without occupant warning. The pre-movement time is expected to be significantly reduced with the occupant warning system as opposed to a DtS design.

Movement Time, t_{flow}

Flow time is the time needed for all of the occupants in a specified part of the building to move to an exit and pass through it and into a ‘place of safety’. The flow time can be divided into two parts:

- The time taken for occupants to move to an exit (i.e. travel time); and
- The time taken for occupants to pass through an exit (i.e. queuing time).

If the time taken to walk to an exit is shorter than the time for the occupants to pass through the exit, then queuing at the exit will occur, and the occupants from the most remote locations on the floor will join the back of the queue. This is typically the case for most buildings unless the occupant density is significantly low in relation to the floor area.

The travel time for the analysis is calculated with the equation below:

$$\textit{Travel time (s)} = \textit{Travel distance (m)} / \textit{Travel speed (m/s)}$$

Assuming a travel speed of 1.2m/s (kept constant for the comparison) for occupants and speed of 0.8m/s is conservatively assumed for mobility impaired occupants, the travel time increase is as follows:

Table 8 Additional travel time to an exit

	Travel Distance	Travel Speed	Travel Time	Mobility Impaired Travel Speed	Mobility Impaired Travel Time
DtS Building	40 m	1.2m/s	33s	0.8m/s	50
Design Building	50.5 m	1.2m/s	42s	0.8m/s	63
Difference		**9 seconds**		**13 seconds**	

Table 9 Additional travel time between alternative exits

	Travel Distance	Travel Speed	Travel Time	Mobility Impaired Travel Speed	Mobility Impaired Travel Time
DtS Building	60 m	1.2m/s	50s	0.8m/s	75
Design Building	69 m	1.2m/s	58s	0.8m/s	86
Difference		8 seconds		11 seconds	

Comparison

The travel distance justified in this Performance Solution are up to 10.5 m in excess of the DtS limits of 40 m. The time taken for occupants to travel the additional travel distance over a DtS design is therefore minimal (9 - 13 seconds). Although the DtS detection and warning (via manual observation and action only) cannot be accurately quantified, particularly for occupants not within sight of the fire, it is considered that the provision of automatic detection system more than offsets the additional 10.5 m that occupants may be required to travel, due to much improved conditions along the path of travel at the time of evacuation. This is supported by PD 7974-6:2004[12] which states the following:

> "*[Delta]t_a is the time from detection to a general alarm. This may vary between effectively zero (where the fire is detected by an automatic system triggering a general alarm on first detection) to several or many minutes (when for example, staged alarm systems are used or where there is no automatic detection.*"

Similarly, the increased time for travel between exits is estimated to be 8 to 11 seconds. In addition to the qualitative analysis above, this minor additional time is considered to be offset by the benefit of a thermal detection system.

5.2.3 Conclusion

Based on the above assessment, it is considered that the Performance Solution meets Performance Requirements DP4 and EP2.2.

5.3 External fire hydrant locations to be within 10m of the building

Issue 4	External fire hydrant locations to be within 10m of the building
BCA Clause	E1.3
Performance Requirements	EP1.3
Method of Assessment	An absolute and quantitative assessment in accordance with BCA Clauses A2.2(1)(a) & A2.2(2)(b)(ii)
Identified Hazards due to Non-compliance	The potential hazard associated with the proposed design is that attending fire brigade may be unable to safely access the external fire hydrants in the event of a fire.
Acceptance Criteria	To demonstrate that attending fire brigade are provided with adequate provisions to safely undertake fire-fighting operations.
Required Fire Safety Measures	• Non-required automatic thermal detection system in accordance with AS 1670.1-2018, • Bollards to provide protection from vehicles to external hydrants, • Coverage of hydrants from additional hydrants within 60m + 10m spray, and • Fire protection of Ground Floor rooms.

5.3.1 Background

Clause E1.3(b)(i) of the BCA states that a fire hydrant system must be installed in accordance with AS 2419.1. Clause 3.2.2.2 of AS 2419.1-2005 outlines the location requirements for external fire hydrants.

Clause 3.2.2.2(e) of AS 2419.1-2005 states that when external fire hydrants are located within 10m of a building they should be protected unless safeguarded by construction:

i. Having an FRL not less than 90/90/90;

ii. Extending 2 m each side of the fire hydrant outlet; and

iii. Extending not less than 3 m above the ground adjacent to the fire hydrant or the height of the building, whichever is the lesser.

Clause 3.2.2.2(f) of AS 2419.5-2005 states that external hydrants shall be located in a position so that the fire hydrant is not obstructed or obscured by obstacles, stored goods, vehicles, vegetation etc.

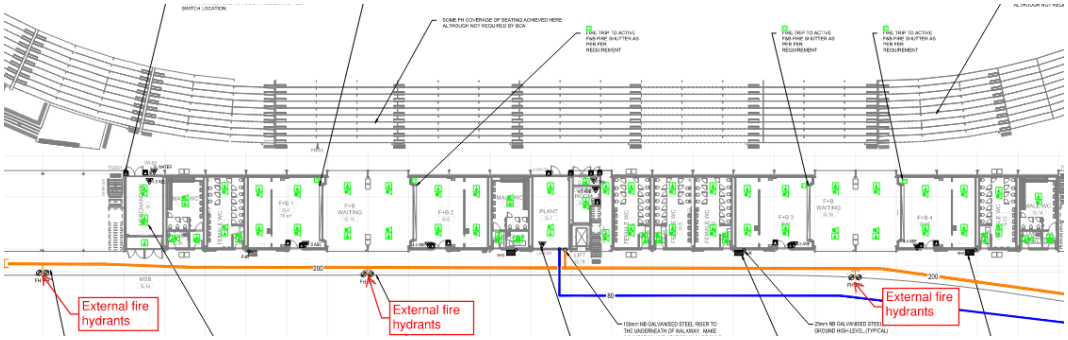

Figure 17 External hydrant locations (indicative only)

5.3.2 Assessment

The omission of protective fire rated construction to the external hydrants is considered acceptable based on the following:

- Should a fire occur in a location that compromises one of the external hydrants, coverage to this area can be achieved via an alternative hydrant (within 60m + 10m of spray). Therefore, in the unlikely event that one hydrant is jeopardised, fire brigade personnel can choose to take resource of the other ones provided.
- The external hydrants are located on the Ground Level. As Level 1 of the grandstand is fire separated from the Ground Level, it is expected that smoke and flames from a fire in Level 1 will vent upwards and out away from the hydrants. Likewise, the high-risk areas of the F&B rooms are fire separated and therefore not likely to allow fire spread that will compromise the external hydrants.
- Hydrants are not located directly adjacent to an external opening as can be seen in Figure 17. Additionally, the elevation slopes downwards from the building to the hydrant location, further limiting the possible heat flux from a fire in the building.

In addition to the above, the likelihood for the external hydrants to be obstructed or obscured is addressed below:

- The hydrants are located within walkways adjacent to the access road through site. This area is a circulation space; therefore, it is considered unlikely that obstacles would be stored in a location that could block access to the hydrants or serve as a fuel source.
- Furthermore, bollards shall be positioned to protect the hydrants from obstruction via vehicles or stored goods to comply with Clause 3.2.2.2(f) of AS 2419.5-2017.

A radiant heat assessment has been undertaken to assess the radiation received by the external hydrants in the event of a fire on the ground floor. The acceptance criteria is defined as the radiation received at the hydrant to be less than the limiting tenability criteria for fire brigade personnel, 3kW/m^2, as specified in the SFS Practice Notes.

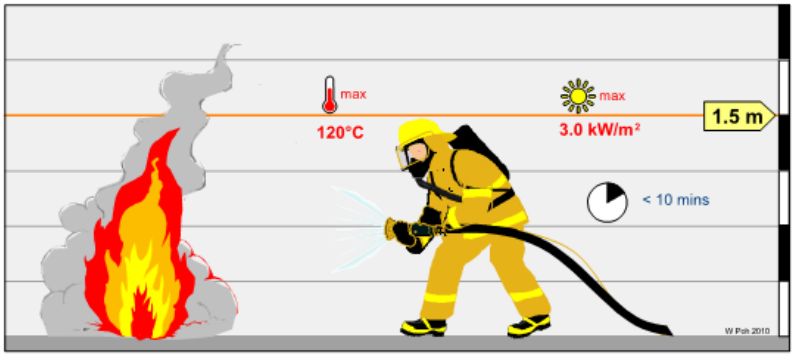

Figure 10: Tenability for Fire Fighters (up to 10 minutes)

Figure 18 Fire brigade tenability during fire-fighting operations extracted from SFS Practice Notes.

Due to the compartmentation on the Ground Floor, the risk of radiation from a fire within the Ground Floor compromising the external hydrants is unlikely.

A radiation assessment has been conducted for a fire in a Level 1 room to the closest external hydrant (Appendix D). The results of this assessment demonstrate the expected heat flux is 0.142kW/m^2. As this is below the 3kW/m^2 threshold, the location of the external hydrants is considered to meet the acceptance criteria.

5.3.3 Conclusion

Based on the above assessment, it is considered that the Performance Solution meets Performance Requirement EP1.3.

5.4 Booster and FIP location not within sight of the main entrance

Issue 5	The location of the booster and FIP is at the rear entry of the site and not within sight of the main entrance
BCA Clause	E1.3 AS2419.1-2005 Part 7.3, E2.2 and AS1670.1
Performance Requirements	EP1.3, EP2.2
Method of Assessment	An absolute and qualitative assessment in accordance with BCA Clauses A2.2(1)(a) & A2.2(2)(b)(ii)
Identified Hazards due to Non-compliance	The potential hazard associated with the proposed design is that attending brigade may be unable to locate the hydrant booster upon arrival, hindering brigade operations.
Acceptance Criteria	To demonstrate that the location of the hydrant booster assembly facilitates fire brigade operations.
Required Fire Safety Measures	• Directional signage provided at the FIP, booster and main entry via public carpark, • Red strobe lights installed at the mimic panel and FIP to activate upon general fire alarm, and • Mimic fire panel provided in the competitor administration building and interlinked with the main FIP.

5.4.1 Background

Clause E1.3 (a) of the BCA states that a fire hydrant system must be provided to serve a building greater than 500m^2 and where a fire brigade is available to attend a building fire. Clause E1.3 (b) requires that the fire hydrant system must be installed in accordance with AS 2419.1-2005.

Clause 7.3 (c) (ii) of AS2419.1-2005 requires that a booster shall be within sight of the main entry to the building.

AS1670.1 clause 2.2 provides for a range of options for this building and the location for the main FIP will be away from the main site entry.

The booster and Main FIP is to be located at the competitor entry at the Southern end of the site and is not within sight of the main entrance. The booster will be accessed via the Southern connection to Ferrers road or from the main entrance and through the site (Figure 19). The road from the main entrance to the booster is for one-way travel and is utilised by all staff, spectators, competitors and emergency services. A secondary Mimic Panel will be provided at the Competitor Administration building.

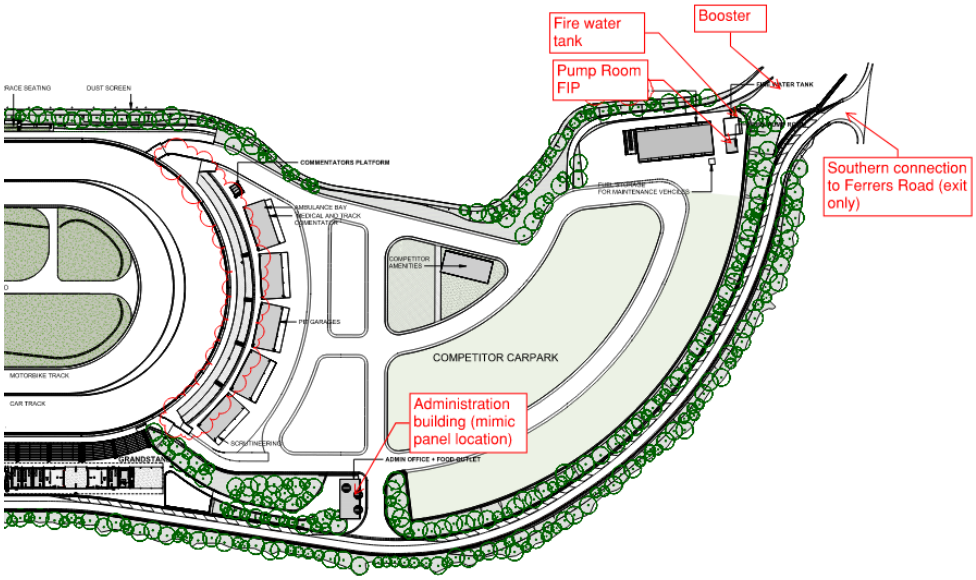

Figure 19 Booster location

5.4.2 Assessment

The location of the booster and FIP assembly is considered acceptable based on the following:

- In an emergency event general traffic conditions will not apply, and the brigade will operate in a contraflow manner to enter from the Southern connection (competitors' entry) and travel against the one-way road to the Grandstand. The 7m wide road accommodates two-way vehicular circulation and therefore allows traffic on the competitor road (unexpected in an emergency event) to give way and allow clear passage for the brigade. Alternatively, the brigade may enter through the public carpark and use the rear competitor road to access the booster.
- The boom gates along the one-way access road are required to open upon activation of the occupant warning system to assist with brigade intervention.
- A mimic FIP interlinked with the main FIP shall be provided at the administration building to assist with brigade intervention if they arrive from the North via the internal road.
- Clear signage is required throughout the route from the main entrance to the booster and FIP locations to assist with wayfinding of emergency services. The signage is to be permanently affixed, weather resistant, high contrasting, clearly visible and readable at the expected viewing distance. The locations of the signage are as follows and as shown in Figure 20:
    - The designated site entry point (DSEP) and through the public carpark to provide direction to the Booster and FIP should the site be accessed via the main entrance.
    - Red strobe lights shall be located at both the FIP and mimic panel locations to assist the attending brigade. The lights are to be activated

by an alarm signal from the fire indicator panel that serves any on site automatic thermal detection.

- A block plan shall be provided at the mimic panel, FIP and Booster indicating the location of the main FIP and booster assembly.

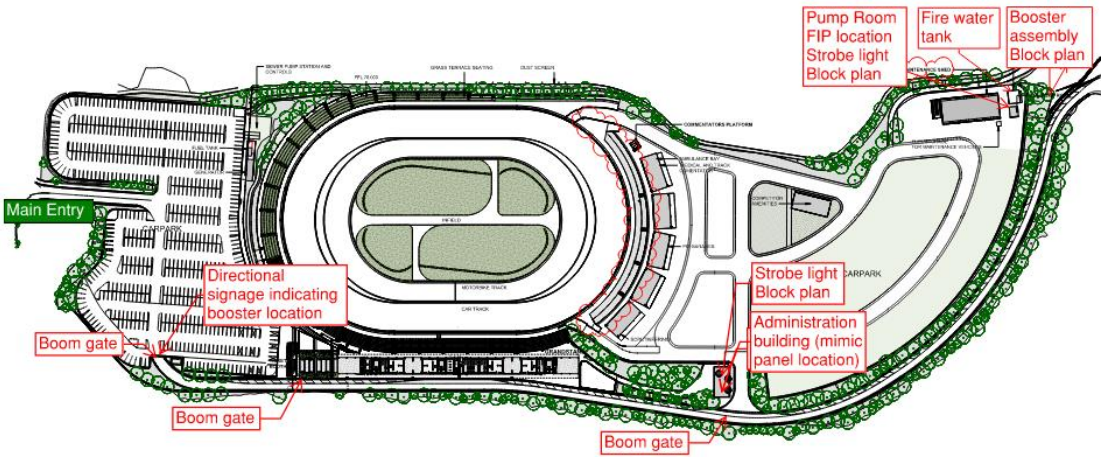

Figure 20 Site plan indicating signage locations

- The booster shall be located in an accessible position where a fire brigade applicant can park adjacent to the booster, complete with a hardstand within 8m of the booster. The hardstand area provides a safe working space for firefighters to exit the vehicle and move around the fire appliance.
- As the booster feed is a large bore and the connections are semi rigid, the brigade is to be positioned such that pumping will not inhibit access to the site for further responders.

5.4.3 Conclusion

Based on the above assessment, it is considered that the Performance Solution meets Performance Requirement EP1.3.

5.5 Omission of fire hose reels in fire rated rooms

Issue 6	FHRs shall be omitted from single fire rated rooms on the Ground Floor (merch room, F&B rooms, comms, DB and plant rooms).
BCA Clause	E1.4(f)
Performance Requirements	EP1.1
Method of Assessment	An absolute and qualitative assessment in accordance with BCA Clauses A2.2(1)(a) & A2.2(2)(b)(ii)
Identified Hazards due to Non-compliance	The potential hazard associated is the delay in first aid firefighting by trained occupants in the identified areas of FHR omission.
Acceptance Criteria	To demonstrate that the compliance with the Performance Requirement of the BCA will be met via a suitable alternative to a hose reel is provided in the identified areas.
Required Fire Safety Measures	Provision of additional fire extinguishers in accordance with AS 2444-2001 as follows: • ABE type fire extinguishers in the F&B, comms, plant and DB rooms (high hazard areas), and • Water based fire extinguishers outside the merchandise room.

5.5.1 Background

BCA Clause E1.4 states that fire hose reels must be provided in accordance with AS 2441-2018 which includes coverage throughout the building. Compliant fire hose reel coverage is achieved throughout the majority of the Grandstand in accordance with AS 2441-2018. However, the fire rated rooms on the Ground Floor, i.e., the F&B, merchandise, comms, DB and plant rooms, are proposed to not be provided with FHR coverage.

Clause E1.4 (f) restricts the coverage of fire hose reels from passing through doorways fitted with fire or smoke doors. The guide to the BCA elaborates that this requirement is to prevent a door from being held while the fire hose reel is in use, breaching the smoke or fire compartmentation. In the event of a fire hose reel passing the smoke doors surrounding the court, the smoke compartmentation required as specified in Section 3.2.1 would potentially be compromised.

Instead it is proposed to provide portable fire extinguishers to the fire rated rooms. The extinguishers provided in accordance with AS 2444-2001, appropriate to the size of the area they are serving.

5.5.2 Assessment

The removal of FHR coverage to the fire rated rooms is required to allow for compartmentation to be maintained. Where FHR coverage is not provided, additional fire extinguishers of a type suitable to the hazard will be provided. These are as follows:

- Additional ABE type (or other as deemed appropriate for the hazard) fire extinguishers within the high hazard rooms: F&B, comms, plant, DB and MSB rooms.
- Additional water-based fire extinguisher provided outside the merchandise room.

All compartment areas have a relatively small compartment area of 80m^2 or less (Table 10).

Table 10 Compartments without FHR coverage summary

Compartment without FHR coverage	Approximate Floor Area (m^2)	Hazard Type	Portable Extinguisher Type
4 x F&B rooms	80 (each)	Oil or grease fires/electrical hazards/flammable items/.	ABE type. If deemed appropriate for the hazard, another type (i.e., Class F) may be required (e.g. if oil cooking/deep fryers are present (internally located)
Plant room	40	Electrical fault/hazard associated with combustible materials, machinery or equipment. Low occupancy rate – staff only.	ABE type (internally located)
Comms room	13	Electrical hazards. Low occupancy rate – staff only.	ABE type (internally located)
DB and MSB room	3.5	Electrical hazards. Small area. Low occupancy rate – staff only.	ABE type (internally located)
Merchandise room	32	Public access/tampering hazards/ combustible retail materials	Water-based (externally located)

This strategy is considered to be acceptable based on the following:

- Additional extinguishers suitably selected of a type appropriate to the fuel hazards (in accordance with Table E1.6 of the BCA and AS 2444-2001 Clauses 1-4) shall be provided in areas where FHR coverage is not provided. A summary of these areas and extinguisher types is provided in Table 10.
- If a fire were to occur in one of these rooms, occupants would be expected to easily locate the fire extinguishers provided and undertake initial attack on the fire.
- When accessing a FHR, the occupant needs to open the stop valve before the nozzle can be disengaged from the nozzle interlock, to roll out the hose, and to negotiate the hose around bends and corners if necessary. In the event of a fire in one of the rooms with non-compliant FHR coverage, the time required to retrieve a FHR and then return to the fire site is expected to be longer than the time required to retrieve a portable fire extinguisher.

- Accordingly, the fire is likely to be relatively larger when water is discharged from a fire hose reel compared to when a portable extinguisher is discharged due to the longer time required for bring a fire hose to the fire site.
- Handheld fire extinguishers are advantageous relative to FHRs as they can contain different suppressants (other than water only) specific to the application required. This is advantageous in the F&B, plant, comms and DB room where various hazard types are present. The ABE type extinguishers provide superior coverage in these spaces to tackle potential grease or electrical fires (Table 10).
- Handheld fire extinguishers allow for compartmentation to be maintained as doors to the spaces are not required to be held open during first attack firefighting as would be required with FHR coverage. If a fire were to occur in one of the rooms, it will likely be contained within the compartment of fire origin. As first response firefighting equipment is still provided, the method is equivalent to a DtS design.
- As the extinguisher to the merchandise room is in a publicly accessible area, it shall be located externally to improve visibility and reduce the likelihood of tampering. All other rooms listed in Table 10 shall be provided with extinguishers within the rooms.
- All staff and security with access to the rooms listed in Table 10 are expected to be alert, mobile and capable of carrying out first attack fire-fighting using portable fire extinguishers. These staff shall be notified of the location of FHRs and fire extinguishers throughout the Grandstand the fire safety training.
- The DB, MSB, comms and plant rooms have a small floor area and are expected to have very low occupancy levels consisting of staff only. Due to the small floor area, an occupant remaining in the area for an extended period of time may pose a greater hazard than other areas within the stadium. A fire extinguisher provides a faster form of first aid firefighting (as discussed below) and is considered a more appropriate firefighting measure.

5.5.3 Conclusion

Based on the above assessment, it is considered that the Performance Solution meets Performance Requirement EP1.1.

5.6 Omission of exit signage above doors in corporate suites, toilet and merchandise rooms

Issue 6	Required emergency exit signage shall be omitted from the corporate suites, amenities and merchandise room.
BCA Clause	E4.5(d)
Performance Requirements	EP4.2
Method of Assessment	An absolute and qualitative assessment in accordance with BCA Clauses A2.2(1)(a) & A2.2(2)(b)(ii)
Identified Hazards due to Non-compliance	The potential hazard associated with the proposed design is that occupants may be unable to locate an exit during egress in the event of a fire.
Acceptance Criteria	To demonstrate that, in the event of a fire, occupants in the corporate suites, amenities or merchandise room will be able to safely navigate their way to an exit.
Required Fire Safety Measures	• Compliant emergency lighting shall be provided in the above-mentioned rooms. • Compliant exit signage shall be provided in all other required areas. • Rooms without exit signage have a simple layout and a single access (entry/exit) door.

5.6.1 Background

Clause E4.5 of the BCA states that an exit sign must be clearly visible to persons approaching the exit, and must be installed on, above or adjacent to each:

a) door providing direct egress from a storey to:

i. an enclosed stairway, passageway or ramp serving as a required exit; and

ii. an external stairway, passageway or ramp serving as a required exit; and

iii. an external access balcony leading to a required exit; and

b) door from an enclosed stairway, passageway or ramp at every level of discharge to a road or open space; and

c) horizontal exit; and

d) door serving as, or forming part of, a required exit in a storey required to be provided with emergency lighting in accordance with E4.2.

As the floor area of Level 1 is greater than 300m^2 and the building is Class 9b, emergency lighting and exit signs are required (BCA Clause E4.2). However, it is proposed that exit signs are omitted from the corporate suites, toilets and merchandise room . Emergency lighting will remain fully compliant and compliant exit signage is achieved in all other areas.

5.6.2 Assessment

The Guide to the BCA outlines that the intent of providing sufficient directional signs is to minimise the risk of death or injury to occupants during an emergency because of an inability to find an exit.

The proposed design is not considered to hinder the ability of occupants to find an exit and is considered acceptable based on the following:

- The corporate suites, toilets and merchandise room are small (less than 50m^2) with simple layouts as can be seen in Figure 21. It is unlikely that wayfinding be difficult for occupant in an emergency event as the access door to the room through which they entered will be close by.

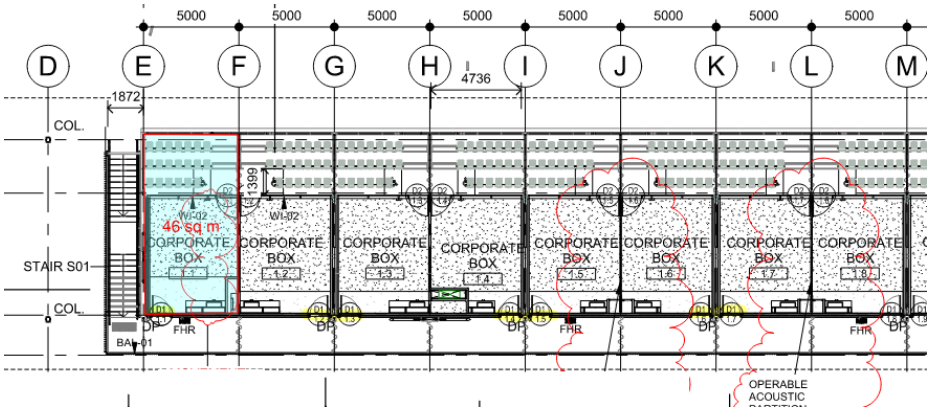

Figure 21 Level 1 - indicative locations of corporate suite doors with omitted exit signage (highlighted)

- The nominated rooms contain only one access door that occupants will use for both entry and exit. Occupants within the rooms are expected to be familiar with the route by which they entered the room, and subsequently the exit that they would need to take in the event of an emergency. Therefore, despite the omission of exit signage from the door, occupants are expected to be able to locate their nearest exit without significant delay.
- Compliant exit signage is provided throughout the remainder of the building, including the common areas (such as walkways). Once occupants of the corporate suites, toilets or merchandise room exit the single room to the egress routes, they will be able to follow the compliant signage to an exit.
- In addition to the above, compliant emergency lighting shall be provided in accordance with AS 2293.1-2018. Therefore, occupants are expected to be able to find their way to the door and follow the exit signs in the common areas to an exit.

5.6.3 Conclusion

Based on the above assessment, it is considered that the Performance Solution meets Performance Requirement EP4.2.

6 Conclusion

This assessment has been reviewed by Alistair Morrison, who is an Accredited Certifier (BPB2136) in the category of fire safety engineering compliance (C10).

As outlined in the introduction, the purpose of this Fire Engineering Report (FER) is to provide the details of the fire safety strategies, acceptance criteria and assessment methodologies for the Performance Solutions associated with this project.

The Performance Solutions documented demonstrate that the proposed works comply with those BCA Performance Requirements that are relevant to the Performance Solutions identified by the Principal Certifying Authority and addressed within this assessment.

In order to comply with the Performance Requirements identified in this report, all fire safety measures described in this document must be adopted and maintained and any assumptions and limitations must be adhered to.

This assessment does not constitute a Compliance Certificate.

7 References

7.1 Project documentation

In addition to the documentation appended to this report, the following documentation was relied upon:

[1] Sydney Speedway architectural drawings, Revision T4, Cox Architecture, updated 4th September 2020; a set of drawings for RFI Responses / Fire Line Updates, updated 16th March 2021 / Fire Line Updates, updated 31st March 2021.

[2] Sydney Speedway structural drawings, Arup, dated 4th September 2020.

[3] BCA assessment report (2020/0186 R1.0), Steve Watson and Partners, May 2020.

[4] Fire engineering brief questionnaire (FRN20/2128, V2 BFS20/2006), Arup, 2nd July 2020.

7.2 Information references

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[11] BS EN 1991-1-2, “Eurocode 1 – Actions on Structures General Actions – Action On Structures Exposed To Fire”, BSI.

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[23] "Guideline 15- Fire Safety Engineered Performance Solutions", Department of Fire and Emergency Services, Government of Western Australia, 2017.

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[25] Campbell, R. (2015), U.S. Structure Fires in Stores and Other Mercantile Properties, National Fire Protection Association - Fire Analysis and Research Division, Quincy, MA

[26] U.S Fire Administration National Fire Centre. (2014). Topical Fire Report Series – Nonresidential Buildings (2014-2016). U.S Department of Home Security, Maryland, United States.

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Appendix A

Fire Safety Objectives

A1 Fire Safety Objectives

A1.1 BCA requirements

The Building Code of Australia (BCA) gives a number of Performance Requirements that a building solution must achieve for fire safety. The purpose of these requirements is to:

- Provide adequate occupant life safety;
- Assist the protection of other property; and
- Facilitate fire brigade operations.

Fire brigade safety during operations is considered to be primarily achieved through fire brigade operational procedures. However, the BCA requires that the design and systems facilitate fire brigade operations. Any Performance Solutions will be subject to the referral of FRNSW and approval of the PCA. The BCA does not address property protection or business continuity, and as such these are not specifically included in the design.

A1.2 Compliance with the Building Regulations

The Building Regulations state that the building must comply with the BCA.

BCA Clause A2.0 states: "Compliance with the NCC is achieved by comply with the Governing Requirements of the NCC and the Performance Requirements".

Therefore, the Performance Requirements are the only part of the BCA with which a design must comply. The BCA Objectives and Functional Statements are given as guidance to explain the intent of the Performance Requirements.

Clause A2.1 of the BCA states Performance Requirements are satisfied by one of the following:

1. A Performance Solution;
2. A Deemed-to-Satisfy Solution; or
3. A combination of (1) and (2).

Accordingly, the Performance Solutions of this report will be demonstrated to comply with the Performance Requirements using Clause A2.2 of the BCA.

Subject to any limitations imposed by the commercial terms of our appointment, the approach adopted by Arup is generally in accordance with the International Fire Engineering Guidelines[6] and the earlier Fire Engineering Guidelines[7] as well as the Society of Fire Safety Code of Practice[8] where appropriate.

Any Performance Solution will be subject to the approval of the PCA.

This report does not assess the level of property protection, business interruption or environmental protection associated with the development. The assessment is

limited to compliance with the Building Regulations, which excludes the above issues.

Issues related to Occupational Health and Safety (OH&S) or community protection are outside the scope of this report, except where directly relevant to the Performance Solutions presented.

A1.3 Property Protection

Arup makes all reasonable efforts to incorporate practical and advanced fire protection concepts into its advice. However, it is to be recognised that fire protection is not an exact science and that no building design can guarantee freedom from ignition or fire damage.

The protection of property from fire is an issue that requires clarification for each project being assessed through a performance-based approach. The Productivity Commission has indicated the following regarding BCA fire safety objectives:

"*The ABCB Chairman submitted that the BCA's goal in the area of fire safety is:*

…to protect the lives of building occupants, facilitate fire brigade intervention in the event of emergency, and protect adjacent property from the spread of fire and physical damage caused by structural failure.

It would appear to be generally accepted that the property protection of a building that is on fire is not a primary objective of the Code (although a level of property protection would often be an indirect consequence of fire safety measures directed at protecting building occupants). Provided the BCA's spread of fire criteria have been satisfied, a building may burn down and technically still have complied with the Performance Requirements of the Code."

Each State and Territory has its own Fire Brigade or Fire Service Act that has its own set of fire safety objectives, which may differ from those of the BCA, in respect to the protection of property. There may also be differing requirements from insurers with regard to protection of property and business interruption. Productivity Commission Report Finding 6.4 states the following:

"The degree of property protection from fire in the objectives of the BCA is different to that generally required by fire authorities' legislation (and some insurance companies) in relation to building performance, particularly for commercial buildings."

In an attempt to resolve the issue of conflicting objectives, the Productivity Commission Report provided the following guidance:

"As a general principle, property owners are best placed to determine the optimal level of fire protection, based on their expectations with respect to the risk of a fire incident and the estimated financial and other losses should a fire event occur. With an efficient insurance market, premiums would accurately reflect differences in risk, and provide further signals/incentives to the building owner to achieve the appropriate trade-off between risk exposure and cost of property protection measures."

The above information is provided in this report so that the building owner can make themselves aware of the BCA objectives regarding protection of property

from fire. It is understood for this project that the building owner has no specific fire safety objectives, other than those of the BCA. Decisions on property protection and business interruption are left for the owners to make in consultation with their insurers.

This report does not address insurance issues. It is recommended that relevant insurers are advised of the contents of this report, so that insurance issues can be appropriately addressed between the building owner and/or operator and their insurer.

Appendix B

Assumptions and Limitations

B1 Assumptions and Limitations

The main assumptions used in this report and the consideration of the fire strategy are set out below, to clarify the issues and give a clear understanding of the strategy to be implemented.

Given the unique and variable nature of deliberate fire scenarios (i.e. arson), the assumptions and limitations related specifically to arson events have been discussed separately in the section below.

The conclusions of this report may not be valid if any of the assumptions are incorrect. Similarly, any assumptions or limitations which are not met in the final design may invalidate the conclusions of this report and require further assessment of the individual situation.

B1.1 Assumptions

The following assumptions have been made in this report:

- All fire safety aspects of the development which are not addressed within this report comply with the DtS provisions of the BCA, unless otherwise noted.
- The assessment and analysis has been based on the assumption that the development will be completed as indicated in the documents provided. All fire safety issues during construction are outside the scope of this report.
- All fire safety systems and management strategies will be installed and maintained in accordance with the fire engineering report requirements and the relevant Building Regulations and Australian Standards.
- All existing fire safety reports have been fully incorporated into the building and all fire safety measures are maintained in accordance with the relevant Australian Standards.
- All the occupant numbers and characteristics are assumed to be as set out in the relevant sections of this report.

B1.2 Limitations

The following limitations apply to the fire safety analysis performed. Any change in the limitations may alter the final design solution and therefore should be referred to a suitably qualified fire engineer for review prior to any change.

- Any change in the building including use, occupant characteristics or fuel conditions outside the parameters of this report may invalidate the conclusions of this report.
- The conclusions of this report may not apply if all requirements are not fully implemented as described in this report.

- The analysis and recommendations contained herein are limited to those issues and fire safety measures affecting the life safety of building occupants. Evaluation of the expected level of fire induced property damage with respect to the contents and building structure is specifically excluded. Responsibility for the protection of property and re-instatement of any damage is considered to be beyond the scope of this report.

Any changes of occupancy, or changes to future proposed tenancy design may mean the results of this report are invalid and re-evaluation of the strategy and/or design will be required.

B1.3 Arson

The client has not indicated that the subject facility is considered a likely target for organised terrorist or criminal arson attack and has not requested that deliberate large scale malicious arson events be included in our fire engineering assessment of Performance Solutions.

However, in accordance with the International Fire Engineering Guidelines (IFEG)[6] fire engineers are required to consider the possibility of single ignition arson events, in addition to accidental fires. There are two basic approaches under accepted practice for the consideration of arson; i.e. prevention or protection. Either of these approaches is acceptable in accordance with the IFEG:

- The "Protective" approach would involve assessing the impact of escalating the design fire scenarios to test the sensitivity to accelerated fire growth rates, failure of sprinklers, fires occurring in unlikely locations etc. which would potentially lead to more onerous requirements being placed on the design.
- The "Preventative" approach would aim to minimise the possibility of a malicious attack, by use of suitable security measures.

It is assumed that the client prefers not to adopt the protective approach and will therefore rely on building security and/or operational measures to reduce the risk of arson. The specification of suitable measures lies outside the scope of this report however the reader is directed to the UK arson prevention website and the recommendations contained in the Fire Protection Association handbook on the Prevention and Control of Arson.

Accordingly, with regard to arson protection, the assessment considers only an amateur arson attack of limited proportions. Organised criminal or terrorist attacks have not been considered.

The possibility of arson attacks is included in the assessment on the following basis:

- An arson attack results in a single fire and associated with the ignition of the fuel load typically expected within the affected part of the building;

Due to the above, the fire scenarios and fire growth rates considered for accidental fires are also considered applicable for arson fire scenarios.

B1.4 General assumptions

Any change to the building design or use may mean that the assumptions are not valid, in which case the report is to be reviewed by a suitably qualified and Accredited Fire Safety Engineer and/or Building Surveyor. The conclusions of this report may not be valid if the assumptions are incorrect.

Some assumptions below discuss the expectations of staff and other occupants. These assumptions are not to impose additional management requirements, rather they outline the basic assumptions which relate to a Deemed to Satisfy building and legislative requirements for maintenance and training of staff, which is a reasonable expectation for such a highly managed institution. It is understood that there may be a small proportion of occupants for which the assumptions do not apply (e.g. new staff who have yet to undergo training) however, the fire engineering strategy is made up of many layers of fire safety and is considered robust enough to account for some staff who may not be fully trained or a small number of on call staff asleep while other staff are attending patients.

The following General assumptions have been made in this report (Other more specific assumptions may be contained within the assessments of this report as inputs into the design):

- All fire safety aspects of the development which are not addressed within this report comply with the DtS provisions of the BCA, unless otherwise noted.
- The assessment and analysis are based on the assumption that the development is complete and operational.
- Any significant changes to the design drawings and/or specifications will be referred to the relevant Fire Safety Engineer for review prior to acceptance.
- It is assumed that the design drawings and specifications supplied and upon which this assessment is based, as detailed within this report, are accurate with respect to the final as-built condition of the facility. No liability is taken for the accuracy of the supplied documentation, which forms as the basis of this assessment.
- All required fire safety measures are maintained in accordance with the list of Essential Safety Measures.
- All specific assumptions or limitations on the use of the building as detailed on the list of Essential Safety measures are correct and are being adhered to. The frequency of checks is to be as determined on the list of Essential Safety Measures.

Upon any change of ownership of the building, the responsibilities in regard to fire safety are transferred to the new owner.

Appendix C

Structural Fire Analysis

C1 Structural fire analysis

C1.1 Limiting Temperature

The limiting temperature of steel is determined in accordance with AS4100 which provides the following variation of yield stress with temperature:

$$\frac{f_y(T)}{f_y(20)} = 1.0 \qquad \text{when } 0°C < T \leq 215°C$$

$$= \frac{905 - T}{690} \qquad \text{when } 215°C < T \leq 905°C$$

where $f_y(T)$ is the yield stress of steel at temperature of T (°C)
$f_y(20)$ is the yield stress of steel at temperature of 20°C
T is the temperature of the steel (°C)

Based upon the load ratio the limiting steel temperature (T_l) will be determined as follows:

$$T_l = 905 - 690 r_f$$

where r_f is the ratio of the design action on the member under the design load to the design capacity of the member at room temperature, known as the member utilisation.

The limiting temperatures for the unprotected steel beams and columns have been provided by the structural engineer (Arup) and are shown in Table 5.

C1.2 Scenario 1: Amenities Fire

A severe fire occurring inside the toilets is considered unlikely as the ignition risks and the fuel load are low. The IFEG[6] recommends a fuel load of approximately zero for water closets. Notwithstanding this, the structure could be exposed to heating from a small localised fire within the amenities, which has been considered in the below assessment for conservatism.

A worst-case credible design fire for the analysis is taken as a paper filled wastepaper basket fire with the following characteristics:

- Peak heat release rate = 0.12MW[21] for a waste-paper basket fire;
- Diameter = 0.29m[22] to represent the base of a waste-paper basket.
- No first response firefighting efforts have been considered.
- As a worst-case scenario, the design fire location is immediately adjacent to a steel column.

C1.2.1 Steel Column Assessment

Arup developed software 'FlashOva' was used to calculate the temperature of a steel column located 0.5m from the design fire.
This is based on fire principle and view factors, the basis of which can be found in SFPE Handbook of Fire Protection Engineering, Chapter 11, Third Edition, 2012.
An image of the inputs required for the assessment is shown below.
The input values for the assessment are shown in Figure 22. The emissivity is assumed to be 1, as recommended by the Fire Engineering Design Guide [7].

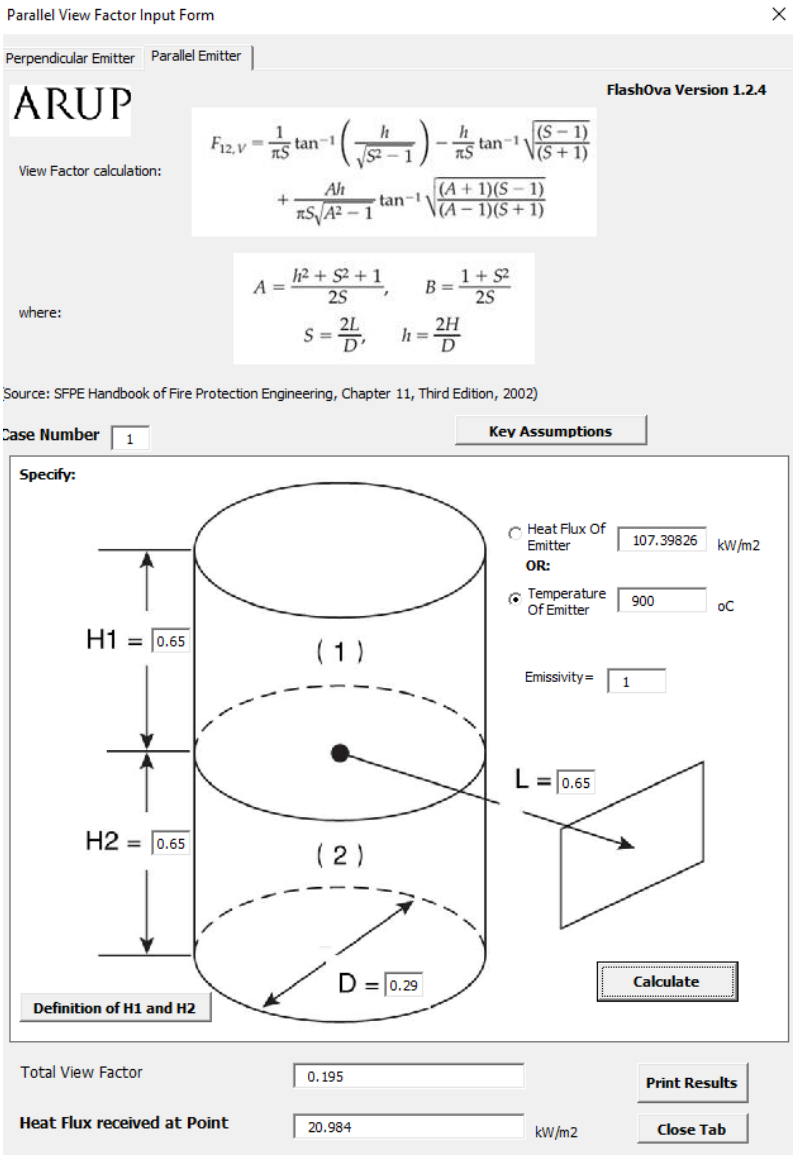

Figure 22 FlashOva inputs: Scenario 1

Therefore the heat flux received at the steel column is 21kW/m^2 for this design fire.

The cylindrical flame was calculated based on the width of the wastepaper basket (029m) of the rubbish bin. The height is taken as the flame height (1.3m). It is assumed the flame temperature is 900°C based on the maximum temperature at

the base of an axisymmetric plume, as recommended by BS EN 1991-1-2[20]. The corresponding emitting heat flux is therefore 20.98kW/m^2.

FlashOva outputs the results in terms of heat flux received at the point (i.e. column in this case). This can be converted to temperature based on the following equation (Drysdale (2011)).

$$\dot{q}_r'' = \varepsilon\sigma T^4$$

Where:

$\dot{q}_r''$ = radiative heat flux (kW/m²)

ε = emissivity (-)

σ = Stefan-Boltzmann constant (5.67x10^{-8} W/m²/K^4)

T = temperature (K)

Table 11 Scenario 1 FlashOva Results

Height of radiating cylinder (flame height)	**Width of radiating panel**	**Distance to steel structure**	**Heat flux received at point ($\dot{q}_r''$)**	**Temperature at point**
1.3 / 2 = 0.65m	0.29m	0.29/2 + 0.5	20.98 kW/m²	507°C

The temperature at the steel columns is therefore 507°C. As plume temperature range is less than the limiting steel temperature (675°C), the column shall retain structural integrity in this fire scenario with the proposed (nil) level of fire protection.

C1.2.2 Steel Beam Assessment

The temperature of the steel beams were calculated using the Eurocode 1 (BS EN1991-1-2)[20] method.

The analysis consists of:

- Calculating the flame height based on the fire size (heat release rate and diameter) and determining whether the members are engulfed in flame. The flame height equation specified by EN1991-1-2 is as follows:

$$L_f = -1.02D + 0.0148Q^{2/5}$$

Where:

L_f is the calculated flame height (m)

D is the diameter of the fire (m)

Q is the heat release rate of the fire (kW)

The input parameters for Scenario 1 are as follows:

Table 12 Scenario 1 fire input parameters

Parameter	Value
D	0.29m
Q	120kW

The flame height is therefore 1.3m, well below the height of the beam (3.45m to the lower side of the beam).

As the structural component is not engulfed in flame, the plume temperature at the height of the component is calculated. The steel temperature is assumed to be equivalent to the plume temperature. This is conservative as it does not consider the thermal mass of the steel and transient heating of the steel. The plume temperature correlation specified by BS EN1991-1-2 (Annex C, C.2) is as follows:

$$\theta_z = 20 + 0.25 Q_c^{\frac{2}{3}} (z - z_0)^{-5/3} \leq 900°C$$

Where:

θ_z is the calculated surrounding plume temperature (°C)

Q_c is the convective portion of the heat release rate (W)

z is the height along the flame axis (m)

z_0 is the virtual origin

- If the plume temperature is less than the *limiting temperature* of the structural component, then it is considered that no fire protection is required.
- If however the plume temperature is greater than the *limiting temperature*, further detailed analysis is undertaken, considering the thermal mass of the steel, to assess if the structural element has enough inherent fire resistance to resist the design fire temperatures.

The input parameters for Scenario 1 are as follows:

Table 13 Scenario 1 fire input parameters

Parameter	Value
Q_c	0.8 x Q = 96kW
z	4.25 – 0.8 = 3.45
z_0	0.27

The plume temperature is therefore 96.1°C. As 96.1°C is less than the limiting temperature, the inherent fire resistance of the beam is sufficient to resist the design fire temperatures.

C1.3 Scenario 2: Rubbish Bin Fire

C1.3.1 Steel Column Assessment

It is a requirement within the fire safety measures for no combustible material to encroach the space within 1.0m of the unprotected steel columns supporting Level 1. This requirement is justified based on the following analysis based on the required combustible separation as given in NFPA 92 equation 5.2.5.3b (extracted below).

$$R = \left(\frac{Q_r}{4\pi q_r''} \right)^{1/2} \qquad \textbf{(5.2.5.3b)}$$

where:
R = separation distance from target to center of fuel package (m)
Q_r = radiative portion of the heat release rate of the fire (kW)
q_r'' = incident radiant flux required for piloted ignition (kW/m^2)

The radiative portion of the heat release rate is given by equation 5.2.5.4b in NFPA92:400.

$$Q_r = \xi Q \qquad \textbf{(5.2.5.4b)}$$

where:
Q_r = radiative portion of the heat release rate of the fire (kW)
ξ = radiative fraction (dimensionless)
Q = heat release rate of the fire (kW)

5.2.5.5 A value of 0.3 shall be used for the radiative fraction unless another value is substantiated in accordance with test data.

5.2.5.7 A value of 0.9 Btu/ft^2· sec (10 kW/m^2) shall be used for the incident radiant heat flux required for piloted ignition unless another value is substantiated in accordance with approved test data.

The peak HRR of the fire is assumed to be 350kW for a large, densely packed trash bag. The radiative portion of the HRR is therefore 105kW. Based on the maximum heat release rate from one bin of 350kW, the reference radiative fraction and an incident radiant flux for piloted ignition, the separation distance is considered to be 0.91 m. Thus, a separation distance of 1.0m from the perimeter room is considered appropriate.

Arup developed software ‘FlashOva’ was used to calculate the temperature of a nearby unprotected steel column with the design fire in Scenario 2.

This is based on fire principle and view factors, the basis of which can be found in SFPE Handbook of Fire Protection Engineering, Chapter 11, Third Edition, 2012. An image of the inputs required for the assessment is shown below.

The emissivity is 1, as recommended by the Fire Engineering Design Guide[7] and the input values are shown in Figure 23 and Figure 24.

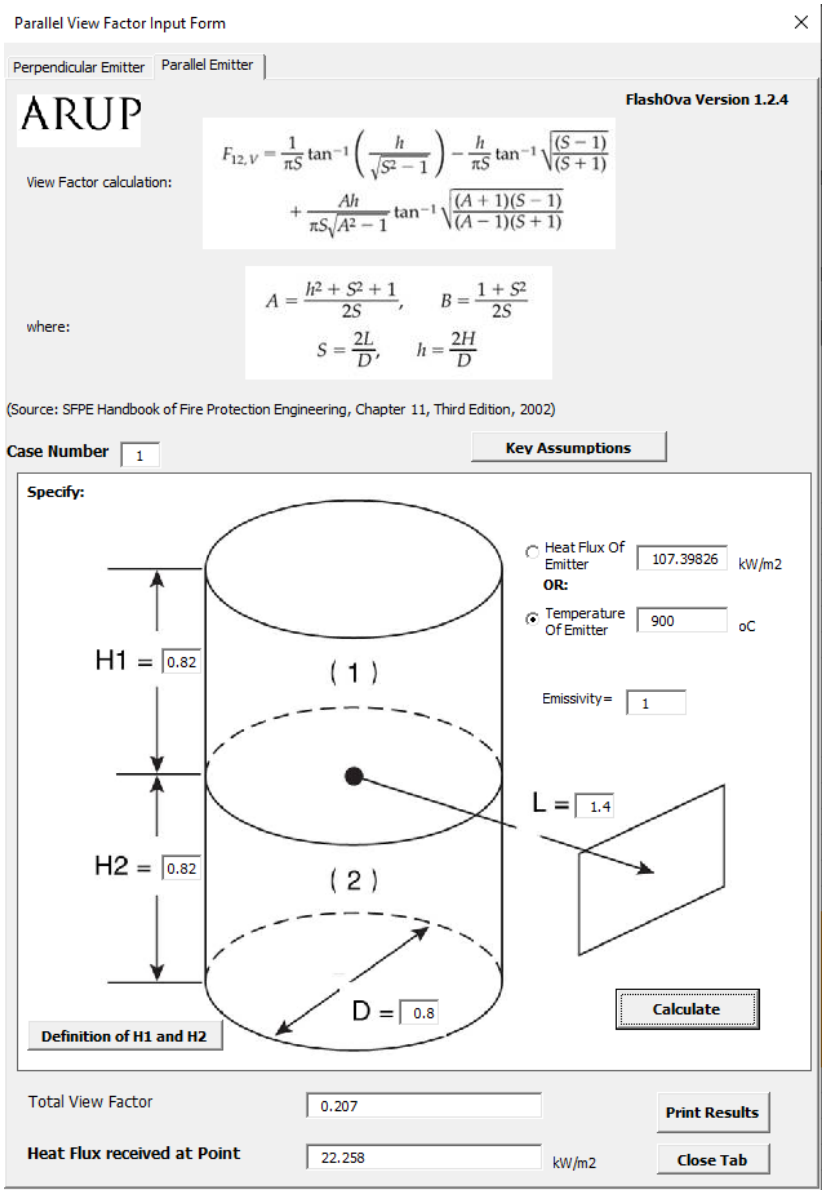

Figure 23 FlashOva inputs - Scenario 2 (1)

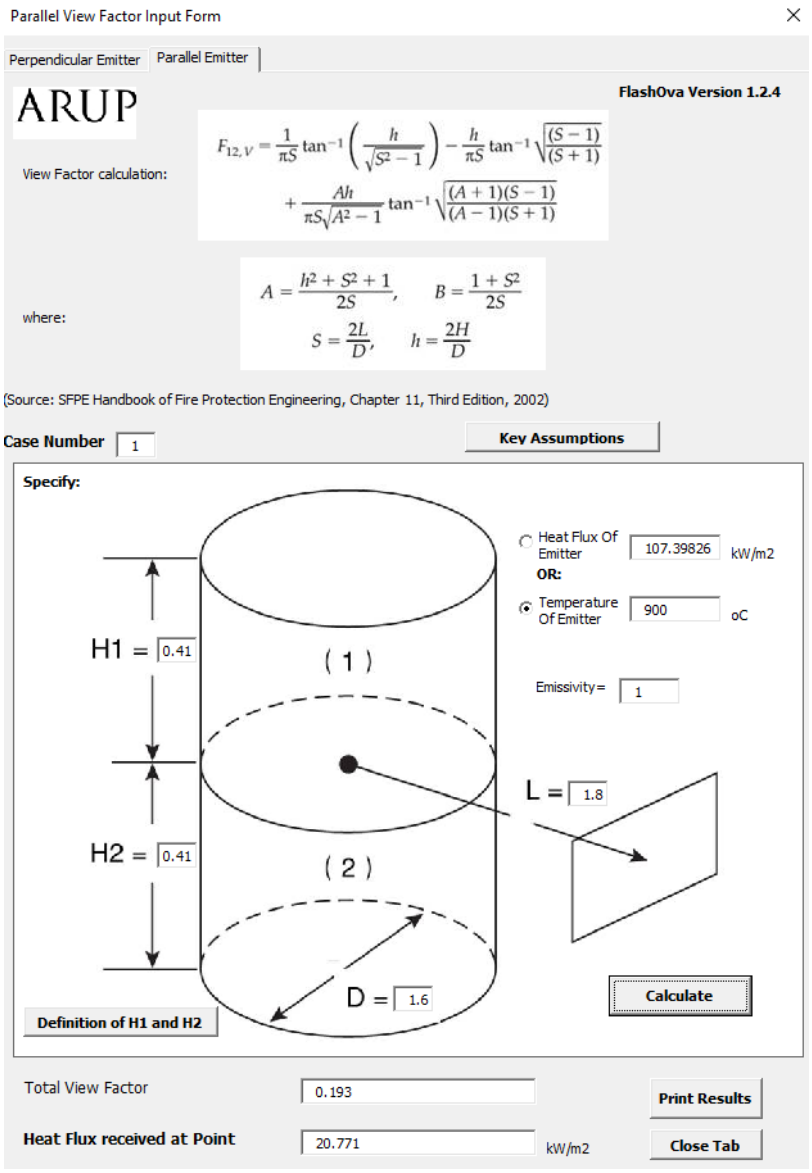

Figure 24 FlashOva inputs - Scenario 2 (2)

The cylindrical flame was calculated based on the width (0.8m – 1.6m) and height (1.64 m) of the rubbish bin. It is assumed the flame temperature is 900°C based on the maximum temperature at the base of an axisymmetric plume, as recommended by BS EN 1991-1-2[20]. The corresponding emitting heat flux is therefore 107.4kW/m^2.

FlashOva outputs the results in terms of heat flux received at the point (i.e. column in this case). This can be converted to temperature based on the following equation (Drysdale (2011)).

$$\dot{q}_r'' = \varepsilon\sigma T^4$$

Where:

$\dot{q}_r''$ = radiative heat flux (kW/m²)

ε = emissivity (-)

σ = Stefan-Boltzmann constant (5.67×10^{-8} W/m²/K⁴)

T = temperature (K)

Table 14: FlashOva Results

Height of radiating panel	Width of radiating panel	Distance to steel structure	Heat flux received at point ($\dot{q}''_r$)	Temperature at point
1.63 / 2 = 0.815m	0.8m	1.4m	22.3 kW/m²	519°C
0.82 / 2 = 0.41m	0.6m	1.8m	20.8 kW/m²	505°C

The temperature at the steel columns is therefore 519°C to 505°C. As plume temperature range is less than the limiting steel temperature (700°C), the column shall retain structural integrity in this fire scenario with the proposed (nil) level of fire protection.

C1.3.2 Steel Beam Assessment

The flame height is calculated as per Annex C of BS EN 1991-1-2:2002 and based on the fire size (equation shown in Section C1.2).

The input parameters for Scenario 3 are as follows:

Table 15 Scenario 3 fire input parameters

Parameter	Value
Area	0.5m² to 2m²
Q	350kW
D	0.8 to 1.6m
Lf	1.63 to 0.82m

Therefore, the length of the flame is therefore 1.63 to 0.82m.

The temperature in the plume is found from equation C.2, Annex C of BS EN 1991-1-2:2002 (equation shown in Section C1.2) with the input parameters as follows:

Parameter	Value
Q_c	0.8 x Q = 280kW
z	4.25 – 0.8 = 3.45
z_0	0.27

The plume temperature at the steel beam is therefore 159.3°C to 117.4°C. As plume temperature range is less than the limiting steel temperature (700°C), the beam is not calculated to fail in this scenario with the proposed (nil) level of fire protection.

Appendix D

Radiative Heat Assessment

D1 Radiative Heat Assessment

D1.1 Calculating the received radiation

The Arup developed tool FlashOva is used, which is based on view factor and heat flux calculations.

The following inputs are used:

- The radiating panel emits radiation at a heat flux of 84kW/m² for a typical office, residential, assembly or recreation purpose groups[23]. This value is more onerous than what is expected in the corporate level of Sydney Speedway and is considered an acceptable conservative approach. This heat flux is equivalent to a flame temperature of approximately 860°C.
- As the walls of Level 1 are not fire rated, they are assumed to fail in a fire event. As such, the width of the fire compartment of origin (one corporate box) is used as the width of the radiative panel.

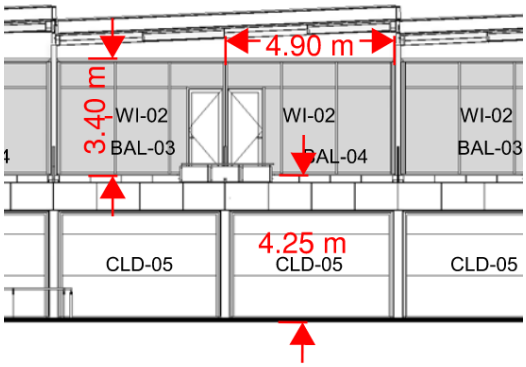

Figure 25 Geometry of Level 1

- The 2.0m Level 1 walkway (Figure 26) is expected to shield the external hydrants on the Ground Floor from a fire within a Level 1 room. The horizontal length in the radiative heat assessment incorporates this 2.0m in addition to the 2.7m offset of the hydrants from the Ground Floor (Figure 27).

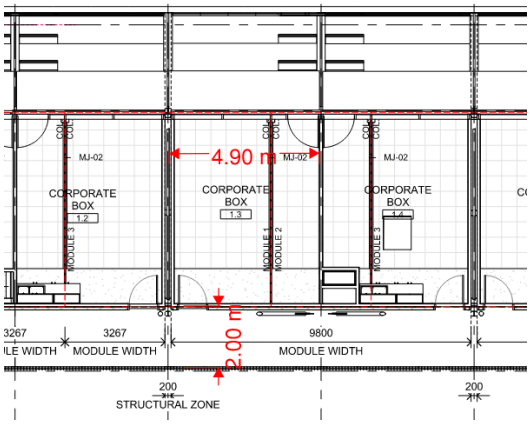

Figure 26 Radiative panel dimensions

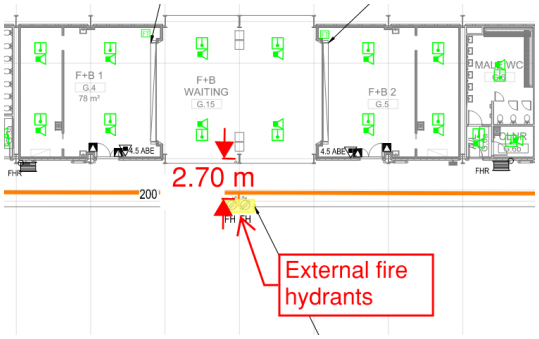

Figure 27 External hydrants location

- The distance between the Level 1 compartment (radiator) and the closest external fire hydrant (receiver) is 4.7m horizontally and 6.51m vertically to the lower end of the panel. Due to the overhanging balcony area the shielded area of the corporate box is discounted from the radiative panel dimensions. The panel is at an angle of 138.5° from the radiating panel to the hydrant.

D1.2 Results

The input values and results of the analysis are shown in Figure 28 below. As can be seen in the above figure, the heat flux received at the external hydrant in this scenario is 0.142kW/m^2. As this is below the 3kW/m^2 threshold, the location of the external hydrants is considered to meet the acceptance criteria.

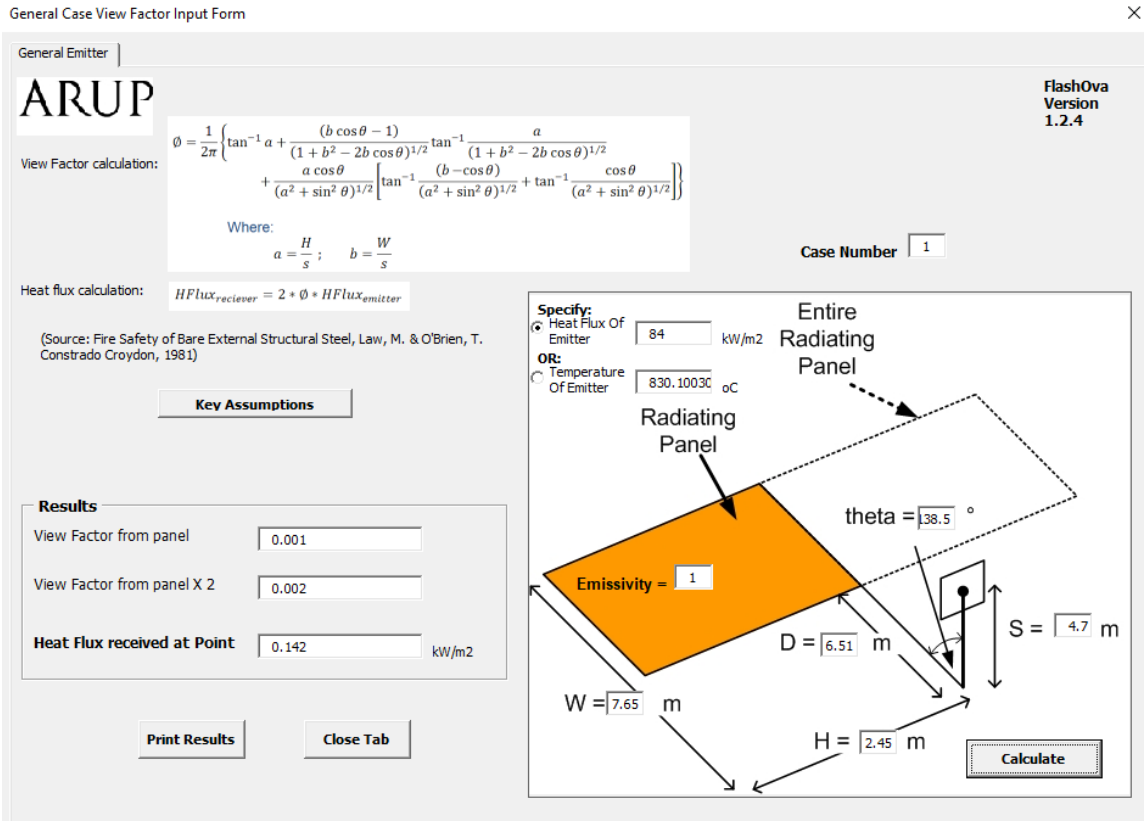

Figure 28 Radiative assessment results

Appendix E

FRNSW FEBQ Comments

E1 FRNSW FEBQ Comments

Fire Engineering Brief Questionnaire (FEBQ)

1 Document control

Applicant reference number Enter ref. no.

FRNSW reference number FRN20/2128
(V2: BFS20/2006)

Ver.	Author	Organisation	Status	Date
01	Alistair Morrison Grant Wang Tess Van Der Veen	Arup	Initial submission	2/07/2020
02	Duke Ismael	FRNSW (#12037)	Response to FEBQ Ver. 01	19/08/2020

2 Applicant

2.1 Agreement

As the applicant, I confirm the following:

- I agree to pay Fire and Rescue NSW (FRNSW) the charges set out in Clause 46 of the *Fire Brigades Regulation 2014* (see Section 10).
- I agree to forward with this application the following documentation for FRNSW to review and provide advice on the assessment methods and acceptance criteria proposed for the given performance solution:
  - ☐ Copy of proposed building plans and specifications
    (e.g. relevant floor plans, elevations, site plan, section views, hydrant plan and schematic)
  - ☐ BCA report or letter from an accredited certifier that identifies all non-compliances (if available)
  - ☐ CFD/zone modelling inputs form (if applicable)
  - ☐ Report extract of the trial design requirements/proposed fire safety measures (optional).

Name of fire engineer	Alistair Morrison	BPB number	2136
Company name	Arup		
Fire engineer's phone no.	02 9320 9320		
Fire engineer's email	Alistair.Morrison@arup.com		

2.2 Remittance advice information

Invoices will be issued based on the information provided below:

ASIC company name	Cox Architecture Pty Ltd		
Australian business number	78426 372646	Trading name	Cox Architecture
Remittance contact name	Cathy Zhu		
Remittance street address	Level 6, 155 Clarence St Sydney NSW 2000		
Remittance email address	cathy.zhu@cox.com.au		
Remittance phone number	02 92679599	Remittance fax number	02 9264 5844
Purchase order ref. no.	If applicable	Project code ref. no.	If applicable

Project leader contact name	Barnaby Hartford – Davis
Project leader contact email	Barnaby.Hartford-Davis@cox.com.au

3 Consultation

3.1 Stakeholders

Role	Name and BPB number	Organisation and phone	Email address
BCA consultant	Andrew Rhys BPB0356	Steve Watson and Partners 02 9283 6555	arys@swpartners.com.au
Certifier	Michael Potts BPB2516	Blackett Maguire + Goldsmith 02 9283 6555	michael@bmplusg.com.au
FRNSW reviewers	A/Insp Murray Mackne Engineer Duke Ismael	Fire and Rescue NSW 02 9742 7434	firesafety@fire.nsw.gov.au

3.2 Meeting details

In conjunction with the written comments provided in response to this FEBQ, FRNSW may at its discretion hold a meeting with the applicant to discuss aspects of the proposed performance solution.

Type of meeting preferred ☐ No meeting ☑ Telephone meeting ☐ Face-to-face meeting

4 Project details

4.1 Premises

Premises name	Sydney Speedway
Primary street address	Ferres road, Eastern Creek, Sydney
Secondary street address	Secondary street address (if applicable)
Premises suburb	Eastern Creek
Lot and DP numbers	N/A

4.2 Proposed works

☑ New building
☐ Refurbishment of an existing building
☐ Extension of an existing building
☐ Change in use within an existing building
☐ Other: (provide details)

Applicable NCC: NCC 2019

For existing buildings:
Approximate year of construction: **Year**
Building code when constructed: **Select**

How many performance solution issues are proposed in this FEBQ? 6

Note: The number of performance solution issues must address all identified non-compliances.

Have all departures from the deemed-to-satisfy (DtS) provisions of the *National Construction Code* (*NCC*) been identified for this proposed design (i.e. a BCA report or letter from an accredited certifier)? Yes

Note: Any advice given is subject to all non-compliances being identified. Any new DtS departures identified, including any from the certifier determining the application for construction certificate, may affect FRNSW advice in respect to this performance solution.

Identify if any previous performance solution applies to the building:

No

Identify if any application has been/will be submitted under Clause 188 of the *Environmental Planning and Assessment Regulation 2000*:

N/A

Identify if the premises is or will be subject to any development application (DA) conditions or special regulatory approvals (e.g. BPB conditions, ministerial conditions, crown building works):

Note: FRNSW will not comment on existing buildings subject to voluntary upgrade or change of use prior to the issuing of any DA conditions of consent, or conditions of an existing consent have been modified (i.e section 4.55 of *Environmental Planning and Assessment Act 1979*). Comment will also not be provided if an order has been issued unless the Council agrees. The Council may seek advice during the DA review.

Crown.

Will the premises be subject to a fire safety study, risk assessment or dangerous goods study? No

Note: Any study/risk assessment should be completed prior to submitting this FEBQ and should be attached to this application.

4.3 Description of building occupancy

Main occupancy class	9b	Largest fire compartment (within the building)	Area (m^2)	Approx 1145m^2
Other occupancy classes	6		Volume (m^3)	**Volume**
Type of construction	B		Height (m)	
Effective height (m)	4m	Ground floor area (m^2)		Appox. 1,100m^2
Rise in storeys	2	Total floor area (m^2)		Approx. 2,365m^2
Levels contained	2	Total volume (m^3)		TBC

Outline any additional building characteristics:

The proposed Sydney Speedway Grandstand and Ticketing Building (the Grandstand) is a new building at the relocated Sydney Speedway at Motorsport Park, Ferres Road, Eastern Creek. The Grandstand design consists of semi-modular construction, with prefabricated elements erected within a primary structural frame. Seating terraces are located on the fill embankment.

Sydney Speedway will be serviced by Huntingwood Fire Station, 42 Huntingwood Drive, Huntingwood, located 4.1km from the main site entrance. As a secondary option, Smithfield Fire Station, 875 The Horsley Drive, Smithfield will service the site.

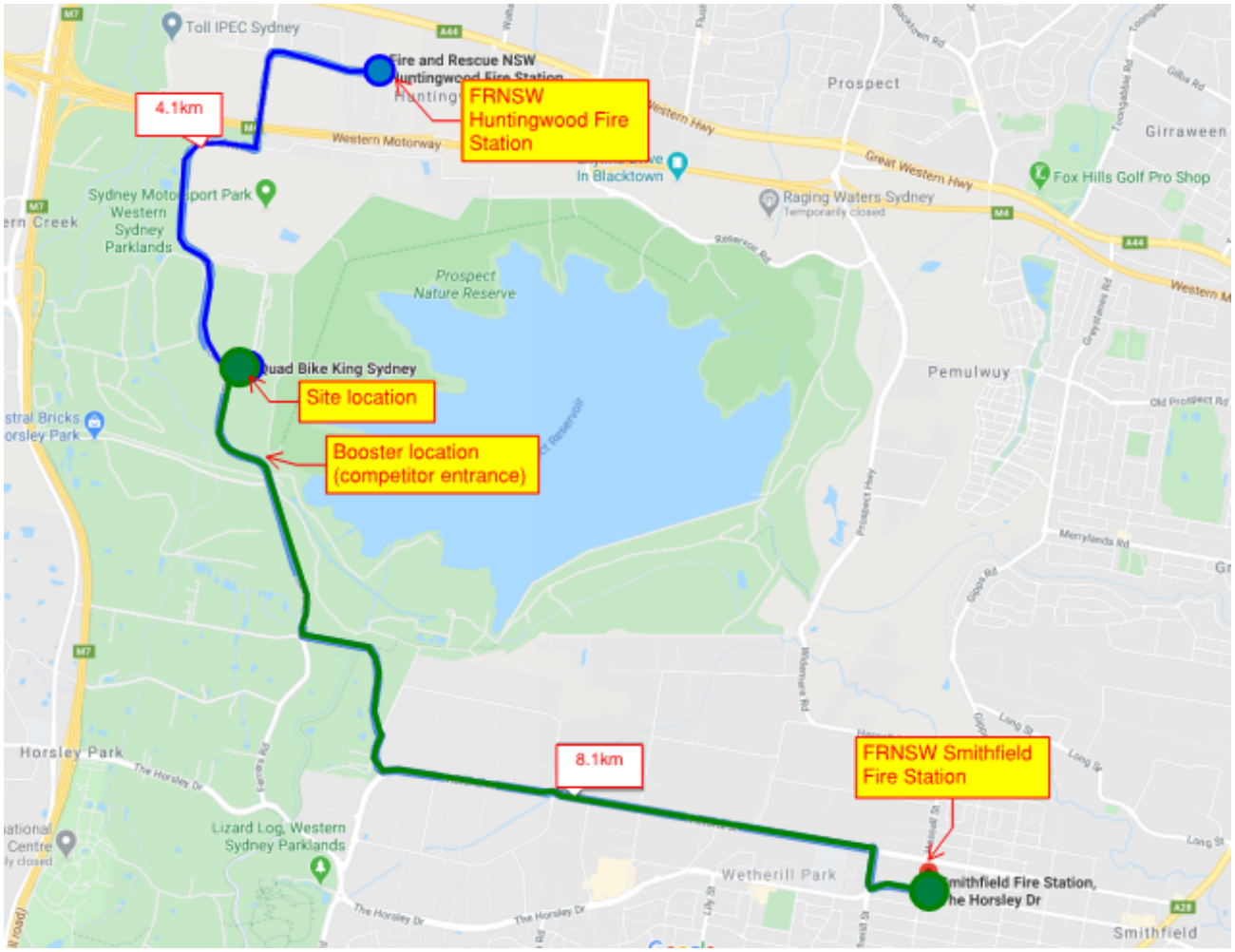

Figure 1 FRNSW Stations servicing Sydney Speedway, Eastern Creek

The Grandstand will be located along the western edge of the speedway track. The Ground Floor consists four food and beverage (F&B) outlets with large openings into the F&B waiting space for food service, amenities, plant room, merchandise room and comms room (Figure 2).

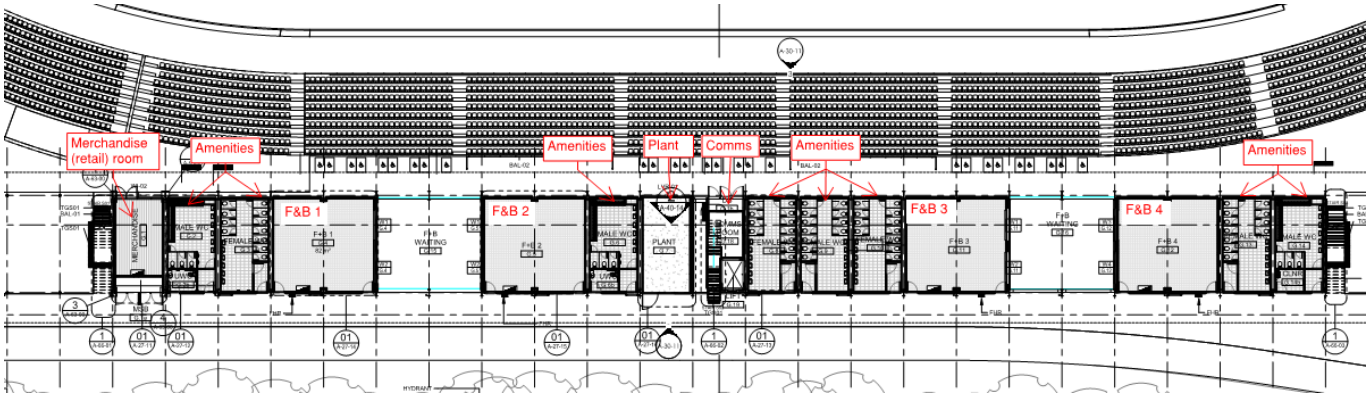

Figure 2 Ground Floor GA Plan

Level 1 of the Grandstand contains corporate boxes and one tier of seating which is accessible from the corporate boxes. Egress from the tiered seating is through the corporate boxes into a circulation hallway. Level 1 is serviced by three exits.

Level 1 floor of the Grandstand is to be constructed by using precast concrete hollow-core slabs and precast concrete terrace seating plates seating on bottom flange of steel beams. The steel beams are supported by steel columns (steel frames). The central portion of the design in Figure 2 will be prefabricated lightweight modular

floors. The construction is semi-modular and Typical structural arrangement for Level 1 is illustrated on Figure 3 below.

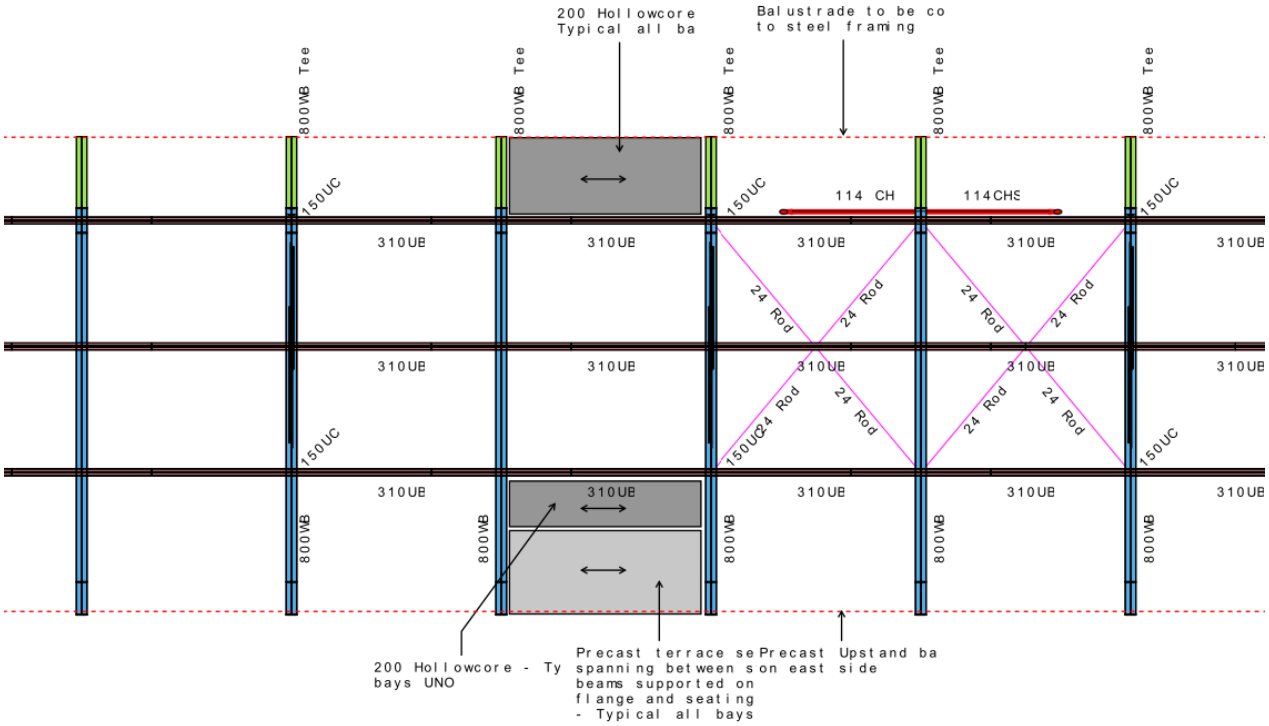

Figure 3 Typical Structural Arrangement – Level 1 Floor

In addition to the above, the following single-storey buildings are also to be located on the site:

- Workshops & Garages – Class 8;
- Ticket Booth – Class 6.

No performance solutions will be applied to these single-storey buildings.

List key occupant characteristics for the building:

- Spectators
  The total capacity of the Grandstand is 3900 spectators. This is broken down into 400 people in the building component and 3500 people in the outdoor seating component.
- Competitors
- Retail staff of food and beverage outlets
- Speedway staff (5% of total spectator population value)

5 Hazards

Outline any hazards unique to the building:

Provide details

- ☐ Combustible external cladding
- ☐ Combustible waste (i.e. waste facility)
- ☐ Hazardous chemicals / dangerous goods
- ☐ Electricity supply system (e.g. substations)
- ☐ Battery system (e.g. BSS, BESS, ESS)
- ☐ Alternative electrical generation (e.g. solar, tri-gen)
- ☐ Insulated sandwich panels
- ☐ Podium type building
- ☐ A basement level
- ☐ An atrium (Part G3 of BCA)
- ☐ Car stacker
- ☐ Other: (provide details)

Note: Clauses E1.10 and E2.3 of the NCC should be addressed when special hazards exist (e.g. car stacker, hazardous chemicals/dangerous goods).

6 Preventative and protective measures

Identify fire safety measures that are, or will be, provided throughout the building, including anything undecided, which should be mentioned as part of the FEBQ review. Additional information may be added to the comments section below to better describe any systems or indicate systems that may be subject to a performance solution.

Suppression system	Detection system	Facilities for emergency services
☐ CA16 (existing building)	☐ AS 3786:2014	☐ Emergency lifts
☐ AS 2118.1-2017	☐ AS 3786-1993 (existing building)	☐ Fire control centre
☐ AS 2118.1-2006	☑ AS 1670.1:2018	☐ Fire control room
☐ AS 2118.1-1999 (existing building)	☐ AS 1670.1:2015 (existing building)	☑ Perimeter vehicular access
☐ AS 2118.2-2010 (wall-wetting)	☐ AS 1668.1:2015	☐ Standby power supply system
☐ AS 2118.3-2010 (deluge)	☐ AS 1670.3-2018 (monitored)	**Occupant warning system**
☐ AS 2118.4-2012 (residential)	☐ AS 1670.3-2004 (existing building)	☑ Building occupant warning
☐ AS 2118.5-2006 (domestic)	☐ Smoke alarms	☐ EWIS
☐ AS 2118.6-2012 (combined)	☐ Heat alarms	☐ SSISEP
☐ FPAA101D (class 2 or 3)	☐ Smoke detectors	☐ Break glass unit
☐ FPAA101H (class 2 or 3)	☑ Heat detectors	☐ Visual / tactile alarm devices
☐ Fast response heads	☐ Flame detectors	**Signage**
☐ ESFR	☐ CO detectors	☑ Emergency lighting
☐ Storage mode sprinklers	☐ Multi-criteria fire detectors	☑ Exit and direction signs
☐ Gaseous suppression system	☐ Aspirated smoke detection	☑ Warning and operational signs
☐ Water mist system	☐ Beam detection	**Protection of openings**
Hydrant system	**Water supply**	☑ Fire doors
☑ AS 2419.1-2017	☐ Reticulated town main	☐ Smoke doors
☐ AS 2419.1-2005	☐ Private water main	☑ Solid core doors
☐ AS 2419.1-1994 (existing building)	☑ Onsite storage tank	☐ Fire windows
☐ Ordinance 70 (existing building)	☐ Gravity tank/reservoir	☑ Fire shutters
☑ External hydrants	☐ Dual supply	☐ Wall-wetting sprinklers
☐ Internal hydrants	**Smoke hazard management**	☐ Fire curtain
☐ Internal dry-riser (for Class 2/3)	☐ Zone smoke control	☐ Smoke curtain
☐ Street hydrant coverage only	☐ Purge system (existing building)	☐ Safety curtain for openings
☑ Hydrant booster assembly	☐ Smoke and heat vents	☐ Fire dampers
☑ Pumpset	☐ Smoke exhaust	☐ Smoke dampers
Firefighting equipment	☐ Smoke baffles	☐ Fire seals (intumescent)
☑ Portable fire extinguishers	☐ Ridge vents	☐ Hot smoke seals (>200ºC)
☑ Fire hose reels	☐ Stair pressurisation	☐ Medium temp. smoke seals
	☐ Impulse / jet fans (in carpark)	

Additional information:

Provide any additional information relevant to the measures

7 Departures from the Deemed-to-Satisfy provisions

Issue number: 1 **Title:** Reduction of FRL's to selected steel columns supporting the Level 1 floor and external seating decks

Details of departures from DtS provisions:

BCA DtS Provisions

Table 4 of Specification C1.1 of the BCA states that for a building of Type B construction, the FRL for Class 6 shall achieve no less than 180/180/180 FRL.

Departure from DtS Provisions

The level 1 floor of the Grandstand will be constructed using precast concrete hollow core slabs for walkways and precast concrete terrace seating plates seated on the bottom flange of the steel beams. The steel beams are supported by steel columns. The central portion of the level 1 floor will be prefabricated lightweight modular floors. The F&B on ground level and corporate boxes on the level 1 will be semi-modular construction.

The FRL of the steel columns is required to achieve an FRL of 180/-/-. The selected structural elements and the reduced/omission of FRL in lieu of the BCA requirements achieved are as follows:

- No fire protective covering is to be provided to the columns exposed to fire from sanitary facilities or circulation area on the ground floor, and
- No columns are to be exposed to a fire from a F&B concession (Class 6), merchandise or plant room which is to be enclosed by fire rated construction achieving and FRL of -/30/30.

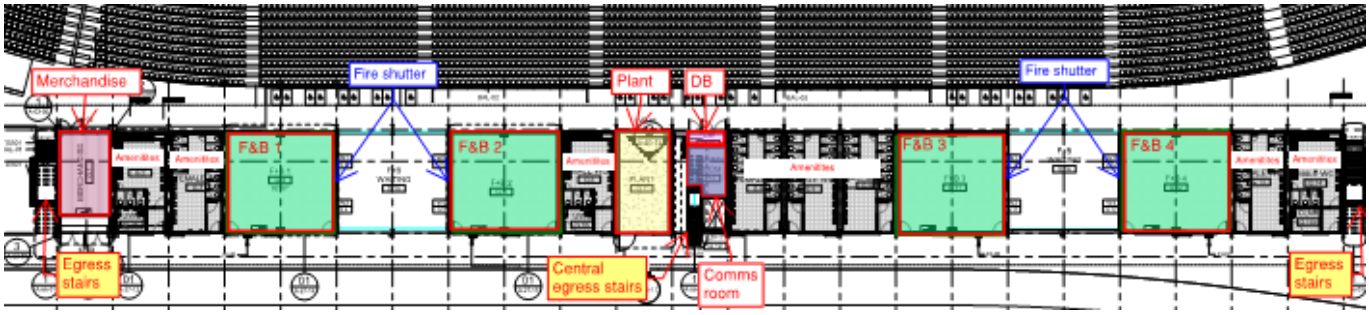

Figure 4 GA Plan Ground Floor Compartmentation. Fire rated walls indicated by red outlines.

Applicable DtS provisions:	Table 3 of Spec C1.1	Performance requirements:	CP1, CP2

List key fire safety measures:

- A fire separating floor between the Ground Floor and level 1 is to be provided that will achieved using one of the following DtS solutions:
  - The Level 1 floor to have an FRL of 30/30/30 (this should be a tested floor system); or
  - A ceiling below the floor to have an incipient spread of fire rating of 60 minutes if the above cannot be achieved.

Any gaps present between the modular construction are required to be sealed with a fire-stopping system as specified by Cox Architecture, achieving an FRL of at least -/30/30 FRL when tested to AS1530.4 and in a manner as they will be installed. For gaps greater than 50mm this is proposed to be a compressible fire rated expansion joint.

- F&B rooms, merchandise and the plant rooms (Hazard Rooms) will be fully enclosed in -/30/30 FRL construction from the internal side such that structure will be outside this zone and shielded by the fire rated construction.
- The doors to the F&B rooms are required to be -/30/30 FRL and fitted with self-closing devices. Door hold open devices shall be provided to the doors to ensure they are held wedged open and will close on fire trip of the detection system.

- The window to the F&B room will be fitted with a fire rated shutter (FRL -/30/-) that shall close on activation of the fire detection system in the room.
- Thermal detection designed in accordance with AS1670.1:2018 shall be provided to all rooms at ground and first floor and will be connected to raise the general fire alarm for the Grandstand.
- Bin locations shall be designed such that they will not encroach the space within 1m of the steel columns and management provisions shall re-enforce this.
- The inherent structural fire rating of the unprotected steel columns shall be not less than 20mins to provide for redundancy in the design (this has been confirmed by the structural engineer).

Proposed performance solution:

The intent of the required FRL applied to the selected steel columns is for structural stability to be maintained during a fire event appropriate to the situation, including, fire size and location, function and use of the building, evacuation and fire brigade intervention.
The proposed solution is as follows:

- The Guide to Safety at Sports Ground, the 'Green Guide', categorises a high fire risk area as an area where combustible elements are present or where structural elements could promote the spread of fire, heat and smoke (Section 15.11). Some common sources of ignition are identified as cooking appliances, food warmers and electrical equipment (Section 15.13). It is also important to limit the spread of fire and smoke from adjacent areas or the egress path. The F&B rooms, merchandise, Comms room, distribution board (DB) and plant room are considered to be of high fire risk. These rooms are required to be fire rated as follows to minimise risk of exposure of the selected steel columns to fire and to maintain a safe egress route.
    - The hazard rooms shall consist of fire rated construction to achieve -/30/30 from the internal side (Figure 4).
    - The Comms and DB (MSB) rooms shall achieve an FRL of 120/120/120.
    - In accordance with Clause C3.5 of the BCA, the doors in the fire-rated walls shall have an FRL of -/30/30.
    - A fire rated shutter is required for the trading opening in the F&B stalls with an FRL of -/30/-. In accordance with the guidance provided in the 'Green Guide', the shutter must be capable of operating both manually and on activation of the fire alarm (Section 15n.).
    - The above is therefore consistent with the floor fire rating provided in line with the DtS provisions for Type B construction, which is deemed suitable for the evacuation of occupants and fire fighting intervention.
- The female and male amenities are considered to be of a low fire hazard with very limited fuel loads and ignition sources. Combustible materials are not expected limiting the possibility of fire spread. As such, a fire directly affecting these areas and subsequently the selected steel columns of nil applied fire protection is unlikely.
- A BCA DtS non-required automatic detection system consisting of thermal detectors, designed in accordance with AS 1670.1:2018 shall be provided throughout including all rooms at ground and first floor and will be connected to raise the general Building Occupant warning system for the Grandstand. A DtS Building of this type and size would not require any detection and alarm and therefore the detection will provide for earlier occupant warning throughout.
- Thermal detection is to be provided F&B rooms to limit the occurrence of spurious alarms due to cooking, dust, etc common in this area. Activation of the F&B detection is to activate the fire shutters into the closed position and raise an alarm through the building. This will enable occupants to egress earlier than in a DtS case with no detection. Additionally, there is no ducted air-conditioning that would enable smoke spread between compartments.
- The inherent FRL of not less than 20 minutes (as confirmed by structural engineer) for the steel columns and the shielding protection from the enclosing -/30/30 construction to hazard rooms will allow time for occupants to egress safely from Level 1 in the event of a fire in an F&B room long before 30 minutes of a standard fire exposure.
- To mitigate the risk of waste/litter accumulation near the unprotected columns that may serve as a fuel source, the design must include designated bin location not less than 1m from the steel columns. Management plans must include timely removal of the waste and no storage or litter within 1m of the steel columns. The plans will also require no storage around the columns, limiting fuel and ignition sources

- DtS fire rated separation shall be provided to separate the ground floor and Level 1 and sufficiently mitigate the risk of upwards fire spread, sufficient to enable means of escape.
- As the proposed design incorporates a modular design that is subject to change, it is important that the fire protection system adopted will not be compromised. Any gaps present between the modular construction are required to be sealed with a fire-stopping system as specified by Cox Architecture, achieving an FRL of at least -/30/30 FRL when tested to AS1530.4 and in a manner as they will be installed.
- Given the relatively straightforward egress arrangements and open deck nature of the exit paths, fire fighting activities will largely focus on suppression. This is achieved externally from the building with good access around and hydrants protected sufficiently, as outlined below.
- Appropriate first aid fire fighting extinguishers shall be provided for the cooking hazards in the F&B and Distribution boards enclosures in addition to DtS locations.

Performance solution:

☑ A2.2(1)(a) - Comply with all relevant performance requirements
☐ A2.2(1)(b) - Be at least equivalent to the DtS provisions

Assessment methods:

☐ A2.2(2)(a) - Evidence of suitability
☐ A2.2(2)(b)(i) - Verification methods provided in the NCC
☑ A2.2(2)(b)(ii) - Other verification methods accepted by the appropriate authority
☐ A2.2(2)(c) - Expert judgement
☐ A2.2(2)(d) - Comparison with the DtS provisions

Assessment approach:

☑ Comparative ☑ Qualitative ☐ Deterministic
☑ Absolute ☐ Quantitative ☐ Probabilistic

IFEG sub-systems used in the analysis:

☑ A – Fire initiation and development and control ☐ D – Fire detection, warning and suppression
☐ B – Smoke development and spread and control ☐ E – Occupant evacuation and control
☑ C – Fire spread and impact and control ☑ F – Fire services intervention

Acceptance criteria and factor of safety:

The design will be considered acceptable if:

- The fire resistance level of the steel columns is adequate for the potential fire risks within the building to enable safe evacuation and firefighting intervention.

Fire scenarios and design fire parameters:

The following fire scenarios will be considered in the design:

Scenario 1: Fire in Amenities

A severe fire occurring inside the toilets is considered unlikely as the ignition risks and the fuel load are low. The IFEG [1] recommends a fuel load of approximately zero for water closets. Notwithstanding this, a fire inside the toilet will be considered for conservatism.

The worst credible design fire used for analysis is considered a paper filled wastepaper basket fire with the following characteristics:

- Peak heat release rate = 0.12MW [2] for a waste-paper basket fire;
- Diameter = 0.29m [3] to represent the base of a waste-paper basket.

Scenario 2: Rubbish bin fire – circulation area, Ground Floor

A rubbish bin fire in the circulation area on the ground floor is conservatively assumed to be a large, densely packed trash bag, with a peak HRR of 350kW. The duration of the bin fire is approximately 10 minutes. The

management procedures should ensure bins are emptied daily and display material is limited. Therefore, the design fire adopted in the design is conservative for a bin fire.

In order to assess the impact of localised fire to the unprotected structural members at the circulation area (i.e. the concourse), the fuel bed area of the bin fire is assumed to be in the range of 0.5m^2 to 2.0m^2.

[1] "International Fire Engineering Guidelines, Edition 2005", Australian Building Codes Board, Canberra, Australia, 2005.

[2] Särdqvist, S., Department of Fire Safety Engineering Lund University, Paril 1993. Initial Fires RHR, Smoke Production and CO Generation from Single Items and Room Fire Tests – one sack with paper rubbish

[3] Ikea, 2012. FNISS Wastepaper basket. [online] Available at <www.ikea.com> [Accessed 4 February 2013].

Describe how fire brigade intervention will be addressed or considered:

The simple layout and clear path of travel through Level 1 means it is unlikely that rescuers would have to transverse any distance larger than the extended. Hydrants are external at ground floor and hazard rooms enclosed.

Verification/validation analyses:

☐ Sensitivity studies ☐ Redundancy studies ☐ Uncertainty studies ☑ None

Provide details of the study or justification why one was not undertaken

Provide details on proposed modelling/assessment tools:

Not proposed.

FRNSW Comment: It is noted that "management plans" are proposed to ensure that fuel loads within proximity to the unprotected columns are removed throughout the life of the building. To clarify, FRNSW recommend this be implemented for all areas of the building, including the amenity areas. FRNSW recommend the proposed management plans are to be included as Essential Fire Safety Measures for the building and are to be reviewed (with inspection/rectification actions to be undertaken) every 6 months.

FRNSW recommend additional measures such as signage be provided for the areas to ensure that storage is not undertaken by both tenants and patrons for the life of the building. These additional measures should be included as Essential Fire Safety Measures for the building and be listed in the Fire Safety Schedule.

Issue number: 2 **Title:** Extended travel distance of 45.5m in lieu of 40m to an exit

Details of departures from DtS provisions:

BCA DtS Provisions

Clause D1.4(c) of the BCA requires that for Classes 5 to 9, no point on a floor must be more than 20m from an exit, or a maximum distance of 40m to one of those exits from a point in which travel in different directions to 2 exits is available.

Departure from DtS Provisions

Level 1 of the grandstand comprises of 17 corporate boxes in addition to an office and communication/media rooms. The level is serviced by three exits stairs and two exits are available for occupants at any point on this level. The maximum travel distance from within a corporate box is 48m (Figure 5). This does not comply with D1.4(c) as the travel distance is 5.5m in excess.

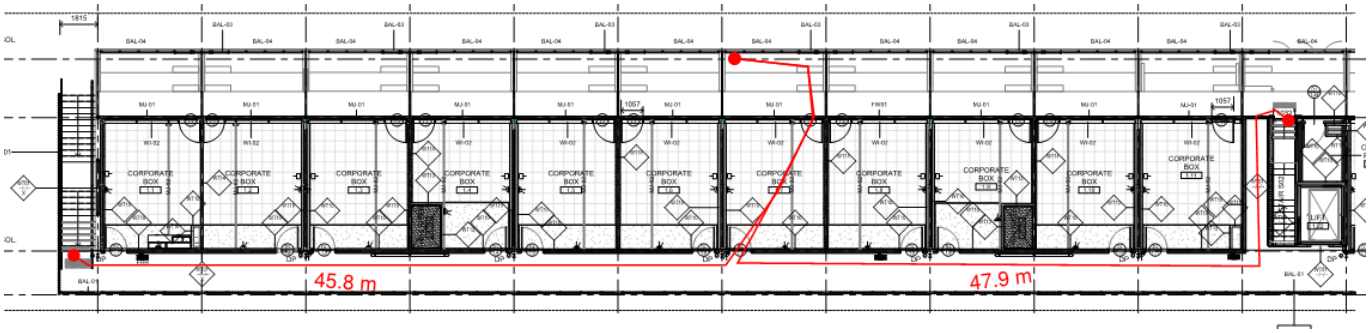

Figure 5 Level 1 extended travel distance

Applicable DtS provisions:	D1.4(c)	Performance requirements:	DP4, EP2.2

List key fire safety measures:

- Heat detection designed in accordance with AS1670.1:2018 shall be provided to all rooms at ground and first floor and will be connected to raise the general fire alarm for the Grandstand.
- Emergency lighting and exit signage are to be provided in accordance with BCA Part E4 and AS/NZS 2293.1-2018.
- DtS fire separation between the Ground Floor and Level 1 is to be provided to achieve resistance an FRL of 30/30/30 or to incipient spread of fire not less than -/60/60. This may be achieved by an appropriate fire rating to the Level 1 ground floor in addition to the inherent fire resistance of the slab, or a ceiling may be provided below the Level 1 floor that will achieve this resistance.

- Proposed performance solution:

The design having an increased travel distance to an exit is acceptable based on the following:

- In the unlikely event of a fire in the egress hallway, occupants are provided with a clear line of sight through the straight open sided corridor with the exception of the corridor to the central stair. Occupants will have direct line of sight to any obstacles or hazards that might be blocking an exit and will be able to choose their path of travel without unnecessarily walking towards one exit. Although occupants will likely be spectators/visitors and unfamiliar with the space, the exit signage and clear lines of sight of exits and hazards shall enable them to identify the most suitable egress path.
- The maximum extended distance on Level 1 is up to 8m to one of the two available exits which would equate to an additional travel time of between 8 and 10 seconds (taking an average walking speed of 1 m/s or 0.8m/s for less able-bodied people for awake and alert occupants).
- The Grandstand will be provided throughout with an automatic detection system in accordance AS 1670.1:2018 with occupant warning system to initiate evacuation throughout the building in the early stages of a fire event. The enhanced fire life safety systems provided are expected to lead to earlier fire detection and alarm compared to a DtS design that does not require detection or occupant warning system. As such, the additional 8-10 seconds of travel is not expected to significantly increase the risk to occupants during evacuation.

Performance solution:

☑ A2.2(1)(a) - Comply with all relevant performance requirements
☑ A2.2(1)(b) - Be at least equivalent to the DtS provisions

Assessment methods:

☐ A2.2(2)(a) - Evidence of suitability
☐ A2.2(2)(b)(i) - Verification methods provided in the NCC
☑ A2.2(2)(b)(ii) - Other verification methods accepted by the appropriate authority
☐ A2.2(2)(c) - Expert judgement
☑ A2.2(2)(d) - Comparison with the DtS provisions

Assessment approach:

☑ Comparative ☐ Qualitative ☐ Deterministic
☐ Absolute ☑ Quantitative ☐ Probabilistic

IFEG sub-systems used in the analysis:

☐ A – Fire initiation and development and control
☐ B – Smoke development and spread and control
☐ C – Fire spread and impact and control
☑ D – Fire detection, warning and suppression
☑ E – Occupant evacuation and control
☐ F – Fire services intervention

Acceptance criteria and factor of safety:

The assessment is to demonstrate that the risk of occupants being overcome or blocked by a fire whilst moving to an exit is not increased and the overall evacuation time is equivalent to a DtS Design.

Fire scenarios and design fire parameters:

Comparable to DtS building.

Describe how fire brigade intervention will be addressed or considered:

The simple layout and clear path of travel through Level 1 means it is unlikely that rescuers would have to transverse any distance larger than the extended travel distance of 8m in a scenario requiring a rescue.

The grandstand is a standalone building with clear access points for fire brigade intervention. It is expected that the compromised area during a fire event will be easily visible and accessible. As Level 1 is the uppermost level at 4m high, vertical travel time will be minimal.

Verification/validation analyses:

☐ Sensitivity studies ☐ Redundancy studies ☐ Uncertainty studies ☑ None

Provide details of the study or justification why one was not undertaken

Provide details on proposed modelling/assessment tools:

Provide details on modelling/assessment tools – attach CFD/zone modelling inputs form if applicable

FRNSW Comment: FRNSW recommend some form of a quantitative assessment be undertaken to demonstrate that the proposed additional measures shall offset the risks associated with the extended travel distance.

The DTS design for comparison should also be clearly detailed as part of the analysis.

Consideration should be given to mobility-impaired occupants (and their travel speed), if these are likely to be present / are proposed to be accepted to enter the building.

Issue number: 3 **Title:** Extended travel distance between alternative exits

Details of departures from DtS provisions:

BCA DtS Provisions

BCA Clause D1.5 requires that exits that are required as alternative means of egress must be not more than 60m apart.

The intent of limiting the distance between alternative exits is in the BCA is to provide reasonable travel distances for occupants who may move towards one exit, find their route blocked, and can then safely move to the alternative exit.

Departure from DtS Provisions

Level 1 of the Grandstand is serviced by three exits. The distance between the northern and centre exits is 67m as shown in Figure 6. The distance between the central and southern stair is 69m as shown in Figure 7.

The hazard associated with these egress arrangements is that occupants must travel an increased distance, thus increasing their potential risk of being exposed to untenable conditions during evacuation and being trapped in the building.

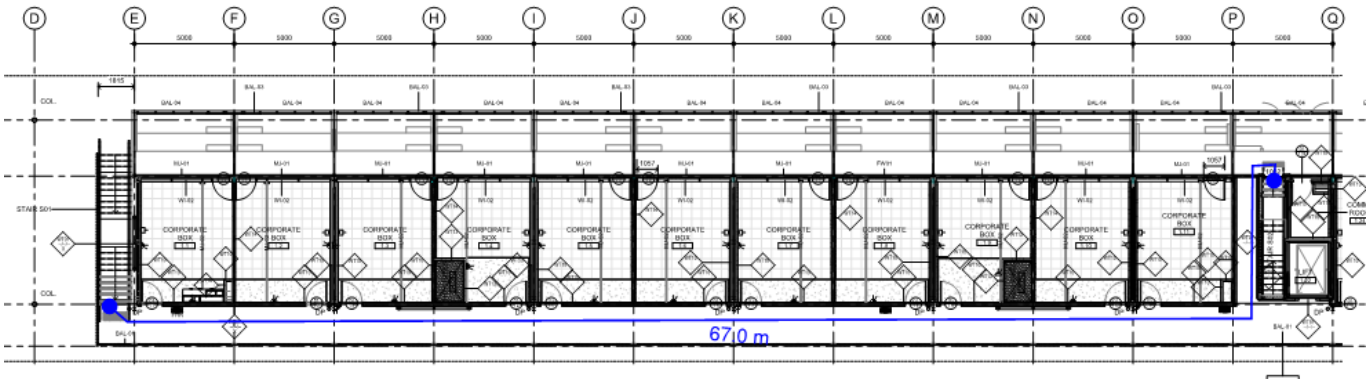

Figure 6 Level 1 extended travel distance between northern and central exits

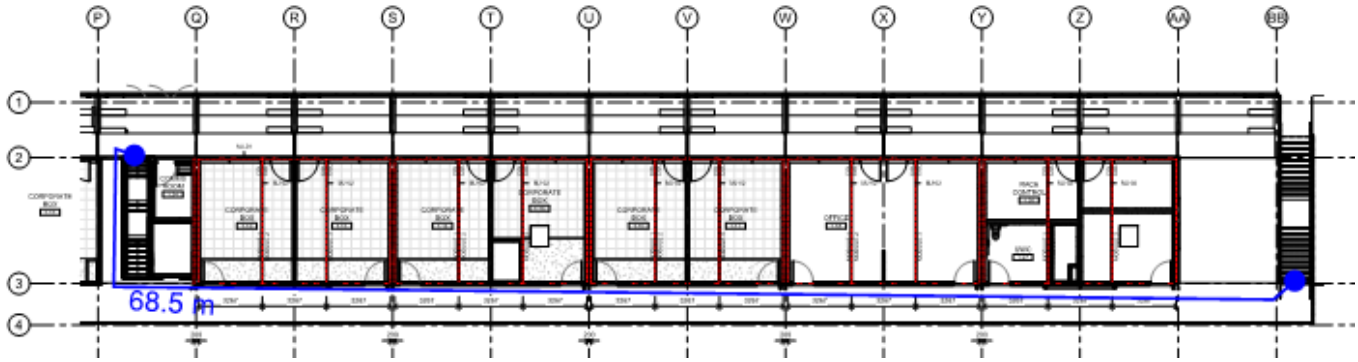

Figure 7 Level 1 extended travel distance between central and southern exits

Applicable DtS provisions:	D1.5	Performance requirements:	DP4, EP2.2

List key fire safety measures:

- Heat detection designed in accordance with AS1670.1:2018 shall be provided to all rooms at ground and first floor and will be connected to raise the general fire alarm for the Grandstand.
- Emergency lighting and exit signage are to be provided in accordance with BCA Part E4 and AS/NZS 2293.1-2018.
- A DtS fire separating floor between the Ground Floor and level 1 is to be provided to achieve an FRL of 30/30/30, which is compliant with the DtS Provisions. Alternatively, a ceiling may be provided below the Level 1 floor that will achieve resistance to insipient spread of fire not less than -/60/60.

Proposed performance solution:

The design having an increased travel distance between exits is acceptable based on the following:

- The extended path of travel is through a transient hallway that will be required to be clear for general access and egress. As such, it shall contain minimal fire load with no storage of combustibles. It is therefore considered unlikely for a fire to initiate in the corridor and impede egress towards a chosen exit.
- In the unlikely event of a fire in the egress hallway, occupants are provided with a clear line of sight through the open sided corridor with the exception of the corridor to the central stair. Occupants will have direct line of sight to any obstacles or hazards that might be blocking an exit and will be able to choose their path of travel without unnecessarily walking towards one exit.
- In the event of the central exit being unavailable due to a hazard not visible from the egress corridor, occupants will still have a choice of two exits, the northern and southern stair, for egress.
- The additional risk when exits are located at a distance from each other is that wayfinding may become more complicated, and occupants may not be able to easily find their way to an exit. However, for the case of the subject building, the alternative egress paths which offer a choice of escape are considered to be obvious to occupants as there is only one path of travel through the building. The exit paths shall be signed to direct occupants to the exits in the event of a fire. Therefore, wayfinding between the exits is not considered to adversely impact occupants' egress.
- All rooms on the Ground Floor and Level 1 will be provided with thermal detection designed in accordance with AS1670.1-2018 with occupant warning system to initiate evacuation throughout the building in the early stages of a fire event. The enhanced fire life safety systems provided are expected to lead to earlier fire detection and alarm compared to a DtS design that does not required detection or occupant warning system. As such, the additional 6-7m of travel is not expected to significantly increase the risk to occupants during evacuation.

Performance solution:

☑ A2.2(1)(a) - Comply with all relevant performance requirements
☑ A2.2(1)(b) - Be at least equivalent to the DtS provisions

Assessment methods:

☐ A2.2(2)(a) - Evidence of suitability
☐ A2.2(2)(b)(i) - Verification methods provided in the NCC
☑ A2.2(2)(b)(ii) - Other verification methods accepted by the appropriate authority
☐ A2.2(2)(c) - Expert judgement
☑ A2.2(2)(d) - Comparison with the DtS provisions

Assessment approach:

☑ Comparative	☐ Qualitative	☐ Deterministic
☑ Absolute	☑ Quantitative	☐ Probabilistic

IFEG sub-systems used in the analysis:

☐ A – Fire initiation and development and control	☑ D – Fire detection, warning and suppression
☐ B – Smoke development and spread and control	☑ E – Occupant evacuation and control
☐ C – Fire spread and impact and control	☐ F – Fire services intervention

Acceptance criteria and factor of safety:

To demonstrate both that:

- (Qualitative) The extended travel distance between alternative exits is adequately offset by the fire safety measures.
- (Qualitative) Occupants can reach a place of relative safety before the onset of untenable conditions.

Fire scenarios and design fire parameters:

Comparable to DtS building.

Describe how fire brigade intervention will be addressed or considered:

The simple layout and clear path of travel through Level 1 means it is unlikely that rescuers would have to transverse any distance larger than the extended travel distance of 8m in a scenario requiring a rescue.

The grandstand is a standalone building with clear access points for fire brigade intervention. It is expected that the compromised area during a fire event will be easily visible and accessible. As Level 1 is the uppermost level at 4m high, vertical travel time will be minimal.

Verification/validation analyses:

☐ Sensitivity studies ☐ Redundancy studies ☐ Uncertainty studies ☑ None

Provide details of the study or justification why one was not undertaken

Provide details on proposed modelling/assessment tools:

N/A

FRNSW Comment: FRNSW recommend some form of a quantitative assessment be undertaken to demonstrate that the proposed additional measures shall offset the risks associated with the extended travel distance.

The DTS design for comparison should also be clearly detailed as part of the analysis.

Consideration should be given to mobility-impaired occupants (and their travel speed), if these are likely to be present / are proposed to be accepted to enter the building.

Issue number: 4 **Title:** External fire hydrant locations to be within 10m of the building

Details of departures from DtS provisions:

BCA DtS Provisions

Clause E1.3(b)(i) of the BCA states that a fire hydrant system must be installed in accordance with AS 2419.1. Clause 3.2.2.2 of AS 2419.1-2017 outlines the location requirements for external fire hydrants.

Clause 3.2.2.2(e) of AS 2419.1-2017 states that when external fire hydrants are located within 10m of a building they should be protected unless safeguarded by construction:

i. Having an FRL not less than 90/90/90;

ii. Extending 2 m each side of the fire hydrant outlet; and

iii. Extending not less than 3 m above the ground adjacent to the fire hydrant or the height of the building, whichever is the lesser.

Clause 3.2.2.2(f) of AS 2419.5-2017 states that external hydrants shall be located in a position so that the fire hydrant is not obstructed or obscured by obstacles, stored goods, vehicles, vegetation etc.

The intent of Clause E1.3 is to ensure hydrant coverage is provided in order to facilitate the needs of the fire brigade appropriate to fire-fighting operations, the floor area of the building and the fire hazard. Likewise, the booster location should be located such that it facilitates firefighting operations.

Departure from DtS Provisions

The proposed locations of external fire hydrants are to be within 10m of the building but are not provided with protective fire rated construction as required by Clause 3.2.2.2(e) of AS 2419.1-2017 (Figure 8).

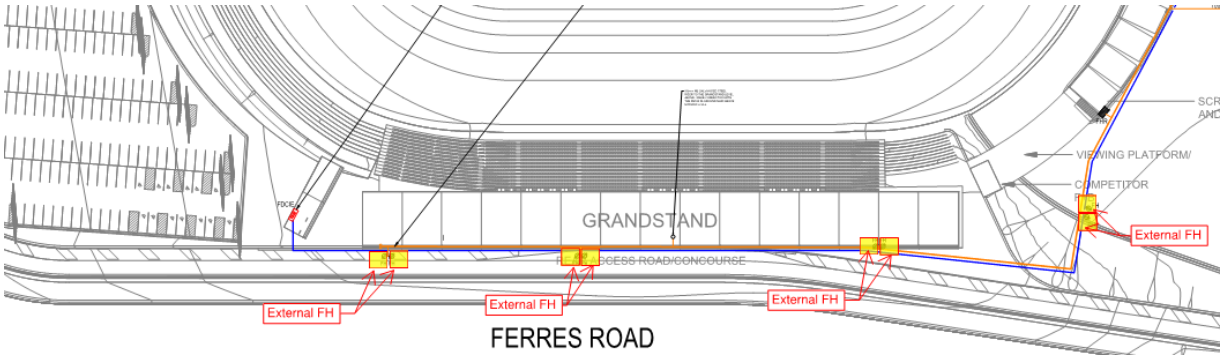

Figure 8 External fire hydrant locations.

Applicable DtS provisions:	E1.3	Performance requirements:	EP1.3

List key fire safety measures:

- Automatic thermal detection designed in accordance with AS1670.1-2018 shall be provided to all rooms at ground and first floor and will be connected to raise the general fire alarm for the Grandstand.
- Bollards shall be used to protect the external hydrants if required.
- Coverage of hydrants from adjacent hydrants within 60+10m.
- Fire protection of hazard rooms at ground floor with construction achieving -/30/30.

Proposed performance solution:

The assessment is considered acceptable based on the following:

- A radiant heat assessment will be undertaken during the detailed fire engineering stage of the project to assess the radiation received in the event of a fire in the building. The assessment will demonstrate that the radiation received at the hydrant will not exceed the limiting tenability criteria for fire brigade personnel (3kw/m^2) as specified in the SFS Practice Notes.
- Should a fire occur in a location that compromises one of the external hydrants, coverage to this area can be achieved via an alternative hydrant (within 60m + 10m). Therefore, in the unlikely event that one hydrant is jeopardised, fire brigade personnel can choose to take resource off the other ones provided.

- The external hydrants are located on the Ground Level. As Level 1 of the grandstand is fire separated from the Ground Level, it is expected that smoke and flames from a fire in Level 1 will vent upwards and out away from the hydrants. Likewise, the high-risk areas of the F&B rooms are fire separated and therefore not likely to allow fire spread that will compromise the external hydrants.
- The hydrants are proposed to be located within walkways and adjacent to Ferres Road. As these areas are circulation spaces it is considered unlikely that obstacles would be stored in a location that could block access to the hydrants or serve as a fuel source.
- Furthermore, bollards may be positioned to protect the hydrants from obstruction via vehicles or stored goods to comply with Clause 3.2.2.2(f) of AS 2419.5-2017.

Performance solution:

☑ A2.2(1)(a) - Comply with all relevant performance requirements
☑ A2.2(1)(b) - Be at least equivalent to the DtS provisions

Assessment methods:

☐ A2.2(2)(a) - Evidence of suitability
☐ A2.2(2)(b)(i) - Verification methods provided in the NCC
☑ A2.2(2)(b)(ii) - Other verification methods accepted by the appropriate authority
☐ A2.2(2)(c) - Expert judgement
☑ A2.2(2)(d) - Comparison with the DtS provisions

Assessment approach:

☐ Comparative	☑ Qualitative	☐ Deterministic
☑ Absolute	☐ Quantitative	☐ Probabilistic

IFEG sub-systems used in the analysis:

☐ A – Fire initiation and development and control	☐ D – Fire detection, warning and suppression
☐ B – Smoke development and spread and control	☐ E – Occupant evacuation and control
☐ C – Fire spread and impact and control	☑ F – Fire services intervention

Acceptance criteria and factor of safety:

To demonstrate that attending fire brigade are provided with adequate provisions to safely undertake fire-fighting operations and that the Booster and FIP locations facilitate firefighting operations.

For the supporting radiation assessment, it shall be demonstrated that the radiation received will be less than the limiting criteria for fire brigade personnel to take resource of the external hydrant (3 kW/m^2).

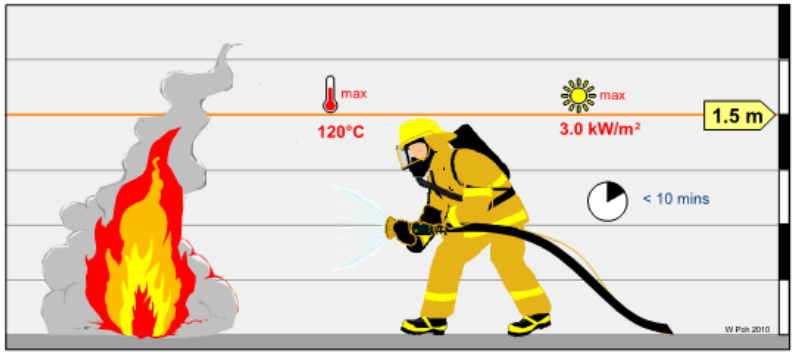

Figure 10: Tenability for Fire Fighters (up to 10 minutes)

Figure 9 Fire brigade tenability during fire-fighting operations extracted from SFS Practice Notes

Fire scenarios and design fire parameters:

N/A

Describe how fire brigade intervention will be addressed or considered:

As per the assessment above.

Verification/validation analyses:

☐ Sensitivity studies ☐ Redundancy studies ☐ Uncertainty studies ☑ None

Provide details of the study or justification why one was not undertaken

Provide details on proposed modelling/assessment tools:

Radiation calculation

FRNSW Comment: In principle support is provided subject to the analysis in the FER demonstrating compliance with the performance requirements of the NCC.

Issue number: 5 The location of the booster will not be within sight of the main entrance.

Details of departures from DtS provisions:

BCA DtS Provisions

Clause E1.3 of the BCA states that a fire hydrant system must be provided to serve a building that has a total floor area of greater than 500m^2 and the fire brigade station is no more than 50km from the building and equipped with equipment capable of utilising a fire hydrant.

Clause E1.3(b)(i) of the BCA states that a fire hydrant system must be installed in accordance with AS 2419.1. Additionally, a fire hydrant system must be installed in accordance with AS2419.1, where it states that a fire brigade booster assembly must be located within sight of the main entrance.

Departure from DtS Provisions

The main Fire Indicator Panel (FIP) will be located adjacent to the pump room at the competitors' exit (Figure 10, Figure 11). This location will be accessed by via the main entrance and through the rear competitor road. The competitor road is one way from north the south. A mimic panel linked to the main FIP shall be provided further down the road at the competitor administration.

The potential hazard associated with the proposed design is that attending fire brigade may be unable to safely access the external fire hydrants in the event of a fire.

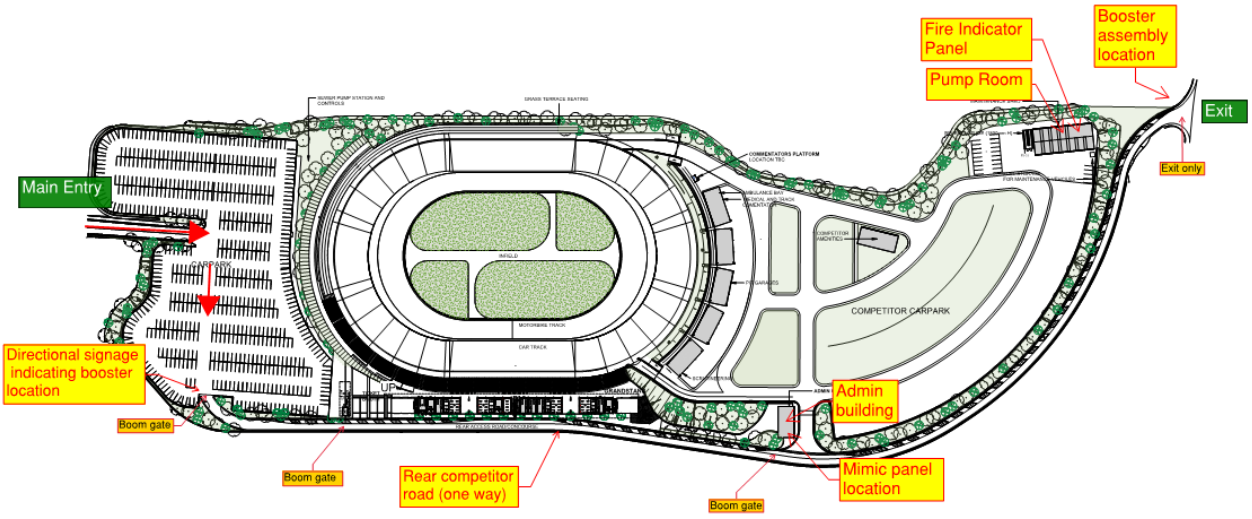

Figure 10 Site Plan with Booster, Pump Room and FIP location

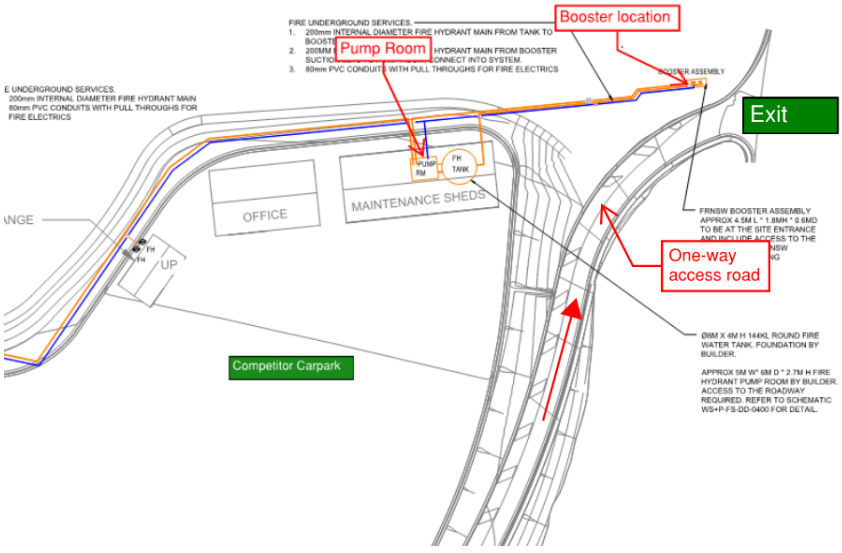

Figure 11 Fire Services Plan with Booster, Pump Room and FIP location

Applicable DtS provisions:	E1.3	Performance requirements:	EP1.3

List key fire safety measures:

- Signage shall be provided at the FIP, booster and main entry via the public carpark indicating the location of the FIP and Booster.
- Red strobes lights are to be installed at the booster and FIP and activate upon an alarm signal from the FIP.
- A mimic Fire Indicator Panel is to be provided in the competitor administration building as indicated in Figure 10 and will be interlinked with the main FIP.

Proposed performance solution:

The assessment is considered acceptable based on the following:

- The main entrance to the Speedway is off Ferrers road through the general public carpark. This path is a one-way road from North to South and is utilised by all staff, spectators, competitors and emergency services (Figure 10). The booster shall be located at the rear exit and may be accessed via the southern connection to Ferrers road (competitors' exit) or through the main entrance.

  In an emergency event general traffic conditions will not apply, and the brigade will operate in a contraflow manner to enter from the Southern connection (competitors' entry) and travel against the one-way road to the Grandstand. The 7m wide road accommodates two-way vehicular circulation and therefore allows traffic on the competitor road (unexpected in an emergency event) to give way and allow clear passage for the brigade.

  Alternatively, the brigade may enter through the public carpark and use the rear competitor road to access the booster. To assist with wayfinding, signage shall be provided in the public carpark indicating the booster location.
- The boom gates along the one-way access road are required to open upon GFA to assist with brigade intervention.
- To enable the attending fire brigade personnel to easily locate the booster and FIP, red strobe lights must be provided at both locations. The lights will be activated by an alarm signal from the fire indicator panel that serves any on site automatic smoke or thermal detection.
- Signage is to be provided at the FIP indicating the Booster location. Block plans shall also be provided at the indicating the FIP location. Along with the red strobe lights, this will enable FRNSW to quickly and easily identify the Booster location.
- Signage is to be provided at the main entrance through the public carpark to provide direction to the attending brigade if the access the site from this point rather than the rear entrance.
- A mimic Fire Indicator Panel is to be provided near the Booster assembly and will be interlinked with the main FIP. This will enable the fire brigade to easily assess the situation from the Booster assembly.
- A hardstand shall be provided at the booster.
- The building management will be aware that the first attending appliances may arrive at this (not main entrance) location.

Performance solution:

☑ A2.2(1)(a) - Comply with all relevant performance requirements
☑ A2.2(1)(b) - Be at least equivalent to the DtS provisions

Assessment methods:

☐ A2.2(2)(a) - Evidence of suitability
☐ A2.2(2)(b)(i) - Verification methods provided in the NCC
☑ A2.2(2)(b)(ii) - Other verification methods accepted by the appropriate authority
☐ A2.2(2)(c) - Expert judgement

☑ A2.2(2)(d) - Comparison with the DtS provisions

Assessment approach:

☐ Comparative	☑ Qualitative	☐ Deterministic
☑ Absolute	☐ Quantitative	☐ Probabilistic

IFEG sub-systems used in the analysis:

☐ A – Fire initiation and development and control	☐ D – Fire detection, warning and suppression
☐ B – Smoke development and spread and control	☐ E – Occupant evacuation and control
☐ C – Fire spread and impact and control	☑ F – Fire services intervention

Acceptance criteria and factor of safety:

To demonstrate that attending fire brigade are provided with adequate provisions to safely undertake fire-fighting operations and that the Booster and FIP locations facilitate fire fighting operations.

Fire scenarios and design fire parameters:

N/A

Describe how fire brigade intervention will be addressed or considered:

As per the assessment above.

The Grandstand is provided with fire hydrants and hose reels to assist with fire brigade intervention.

Verification/validation analyses:

☐ Sensitivity studies ☐ Redundancy studies ☐ Uncertainty studies ☑ None

Provide details of the study or justification why one was not undertaken

Provide details on proposed modelling/assessment tools:

N/A

FRNSW Comment: It is noted that the booster feed will be large bore. As the large bore connections are semi rigid, consideration of pumper positioning is required to ensure that once connected the pumper will not block access to the site for further responders.

Please review the following link to Fire Safety Guideline, *Access for Fire Brigade Vehicles and Firefighters* in particular section8 Hardstand to confirm pumper positioning will be as required.

https://www.fire.nsw.gov.au/gallery/files/pdf/guidelines/vehicle_access.pdf

In principle support is provided subject to the above comment being addressed and the analysis in the FER demonstrating compliance with the performance requirements of the NCC.

Issue number: 6 FHR will not be provided to the fire rated rooms on the ground floor.

Details of departures from DtS provisions:

BCA DtS Provisions

Clause E1.4(f) of the BCA states that FRH must be located so that the fire hose will not need to pass through doorways fitted with fire or smoke doors

Departure from DtS Provisions

FHR will not be located within the fire rated rooms located on the ground floor (Figure 4) and will not be serviced by FHR located outside the rooms.

Applicable DtS provisions:	E1.4(f)	Performance requirements:	EP1.1

List key fire safety measures:

- Additional ABE type fire extinguishers are to be provided in the F&B, comms, plant and DB rooms as these areas are considered to be high hazard areas.
- Water based fire extinguishers are to be provided outside the merchandise room.

Proposed performance solution:

The assessment is considered acceptable based on the following:

- Compliant FHR coverage is generally provided throughout the Grandstand; it is only the fire rated tenancies within the ground floor where coverage does not comply with Clause E1.4(f) due to the compartmentation.
- Additional ABE type portable fire extinguishers designed in accordance with AS2444:2001 are to be provided in lieu of hose reels within the F&B, plant, comms and DB rooms (Figure 12). Portable extinguishers can support attack on multiple types of fire, instead of only fires attackable by water and are therefore better suited for first response firefighting in these areas. Use of this equipment will not require the door within the compartmentation to remain open but still provides a method of first response firefighting and is therefore considered equivalent to a DtS design and less likely to lead to doors being held open by hose.
- The F&B and DB rooms will be accessible by staff only who are expected to be familiar with the first response firefighting equipment available within the area.
- The provision of an additional water-based fire extinguisher outside the merchandise room provides an alternative method of first response firefighting within this room that is not reliant on the FHR (Figure 12). This is equivalent to a DtS design.

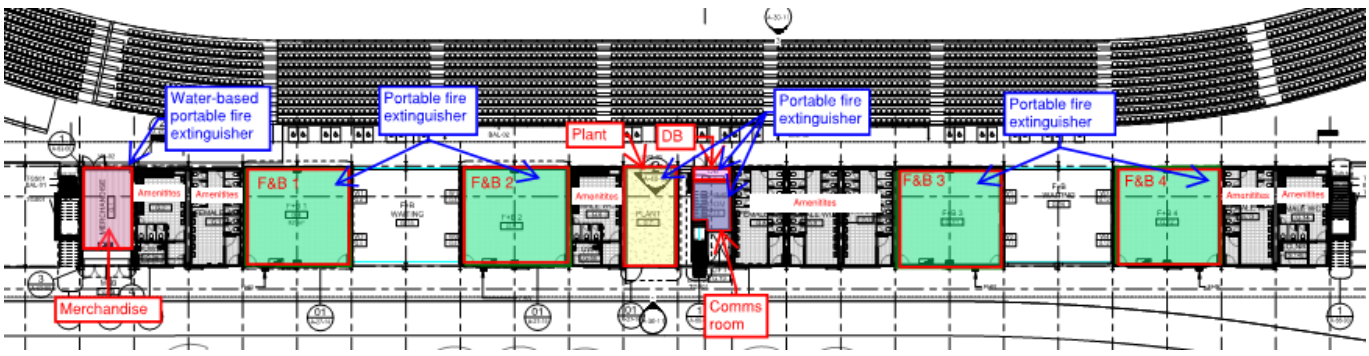

Figure 12 Ground floor – indicative locations of additional portable fire extinguishers

Performance solution:

☐ A2.2(1)(a) - Comply with all relevant performance requirements
☑ A2.2(1)(b) - Be at least equivalent to the DtS provisions

Assessment methods:

☐ A2.2(2)(a) - Evidence of suitability
☐ A2.2(2)(b)(i) - Verification methods provided in the NCC
☐ A2.2(2)(b)(ii) - Other verification methods accepted by the appropriate authority
☐ A2.2(2)(c) - Expert judgement
☑ A2.2(2)(d) - Comparison with the DtS provisions

Assessment approach:

☑ Comparative ☑ Qualitative ☐ Deterministic
☑ Absolute ☐ Quantitative ☐ Probabilistic

IFEG sub-systems used in the analysis:

☐ A – Fire initiation and development and control
☑ B – Smoke development and spread and control
☑ C – Fire spread and impact and control
☐ D – Fire detection, warning and suppression
☐ E – Occupant evacuation and control
☐ F – Fire services intervention

Acceptance criteria and factor of safety:

To demonstrate that first response firefighting equipment will not result in smoke or fire spread between compartments and that CP2 and EP1.1 are satisfied.

Fire scenarios and design fire parameters:

N/A

Describe how fire brigade intervention will be addressed or considered:

As per the assessment above.

Verification/validation analyses:

☐ Sensitivity studies ☐ Redundancy studies ☐ Uncertainty studies ☑ None

Provide details of the study or justification why one was not undertaken

Provide details on proposed modelling/assessment tools:

N/A

FRNSW Comment: The fire engineering assessment should specifically assess (in the context of the subject building's specific details) the following factors when demonstrating compliance against Performance Requirement EP1.1:

- The size of the *fire compartment*;
- The function or use of the building (or part of the building being assessed); and
- The *fire hazard*.

8 Construction, commissioning, management, use and maintenance

What considerations does the performance solution require during the construction phase?

The proposed performance solutions do not require any special consideration during the construction phase.

How will the performance solution affect commissioning of the systems (e.g. listed on fire safety schedule as essential or critical measure, combined new and old installations)?

The performance solutions are part of an overall fire engineering strategy. As best practice, the commissioning of all the fire safety systems will need to be done as part of the integrated commissioning and testing. Fire engineering inspections and witnessing the integrated testing will form part of the sign off from the fire engineer for the Occupation Certificate.

How will the performance solution be addressed for ongoing building management and use (e.g. details to be provided in a 'fire safety management plan' for the building manager)?

- The building is required to be managed under a fire safety policy which includes:
- An emergency management plan in accordance with AS 3745; including procedures for the safety of people in buildings, structures and workplaces during emergencies, the appointment of an Emergency Planning Committee and setting up of an Emergency Control Organization.
- Good house-keeping and fire prevention procedures such as maintaining clear evacuation routes.
- Regular maintenance of all fire safety systems as outlined in this FEBQ.
- Fire training of staff, including evacuation procedures, undertaken at regular intervals.

How will any restrictions on fuel load/use/populations within the performance solution be managed and enforced (e.g. details to be provided in 'fire safety management plan')?

Management plans will require no storage around the columns, limiting fuel and ignition sources.

Additional procedures will be needed to manage waste, and ensure there are no blockages to external hydrants and/or exits during events.

How will the performance solution be addressed for maintenance (e.g. details included on fire safety schedule, location of fire engineering report on site, plain English summary adjacent to FIP)?

The maintenance of fire and other safety systems is a mandatory requirement for building owners under the provisions of the Environmental Planning and Assessment Act 1979 and the Environmental Planning and Assessment Regulation 2000.

9 Additional comments

Provide any additional comment relevant to the FEBQ

Note: Any in principle support extended for performance solution issues through consultation is contingent upon all assumptions, analyses and conclusions in the fire engineering report being fully justified, and referenced as appropriate, to demonstrate how the relevant performance requirements have been satisfied to the extent required by the agreed acceptance criteria.

10 Scheduled charges

FRNSW charge for the provision of services performed in connection with statutory fire safety as per the schedule of charges identified in clause 46 and schedule 3 of the *Fire Brigades Regulation 2014*.

The charge applicable is $2,600 for each day (or part of a day) spent by the Commissioner or a fire brigade member providing advisory, assessment or consultancy services.

Note: For a full description of the charges applicable including terms, payment options, applying for a waiver or reduction of the charges, please refer to the FRNSW website at firesafety.fire.nsw.gov.au.

11 Submission of this form

This completed form is to be emailed to firesafety@fire.nsw.gov.au.

All plans and specifications required by FRNSW for assessment are to be attached to the email (or sent separately if necessary due to file size). Refer to Submitting plans and specifications to FRNSW for further information.

12 Contact us

For further information contact the Fire Safety Branch on (02) 9742 7434 or email firesafety@fire.nsw.gov.au.

Alistair Morrison

From: Fire Safety <FireSafety@fire.nsw.gov.au>
Sent: Monday, 8 November 2021 10:01 AM
To: Barnaby.Hartford-Davis@cox.com.au
Cc: Michael Potts; Karin Ke; Grant Wang; Tess Van Der Veen; Alistair Morrison; cathy.zhu@cox.com.au
Subject: FEBQ Will not be provided - Sydney Speedway - Ferrers Road Eastern Creek

CAUTION: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Good Morning,

Fire & Rescue NSW (FRNSW) acknowledge receipt of your application and supporting documents for a Fire Engineering Brief Questionnaire submitted on 5/11/2021 .

In this instance, FRNSW advises that an Fire Engineering Brief Questionnaire will not be provided.

The decision not to assess the Version (V3 – 5/11/2021) submitted is not to be interpreted as FRNSW support for the proposal nor an objection to the proposal, only that FRNSW does not have the resources to review and provide stakeholder comment on this proposal.

For any future correspondence regarding this matter, we request that you quote your job / reference number:

Project Reference:	FRN20/2128
Job Number:	BFS21/4242
SRID Number:	8000018111

Should you have any further queries regarding this matter, please contact the Fire Safety Branch on 02 9742 7434.

Regards
Michelle Trajkovski

Administration Officer
FIRE SAFETY ADMINISTRATION UNIT
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Appendix F

Fire Hazard Assessment

F1 Fire Hazard Assessment

An assessment of fire hazards and their consequences to the proposed development and the safety of its occupants is detailed in this section, in relation to the different types of use throughout the development. This assessment will be the basis for the fire scenarios proposed for analysis.

The primary use of the building will be as an assembly venue for use primarily as a stadium for events of the speedway. The building also contains retail, electrical/DB/comms rooms, food and beverage facilities, carparking and plant rooms.

Statistical data indicates that the most likely fire sizes are small, extinguished by occupants. These fires do not challenge the fire safety design elements of a building, and hence are not considered in the analysis.

Figure 29 below, adapted from NFPA 92B[9] shows a typical time-based illustration of the heat release rate of a continuously growing fire, known as a t^2 fire. The incubation period may range from seconds to hours, however it is very difficult to predict.

For the purposes of this assessment, it shall be assumed that the fire begins to grow immediately, and the incubation period is ignored. This should be recognised as a very conservative approach. The incubation period is normally characterised by smouldering combustion which still produces small amounts of smoke that may be sufficient to activate detection systems or alert occupants.

Once the growth phase of the fire begins, the fire will develop at a rate dependent on its location and the fuel and ventilation available.

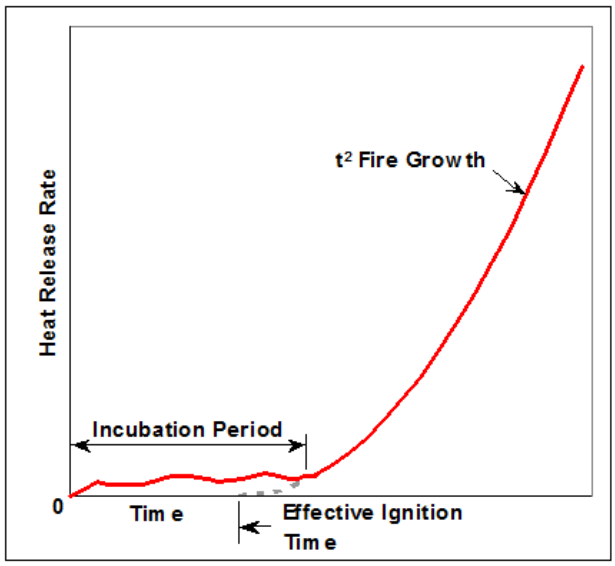

Figure 29: Typical Actual Fire Growth Curve.

In terms of fire safety, the Grandstand consists on compartmentalised rooms, clear circulation areas and a straight, clear walkway on Level 1. Occupants are

considered to be in a place of relative safety once they have exited the Grandstand.

It is considered that the development of a fire would be quickly recognised either via automatic thermal detection or visual detection by staff. in the back of house areas or visual detection by staff. The natural ventilation in Level 1 assist in maintaining tenable conditions during egress.

F1.1 Retail areas

It is possible for a fire to start in retail areas however, the likelihood of this event remains quite low given that retail areas do not have a large number of ignition sources. Staff members are expected to be present at all times during normal operating hours. Initial visual fire detection by the occupants of the retail units is highly likely as the space will not be left unattended during normal operating hours, the public would also be able to notify staff of a fire incident. If a fire occurs after hours, it is unlikely there would be occupants to detect the fire; however, the thermal detection system should prevent significant fire growth and spread. If a fire were to occur outside operating hours, it is unlikely many people would be affected.

Retail areas can accumulate waste packaging throughout the event/opening hours. Packaging and shipping materials can pile up inside and outside of the retail area which has the potential to become a fuel load. Good housekeeping and store management can restrict the accumulation of waste with efficient and safe disposal of these items.

Fires in stores and other mercantile properties represent approximately 3% of all structure fires.[25] Fires in this property type have fallen substantially over the past 35 years with reported fires within this group has seen a decline of 63% from 1980 to 2013.[25] Grocery stores account for 28% of all fires which is the largest quantity of structure fires by property use, the remaining breakdown of structure fires is shown in Table 16 below.

Table 16: Structure fires in stores by property use, 2009-2013 annual averages.[25]

Property Use	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Grocery or convenience store	**3,740**	**(28%)**	**1**	**(5%)**	**66**	**(22%)**	**$94**	**(16%)**
Convenience store	810	(6%)	0	4%	11	4%	$26	4%
Food and beverage sales, grocery store	2,920	(22%)	0	2%	56	19%	$67	11%
Unclassified or unknown-type mercantile or business	**2,930**	**(22%)**	**1**	**9%**	**59**	**20%**	**$126**	**21%**
Service station or vehicle sales, service or repair	**1,920**	**(14%)**	**4**	**31%**	**81**	**27%**	**$116**	**19%**
Service station or gas station	460	3%	0	0%	14	5%	$15	2%
Motor vehicle or boat sales, services or repair	1,460	11%	4	31%	67	22%	$101	17%
Laundry, dry cleaning, professional supplies or services	**1,480**	**11%**	**1**	**5%**	**25**	**8%**	**$42**	**7%**
Laundry or dry cleaning	1,040	8%	0	3%	19	6%	$16	3%
Professional supplies services	440	3%	0	2%	6	2%	$26	4%
Specialty shop	**1,280**	**9%**	**3**	**23%**	**22**	**7%**	**$85**	**14%**
Department store or unclassified general retail	**1,010**	**(7%)**	**1**	**(4%)**	**21**	**(7%)**	**$73**	**(12%)**
Unclassified general retail	630	(5%)	1	(4%)	11	(4%)	$56	(9%)
Department or discount store	380	(3%)	0	(0%)	10	(3%)	$17	(3%)
Personal Service, recreational or home repair	**670**	**5%**	**1**	**12%**	**15**	**5%**	**$28**	**5%**
Personal service, including barber or beauty shops	500	4%	1	6%	9	3%	$16	3%
Recreational, hobby, home repair sales or pet store	170	1%	1	6%	6	2%	$12	2%
Household goods sales or repairs	**290**	**2%**	**0**	**2%**	**6**	**2%**	**$26**	**4%**
Textile or apparel sales	**260**	**2%**	**1**	**8%**	**5**	**2%**	**$14**	**2%**
Total	**13,570**	**100%**	**12**	**100%**	**299**	**100%**	**$604**	**100%**

Data from NFPA suggests that fires are more common during normal operating hours (9am to 6pm).[25] However, fires that do not occur during this period account for the most property damage (9pm to 5am) (45%) as shown in Figure 30. This shows that that early visual detection by occupants and first aid firefighting is key to extinguish or delay fire growth during a fires initial stages. This highlights the need for automatic detection and suppression systems to further protect occupants and the property when not occupied.

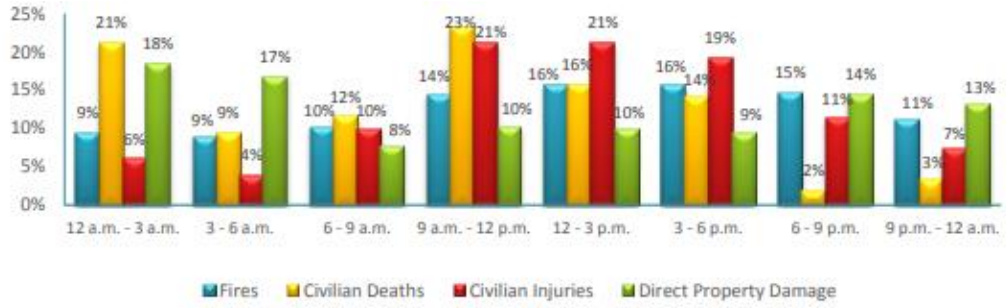

Figure 30. Fires and losses in stores by alarm hour, 2009-2013.[25]

Data from the NFPA show the leading cause of fires in stores was cooking equipment which was responsible for 21% of fires.[25] Other leading causes were Electrical distribution (15%), heating (11%) and intentional (11%). The leading causes of fires in this property type is shown in Figure 31 below. Cooking materials were the first item to be ignited in 13% of fires however only accounted

for 2% of all property damage, in this case it is likely first attack firefighting limited the fire growth to the object of origin.

NFPA data over the period of 2009-2013 show that 72% of the fires in stores did not extend beyond the room of origin. During this period only 3% of fires extended beyond the building of origin.[25]

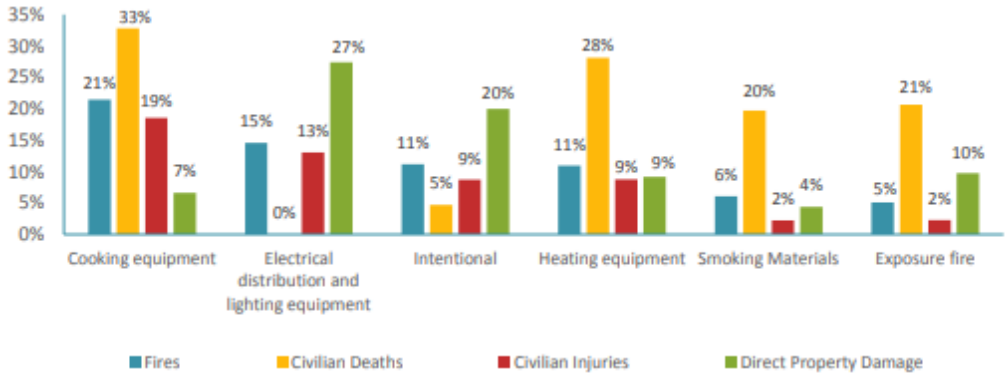

Figure 31. Structure fires in stores by leading cause, 2009-2013.[25]

F1.2 Eating and Drinking Facilities

The grandstand consists of four F&B rooms with cooking facilities.

Eating and drinking facilities can have a medium/ high fuel load due to the furniture, furnishings and storage of combustible goods. Occupants within the space are expected to be awake and alert, however, may not be familiar with the layout of the building and egress routes. Staff within the establishment are expected to be awake and alert, familiar with the building and evacuation procedures. As alcohol is permitted on the premises there is a likelihood occupants are intoxicated. Occupants that are intoxicated typically respond slower to visual and audible cues and have general decision making inhibited.

During 2014-2016, FEMA has shown that eating and drinking establishments accounted for 8.6% of non-residential building fires.[26] NFPA has shown during 2010-2014 the leading cause of fires in these properties is cooking equipment accounting for three out of five fires and 38% of direct property damage.[27] Other leading causes within this property type are electrical and lighting equipment (9%), heating (9%), smoking materials (7%) and intentional fire setting (4%) as shown in Figure 32 below.

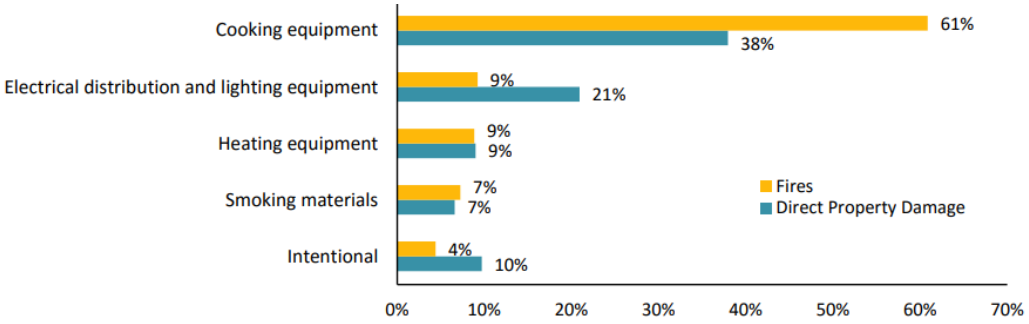

Figure 32. Structure fires in eating and drinking establishments by major cause 2010-2014 (top 5 shown).[27]

Deep fryers were involved in 21% of fires and ranges/cooktops were involved in 14% of all cooking equipment fires. Cooking materials were also noted to be the first thing ignited accounting for 43% of fires.[27]

During 2010-2014 structure fires have been classified depending on the occupancy type as shown in Table 17 below. Restaurants and Cafeterias accounted for 78% of all fires in eating and drinking establishments during this period.

Table 17. Structure fires in eating and drinking establishments by property use 2010-2014.[27]

Property Use	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Restaurant or cafeteria	5,810	(78%)	1	(40%)	91	(83%)	$119	(72%)
Unclassified eating or drinking places	830	(11%)	0	(0%)	7	(6%)	$19	(11%)
Bar or nightclub	770	(10%)	2	(60%)	12	(11%)	$27	(16%)
Total	7,410	(100%)	3	(100%)	110	(100%)	$165	(100%)

Statistics from NFPA show that for all structure fires in eating and drinking establishments 68% of fires were contained to the object of origin. [27] Only 1% of all fires extended beyond the building of origin. The extend of flame damage within this property type is shown in Figure 33 below. As most fires occurred during the day there is a high likelihood of early visual detection of a fire incident from occupants. If safe to do so, a member of staff can commence an initial first attack on the fire delaying fire growth or fully extinguishing the fire to the object of origin.

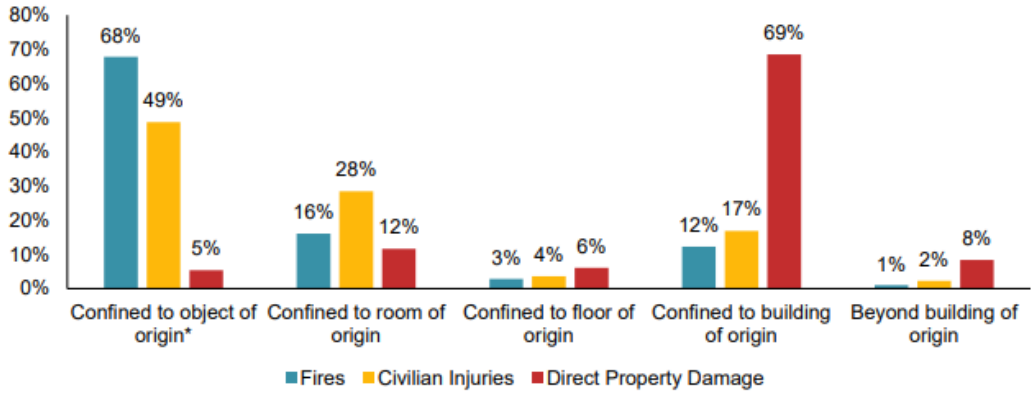

Figure 33. Extent of flame damage within eating and drinking establishments, 2010-2014.[27]

Fires were more common to occur on Fridays and the weekend. Fires were less common during overnight hours (midnight to 6am), however, fire incidents that occurred overnight caused the most damage. Fires during this time are less likely to affect many occupants as it is outside of normal operating hours. This highlights the need for suppression and detection systems during this time when there are less occupants to provide early visual detection.

F1.3 Plant rooms

The overall fire safety risk in a plant room is assessed in terms of both probability of occurrence and extent of harm to people. There may be a reasonable number of ignition sources, such as electrical failure and heat transfer to combustibles. However appropriate maintenance can significantly mitigate this risk. Even if an ignition source is present, the fire load is typically low and a fire is likely to be small and have a slow growth rate.

Plant areas remain largely unoccupied except for maintenance purposes and these occupants should be alert and responsive, which implies a limited risk of harm to people.

Automatic detection is provided in the plant rooms which is particularly relevant for times when plant areas are unattended.

F1.4 Fire brigade intervention

Fire Brigade intervention is first and foremost aimed at protecting life. Upon arrival, the first consideration is life safety. If occupants require assistance, rescue operations will take priority. If occupants are considered to be out of immediate danger, brigade activities will focus on fighting the fire.

In the case of this building, compartmentation should limit fire spread to a small area, with only a single floor fire affected. As all occupants should be awake, evacuation of occupants most at risk should be relatively quick. Consequently, it is likely that brigade activities will focus on fighting the fire.

The health and safety of fire fighters must be considered by the officer in charge at the time, however this is significantly addressed by the provision of sprinklers, appropriate hydrant provisions and pressurised fire stairs. Sprinklers reduce the amount of smoke, significantly reduce the heat in a compartment, generally prevent flashover, limit fire spread, and help prevent structural failure.

Fire brigade also aim to protect the environment. In particular, this fire engineered strategy supports the environmentally sustainable design objectives for the project by minimising the likely adverse impact of a fire scenario.

Sydney Metro

Sydney Speedway Grandstand Building

Fire Engineering Report

02

Issue 5 | 10 November 2021

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 276189-00

Arup Australasia Pty Ltd ABN 76 625 912 665

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Australia

ARUP

Document verification

ARUP

Job title		Sydney Speedway Grandstand Building		Job number 276189-00
Document title		Fire Engineering Report		File reference
Document ref		02		
Revision	Date	Filename	001_Sydney Speedway_FER_Issue.docx	
Draft 1	23 Sep 2020	Description	First draft	
			Prepared by	Checked by	Approved by
		Name	Tess Van Der Veen	Grant Wang	Alistair Morrison
		Signature			
Issue 1	29 Sep 2020	Filename	002_Sydney Speedway_FER_Issue.docx	
		Description	Updated with team comments	
			Prepared by	Checked by	Approved by
		Name	Tess Van Der Veen	Grant Wang	Alistair Morrison
		Signature			
Issue 2	21 April 2021	Filename	003_Sydney Speedway_FER_Issue 2.docx	
		Description	The report was updated to reflect the changes to the fire compartment lines and fire rating between levels.	
			Prepared by	Checked by	Approved by
		Name	Tess Van Der Veen / Grant Wang	Grant Wang	Alistair Morrison
		Signature			
Issue 3	28 Apr 2021	Filename	004_Sydney Speedway_FER_Issue 3.docx	
		Description	Minor update to the reference drawings for ‘Fire Line Update’	
			Prepared by	Checked by	Approved by
		Name	Tess Van Der Veen / Grant Wang	Grant Wang	Alistair Morrison
		Signature			
				Issue Document verification with document	✓

Document Verification

Job title		Sydney Speedway Grandstand Building			**Job number** 276189-00
Document title		Fire Engineering Report			**File reference**
Document ref		02			
Revision	**Date**	**Filename**	005_Sydney Speedway_FER_Issue 4.docx		
Issue 4	3 Jun 2021	**Description**	Minor update to the doors		
			Prepared by	Checked by	Approved by
		Name	Grant Wang / Tess Van Der Veen	Grant Wang	Alistair Morrison
		Signature			
Issue 5	10 Nov 2021	**Filename**	006_Sydney Speedway_FER_Issue 5.docx		
		Description	Updated to include additional performance solution; omission of emergency signage above select doors.		
			Prepared by	Checked by	Approved by
		Name	Tess Van Der Veen	Grant Wang	Alistair Morrison
		Signature			
		Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			
		Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			
				Issue Document Verification with Document	✓

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FRNSW FEBQ Comments

Appendix F

Fire Hazard Assessment

Executive Summary

Arup has been engaged to develop a performance-based fire safety strategy for the Sydney Speedway Grandstand.

The Grandstand is to be a new construction proposed to accompany the relocation of the Sydney Speedway to Eastern Creek, Sydney. The two-storey building shall be located along the Competitor Access Road west of the speedway track and is of Type B construction. The building is Class 9b and Class 6.

The design for the proposed building will generally follow the prescriptive Deemed-to-Satisfy (DtS) Provisions of the Building Code of Australia (BCA 2019) where appropriate. However, where the DtS provisions are either inappropriate, or prove overly onerous or restrictive to the design, it will be demonstrated that the Performance Requirements of the BCA are achieved by a performance-based, fire engineered, Performance Solution.

This Fire Engineering Report (FER) is prepared based on the documents detailed in Section 7.1 to specify the fire safety strategies, acceptance criteria, assessment methodologies and detailed assessments for the Performance Solutions associated with this project. This FER is to support the Construction Certificate for the Grandstand Building.

The DtS non-compliances identified by the Project BCA Consultant are listed in Section 4. Section 3 includes the required fire safety measures to support the Performance Solutions for each of the identified non-compliances. The builder, sub-contractors and designers are required to include this fire safety strategy in the design.

By satisfying the Performance Requirements of the BCA, an acceptable level of life safety can be achieved by the design.

The reader is also directed to read the Assumptions and Limitations in Appendix B.

1 Introduction

1.1 General

Arup has been engaged to develop a performance-based fire safety strategy for the Sydney Speedway Grandstand at Eastern Creek. The fire safety objective of this strategy is limited to achieving compliance with the Performance Requirements of the Building Code of Australia (BCA)[5]. Fundamentally this aims to protect life safety, prevent fire spread to adjacent buildings, and facilitate Fire Brigade operations.

The approach adopted by Arup is generally in accordance with the International Fire Engineering Guidelines[2] by adopting worldwide best practice and standards as outlined in Section 0.1.1 (of the IFEG) and using the document as general guidance on the analysis process without strictly following each individual sub-system as outlined in Section 1.3 of the IFEG which permits different approaches to demonstrate compliance. In addition, the approaches outlined the earlier Fire Engineering Guidelines[6], as well as the Society of Fire Safety Code of Practice[8] are adopted where appropriate.

Arup makes all reasonable efforts to incorporate practical and advanced fire protection concepts into its advice. It is to be recognised, however, that fire protection is not an exact science, and that no building design can guarantee freedom from either ignition or fire damage, and enhanced property protection strategies should be considered in consultation with the insurer's requirements.

The design for the proposed building will generally follow the prescriptive Deemed-to-Satisfy (DtS) Provisions of the BCA where appropriate. However, where the DtS provisions are either inappropriate, or prove overly onerous or restrictive to the design, it will be demonstrated that the Performance Requirements of the BCA are achieved by a performance-based, fire engineered, Performance Solution.

1.2 Purpose of this report and approvals process

This Fire Engineering Report (FER) is prepared based on the documents detailed in Section 7.1 to specify the fire safety strategies, acceptance criteria, assessment methodologies and detailed assessments for the Performance Solutions associated with this project. This FER is to support the Construction Certificate for the Stage 3 construction of new works on site.

The strategies, criteria and methodologies applied in the assessment have been discussed with project stakeholders, Fire & Rescue NSW (FRNSW) and appropriate regulatory authorities (e.g. Principal Certifying Authority) regarding their applicability and suitability during the FEBQ process involving submittal of a FEBQ to FRNSW on 2 July 2020. Comments from FRNSW on the FEBQ were received on the 19 August 2020 and are addressed within this report. For a summary of the FRNSW comments, the reader is referred to the FRNSW response to the FEBQ in Appendix E1.

1.3 Limitations of this report

This report does not assess the level of property protection, business interruption or environmental protection associated with the development. The assessment is limited to compliance with the Building Regulations, which excludes the above issues.

This report does not address insurance issues. It is recommended that relevant insurers are advised of the contents of this report, so that insurance issues can be appropriately addressed between the building owner and/or operator and their insurer.

Issues related to Occupational Health and Safety or community protection are outside the scope of this report, except where directly relevant to the Performance Solutions presented.

With regard to arson protection, the assessment considers only an amateur attack of limited proportions. Organised criminal or terrorist attacks have not been considered. The client has not indicated that the subject facility is considered to be a likely target for this type of attack and has not requested that it be included in the assessment. Appendix B provides more information on the limitations of this report, including arson protection.

1.4 Stakeholders

The stakeholders relevant to the fire strategy include the following representatives listed in Table 1.

Table 1 Stakeholders

Role	Company	Representative
Client	Sydney Metro	John Andrews
Principal Certifying Authority	Blackett Maguire and Goldsmith	Michael Potts
BCA Consultant	Steve Watson & Partners	Andrew Rys
Architect	Cox Architecture	Barnaby Hartford-Davis John Ferendinos
Fire Services Consultant	Warren Smith	David Bolt
Civil Engineer	Turnbull engineering	John Ekechukwu Ruth Hoog Antink Steve Andrew
Fire Brigade	FRNSW	Duke Ishmael
Fire Engineer	Arup	Alistair Morrison Grant Wang Tess Van Der Veen

2 Project Description

The Sydney Speedway Grandstand is a two-storey design of Type B construction, to be located on the western edge of the relocated speedway track. For a comprehensive description of the development, the reader is referred to the project documentation. The following brief description is provided to set the fire safety strategy in context.

2.1 Building description

Sydney Speedway will consist of the speedway track itself along with a new ticket building (booth), pit garages, competitor amenities, administration building and maintenance shed in addition to the new Grandstand.

The ticket building (booth) is a standalone single level building and is required to be Type C Construction. All other construction aside from the Grandstand is understood to meet the BCA DtS requirements and, as such, are not addressed in this FER.

The Grandstand is a new two storey building to be located along the western edge of the speedway racetrack. The Grandstand design consists of semi-modular construction, with prefabricated elements erected within a primary structural frame. Seating terraces are located around the northern end of the speedway track.

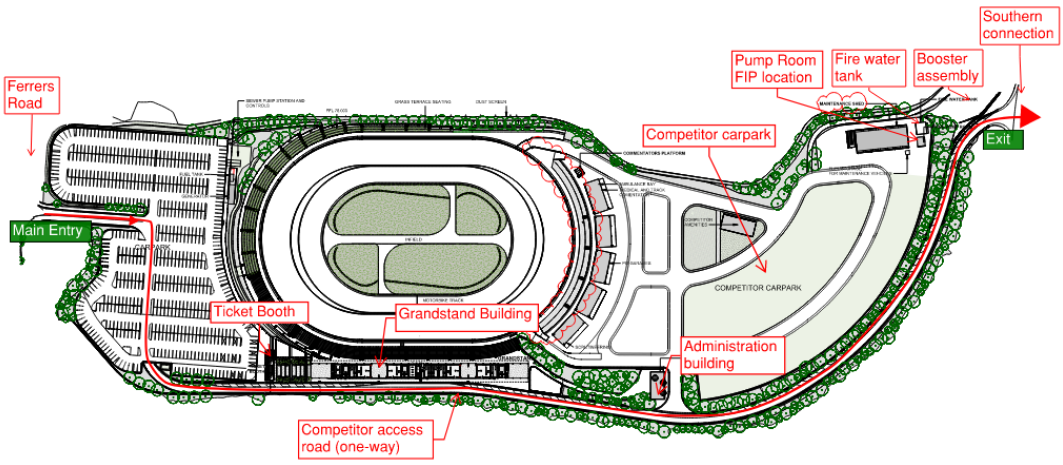

Figure 1 Site layout

The Grandstand has been identified as Type B construction with Class 6 and 9b spaces as identified in the preliminary BCA report by Steve Watson and Partners prepared for Cox Architecture dated 12 May 2020.

The Grandstand which has a rise in storeys of 2 and a floor area of 1100m^2 and 1145m^2 for the Ground Floor and Level 1 respectively, excluding the seating terraces which are located externally on the fill embankment.

The Ground Floor consists four food and beverage (F&B) outlets, male and female amenities, a plant room, merchandise room, MSB room, distribution board (DB) room and comms room (Figure 2).

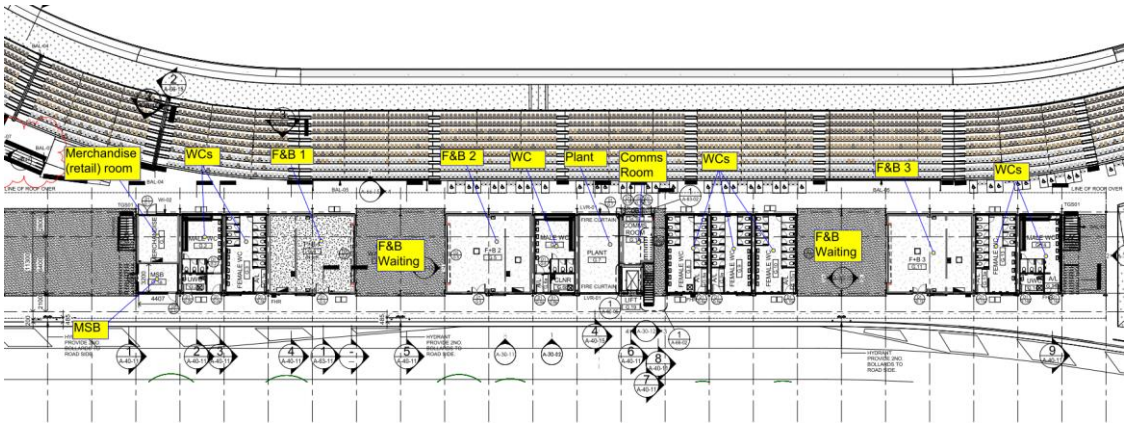

Figure 2 Ground Floor GA plan

Level 1 of the Grandstand contains corporate boxes and one tier of seating which is accessible from the corporate boxes. Egress from the tiered seating is through the corporate boxes into a circulation hallway. Level 1 is serviced by three exit stairs (see Figure 3).

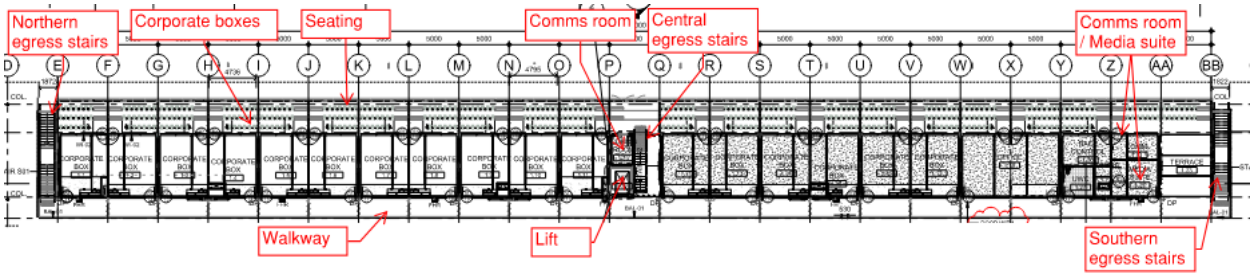

Figure 3 Level 1 GA Plan

The fire brigade access to the site is via the main entrance of Ferrers Road or via the Southern rear exit (Figure 1). A 7m wide road from the main entrance to the competitor carpark is the only access road through the site for competitors, staff, spectators and emergency services. The road will be ‘one-way’ only during standard operation but will be accessible from both points for emergency services personnel and vehicles.

2.2 Building characteristics

A summary of the key BCA building characteristics is provided in Table 2 below.

Table 2: Building description

Characteristic	Description
Rise in storeys	2
Effective height	4m
BCA classes of use	Class 9b, Class 6
DtS designation of type of construction	Type B
Nearest fire stations	The nearest fire stations include Huntingwood Fire Station and Smithfield Fire Station as shown in Figure 3 below.

Sydney Speedway will be serviced by Huntingwood Fire Station, 42 Huntingwood Drive, Huntingwood, located 4.1km from the main site entrance. As a secondary option, Smithfield Fire Station, 875 The Horsley Drive, Smithfield will service the site.

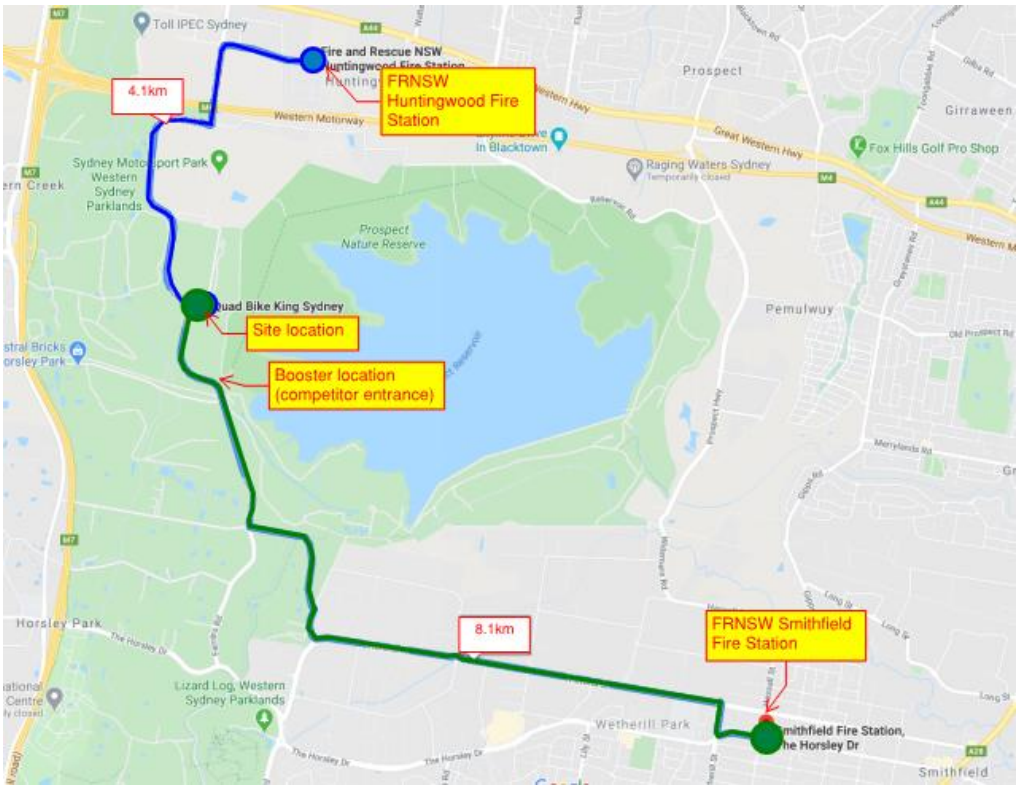

Figure 4: FRNSW Stations servicing Sydney Speedway, Eastern Creek

2.3 Occupant characteristics

2.3.1 Non-event mode

Occupants within the building in non-event mode are typically staff members, cleaners and maintenance personnel. All staff members are expected to be awake, alert and familiar with the building, including the exit locations and evacuation procedures.

2.3.2 Event mode – public area

The Grandstand is primarily used during events at the site. During event mode occupancy will be at a maximum. The following occupant characteristics are expected:

- The main occupancy group will consist of spectators. The total spectator capacity of the Grandstand is 3900, broken down into 400 people in the building component and 3500 in the outdoor seating component. Spectators will also transverse the space from the public carpark to the Grandstand. Spectators are expected to be awake and alert, however they could be visiting the stadium for the first time and therefore it is assumed that they are unfamiliar with the layout or evacuation procedures. Occupants mobility will be typical for a broad range of public and include people with a mobility impairment but who are able to self-evacuate or have an assistant who can help with evacuation (see Section 3.3.2 for mobility impaired egress strategy).
- Staff will be present throughout the building including ushers, security, management and food and beverage and merchandise workers. The speedway staff are predicted to be 5% of the total spectator population. Staff are expected to be familiar with the building and emergency procedures. Training shall be provided to assist others with egress from the building.
- Competitors will occupy the site but their presence in the Grandstand will be minimal. A competitor carpark is located at the southern end of the site.

3 Required Fire Safety Strategy

The purpose of the fire safety strategy is to detail the necessary design provisions such that the building can perform to an acceptable level of fire and life safety. A more comprehensive summary of the fire safety objectives is provided in Appendix A of this report.

The fire safety strategy developed in this report is only related to the Grandstand and the significant fire safety issues identified by the project BCA consultant in the report titled *BCA Assessment Report: Eastern Creek Speedway Report 2020/0186 R1.0* prepared by Steve Watson & Partners, dated May 2020.

The works are generally to be built in accordance with the DtS provisions of the BCA for fire safety. The exception to this is where the DtS provisions are altered

by the Performance Solutions (Section 4) outlined in this report and documented in the following sections.

Unless identified in this report, all other fire safety measures are to satisfy the BCA DtS provisions.

3.1 Design philosophy

The fire safety strategy is to provide a design that gives a satisfactory level of occupant life safety, protection to other property and can facilitate fire brigade intervention. Fire engineering allows an increased level of design innovation and flexibility over a strictly DtS design and can be used to design strategies that are particularly relevant to the fire safety risks of this development.

The key characteristics of the fire safety strategy involve fire resistance, means of escape, services and equipment, fire brigade intervention and fire safety management, as explained in detail in the following section.

Fire resistance is achieved through fire separation between Ground Floor spaces and the Ground floor to Level 1 ceiling or floor. As specified in Section 5.1, this is achieved by combination of the follows:

- Precast concrete slabs having an inherence FRL at least of 30/30/30;
- Fire rated enclosure having an FRL at least of -/30/30 to the rooms on the ground floor (except that no need fire rating for the walls along Grids 1 and 3 of the WCs);
- Fire rated ceiling having an FRL of -/30/30 to the F&B waiting areas on the ground floor;
- Cavities between hazard rooms form part of level 1 and are provided with fire rated penetrations in accordance with the DtS Provisions of the BCA from the rooms and the voids between the Ground floor modules.

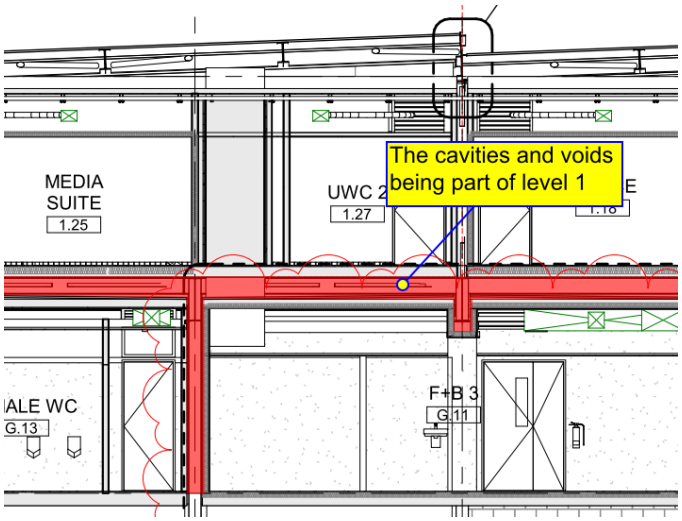

Figure 5 A portion of section showing the cavities and voids being part of level 1

A typical section which indicatively shows the F&B fire resistance arrangement is illustrated in Figure 6 below. More details are referred to the relevant architectural drawings for ‘fire line arrangement’.

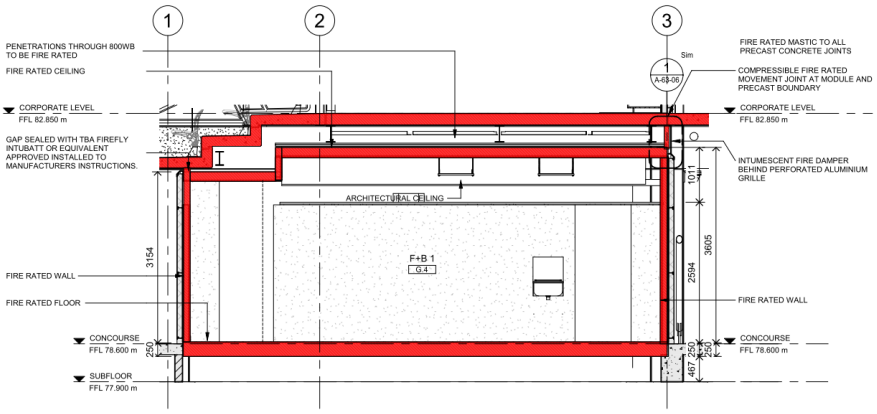

Figure 6 Typical Section indicatively shown F&B Fire Resistance Arrangement

Fire rated construction around hazard rooms (eg. F&B areas, merchandise, plant room, comms room) and WCs is intended to limit fire and smoke spread in addition to providing protection of Ground Floor steel columns and areas adjacent to essential egress routes. It is considered that the fire rated construction also provides the adequate protection to the people evacuating building from Level 1.

A non-required automatic thermal detection system in accordance with AS1670.1:2018 is to be provided throughout Ground Floor and Level 1. Due to the risk of spurious alarms in this area, thermal detection is proposed in lieu of smoke detection. This will provide early occupant warning compared to a DtS design that does not require a detection system. This provision assists in offsetting the extended travel distances on level 1 and the reduced fire rating to columns at ground floor.

Fire brigade intervention is assisted by signage and red strobes that provide visual cues to alert of the booster location at the rear entrance. The signage shall be provided throughout the site to direct emergency vehicles from the main entrance to the rear booster location. A mimic panel is to be provided at the competitor administration building and linked to the main FIP near the pumps and booster.

External hydrants are also provided to assist with intervention. Perimeter access and compartmentation shall assist the attending brigade to attack the fire without traversing a large distance through the building.

3.2 Fire resistance and compartmentation

The fire resistance and compartmentation strategy for the subject building is developed considering the semi-modular design.

The Level 1 floor of the Grandstand are to be constructed of precast concrete hollow-core slabs and precast concrete terrace seating plates on the bottom flange of steel beams. The steel beams are supported by steel columns (steel frames).

The central portion of the design (shown in Figure 7) is to be prefabricated, lightweight, modular floors. The hollow-core slabs and concrete terraces support the external seating are to achieve a minimum inherent FRL of 30/30/30. This inherent FRL is at least equivalent to a DtS design.

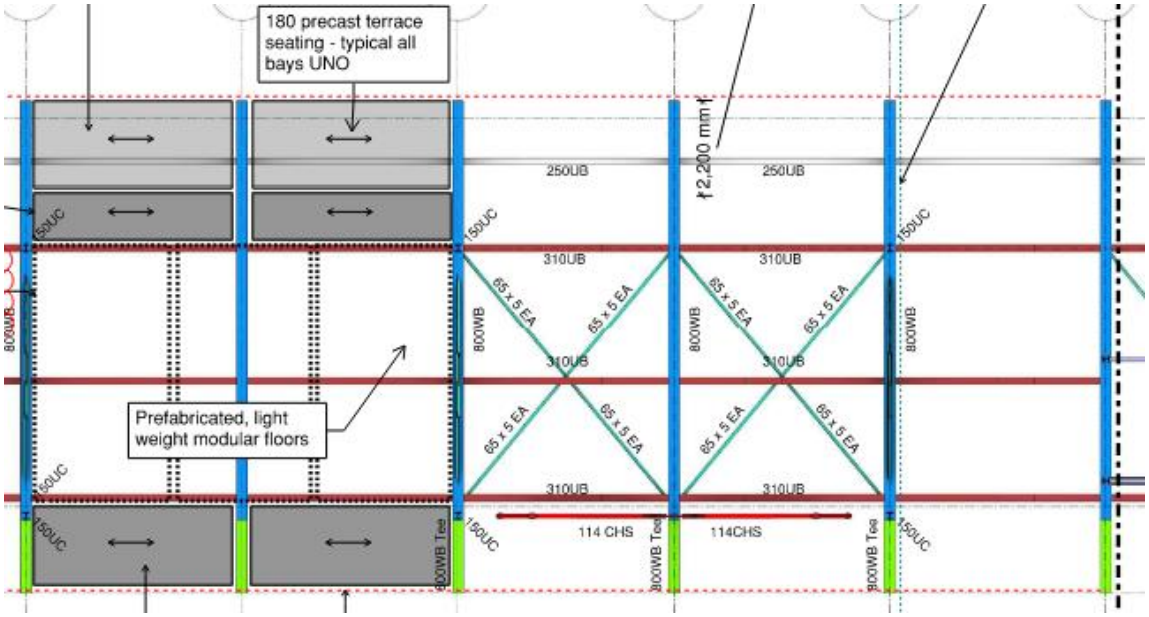

Figure 7 Structural arrangement - Level 1 floor

The fire resistance strategy requires fire rated sheeting as part of a tested, certified system to be applied to the underside of the floor framing as well as to the top of the floor joist (if required) to meet the required fire rating.

The fire resistance and compartmentation strategy has been developed in conjunction with the egress and fire brigade intervention strategy of the building as one holistic fire strategy.

A detailed assessment of the fire resistance and compartmentation is provided in Section 5.1.

3.2.1 Compartmentation

The compartmentation strategy includes separation between floors and high hazard Ground Floor rooms to assist in safe egress and limit fire and smoke spread.

High hazard rooms on the Ground Floor are to be fire separated to limit fire risk to the concourse area by fire rated bounding construction (walls, doors, shutters and dampers). This provision is in accordance with guidance in the ‘Green Guide’ to limit heat, fire and smoke spread[15]. The following rooms (shown in Figure 8) shall be fire rated from the internal side:

- Merchandise room and MSB room (-/30/30) due to the close proximity of these rooms to the egress path,
- WCs (-/30/30) in order to simplify the services penetrations (no fire rating for the walls below the ceiling along Grids 1 and 3);

- All F&B rooms and the plant room (-/30/30) due to the high hazard risk, and
- If the MSB, DB or Comms rooms on the Ground floor sustain emergency equipment, an FRL of -/120/120 shall be achieved from the internal side. If not, the FRL is required to be -/30/30 for the MSB, DB and Comms rooms due to the fire hazard associated with these rooms.

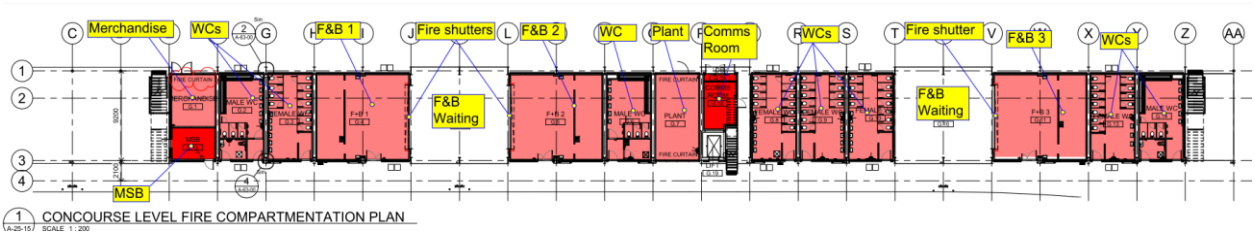

Figure 8 Ground Floor Compartmentation

Any gaps present between fire rated elements and between modular construction shall be sealed with a fire stopping system achieving an FRL of at least -/30/30. This includes gaps that are required to be sealed to maintain the fire resistance between storeys or between fire rated elements. The system shall comply with BCA clause C 3.15 and C3.16 and tested to 1530.4 and in the manner in which they are installed.

Construction joints between the pre-cast plats projecting beyond the fire rated walls beneath, as circled in Figure 9 below shall be fire stopped in accordance with Clause C3.16 of the BCA. The inherent FRL of the steel has been assessed as being appropriate to the risk in order to maintain structural stability during a design fire and therefore can be considered as having the required fire rating for the purposes of this strategy.

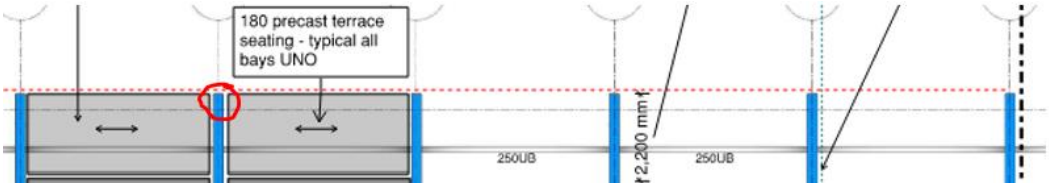

Figure 9 – typical construction joints between pre-cast plats requiring protection.

3.2.1.1 Fire Shutters

The fire shutters noted in this report must be tested as a complete system to achieve a -/30/- FRL rating and shall consist of one single and continuous module once installed (i.e. no overlapping sections). The bulkhead system shall also be fire rated to -/30/30 FRL from room side.

The shutters shall be restrained at the sides by side guiderails forming part of the system. The shutters shall comply in all respects with the design requirements of AS1905.2 and AS1530.4.

The shutters for F&B rooms must be capable of operating both manually and on activation of the fire alarm. As such, the shutter shall be linked to the internal thermal detection of the room and shall close upon activation. The shutter shall 'fail safe' in the closed position.

The shutter for the Merchandise room is provided on the egress route for the occupants in the room. This shutter is to be activated by a fusible link only.

The supplier shall provide evidence of compliance to show that the fire shutters meet both of the above Australian Standards. The evidence of compliance shall clearly state that maximum allowable size for the shutters and this maximum size shall be less than the installed sizes required.

The design and installation of each system is to fully meet the manufacturer's requirements for each tested system.

Consideration may need to be given to the provision of fixed furniture near the shutter for the Merchandise room to reduce the risk of the shutter being blocked by loose furniture.

The installer shall perform suitable tests to ensure that the shutter descend automatically in accordance with the Australian Standard. The supplier of each system shall also provide a 12-month manufacturer's warranty or extended as agreed.

3.2.2 Structural Fire Resistance

The structural fire resistance levels (FRLs) for the new building structure will generally meet the BCA DtS provisions for Type B construction, with the exception as noted below:

- The steel columns and steel frames supporting the Level 1 slab shall have no applied fire resistance and achieve only an inherent FRL of 20 minutes in lieu of 180/-/- required by the BCA. This non-compliance is addressed in Section 5.1.

The following measures are requirements of the fire safety strategy for structural fire resistance:

- All Ground Floor compartmentation shall achieve an FRL of -/30/30 from the internal side to minimise the risk of fire spread from these rooms to the unprotected steel structure. These rooms include F&B, merchandise, plant rooms and WCs on the Ground Floor (except that no fire rating is required for the walls along Grids 1 and 3 of the WCs).
- The MSB, DB and Comms rooms on the Ground Floor shall achieve an FRL of -/120/120 from the internal side if emergency equipment is sustained in these rooms. If not, the FRL is required to be -/30/30.
- All doors to the following compartments require self-closers to each door along the compartmentation line; merchandise, DB, comms, plant, F&B and MSB rooms. The door hold-open devices are to be provided to the doors for F&B. The devices are to be linked to the detection system to release.

- Doors to the WCs are not required to be fire doors.
- The three F&B spaces contain large service windows, opening out to an F&B waiting space. The Merchandise also contains glazed windows (or doors) to the circulation area. These windows are to be fitted with a fire rated shutter having an FRL of -/30/- that is required to 'fail safe' in the closed position. Thermal detection in the individual F&B space must activate the closure of the respective shutter.
- The external walls of the Type B building are to be designed and constructed to comply with the BCA DTS requirements, i.e. non-combustible material.
- To mitigate the risk of waste/litter accumulation (a fuel source) near the unprotected columns, no combustible material shall encroach the area within 1.0m of the unprotected steel columns highlighted in Figure 10.
- Management plans must include timely removal of the waste and no storage or litter within 1.0m of the steel columns. The bin locations are required to remain in accordance with the designed locations provided by Cox Architecture.

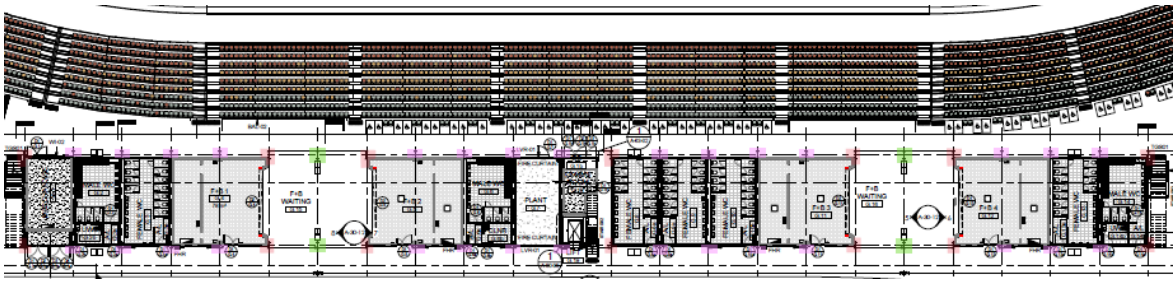

Figure 10 Indicative location of unprotected steel columns (highlighted)

3.2.3 Protection of Openings

Service penetrations through the floors are to be fire stopped to maintain the FRL of the floor. The fire stop system shall have been tested to AS1530.4 and AS4072.1 and be suitable for the application as demonstrated in the fire resistance test of its prototype and in accordance with Clause C3.15 of the BCA.

3.3 Means of Escape

3.3.1 Evacuation Strategy

The building shall rely on a simultaneous evacuation (one evacuation zone) that shall be initiated upon activation of the general fire alarm (GFA). Detection anywhere within the building shall active the GFA for the entire building.

Given the specific layout of the Grandstand, it is expected that concourse areas on the ground floor may serve as part of the evacuation routes. The evacuation strategy is to move people into the ground floor concourse from the viewing areas and further to outside of the venue.

Three stairs service level 1 and provide options for escape. It is noted that extended travel distances are present within the building on Level 1. This is addressed via a Performance Solution (see Section 5.2).

The "Green Guide" recommends that where concourses form part of an emergency evacuation route they should be designed as areas of very low fire risk, separated from catering and other outlets which may contain a fire risk with fire resistant construction of at least 30 minutes[15]. To maintain this requirement for evacuation from Level 1, the FRL of the ground floor areas adjacent to the stairs are examined. The merchandise and MSB room area fire separated by -/30/30 construction from the internal side given the fire risk in the room and its proximity to the egress path (see Section 3.2.2). The amenities located adjacent to the southern stairs is not subject to the same FRL requirements given the low risk nature of the space. Egress routes and areas shall be free from obstructions and be of low fire risk.

In addition, all doors within the path of travel and final egress doors, are to swing in the direction of escape in accordance with D2.20 of the BCA.

3.3.2 Mobility impaired egress

The BCA DtS provisions do not require any particular provisions for the evacuation of mobility impaired occupants but require accessibility for all occupants. Therefore, any measures taken to aid people with a mobility disability to evacuate will be over and above the DtS provisions.

However, there is an increased awareness and recognition that safe evacuation should be provided for all occupants in public buildings to meet the Performance Requirements of the BCA. Specific measures and requirements for evacuation of people with a mobility disability are outlined in a number of international regulations and standards, which use a combination of design and management to achieve safe evacuation.

Any mobility impaired occupants in need of assistance to travel through the flat areas or up to Level 1 are expected to be accompanied by an attendant. Attendants are however not expected to be able to assist occupants in a wheelchair down the stairs. Members of the Sydney Speedway staff would therefore be required to aid mobility impaired occupants to evacuate via Level 1 if stair evacuation is required. The benefits provided by the non-required automatic detection system are expected to further aid improved evacuation time of mobility impaired occupants in contrast to a DtS design. It is recommended that the Operator develop personal emergency evacuation plans in accordance with AS3745 to ensure procedures are developed and staff are trained in them. Evacuation chairs may be required to support this.

Further details are to be provided by the access consultant and Cox Architecture on the mobility egress strategy for Sydney Speedway.

3.4 Services and Equipment

3.4.1 Detection and Alarm

- A fire detection and alarm system will be provided throughout the Grandstand, in accordance with Specification E2.2a of the NCC and AS1670.1-2018. This is above the requirements of the DtS Provisions of the NCC.
- The detection system shall consist of thermal detection in lieu of a smoke detection system due to the risk of spurious alarms likely to be caused by dust and external smoke in the area. Detectors shall be located throughout the entirety of the building.
- Detection shall be linked to the door hold-open devices for the F&B doors required to maintain compartmentation.
- The building will have a simultaneous evacuation regime and any detection shall raise the alarm to alert all areas of the building.

3.4.2 Signage and Emergency Lighting

Exit signage and emergency lighting is to be provided in accordance with DtS Provisions from Part E4 of the BCA and AS 2293.1-2018 with the exception of the omission of exit signage in the corporate suites, amenities and merchandise rooms. This is addressed via a Performance Solution (Section 5.6).

The emergency and signage shall be provided as follows to assist with evacuation for the large number of occupants expected to be unfamiliar with the site:

- Emergency lighting throughout all the seating area and ‘internal areas’ of the Grandstand with emergency power back up through the UPS system, and
- Exit and directional signs in accordance with DtS provisions of the BCA to provide effective wayfinding in the environment of the concourse on the Ground Floor and Level 1 (Section 5.4).
- A block plan shall be provided at the mimic panel, FIP and Booster indicating the location of the main FIP and booster assembly.
- Red strobe lights shall be located at both the FIP and mimic panel locations to assist the attending brigade. The lights are to be activated by an alarm signal from the fire indicator panel.
- Clear signage is required to assist with wayfinding for emergency services from the main entrance to the booster and FIP. The signage is to be permanently affixed, weather resistant, high contrasting, clearly visible and readable at the expected viewing distance. The specific signage locations are detailed in Section 5.4.
- Signage shall be provided throughout the Ground Floor concourse to effectively ensure that storage is not undertaken by both tenants and patrons within 1.0m of the unprotected steel columns supporting Level 1. Signage shall read ‘**KEEP CLEAR – NO STORAGE PERMITTED**’ having capital letters 20mm high in colour contrasting its background. This measure shall be

included as an Essential Fire Safety Measure for the building and listed in the Fire Safety Schedule.

- It is recommended for one sign to be provided per two columns, within direct sight of the columns. Floor markings are to be provided indicating the 1.0m zone around the columns.
- Signage shall be provided adjacent to all fire shutters to require “no obstruction of shutter above" in letters 20mm high in a colour contrasting to the background.

3.4.3 Fire Hose Reels and Extinguishers

Fire hose reels are proposed to be provided in accordance with DTS provisions of the BCA, with the exception of coverage to the fire rated Ground Floor rooms where DtS coverage is not compatible with the compartmentation strategy. This is addressed via a Performance Solution (Section 5.5).

Fire Extinguishers are to be installed and designed in accordance with BCA E1.6 and AS2444-2001. Additional extinguishers (4.5kg ABE extinguishers) are to be provided within F&B rooms, merchandise, comms room, DB and plant room as those areas are not provided with FHR coverage. A water-based extinguisher is to be provided outside the merchandise room to assist with first response firefighting. This is addressed via a Performance Solution (Section 5.5).

3.5 Firefighting Provisions

3.5.1 Fire Hydrants

A fire hydrant system is to be provided in accordance with BCA Clause E1.3 and AS 2419.1-2005, except for the following non-compliance:

The external hydrants are located approximately 5.5m (2.7m to the F&B waiting area) from the building in lieu of 10m. See Figure 11 below. This is addressed as a Performance Solution in Section 5.3.

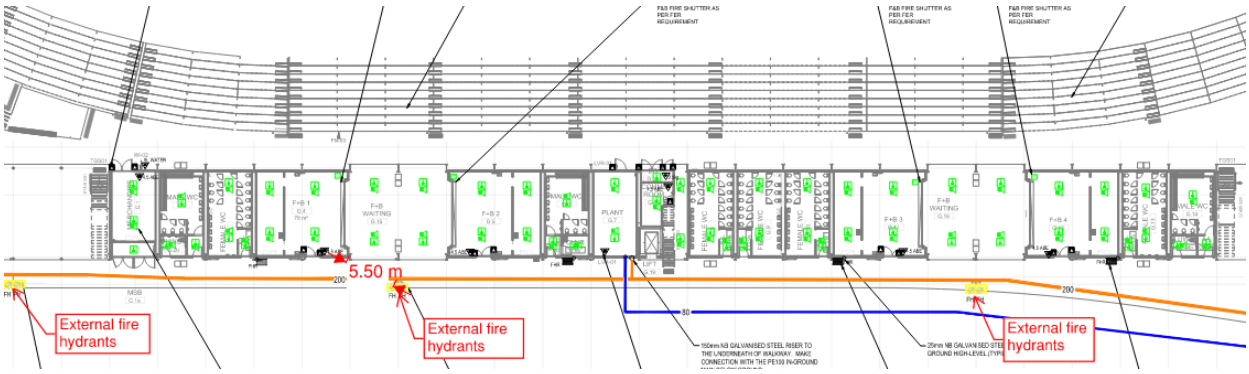

Figure 11: Indicative location of external hydrants relative to the building

3.5.2 Hydrant Booster

A hydrant booster assembly shall be provided at the southern end of the site near the Competitor Access Road exit in accordance with AS 2419.1-2005. This assembly is not within sight of the main entrance, which is addressed via a Performance Solution in Section 5.4. As part of this solution, the following is required:

- Signage for emergency services wayfinding as described in Section 3.4.2.
- Mimic fire panel provided in the competitor administration building and interlinked with the main FIP.
- The boom gates along the one-way access road to be manually opened upon general fire alarm to assist with brigade intervention.

The booster shall be in an accessible position where the fire brigade can park adjacent to the booster, complete with a hardstand within 8m of the booster. The hardstand area provides a safe working space for firefighters to exit the vehicle and move around the fire appliance.
As the booster feed is a large bore and the connections are semi rigid, the brigade is to be positioned such that pumping will not inhibit access to the site for further responders.

3.5.3 Fire Indicator Panel (FIP)

The fire indicator panel for the site shall be located external to the pumproom in a weatherproof enclosure. This location is not at the Designated Building Entry Point to the Speedway and is addressed in a Performance Solution (Section 5.4).

To satisfy the performance requirements, a mimic panel interlinked with the main FIP shall be provided in the administration building. Red strobe lights shall be provided at both the FIP and mimic panel locations. The lights will be activated by an alarm signal from the fire indicator panel that serves any on site automatic detection.

3.6 Fire Safety Management

The building is required to be managed under a fire safety policy which includes:

- An emergency management plan in accordance with AS 3745; including procedures for the safety of people in buildings including occupants with a mobility impairment, structures and workplaces during emergencies, the appointment of an Emergency Planning Committee and setting up of an Emergency Control Organization.
- Good housekeeping and fire prevention procedures such as maintaining clear evacuation routes.
- A list of the requirements as part of the FER shall be provided adjacent to the FIP and included in the AFSS to be incorporated as part of the yearly AFSS update.

Specific fire safety management requirements as part of this strategy include:

- Storage of combustibles shall not occur on the Ground Floor (in all areas including amenities) within 1.0m of unprotected steel columns supporting Level 1 (see Section C1.3 for justification). This includes implementation of the designed bin locations. This includes management procedures ensuring timely removal of waste to minimise accumulation of combustible material. This requirement shall be included in the Essential Fire Safety Measures for the building and are to be reviewed, with necessary inspections and rectification actions.

In addition to the above, the following items shall be included in the staff training requirements:

Table 3: Summary of staff training requirements

Training Requirement	Staff required
Notified of the location of fire hose reels and fire extinguishers throughout the building as part of annual fire safety training.	All permanent staff and designated fire wardens
Informed of the management in use requirement for the storage of combustibles on the Ground Floor concourse to not encroach within 1.0m of the unprotected steel columns. Any storage within the space must be removed by staff throughout the lifetime of the building and bins must be emptied in a timely manner. This includes all areas with the Ground Floor including the amenities.	All permanent staff, security and F&B staff.
Informed of booster location and that the brigade may arrive at the Competitor entrance as opposed to the main entrance in a fire event.	Building management.
Waste management plan to ensure no waste accumulates near the entry/exit or near external hydrants.	All permanent staff.

3.7 Maintenance of fire and other safety measures

The maintenance of fire and other safety systems is a mandatory requirement for building owners under the provisions of the Environmental Planning and Assessment Act 1979 and the Environmental Planning and Assessment Regulation 2000.

All fire safety measures required by relevant DtS Provisions or the Performance Solutions are considered to be essential to the performance of the Building Solution and should be maintained and perform in accordance with the nominated standard(s) on the Fire Safety Schedule.

AS1851-2012 is recommended to be followed for maintenance of all fire safety features in the building.

3.8 Fire brigade intervention

Fire Brigade intervention is first and foremost aimed at protecting life. Upon arrival, the first consideration is life safety. If occupants require assistance, rescue

operations will take priority. If occupants are considered to be out of immediate danger, brigade activities will focus on fighting the fire.

In the case of this building, the large enclosed volume and natural ventilation provisions are expected to maintain tenable conditions for the duration of egress. Early detection is provided in the back of house areas via automatic smoke detection, and trained staff shall activate manual call points in the event of a fire, thereby providing an alarm to all occupants. As all occupants should be awake, evacuation of occupants most at risk should be relatively quick. Consequently, it is likely that brigade activities will focus on fighting the fire.

The health and safety of fire fighters must be considered by the officer in charge at the time, however this is significantly addressed by the provision of the natural ventilation system, appropriate hydrant provisions and direct access to the public and back of house area.

4 DtS Non-compliances

The following non-compliances with the DtS provisions of the BCA have been identified to Arup by the Project Certifier.

Table 4: Summary of DtS non-compliances to be addressed via fire engineering Performance Solutions

Issue Number	Performance Solution	DtS Provisions	Performance Requirements
1	*Nil applied fire resistance is provided to selected steel columns and beams incorporating non-DtS fire separation between ground and level 1.*	*Table 4 and Clause 4.1(i) of Spec C1.1*	*CP1, CP2*
2, 3	*Extended travel distances on Level 1:50.5m to an exit, and 69m between alternative exits.*	*D1.4(c), D1.5*	*DP4, EP2.2*
4	*External fire hydrant locations to be within 10m of the building.*	*E1.3*	*EP1.3*
5	*The location of the booster and FIP will not be within sight of the main entrance.*	*E1.3, E2.2*	*EP1.3 and EP2.1*
6	*Omission of fire hose reels in fire rated rooms.*	*E1.4(f)*	*EP1.1*
7	*Omission of exit signs above doors from Corporate Suites, toilets and merchandise room*	*E4.5(d)*	*EP4.2*

5 Performance Solutions

5.1 Rationalisation of fire protection to steel structure

Issue 1	Reduction of FRL's to selected steel columns and beams supporting the Level 1 floor and external seating decks, with incorporation of non DtS fire separation between ground and level 1.
BCA Clause	Spec C1.1, Table 4 and Clause 4.1(i)
Performance Requirements	CP1, CP2
Method of Assessment	A comparative, qualitative and absolute, quantitative assessment in accordance with BCA Clauses A2.2(1)(a), A2.2(2)(b)(ii) and A2.2(2)(d).
Identified Hazards due to Non-compliance	The potential hazard associated with the proposed design is that a fire affecting an unprotected structural steel element may result in partial structural failure and potential for premature fire spread between levels in the event of fire the building.
Acceptance Criteria	To demonstrate the inherent fire resistance level of the unprotected steel structure and fire enclosure to the rooms on the ground floor is adequate for the potential fire risks within the building.
Required Fire Safety Measures	• Thermal detection designed in accordance with AS 1670.1-2018 provided throughout the entire building and designed to activate GFA. • Fire resistance is achieved through fire separation between Ground Floor spaces and the Ground floor to Level 1 ceiling or floor. This is achieved by combination of the followings: - Precast concrete slabs having an inherence FRL at least of 30/30/30; - Fire rated enclosure having an FRL at least of -/30/30 to the rooms on the ground floor (except that no need fire rating for the walls along Grids 1 and 3 of the WCs); - Fire rated ceiling having an FRL of -/30/30 to the F&B waiting areas on the ground floor; - Cavities between hazard rooms are provided with fire seals from the rooms and the voids between the Ground floor modules are part of level 1. • High hazard rooms on the Ground Floor shall achieve -/30/30 FRL from the internal side such that the structure outside this zone is shielded by the fire rated construction. If any rooms sustain emergency equipment, these must achieve an FRL of -/120/120. • Storage of bins and other good shall not occur within 1.0m of the unprotected steel columns.

	• Management in use strategy to control the positioning of excess combustible materials as outlined in Section 3.6.

5.1.1 Background

The F&B rooms on the ground floor is classified as Class 6 for retails. Specification C1.1, Table 4 of the BCA states that for a building of Type B construction, the FRL for Class 6 shall achieve no less than 180/-/- FRL.

Clause 4.1(i) of Specification C1.1 requires that in a Class 9b building, a floor separating storeys must (i) be constructed so that it is at least of the standard achieved by a floor/ceiling system incorporating a ceiling which has a resistance to the incipient spread of fire to the floor above itself of not less than 60 minutes; or (ii) have an FRL of at least 30/30/30; or (iii) have a fire protective covering on the underside of the of the floor, including beams incorporated in it, if the floor is combustible or of metal.

The steel columns supporting the Level 1 floor will not be applied with additional fire rating and will achieve an inherent FRL of approximately 20 minutes. The floor supported by these unprotected columns is precast concrete, hollow-core slabs for walkways and precast concrete terrace seating plates seated on the bottom flange of the steel beams. The steel beams are supported by the unprotected steel columns. The central portion of the level 1 floor is prefabricated lightweight modular floors.

The intent of the required FRL applied to the selected steel columns is for structural stability to be maintained during a fire event appropriate to the situation, including, fire size and location, function and use of the building, evacuation and fire brigade intervention.

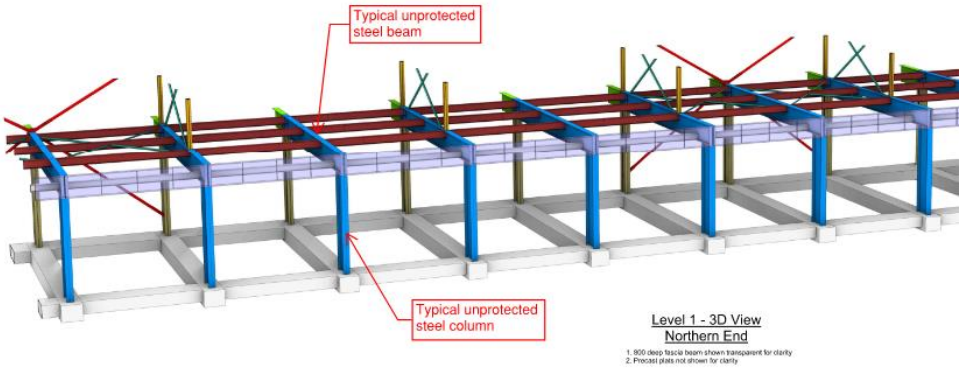

Figure 12 Steel structure render

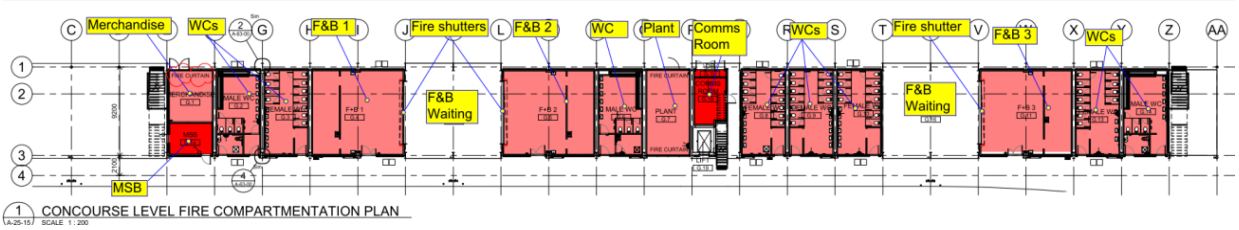

Figure 13 Ground Floor compartmentation

5.1.2 Qualitative Assessment

The solution is considered acceptable based on the following assessment:

- The unprotected steel columns supporting Level 1 could be exposed to heating from a localised fire, which has been reviewed based on the credible fire scenarios identified in Section 5.1.3. The potential fire adjacent to the structural element would not compromise the stability of the structure under fire loading conditions, in according to the structural fire engineering assessments.
- The Guide to Safety at Sports Ground, the 'Green Guide', categorises a high fire risk area as an area where combustible elements are present or where structural elements could promote the spread of fire, heat and smoke[15]. Some common sources of ignition are identified as cooking appliances, food warmers and electrical equipment (Section 15.13). Additionally, the spread of fire and smoke from areas adjacent to the egress path must be limited. As such, fire ratings are required for the selected high hazard rooms as follows:
    - The three F&B rooms and Merchandise room shall achieve an FRL of -/30/30 from the internal side due to the high fire risk associated with the space. The large trading windows of each F&B room facing out to the F&B waiting areas and the window and door to the merchandise, shall be fitted with a fire rated shutter achieving an FRL of -/30/-.
    - The shutters requires no insulation rating as the risk of fire spread to the other side is not significant. The F&B waiting area and the area outside the Merchandise are a transient, open space with limited combustible material. Occupants are not required to transverse the waiting space during evacuation and shall not be exposed to radiative heat through the shutter. Signage shall be provided adjacent to all fire shutters to require "no obstruction of shutter above" in letters 20mm high in a colour contrasting to the background.
    - In accordance with the guidance provided in the 'Green Guide', the shutters for F&B rooms must be capable of operating both manually and on activation of the fire alarm. As such, the shutter shall be linked to the internal thermal detection of the room and shall close upon activation. The shutter shall 'fail safe' in the closed position.

  - The shutter for the Merchandise room is provided on the egress route for the occupants in the room. This shutter is to be activated by a fusible link only.
  - The merchandise and MSB rooms are located adjacent to the northern egress stairs and, as such, are required to achieve an FRL of -/30/30 from the internal side. This provision will limit the risk of negative impact on occupants' egress due to fire and smoke spread from a fire within these rooms.
  - The plant room is considered to be high risk, and therefore required to be fire rated to achieve -/30/30 from the internal side.
  - If the MSB, DB or Comms rooms sustain emergency equipment, an FRL of -/120/120 shall be achieved from the internal side. If not, the FRL is required to be -/30/30 to minimise risk of exposure of the selected steel columns to fire and to maintain a safe egress route.

- In accordance with Clause C3.5 of the BCA, all doors to the fire rated rooms listed above shall have an FRL of -/30/30. The doors shall be fitted with self-closing. The door hold open devices to the F&B doors shall be linked to the detection system to release.
- The female and male amenities contain a low level of fire hazards with very limited fuel loads and ignition sources. Combustible materials of any significance to the structure are not expected limiting the possibility of fire spread. As such, a fire directly affecting these areas and subsequently the steel columns of nil applied fire protection is considered unlikely. This scenario is addressed in Section 5.1.3.3. In order to simplify the services penetrations, the female and male amenities are also enclosed in a fire rated enclose having an FRL of -/30/30, except that no fire rating is required for the walls along Grids 1 and 3 of the WCs.
- A DtS automatic thermal detection system shall be designed in accordance with AS 1670.1-2018 and with detection provided throughout the building. The detection system will be linked to the building Occupant Warning System (OWS), which will provide warning to all occupants simultaneously in the event of a fire. The provision of the detection and warning systems is above the minimum DtS requirements, which do not require any forms of automatic detection or warning at all in this two-storey building of Type B construction. Additionally, there is no ducted air-conditioning that would enable smoke spread between compartments.
- The inherent FRL of not less than 20 minutes for the steel columns and the shielding protection from the enclosing -/30/30 construction to hazard rooms will allow time for occupants to egress safely from Level 1 in the event of a fire in an F&B room long before 30 minutes of a standard fire exposure.
- To mitigate the risk of waste/litter accumulation near the unprotected columns that may serve as a fuel source, the design must include designated bin locations not less than 1.0m from the steel columns, as determined in Section C1.3. Management plans must include timely removal of the waste and no

storage or litter within 1m of the steel columns. The plans will also require no storage around the columns, limiting fuel and ignition sources.

- Signage shall be provided throughout the Ground Floor concourse to effectively ensure that storage is not undertaken by both tenants and patrons within 1.0m of the unprotected steel columns. Signage shall read '**KEEP CLEAR – NO STORAGE PERMITTED**' having capital letters 20mm high in colour contrasting its background. It is recommended for one sign to be provided per two columns, within direct sight of the columns. Floor markings are to be provided indicating the 1.0m zone around the columns. This measure shall be included as an Essential Fire Safety Measure for the building and listed in the Fire Safety Schedule.
- Fire resistance is achieved through fire separation between Ground Floor spaces and the Ground floor to Level 1 ceiling or floor. As per Section 5.1, this is achieved by combination of the following:
    - Precast concrete slabs having an inherent FRL at least of 30/30/30;
    - Fire rated enclosure having an FRL at least of -/30/30 to the rooms on the ground floor (except that no need fire rating for the walls along Grids 1 and 3 of the WCs);
    - Fire rated ceiling having an FRL of -/30/30 to the F&B waiting areas on the ground floor;
    - Interface of fire rated ceilings with steel beams to the open breezeway shall be closed with fire rated mastic tested to AS1530.1.
    - Cavities between hazard rooms are provided with fire stopping in accordance with the BCA DtS Provisions from the rooms and the voids between the Ground floor modules are part of level 1.

  Fire rated construction around hazard rooms (eg. F&B areas, merchandise, plant room, comms room) and WCs is intended to limit fire and smoke spread in addition to providing protection of Ground Floor steel columns and areas adjacent to essential egress routes. It is considered that the fire rated construction also provides the adequate protection to the people evacuating the building from Level 1.

  In the event of a room fire which is assumed as severe as the AS1530.4 Standard Fire, it is expected that the average air temperature within the cavities and voids would be up to 180^{o}C above ambient temperate after 30 minutes of fire exposure (i.e. the acceptance criterion for insulation in accordance with AS1530.4). It is therefore considered that the structural steel within the cavities and voids have been adequately protected compared with a DTS compliant design which allows the floor system to achieve an FRL of 30 minutes.

  In the event of a fire outside of a room, a quantitative assessment has been carried out below. It has been demonstrated that structural stability is maintained for the structural steel (beams and columns) exposed to a credible fire.

5.1.2.1 Requirement for Fire Shutters

The fire shutters noted in this report must be tested as a complete system to achieve a -/30/- FRL rating and shall consist of one single and continuous module once installed (i.e. no overlapping sections). The bulkhead system shall also be fire rated to -/30/30 FRL from room side.

The shutters shall be restrained at the sides by side guiderails forming part of the system. The shutters shall comply in all respects with the design requirements of AS1905.2 and AS1530.4.

The shutters for F&B rooms must be capable of operating both manually and on activation of the fire alarm. As such, the shutter shall be linked to the internal thermal detection of the room and shall close upon activation. The shutter shall 'fail safe' in the closed position.

The shutter for the Merchandise room is provided on the egress route for the occupants in the room. This shutter is to be activated by a fusible link only.

The supplier shall provide evidence of compliance to show that the fire shutters meet both of the above Australian Standards. The evidence of compliance shall clearly state that maximum allowable size for the shutters and this maximum size shall be less than the installed sizes required.

The design and installation of each system is to fully meet the manufacturer's requirements for each tested system.

Consideration may need to be given to the provision of fixed furniture near the shutter for the Merchandise room to reduce the risk of the shutter being blocked by loose furniture.

The installer shall perform suitable tests to ensure that the shutter descend automatically in accordance with the Australian Standard. The supplier of each system shall also provide a 12-month manufacturer's warranty or extended as agreed.

5.1.3 Quantitative Assessment

5.1.3.1 Methodology

The structural fire engineering analysis to verify the fire resistance of the steel structural elements of the link bridge to allow it to be unprotected consists of the following 3 stages:

1. Define credible design fires that would expose the structure to high temperatures;
2. Calculate the temperatures of the steel members due to the design fires;

3. Assessment of the structural adequacy on the basis of single element behaviour by comparing the calculated steel temperatures with the *limiting temperatures* (Section C1.1).
    - The *limiting temperature* is the temperature at which the steel element would fail, assuming no structural redundancy or load redistribution.
    - Single element analysis is considered a conservative approach for assessing the structural adequacy of the steel elements as it does not consider load transfer and redistribution to other cooler members.
    - The *limiting temperature* has been determined based on the load ratios of the structural members, by the structural engineer (Arup).

The element is considered to have sufficient structural adequacy if:

Steel temperature ≤ Limiting temperature

If the calculated steel temperature is greater than the limiting temperature, then the structural element is considered to have failed.

Elements whose steel temperatures exceed the limiting temperatures will be protected.

Note that the calculated temperatures are steady state temperatures and do not consider the transient heating and cooling effects.

The structural engineer (Arup) has provided the load ratios and corresponding limiting temperatures for the steel columns and beams as shown in Table 5. This is based on four-sided exposure of the member.

Table 5 Limiting temperatures

Structural Element	Load Ratio	Limiting Temperature
Columns	0.33	675°C
Beams	0.30	700°C

5.1.3.2 Scenario 1: Fire in Amenities

A severe fire occurring inside the toilets is considered unlikely as the ignition risks and the fuel load are low. The IFEG[6] recommends a fuel load of approximately zero for water closets. Notwithstanding this, the structure could be exposed to heating from a small localised fire within the amenities, which has been considered in the below assessment for conservatism. No first response firefighting efforts have been considered.

A worst-case credible design fire for the analysis is taken as a paper filled wastepaper basket fire with the following characteristics:

- Peak heat release rate = 0.12MW[21] for a waste-paper basket fire;
- Diameter = 0.29m[22] to represent the base of a waste-paper basket.
- The design fire location is immediately adjacent to a steel column.

Steel Column Assessment

The temperature of the steel column is compared to the limiting temperature to assess the impact of a bin fire from a typical unprotected steel column. The radiative heat analysis is detailed in Section C1.2.1 and the results are displayed in Table 7 below.

Table 6 Scenario 1 FlashOva Results

Height of radiating cylinder (flame height)	Width of radiating panel	Distance to steel structure	Heat flux received at point ($\dot{q}_r''$)	Temperature at point
1.3 / 2 = 0.65m	0.29m	0.29/2 + 0.5	20.98 kW/m²	507°C

The temperature at the steel columns is therefore 507°C. As plume temperature range is less than the limiting steel temperature (675°C), the column shall retain structural integrity in this fire scenario with the proposed (nil) level of fire protection.

Steel Beam Assessment

As per the methodology in Section C1.2, the flame height calculated to be 0.40m, well below the height of the beam (3.45m to the lower side of the beam).

As the structural component is not engulfed in flame, the plume temperature at the height of the component is calculated. The steel temperature is assumed to be equivalent to the plume temperature. The plume temperature correlation specified by BS EN1991-1-2 (Annex C, C.2) and is calculated to be 101.7°C (Section C1.2.2C1.2). As 101.7°C is less than the limiting temperature, the inherent fire resistance of the beam is sufficient to resist the design fire temperatures.

5.1.3.3 Scenario 2: Rubbish bin fire – circulation area, Ground Floor

A credible fire scenario of a rubbish bin fire within the circulation area on the Ground Floor is considered as Scenario 2. The design fire location is parallel to an unprotected column and directly beneath an unprotected beam. A rubbish bin fire in the circulation area on the ground floor is conservatively assumed to be a large, densely packed bin located close to the exposed steel structure.

Steel Column Assessment

The peak HRR of the fire is assumed to be 350kW for a large, densely packed trash bag. The radiative portion of the HRR is therefore 105kW. Based on the maximum heat release rate from one bin of 350kW, the reference radiative

fraction and an incident radiant flux for piloted ignition, the separation distance is considered to be 0.91 m. Thus, a separation distance of 1.0m from the perimeter room is considered appropriate (Section C1.3.1).

Furthermore, the temperature of the steel column is compared to the limiting temperature to assess the impact of a bin fire from a typical unprotected steel column. The radiative heat analysis is detailed in Section C1 and the results are displayed in Table 7 below (see Section C1.2 and C1.3 for methodology and input values).

The cylindrical flame was calculated based on the width (0.8m – 1.6m) and height of the flame length. It is assumed the flame temperature is 900°C based on the maximum temperature at the base of an axisymmetric plume, as recommended by BS EN 1991-1-2[20]. The corresponding emitting heat flux is therefore 107.4kW/m^2. The assessment is detailed in Section C1.3.

Table 7 Radiation assessment results

Height of radiating panel	Width of radiating panel	Distance to steel structure	Heat flux received at point ($\dot{q}''_r$)	Temperature at point
1.63 / 2 = 0.815m	0.8m	1.4m	22.3 kW/m²	519°C
0.82 / 2 = 0.41m	0.6m	1.8m	20.8 kW/m²	505°C

The temperature at the steel columns is therefore 519°C to 505°C. As plume temperature range is less than the limiting steel temperature (700°C), the column shall retain structural integrity in this fire scenario with the proposed (nil) level of fire protection.

Steel Beam Assessment

An assessment is undertaken to assess the risk of nil fire protection applied to the steel beams supporting Level 1. The worst credible design fire is considered to be a rubbish bin fire on the Ground Floor concourse, directly beneath the steel beam.

The flame height is calculated as per Annex C of BS EN 1991-1-2:2002 and based on the fire size (see Section C1.3.2). The flame diameter is taken as the width of the burning element, 0.8m to 1.6m. Using the maximum heat release rate of 350kW, the length of the flame is 1.63 to 0.82m.

The temperature in the plume is found from equation C.2, Annex C of BS EN 1991-1-2:2002 (equation shown in Section C1.2).As the beam is an 800UB, the height to the lower edge of the steel beam is 3.45m. The plume temperature at the steel beam is therefore 159.3°C to 117.4°C.

The load ratio of the unprotected steel beam in this scenario is determined to be 0.30 with a corresponding limiting temperature of 700°C. As plume temperature range is less than the limiting steel temperature (700°C), the beam is not calculated to fail in this scenario with the proposed (nil) level of fire protection.

5.1.4 Conclusion

Based on the above assessment, it is considered that the Performance Solution meets Performance Requirements CP1 and CP2.

5.2 Extended travel distances on Level 1

Issues 2 and 3	Extended travel distances on Level 1 up to: • 50.5m in lieu of 40m to an exit, and • 69m in lieu of 60m between alternative exits.
BCA Clause	D1.4(c), D1.5(c)
Performance Requirements	DP4, EP2.2
Method of Assessment	An absolute, quantitative, and qualitative assessment in accordance with BCA Clauses A2.2(1)(a) and A2.2(2)(b)(ii)
Identified Hazards due to Non-compliance	The additional travel distance could increase the time to escape and could potentially increase the exposure time to smoke and fire and the risk of a fire blocking an exit due to the delayed evacuation.
Acceptance Criteria	The design shall demonstrate that the provision of non-required automatic detection system provides a significant improvement over a DTS design without such systems, such that the risk associated with the relatively modest increase in travel distance is offset.
Required Fire Safety Measures	• Thermal detection designed in accordance with AS 1670.1-2018 shall be provided throughout the building. The detection system shall initiate the occupant warning system (OWS) upon activation. • Emergency lighting and exit signage shall be provided in accordance with BCA Part E4 and AS/NZS 2293.1-2018 to aid wayfinding. This excludes the corporate suites, amenities and merchandise room where exit signs shall be omitted. • DtS fire separation shall be provided between Level 1 and the Ground Floor to achieve an FRL of 30/30/30 or resistance to insipient fire spread of fire not less than -/60/60. This is achieved by a fire rated Level 1 floor or a fire rated ceiling below the Level 1 floor.

5.2.1 Background

Clause D1.4(c) of the BCA requires the maximum travel distance in a Class 5 – 9 building to be 40m where two exits are available. Clause D1.5(c)(iii) specifies that for all Classes with exception of Class 2, 3 and 9a, the alternative exits must be no more than 60m apart.

The intent of this provision is to maximise occupant safety by ensuring a nearby exit is available and may be reached by the occupants in a reasonable time before the onset of untenable conditions. The BCA places a limit on the allowable distance between exits to ensure that, in the event that an exit in inaccessible, access to another exit will be available within a reasonable distance.

Level 1 of the Grandstand comprises of 17 corporate boxes in addition to an office and communication/media rooms. The level 1 is serviced by three exit stairs, and occupants are expected to have two available exits from any point on the floor. Two of which are available for occupants at any point on this level. The maximum travel distance from within a corporate box is 50.5m measured from the associated seating tiers (Figure 14).

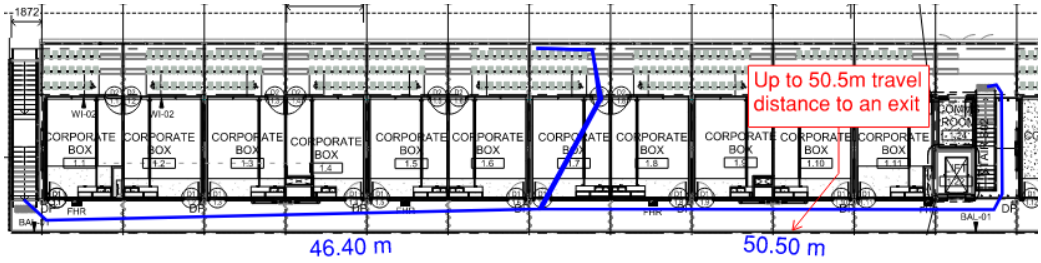

Figure 14 Level 1 extended travel distance

The design also includes extended travel distances via the point of choice between alternative exits of up to 69m. An indicative mark up of this area is shown in Figure 15 and Figure 16.

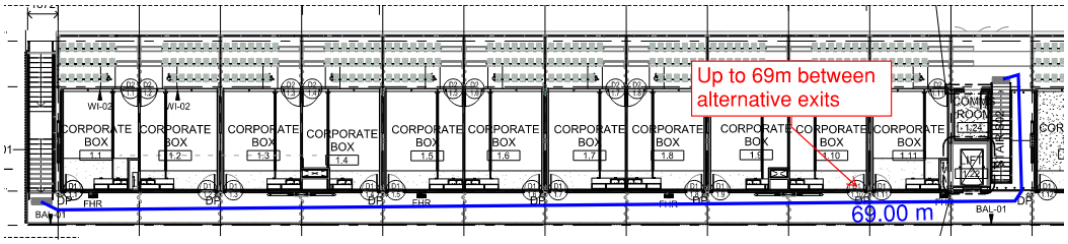

Figure 15 Level 1 travel distance between alternative exits, plan 1

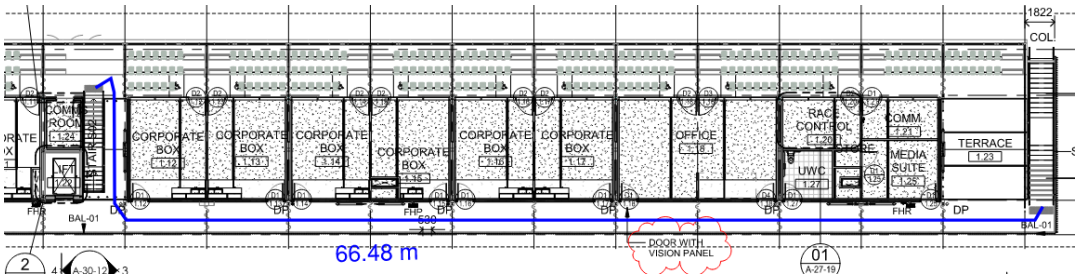

Figure 16 Level 1 travel distance between alternative exits, plan 2

5.2.2 Assessment

The Performance Solution is considered acceptable on the following basis:

- A non-required automatic thermal detection designed in accordance to AS 1670.1-2018 shall be provided throughout the building. The system shall be linked to the occupant warning system (OWS), which will provide warning to all occupants simultaneously in the event of a fire. The provision of the detection and warning systems is over and above the minimum DtS requirements, which do not require any forms of automatic detection or warning at all in this building. The benefits of the system are further described in Section 5.2.2.1.
- The additional risk when exits are located at a distance from each other is that wayfinding may become more complicated, and occupants may not be able to easily find their way to an exit. However, for the case of the subject building, the alternative egress paths which offer a choice of escape are considered to be

obvious to occupants as there is only one path of travel – the main walkway. The exit paths shall be signed to direct occupants to the exits in the event of a fire. Therefore, wayfinding between the exits is not considered to adversely impact occupants' egress.

- As the path of travel follows an open walkway, occupants are likely to notice egress to an exit is inhibited before reaching the final exit and therefore, would be expected to exit towards and alternative exit rather than travelling the whole distance towards where a potential incident is located. In the event of the central exit being unavailable due to a hazard not visible from the egress corridor, occupants will still have a choice of two exits, the northern and southern stair, for egress.
- As one side of the Level 1 walkway is open, in the event of a fire, smoke is expected to spill out of the walkway and not collate in a smoke reservoir. The delay in smoke collecting within the space will result in a longer period of visibility and tenability for evacuating occupants.
- The extended path of travel is through a transient walkway that is required to remain clear of any storage or combustibles. The minimal fuel load is unlikely to contribute to ignition or development in the walkway/egress path and impede egress towards a chosen exit.
- Alternatively, the DtS conditions of the BCA assume 40m to an exit and 60m to the next available exit, a total distance of 100m. The Level 1 travel distances measured in this way results in a 119.5m distance, 19.5m in excess. However, given the straight and open walkway, it is assumed that occupants can make an informed choice of travel direction from the point of choice as opposed to travelling to one exit before retreating. Therefore, the 69m distance addressed in this assessment is based a scenario involving travel throughout the entire length of the walkway to reach an alternative exit. Notwithstanding, the benefits of the detection system shall offset the 25 second delay caused by the 19.5m excess travel distance.

5.2.2.1 Benefits of automatic detection system

The enhanced detection provided by the non-required automatic detection system is considered to offset the extended travel distances based on the following RSET assessment.

The required safety egress time (RSET) can be expressed in the following equation[4]:

$$RSET = t_{det} + t_{pre} + t_{flow}$$

Where:

t_{det} is the alarm / detection time

t_{pre} is the pre-movement time

t_{flow} is the flow / movement time

Detection Time, t_{det}

The detection time used in the fire engineering analysis is based on activation of the installed fire safety systems, i.e. the automatic thermal detection system, or alarm raised by an occupant.

The detection and warning systems provide a significant improvement over a strictly DtS compliant design in terms of occupant life safety and egress.

For a fire in a DtS Design, occupants remote from the fire may be completely unaware of the fire event until they are personally warned by other occupants have seen the fire, or they receive fire cues by visual or olfactory means (such as smoke spread to their area of the building).

By the time this warning occurs in a DtS design, the fire could have grown to a substantial size, meaning that occupants are more likely to encounter untenable conditions along their egress path. The time saved is highly dependent on the fire location but is expected to result in a minimum 30 second improvement to a DtS design.

Pre-movement Time (t_{pre})

The pre-movement time depends on two parts; coping time and recognition time. During the coping time, occupants will become aware of the situation and in the recognition time they will decide how to react.

The pre-movement time varies based on a number of factors such as type of occupancy, characteristics of occupants, size and geometry of building, etc.

Without a warning and detection system, occupants rely on manual activation of an alarm without occupant warning. The pre-movement time is expected to be significantly reduced with the occupant warning system as opposed to a DtS design.

Movement Time, t_{flow}

Flow time is the time needed for all of the occupants in a specified part of the building to move to an exit and pass through it and into a ‘place of safety’. The flow time can be divided into two parts:

- The time taken for occupants to move to an exit (i.e. travel time); and
- The time taken for occupants to pass through an exit (i.e. queuing time).

If the time taken to walk to an exit is shorter than the time for the occupants to pass through the exit, then queuing at the exit will occur, and the occupants from the most remote locations on the floor will join the back of the queue. This is typically the case for most buildings unless the occupant density is significantly low in relation to the floor area.

The travel time for the analysis is calculated with the equation below:

$$\textit{Travel time (s)} = \textit{Travel distance (m)} / \textit{Travel speed (m/s)}$$

Assuming a travel speed of 1.2m/s (kept constant for the comparison) for occupants and speed of 0.8m/s is conservatively assumed for mobility impaired occupants, the travel time increase is as follows:

Table 8 Additional travel time to an exit

	Travel Distance	Travel Speed	Travel Time	Mobility Impaired Travel Speed	Mobility Impaired Travel Time
DtS Building	40 m	1.2m/s	33s	0.8m/s	50
Design Building	50.5 m	1.2m/s	42s	0.8m/s	63
Difference		**9 seconds**		**13 seconds**	

Table 9 Additional travel time between alternative exits

	Travel Distance	Travel Speed	Travel Time	Mobility Impaired Travel Speed	Mobility Impaired Travel Time
DtS Building	60 m	1.2m/s	50s	0.8m/s	75
Design Building	69 m	1.2m/s	58s	0.8m/s	86
Difference		8 seconds		11 seconds	

Comparison

The travel distance justified in this Performance Solution are up to 10.5 m in excess of the DtS limits of 40 m. The time taken for occupants to travel the additional travel distance over a DtS design is therefore minimal (9 - 13 seconds). Although the DtS detection and warning (via manual observation and action only) cannot be accurately quantified, particularly for occupants not within sight of the fire, it is considered that the provision of automatic detection system more than offsets the additional 10.5 m that occupants may be required to travel, due to much improved conditions along the path of travel at the time of evacuation. This is supported by PD 7974-6:2004[12] which states the following:

> "*[Delta]t_a is the time from detection to a general alarm. This may vary between effectively zero (where the fire is detected by an automatic system triggering a general alarm on first detection) to several or many minutes (when for example, staged alarm systems are used or where there is no automatic detection.*"

Similarly, the increased time for travel between exits is estimated to be 8 to 11 seconds. In addition to the qualitative analysis above, this minor additional time is considered to be offset by the benefit of a thermal detection system.

5.2.3 Conclusion

Based on the above assessment, it is considered that the Performance Solution meets Performance Requirements DP4 and EP2.2.

5.3 External fire hydrant locations to be within 10m of the building

Issue 4	External fire hydrant locations to be within 10m of the building
BCA Clause	E1.3
Performance Requirements	EP1.3
Method of Assessment	An absolute and quantitative assessment in accordance with BCA Clauses A2.2(1)(a) & A2.2(2)(b)(ii)
Identified Hazards due to Non-compliance	The potential hazard associated with the proposed design is that attending fire brigade may be unable to safely access the external fire hydrants in the event of a fire.
Acceptance Criteria	To demonstrate that attending fire brigade are provided with adequate provisions to safely undertake fire-fighting operations.
Required Fire Safety Measures	• Non-required automatic thermal detection system in accordance with AS 1670.1-2018, • Bollards to provide protection from vehicles to external hydrants, • Coverage of hydrants from additional hydrants within 60m + 10m spray, and • Fire protection of Ground Floor rooms.

5.3.1 Background

Clause E1.3(b)(i) of the BCA states that a fire hydrant system must be installed in accordance with AS 2419.1. Clause 3.2.2.2 of AS 2419.1-2005 outlines the location requirements for external fire hydrants.

Clause 3.2.2.2(e) of AS 2419.1-2005 states that when external fire hydrants are located within 10m of a building they should be protected unless safeguarded by construction:

i. Having an FRL not less than 90/90/90;

ii. Extending 2 m each side of the fire hydrant outlet; and

iii. Extending not less than 3 m above the ground adjacent to the fire hydrant or the height of the building, whichever is the lesser.

Clause 3.2.2.2(f) of AS 2419.5-2005 states that external hydrants shall be located in a position so that the fire hydrant is not obstructed or obscured by obstacles, stored goods, vehicles, vegetation etc.

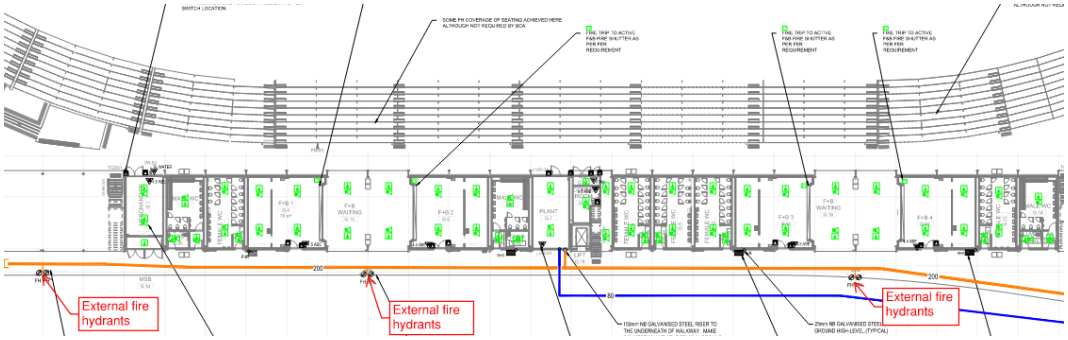

Figure 17 External hydrant locations (indicative only)

5.3.2 Assessment

The omission of protective fire rated construction to the external hydrants is considered acceptable based on the following:

- Should a fire occur in a location that compromises one of the external hydrants, coverage to this area can be achieved via an alternative hydrant (within 60m + 10m of spray). Therefore, in the unlikely event that one hydrant is jeopardised, fire brigade personnel can choose to take resource of the other ones provided.
- The external hydrants are located on the Ground Level. As Level 1 of the grandstand is fire separated from the Ground Level, it is expected that smoke and flames from a fire in Level 1 will vent upwards and out away from the hydrants. Likewise, the high-risk areas of the F&B rooms are fire separated and therefore not likely to allow fire spread that will compromise the external hydrants.
- Hydrants are not located directly adjacent to an external opening as can be seen in Figure 17. Additionally, the elevation slopes downwards from the building to the hydrant location, further limiting the possible heat flux from a fire in the building.

In addition to the above, the likelihood for the external hydrants to be obstructed or obscured is addressed below:

- The hydrants are located within walkways adjacent to the access road through site. This area is a circulation space; therefore, it is considered unlikely that obstacles would be stored in a location that could block access to the hydrants or serve as a fuel source.
- Furthermore, bollards shall be positioned to protect the hydrants from obstruction via vehicles or stored goods to comply with Clause 3.2.2.2(f) of AS 2419.5-2017.

A radiant heat assessment has been undertaken to assess the radiation received by the external hydrants in the event of a fire on the ground floor. The acceptance criteria is defined as the radiation received at the hydrant to be less than the limiting tenability criteria for fire brigade personnel, 3kW/m^2, as specified in the SFS Practice Notes.

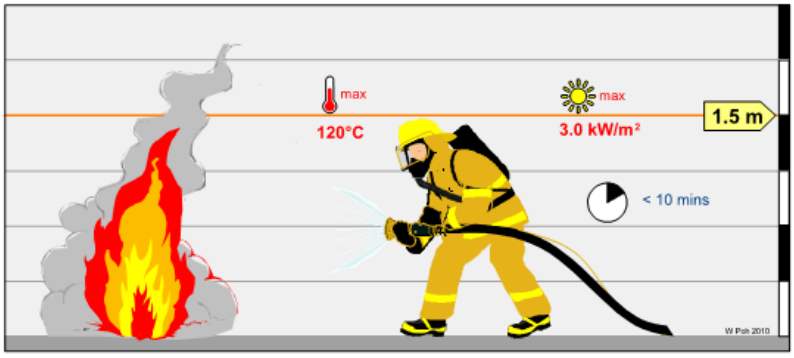

Figure 10: Tenability for Fire Fighters (up to 10 minutes)

Figure 18 Fire brigade tenability during fire-fighting operations extracted from SFS Practice Notes.

Due to the compartmentation on the Ground Floor, the risk of radiation from a fire within the Ground Floor compromising the external hydrants is unlikely.

A radiation assessment has been conducted for a fire in a Level 1 room to the closest external hydrant (Appendix D). The results of this assessment demonstrate the expected heat flux is 0.142kW/m^2. As this is below the 3kW/m^2 threshold, the location of the external hydrants is considered to meet the acceptance criteria.

5.3.3 Conclusion

Based on the above assessment, it is considered that the Performance Solution meets Performance Requirement EP1.3.

5.4 Booster and FIP location not within sight of the main entrance

Issue 5	The location of the booster and FIP is at the rear entry of the site and not within sight of the main entrance
BCA Clause	E1.3 AS2419.1-2005 Part 7.3, E2.2 and AS1670.1
Performance Requirements	EP1.3, EP2.2
Method of Assessment	An absolute and qualitative assessment in accordance with BCA Clauses A2.2(1)(a) & A2.2(2)(b)(ii)
Identified Hazards due to Non-compliance	The potential hazard associated with the proposed design is that attending brigade may be unable to locate the hydrant booster upon arrival, hindering brigade operations.
Acceptance Criteria	To demonstrate that the location of the hydrant booster assembly facilitates fire brigade operations.
Required Fire Safety Measures	• Directional signage provided at the FIP, booster and main entry via public carpark, • Red strobe lights installed at the mimic panel and FIP to activate upon general fire alarm, and • Mimic fire panel provided in the competitor administration building and interlinked with the main FIP.

5.4.1 Background

Clause E1.3 (a) of the BCA states that a fire hydrant system must be provided to serve a building greater than 500m^2 and where a fire brigade is available to attend a building fire. Clause E1.3 (b) requires that the fire hydrant system must be installed in accordance with AS 2419.1-2005.

Clause 7.3 (c) (ii) of AS2419.1-2005 requires that a booster shall be within sight of the main entry to the building.

AS1670.1 clause 2.2 provides for a range of options for this building and the location for the main FIP will be away from the main site entry.

The booster and Main FIP is to be located at the competitor entry at the Southern end of the site and is not within sight of the main entrance. The booster will be accessed via the Southern connection to Ferrers road or from the main entrance and through the site (Figure 19). The road from the main entrance to the booster is for one-way travel and is utilised by all staff, spectators, competitors and emergency services. A secondary Mimic Panel will be provided at the Competitor Administration building.

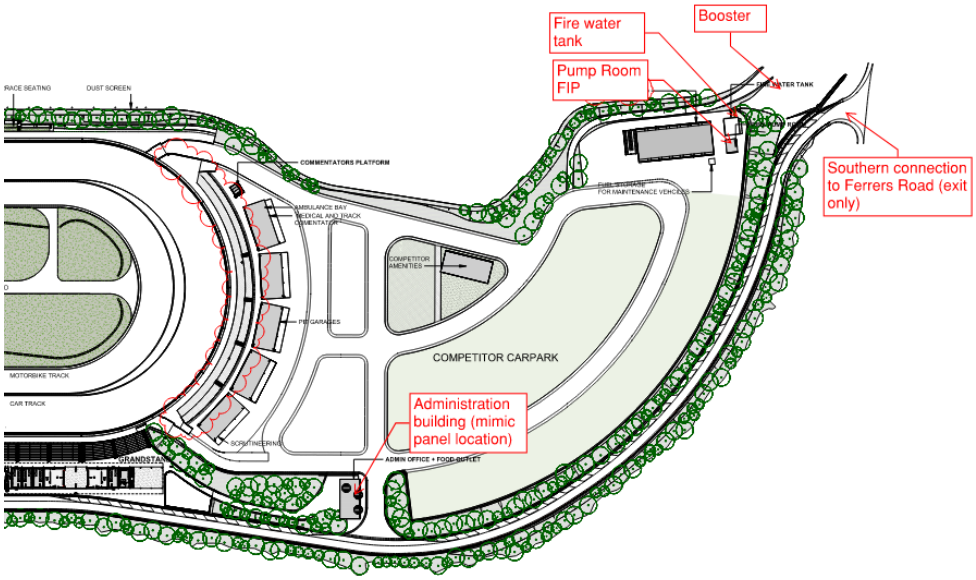

Figure 19 Booster location

5.4.2 Assessment

The location of the booster and FIP assembly is considered acceptable based on the following:

- In an emergency event general traffic conditions will not apply, and the brigade will operate in a contraflow manner to enter from the Southern connection (competitors' entry) and travel against the one-way road to the Grandstand. The 7m wide road accommodates two-way vehicular circulation and therefore allows traffic on the competitor road (unexpected in an emergency event) to give way and allow clear passage for the brigade. Alternatively, the brigade may enter through the public carpark and use the rear competitor road to access the booster.
- The boom gates along the one-way access road are required to open upon activation of the occupant warning system to assist with brigade intervention.
- A mimic FIP interlinked with the main FIP shall be provided at the administration building to assist with brigade intervention if they arrive from the North via the internal road.
- Clear signage is required throughout the route from the main entrance to the booster and FIP locations to assist with wayfinding of emergency services. The signage is to be permanently affixed, weather resistant, high contrasting, clearly visible and readable at the expected viewing distance. The locations of the signage are as follows and as shown in Figure 20:
    - The designated site entry point (DSEP) and through the public carpark to provide direction to the Booster and FIP should the site be accessed via the main entrance.
    - Red strobe lights shall be located at both the FIP and mimic panel locations to assist the attending brigade. The lights are to be activated

by an alarm signal from the fire indicator panel that serves any on site automatic thermal detection.

- A block plan shall be provided at the mimic panel, FIP and Booster indicating the location of the main FIP and booster assembly.

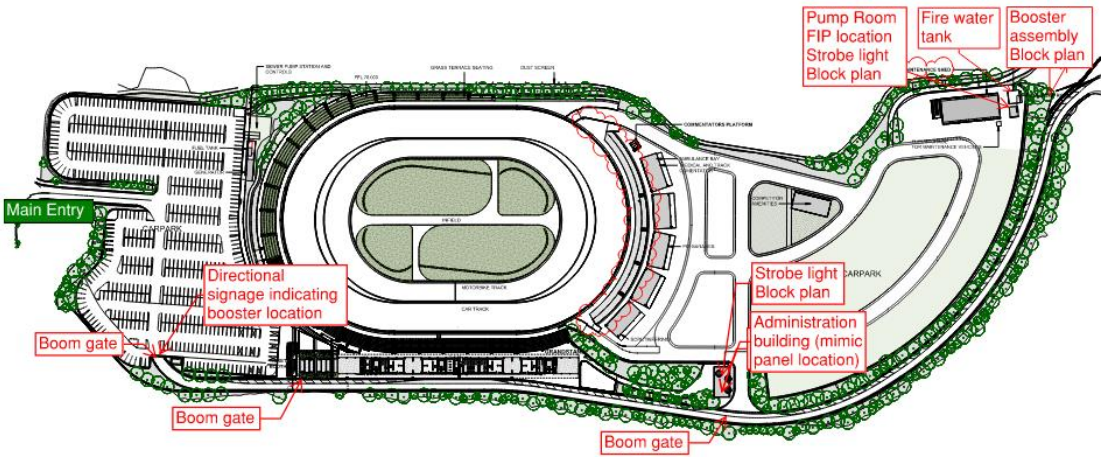

Figure 20 Site plan indicating signage locations

- The booster shall be located in an accessible position where a fire brigade applicant can park adjacent to the booster, complete with a hardstand within 8m of the booster. The hardstand area provides a safe working space for firefighters to exit the vehicle and move around the fire appliance.
- As the booster feed is a large bore and the connections are semi rigid, the brigade is to be positioned such that pumping will not inhibit access to the site for further responders.

5.4.3 Conclusion

Based on the above assessment, it is considered that the Performance Solution meets Performance Requirement EP1.3.

5.5 Omission of fire hose reels in fire rated rooms

Issue 6	FHRs shall be omitted from single fire rated rooms on the Ground Floor (merch room, F&B rooms, comms, DB and plant rooms).
BCA Clause	E1.4(f)
Performance Requirements	EP1.1
Method of Assessment	An absolute and qualitative assessment in accordance with BCA Clauses A2.2(1)(a) & A2.2(2)(b)(ii)
Identified Hazards due to Non-compliance	The potential hazard associated is the delay in first aid firefighting by trained occupants in the identified areas of FHR omission.
Acceptance Criteria	To demonstrate that the compliance with the Performance Requirement of the BCA will be met via a suitable alternative to a hose reel is provided in the identified areas.
Required Fire Safety Measures	Provision of additional fire extinguishers in accordance with AS 2444-2001 as follows: • ABE type fire extinguishers in the F&B, comms, plant and DB rooms (high hazard areas), and • Water based fire extinguishers outside the merchandise room.

5.5.1 Background

BCA Clause E1.4 states that fire hose reels must be provided in accordance with AS 2441-2018 which includes coverage throughout the building. Compliant fire hose reel coverage is achieved throughout the majority of the Grandstand in accordance with AS 2441-2018. However, the fire rated rooms on the Ground Floor, i.e., the F&B, merchandise, comms, DB and plant rooms, are proposed to not be provided with FHR coverage.

Clause E1.4 (f) restricts the coverage of fire hose reels from passing through doorways fitted with fire or smoke doors. The guide to the BCA elaborates that this requirement is to prevent a door from being held while the fire hose reel is in use, breaching the smoke or fire compartmentation. In the event of a fire hose reel passing the smoke doors surrounding the court, the smoke compartmentation required as specified in Section 3.2.1 would potentially be compromised.

Instead it is proposed to provide portable fire extinguishers to the fire rated rooms. The extinguishers provided in accordance with AS 2444-2001, appropriate to the size of the area they are serving.

5.5.2 Assessment

The removal of FHR coverage to the fire rated rooms is required to allow for compartmentation to be maintained. Where FHR coverage is not provided, additional fire extinguishers of a type suitable to the hazard will be provided. These are as follows:

- Additional ABE type (or other as deemed appropriate for the hazard) fire extinguishers within the high hazard rooms: F&B, comms, plant, DB and MSB rooms.
- Additional water-based fire extinguisher provided outside the merchandise room.

All compartment areas have a relatively small compartment area of 80m^2 or less (Table 10).

Table 10 Compartments without FHR coverage summary

Compartment without FHR coverage	Approximate Floor Area (m^2)	Hazard Type	Portable Extinguisher Type
4 x F&B rooms	80 (each)	Oil or grease fires/electrical hazards/flammable items/.	ABE type. If deemed appropriate for the hazard, another type (i.e., Class F) may be required (e.g. if oil cooking/deep fryers are present (internally located)
Plant room	40	Electrical fault/hazard associated with combustible materials, machinery or equipment. Low occupancy rate – staff only.	ABE type (internally located)
Comms room	13	Electrical hazards. Low occupancy rate – staff only.	ABE type (internally located)
DB and MSB room	3.5	Electrical hazards. Small area. Low occupancy rate – staff only.	ABE type (internally located)
Merchandise room	32	Public access/tampering hazards/ combustible retail materials	Water-based (externally located)

This strategy is considered to be acceptable based on the following:

- Additional extinguishers suitably selected of a type appropriate to the fuel hazards (in accordance with Table E1.6 of the BCA and AS 2444-2001 Clauses 1-4) shall be provided in areas where FHR coverage is not provided. A summary of these areas and extinguisher types is provided in Table 10.
- If a fire were to occur in one of these rooms, occupants would be expected to easily locate the fire extinguishers provided and undertake initial attack on the fire.
- When accessing a FHR, the occupant needs to open the stop valve before the nozzle can be disengaged from the nozzle interlock, to roll out the hose, and to negotiate the hose around bends and corners if necessary. In the event of a fire in one of the rooms with non-compliant FHR coverage, the time required to retrieve a FHR and then return to the fire site is expected to be longer than the time required to retrieve a portable fire extinguisher.

- Accordingly, the fire is likely to be relatively larger when water is discharged from a fire hose reel compared to when a portable extinguisher is discharged due to the longer time required for bring a fire hose to the fire site.
- Handheld fire extinguishers are advantageous relative to FHRs as they can contain different suppressants (other than water only) specific to the application required. This is advantageous in the F&B, plant, comms and DB room where various hazard types are present. The ABE type extinguishers provide superior coverage in these spaces to tackle potential grease or electrical fires (Table 10).
- Handheld fire extinguishers allow for compartmentation to be maintained as doors to the spaces are not required to be held open during first attack firefighting as would be required with FHR coverage. If a fire were to occur in one of the rooms, it will likely be contained within the compartment of fire origin. As first response firefighting equipment is still provided, the method is equivalent to a DtS design.
- As the extinguisher to the merchandise room is in a publicly accessible area, it shall be located externally to improve visibility and reduce the likelihood of tampering. All other rooms listed in Table 10 shall be provided with extinguishers within the rooms.
- All staff and security with access to the rooms listed in Table 10 are expected to be alert, mobile and capable of carrying out first attack fire-fighting using portable fire extinguishers. These staff shall be notified of the location of FHRs and fire extinguishers throughout the Grandstand the fire safety training.
- The DB, MSB, comms and plant rooms have a small floor area and are expected to have very low occupancy levels consisting of staff only. Due to the small floor area, an occupant remaining in the area for an extended period of time may pose a greater hazard than other areas within the stadium. A fire extinguisher provides a faster form of first aid firefighting (as discussed below) and is considered a more appropriate firefighting measure.

5.5.3 Conclusion

Based on the above assessment, it is considered that the Performance Solution meets Performance Requirement EP1.1.

5.6 Omission of exit signage above doors in corporate suites, toilet and merchandise rooms

Issue 6	Required emergency exit signage shall be omitted from the corporate suites, amenities and merchandise room.
BCA Clause	E4.5(d)
Performance Requirements	EP4.2
Method of Assessment	An absolute and qualitative assessment in accordance with BCA Clauses A2.2(1)(a) & A2.2(2)(b)(ii)
Identified Hazards due to Non-compliance	The potential hazard associated with the proposed design is that occupants may be unable to locate an exit during egress in the event of a fire.
Acceptance Criteria	To demonstrate that, in the event of a fire, occupants in the corporate suites, amenities or merchandise room will be able to safely navigate their way to an exit.
Required Fire Safety Measures	• Compliant emergency lighting shall be provided in the above-mentioned rooms. • Compliant exit signage shall be provided in all other required areas. • Rooms without exit signage have a simple layout and a single access (entry/exit) door.

5.6.1 Background

Clause E4.5 of the BCA states that an exit sign must be clearly visible to persons approaching the exit, and must be installed on, above or adjacent to each:

a) door providing direct egress from a storey to:

i. an enclosed stairway, passageway or ramp serving as a required exit; and

ii. an external stairway, passageway or ramp serving as a required exit; and

iii. an external access balcony leading to a required exit; and

b) door from an enclosed stairway, passageway or ramp at every level of discharge to a road or open space; and

c) horizontal exit; and

d) door serving as, or forming part of, a required exit in a storey required to be provided with emergency lighting in accordance with E4.2.

As the floor area of Level 1 is greater than 300m^2 and the building is Class 9b, emergency lighting and exit signs are required (BCA Clause E4.2). However, it is proposed that exit signs are omitted from the corporate suites, toilets and merchandise room . Emergency lighting will remain fully compliant and compliant exit signage is achieved in all other areas.

5.6.2 Assessment

The Guide to the BCA outlines that the intent of providing sufficient directional signs is to minimise the risk of death or injury to occupants during an emergency because of an inability to find an exit.

The proposed design is not considered to hinder the ability of occupants to find an exit and is considered acceptable based on the following:

- The corporate suites, toilets and merchandise room are small (less than 50m^2) with simple layouts as can be seen in Figure 21. It is unlikely that wayfinding be difficult for occupant in an emergency event as the access door to the room through which they entered will be close by.

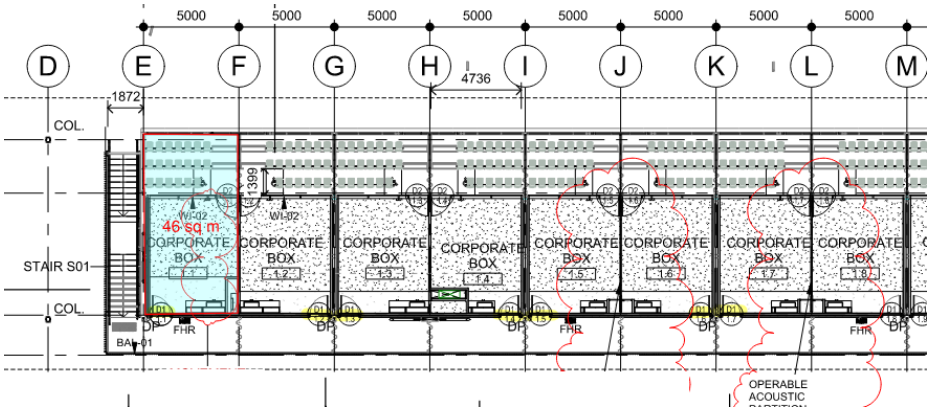

Figure 21 Level 1 - indicative locations of corporate suite doors with omitted exit signage (highlighted)

- The nominated rooms contain only one access door that occupants will use for both entry and exit. Occupants within the rooms are expected to be familiar with the route by which they entered the room, and subsequently the exit that they would need to take in the event of an emergency. Therefore, despite the omission of exit signage from the door, occupants are expected to be able to locate their nearest exit without significant delay.
- Compliant exit signage is provided throughout the remainder of the building, including the common areas (such as walkways). Once occupants of the corporate suites, toilets or merchandise room exit the single room to the egress routes, they will be able to follow the compliant signage to an exit.
- In addition to the above, compliant emergency lighting shall be provided in accordance with AS 2293.1-2018. Therefore, occupants are expected to be able to find their way to the door and follow the exit signs in the common areas to an exit.

5.6.3 Conclusion

Based on the above assessment, it is considered that the Performance Solution meets Performance Requirement EP4.2.

6 Conclusion

This assessment has been reviewed by Alistair Morrison, who is an Accredited Certifier (BPB2136) in the category of fire safety engineering compliance (C10).

As outlined in the introduction, the purpose of this Fire Engineering Report (FER) is to provide the details of the fire safety strategies, acceptance criteria and assessment methodologies for the Performance Solutions associated with this project.

The Performance Solutions documented demonstrate that the proposed works comply with those BCA Performance Requirements that are relevant to the Performance Solutions identified by the Principal Certifying Authority and addressed within this assessment.

In order to comply with the Performance Requirements identified in this report, all fire safety measures described in this document must be adopted and maintained and any assumptions and limitations must be adhered to.

This assessment does not constitute a Compliance Certificate.

7 References

7.1 Project documentation

In addition to the documentation appended to this report, the following documentation was relied upon:

[1] Sydney Speedway architectural drawings, Revision T4, Cox Architecture, updated 4th September 2020; a set of drawings for RFI Responses / Fire Line Updates, updated 16th March 2021 / Fire Line Updates, updated 31st March 2021.

[2] Sydney Speedway structural drawings, Arup, dated 4th September 2020.

[3] BCA assessment report (2020/0186 R1.0), Steve Watson and Partners, May 2020.

[4] Fire engineering brief questionnaire (FRN20/2128, V2 BFS20/2006), Arup, 2nd July 2020.

7.2 Information references

[5] “Building Code of Australia 2019 – Volume One”, NCC, Australian Building Codes Board, Canberra, Australia, 2019.

[6] “International Fire Engineering Guidelines, Edition 2005”, Australian Building Codes Board, Canberra, Australia, 2005.

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[9] NFPA 1995, NFPA 92B - Guide for Smoke Management Systems in Malls, Atria, and Large Areas – 1995 Edition, National Fire Protection Association, Denver, CO, USA

[10] White, N., 2007, “Assessment of The Fire Behaviour of Viva Stadium Seating Using CSIRO Protocol for Row Seating”, CSIRO.

[11] BS EN 1991-1-2, “Eurocode 1 – Actions on Structures General Actions – Action On Structures Exposed To Fire”, BSI.

[12] PD 7974 - The application of fire safety engineering principles to fire safety design of buildings – Part 6: Human factors: Life safety strategies – Occupant evacuation, behaviour and condition (Sub – System 6).

[13] SFPE Handbook of Fire Protection Engineering, 5th Edition, Society of Fire Safety Engineers 2016.

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[21] Särdqvist, S., Department of Fire Safety Engineering Lund University, Paril 1993. Initial Fires RHR, Smoke Production and CO Generation from Single Items and Room Fire Tests – one sack with paper rubbish

[22] Ikea, 2012. FNISS Wastepaper basket. [online] Available at <www.ikea.com> [Accessed 4 February 2013].

[23] "Guideline 15- Fire Safety Engineered Performance Solutions", Department of Fire and Emergency Services, Government of Western Australia, 2017.

[24] NFPA (2009), NFPA 92B - Guide for Smoke Management Systems in Malls NFPA (2009), NFPA 92B - Guide for Smoke Management, Fire Protection Association, Denver, CO, USA

[25] Campbell, R. (2015), U.S. Structure Fires in Stores and Other Mercantile Properties, National Fire Protection Association - Fire Analysis and Research Division, Quincy, MA

[26] U.S Fire Administration National Fire Centre. (2014). Topical Fire Report Series – Nonresidential Buildings (2014-2016). U.S Department of Home Security, Maryland, United States.

[27] Campbell, R. (2017), U.S. Structure Fires in Eating and Drinking Establishments, National Fire Protection Association - Fire Analysis and Research Division, Quincy, MA

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Appendix A

Fire Safety Objectives

A1 Fire Safety Objectives

A1.1 BCA requirements

The Building Code of Australia (BCA) gives a number of Performance Requirements that a building solution must achieve for fire safety. The purpose of these requirements is to:

- Provide adequate occupant life safety;
- Assist the protection of other property; and
- Facilitate fire brigade operations.

Fire brigade safety during operations is considered to be primarily achieved through fire brigade operational procedures. However, the BCA requires that the design and systems facilitate fire brigade operations. Any Performance Solutions will be subject to the referral of FRNSW and approval of the PCA. The BCA does not address property protection or business continuity, and as such these are not specifically included in the design.

A1.2 Compliance with the Building Regulations

The Building Regulations state that the building must comply with the BCA.

BCA Clause A2.0 states: "Compliance with the NCC is achieved by comply with the Governing Requirements of the NCC and the Performance Requirements".

Therefore, the Performance Requirements are the only part of the BCA with which a design must comply. The BCA Objectives and Functional Statements are given as guidance to explain the intent of the Performance Requirements.

Clause A2.1 of the BCA states Performance Requirements are satisfied by one of the following:

1. A Performance Solution;
2. A Deemed-to-Satisfy Solution; or
3. A combination of (1) and (2).

Accordingly, the Performance Solutions of this report will be demonstrated to comply with the Performance Requirements using Clause A2.2 of the BCA.

Subject to any limitations imposed by the commercial terms of our appointment, the approach adopted by Arup is generally in accordance with the International Fire Engineering Guidelines[6] and the earlier Fire Engineering Guidelines[7] as well as the Society of Fire Safety Code of Practice[8] where appropriate.

Any Performance Solution will be subject to the approval of the PCA.

This report does not assess the level of property protection, business interruption or environmental protection associated with the development. The assessment is

limited to compliance with the Building Regulations, which excludes the above issues.

Issues related to Occupational Health and Safety (OH&S) or community protection are outside the scope of this report, except where directly relevant to the Performance Solutions presented.

A1.3 Property Protection

Arup makes all reasonable efforts to incorporate practical and advanced fire protection concepts into its advice. However, it is to be recognised that fire protection is not an exact science and that no building design can guarantee freedom from ignition or fire damage.

The protection of property from fire is an issue that requires clarification for each project being assessed through a performance-based approach. The Productivity Commission has indicated the following regarding BCA fire safety objectives:

"*The ABCB Chairman submitted that the BCA's goal in the area of fire safety is:*

…to protect the lives of building occupants, facilitate fire brigade intervention in the event of emergency, and protect adjacent property from the spread of fire and physical damage caused by structural failure.

It would appear to be generally accepted that the property protection of a building that is on fire is not a primary objective of the Code (although a level of property protection would often be an indirect consequence of fire safety measures directed at protecting building occupants). Provided the BCA's spread of fire criteria have been satisfied, a building may burn down and technically still have complied with the Performance Requirements of the Code."

Each State and Territory has its own Fire Brigade or Fire Service Act that has its own set of fire safety objectives, which may differ from those of the BCA, in respect to the protection of property. There may also be differing requirements from insurers with regard to protection of property and business interruption. Productivity Commission Report Finding 6.4 states the following:

"The degree of property protection from fire in the objectives of the BCA is different to that generally required by fire authorities' legislation (and some insurance companies) in relation to building performance, particularly for commercial buildings."

In an attempt to resolve the issue of conflicting objectives, the Productivity Commission Report provided the following guidance:

"As a general principle, property owners are best placed to determine the optimal level of fire protection, based on their expectations with respect to the risk of a fire incident and the estimated financial and other losses should a fire event occur. With an efficient insurance market, premiums would accurately reflect differences in risk, and provide further signals/incentives to the building owner to achieve the appropriate trade-off between risk exposure and cost of property protection measures."

The above information is provided in this report so that the building owner can make themselves aware of the BCA objectives regarding protection of property

from fire. It is understood for this project that the building owner has no specific fire safety objectives, other than those of the BCA. Decisions on property protection and business interruption are left for the owners to make in consultation with their insurers.

This report does not address insurance issues. It is recommended that relevant insurers are advised of the contents of this report, so that insurance issues can be appropriately addressed between the building owner and/or operator and their insurer.

Appendix B

Assumptions and Limitations

B1 Assumptions and Limitations

The main assumptions used in this report and the consideration of the fire strategy are set out below, to clarify the issues and give a clear understanding of the strategy to be implemented.

Given the unique and variable nature of deliberate fire scenarios (i.e. arson), the assumptions and limitations related specifically to arson events have been discussed separately in the section below.

The conclusions of this report may not be valid if any of the assumptions are incorrect. Similarly, any assumptions or limitations which are not met in the final design may invalidate the conclusions of this report and require further assessment of the individual situation.

B1.1 Assumptions

The following assumptions have been made in this report:

- All fire safety aspects of the development which are not addressed within this report comply with the DtS provisions of the BCA, unless otherwise noted.
- The assessment and analysis has been based on the assumption that the development will be completed as indicated in the documents provided. All fire safety issues during construction are outside the scope of this report.
- All fire safety systems and management strategies will be installed and maintained in accordance with the fire engineering report requirements and the relevant Building Regulations and Australian Standards.
- All existing fire safety reports have been fully incorporated into the building and all fire safety measures are maintained in accordance with the relevant Australian Standards.
- All the occupant numbers and characteristics are assumed to be as set out in the relevant sections of this report.

B1.2 Limitations

The following limitations apply to the fire safety analysis performed. Any change in the limitations may alter the final design solution and therefore should be referred to a suitably qualified fire engineer for review prior to any change.

- Any change in the building including use, occupant characteristics or fuel conditions outside the parameters of this report may invalidate the conclusions of this report.
- The conclusions of this report may not apply if all requirements are not fully implemented as described in this report.

- The analysis and recommendations contained herein are limited to those issues and fire safety measures affecting the life safety of building occupants. Evaluation of the expected level of fire induced property damage with respect to the contents and building structure is specifically excluded. Responsibility for the protection of property and re-instatement of any damage is considered to be beyond the scope of this report.

Any changes of occupancy, or changes to future proposed tenancy design may mean the results of this report are invalid and re-evaluation of the strategy and/or design will be required.

B1.3 Arson

The client has not indicated that the subject facility is considered a likely target for organised terrorist or criminal arson attack and has not requested that deliberate large scale malicious arson events be included in our fire engineering assessment of Performance Solutions.

However, in accordance with the International Fire Engineering Guidelines (IFEG)[6] fire engineers are required to consider the possibility of single ignition arson events, in addition to accidental fires. There are two basic approaches under accepted practice for the consideration of arson; i.e. prevention or protection. Either of these approaches is acceptable in accordance with the IFEG:

- The "Protective" approach would involve assessing the impact of escalating the design fire scenarios to test the sensitivity to accelerated fire growth rates, failure of sprinklers, fires occurring in unlikely locations etc. which would potentially lead to more onerous requirements being placed on the design.
- The "Preventative" approach would aim to minimise the possibility of a malicious attack, by use of suitable security measures.

It is assumed that the client prefers not to adopt the protective approach and will therefore rely on building security and/or operational measures to reduce the risk of arson. The specification of suitable measures lies outside the scope of this report however the reader is directed to the UK arson prevention website and the recommendations contained in the Fire Protection Association handbook on the Prevention and Control of Arson.

Accordingly, with regard to arson protection, the assessment considers only an amateur arson attack of limited proportions. Organised criminal or terrorist attacks have not been considered.

The possibility of arson attacks is included in the assessment on the following basis:

- An arson attack results in a single fire and associated with the ignition of the fuel load typically expected within the affected part of the building;

Due to the above, the fire scenarios and fire growth rates considered for accidental fires are also considered applicable for arson fire scenarios.

B1.4 General assumptions

Any change to the building design or use may mean that the assumptions are not valid, in which case the report is to be reviewed by a suitably qualified and Accredited Fire Safety Engineer and/or Building Surveyor. The conclusions of this report may not be valid if the assumptions are incorrect.

Some assumptions below discuss the expectations of staff and other occupants. These assumptions are not to impose additional management requirements, rather they outline the basic assumptions which relate to a Deemed to Satisfy building and legislative requirements for maintenance and training of staff, which is a reasonable expectation for such a highly managed institution. It is understood that there may be a small proportion of occupants for which the assumptions do not apply (e.g. new staff who have yet to undergo training) however, the fire engineering strategy is made up of many layers of fire safety and is considered robust enough to account for some staff who may not be fully trained or a small number of on call staff asleep while other staff are attending patients.

The following General assumptions have been made in this report (Other more specific assumptions may be contained within the assessments of this report as inputs into the design):

- All fire safety aspects of the development which are not addressed within this report comply with the DtS provisions of the BCA, unless otherwise noted.
- The assessment and analysis are based on the assumption that the development is complete and operational.
- Any significant changes to the design drawings and/or specifications will be referred to the relevant Fire Safety Engineer for review prior to acceptance.
- It is assumed that the design drawings and specifications supplied and upon which this assessment is based, as detailed within this report, are accurate with respect to the final as-built condition of the facility. No liability is taken for the accuracy of the supplied documentation, which forms as the basis of this assessment.
- All required fire safety measures are maintained in accordance with the list of Essential Safety Measures.
- All specific assumptions or limitations on the use of the building as detailed on the list of Essential Safety measures are correct and are being adhered to. The frequency of checks is to be as determined on the list of Essential Safety Measures.

Upon any change of ownership of the building, the responsibilities in regard to fire safety are transferred to the new owner.

Appendix C

Structural Fire Analysis

C1 Structural fire analysis

C1.1 Limiting Temperature

The limiting temperature of steel is determined in accordance with AS4100 which provides the following variation of yield stress with temperature:

$$\frac{f_y(T)}{f_y(20)} = 1.0 \qquad \text{when } 0°C < T \leq 215°C$$

$$= \frac{905 - T}{690} \qquad \text{when } 215°C < T \leq 905°C$$

where $f_y(T)$ is the yield stress of steel at temperature of T (°C)
$f_y(20)$ is the yield stress of steel at temperature of 20°C
T is the temperature of the steel (°C)

Based upon the load ratio the limiting steel temperature (T_l) will be determined as follows:

$$T_l = 905 - 690 r_f$$

where r_f is the ratio of the design action on the member under the design load to the design capacity of the member at room temperature, known as the member utilisation.

The limiting temperatures for the unprotected steel beams and columns have been provided by the structural engineer (Arup) and are shown in Table 5.

C1.2 Scenario 1: Amenities Fire

A severe fire occurring inside the toilets is considered unlikely as the ignition risks and the fuel load are low. The IFEG[6] recommends a fuel load of approximately zero for water closets. Notwithstanding this, the structure could be exposed to heating from a small localised fire within the amenities, which has been considered in the below assessment for conservatism.

A worst-case credible design fire for the analysis is taken as a paper filled wastepaper basket fire with the following characteristics:

- Peak heat release rate = 0.12MW[21] for a waste-paper basket fire;
- Diameter = 0.29m[22] to represent the base of a waste-paper basket.
- No first response firefighting efforts have been considered.
- As a worst-case scenario, the design fire location is immediately adjacent to a steel column.

C1.2.1 Steel Column Assessment

Arup developed software 'FlashOva' was used to calculate the temperature of a steel column located 0.5m from the design fire.
This is based on fire principle and view factors, the basis of which can be found in SFPE Handbook of Fire Protection Engineering, Chapter 11, Third Edition, 2012.
An image of the inputs required for the assessment is shown below.
The input values for the assessment are shown in Figure 22. The emissivity is assumed to be 1, as recommended by the Fire Engineering Design Guide [7].

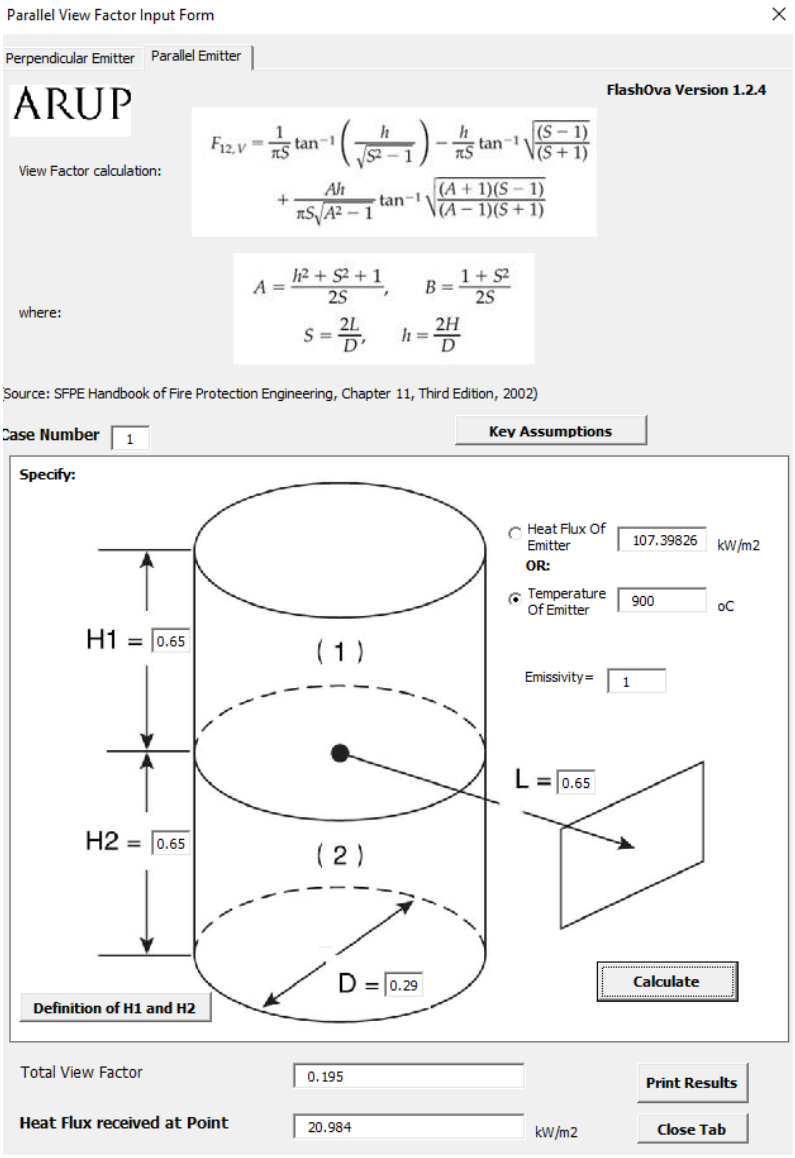

Figure 22 FlashOva inputs: Scenario 1

Therefore the heat flux received at the steel column is 21kW/m^2 for this design fire.

The cylindrical flame was calculated based on the width of the wastepaper basket (029m) of the rubbish bin. The height is taken as the flame height (1.3m). It is assumed the flame temperature is 900°C based on the maximum temperature at

the base of an axisymmetric plume, as recommended by BS EN 1991-1-2[20]. The corresponding emitting heat flux is therefore 20.98kW/m^2.

FlashOva outputs the results in terms of heat flux received at the point (i.e. column in this case). This can be converted to temperature based on the following equation (Drysdale (2011)).

$$\dot{q}_r'' = \varepsilon\sigma T^4$$

Where:

$\dot{q}_r''$ = radiative heat flux (kW/m²)

ε = emissivity (-)

σ = Stefan-Boltzmann constant (5.67x10^{-8} W/m²/K^4)

T = temperature (K)

Table 11 Scenario 1 FlashOva Results

Height of radiating cylinder (flame height)	**Width of radiating panel**	**Distance to steel structure**	**Heat flux received at point ($\dot{q}_r''$)**	**Temperature at point**
1.3 / 2 = 0.65m	0.29m	0.29/2 + 0.5	20.98 kW/m²	507°C

The temperature at the steel columns is therefore 507°C. As plume temperature range is less than the limiting steel temperature (675°C), the column shall retain structural integrity in this fire scenario with the proposed (nil) level of fire protection.

C1.2.2 Steel Beam Assessment

The temperature of the steel beams were calculated using the Eurocode 1 (BS EN1991-1-2)[20] method.

The analysis consists of:

- Calculating the flame height based on the fire size (heat release rate and diameter) and determining whether the members are engulfed in flame. The flame height equation specified by EN1991-1-2 is as follows:

$$L_f = -1.02D + 0.0148Q^{2/5}$$

Where:

L_f is the calculated flame height (m)

D is the diameter of the fire (m)

Q is the heat release rate of the fire (kW)

The input parameters for Scenario 1 are as follows:

Table 12 Scenario 1 fire input parameters

Parameter	Value
D	0.29m
Q	120kW

The flame height is therefore 1.3m, well below the height of the beam (3.45m to the lower side of the beam).

As the structural component is not engulfed in flame, the plume temperature at the height of the component is calculated. The steel temperature is assumed to be equivalent to the plume temperature. This is conservative as it does not consider the thermal mass of the steel and transient heating of the steel. The plume temperature correlation specified by BS EN1991-1-2 (Annex C, C.2) is as follows:

$$\theta_z = 20 + 0.25 Q_c^{\frac{2}{3}} (z - z_0)^{-5/3} \leq 900°C$$

Where:

θ_z is the calculated surrounding plume temperature (°C)

Q_c is the convective portion of the heat release rate (W)

z is the height along the flame axis (m)

z_0 is the virtual origin

- If the plume temperature is less than the *limiting temperature* of the structural component, then it is considered that no fire protection is required.
- If however the plume temperature is greater than the *limiting temperature*, further detailed analysis is undertaken, considering the thermal mass of the steel, to assess if the structural element has enough inherent fire resistance to resist the design fire temperatures.

The input parameters for Scenario 1 are as follows:

Table 13 Scenario 1 fire input parameters

Parameter	Value
Q_c	0.8 x Q = 96kW
z	4.25 – 0.8 = 3.45
z_0	0.27

The plume temperature is therefore 96.1°C. As 96.1°C is less than the limiting temperature, the inherent fire resistance of the beam is sufficient to resist the design fire temperatures.

C1.3 Scenario 2: Rubbish Bin Fire

C1.3.1 Steel Column Assessment

It is a requirement within the fire safety measures for no combustible material to encroach the space within 1.0m of the unprotected steel columns supporting Level 1. This requirement is justified based on the following analysis based on the required combustible separation as given in NFPA 92 equation 5.2.5.3b (extracted below).

$$R = \left(\frac{Q_r}{4\pi q_r''} \right)^{1/2} \qquad \textbf{(5.2.5.3b)}$$

where:
R = separation distance from target to center of fuel package (m)
Q_r = radiative portion of the heat release rate of the fire (kW)
q_r'' = incident radiant flux required for piloted ignition (kW/m^2)

The radiative portion of the heat release rate is given by equation 5.2.5.4b in NFPA92:400.

$$Q_r = \xi Q \qquad \textbf{(5.2.5.4b)}$$

where:
Q_r = radiative portion of the heat release rate of the fire (kW)
ξ = radiative fraction (dimensionless)
Q = heat release rate of the fire (kW)

5.2.5.5 A value of 0.3 shall be used for the radiative fraction unless another value is substantiated in accordance with test data.

5.2.5.7 A value of 0.9 Btu/ft^2· sec (10 kW/m^2) shall be used for the incident radiant heat flux required for piloted ignition unless another value is substantiated in accordance with approved test data.

The peak HRR of the fire is assumed to be 350kW for a large, densely packed trash bag. The radiative portion of the HRR is therefore 105kW. Based on the maximum heat release rate from one bin of 350kW, the reference radiative fraction and an incident radiant flux for piloted ignition, the separation distance is considered to be 0.91 m. Thus, a separation distance of 1.0m from the perimeter room is considered appropriate.

Arup developed software ‘FlashOva’ was used to calculate the temperature of a nearby unprotected steel column with the design fire in Scenario 2.

This is based on fire principle and view factors, the basis of which can be found in SFPE Handbook of Fire Protection Engineering, Chapter 11, Third Edition, 2012. An image of the inputs required for the assessment is shown below.

The emissivity is 1, as recommended by the Fire Engineering Design Guide[7] and the input values are shown in Figure 23 and Figure 24.

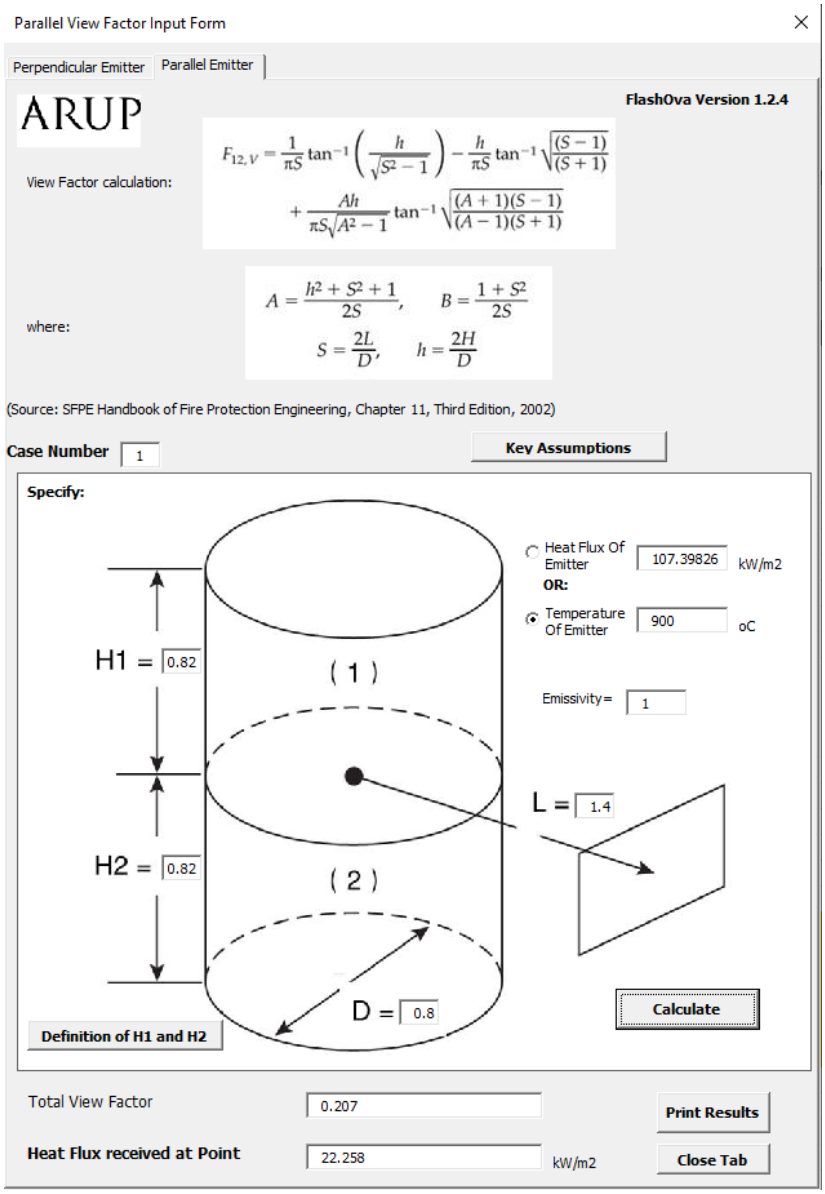

Figure 23 FlashOva inputs - Scenario 2 (1)

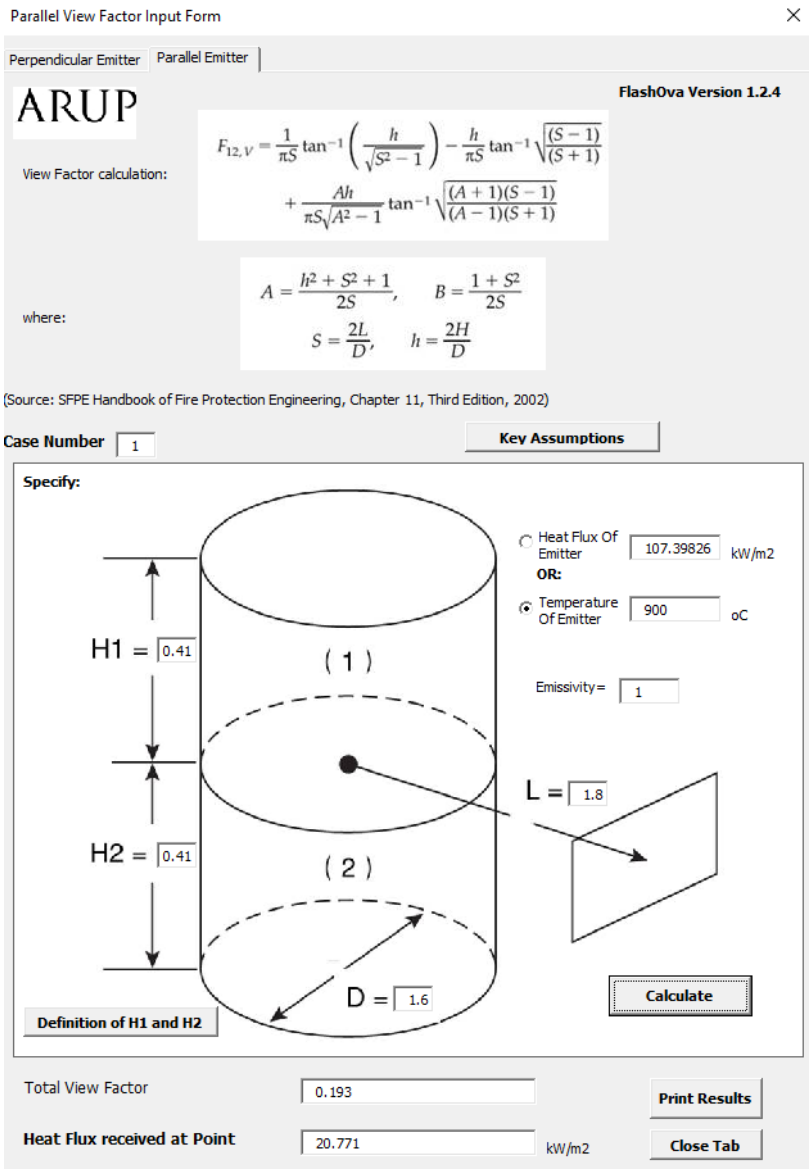

Figure 24 FlashOva inputs - Scenario 2 (2)

The cylindrical flame was calculated based on the width (0.8m – 1.6m) and height (1.64 m) of the rubbish bin. It is assumed the flame temperature is 900°C based on the maximum temperature at the base of an axisymmetric plume, as recommended by BS EN 1991-1-2[20]. The corresponding emitting heat flux is therefore 107.4kW/m^2.

FlashOva outputs the results in terms of heat flux received at the point (i.e. column in this case). This can be converted to temperature based on the following equation (Drysdale (2011)).

$$\dot{q}_r'' = \varepsilon\sigma T^4$$

Where:

$\dot{q}_r''$ = radiative heat flux (kW/m²)

ε = emissivity (-)

σ = Stefan-Boltzmann constant (5.67×10^{-8} W/m²/K⁴)

T = temperature (K)

Table 14: FlashOva Results

Height of radiating panel	Width of radiating panel	Distance to steel structure	Heat flux received at point ($\dot{q}''_r$)	Temperature at point
1.63 / 2 = 0.815m	0.8m	1.4m	22.3 kW/m²	519°C
0.82 / 2 = 0.41m	0.6m	1.8m	20.8 kW/m²	505°C

The temperature at the steel columns is therefore 519°C to 505°C. As plume temperature range is less than the limiting steel temperature (700°C), the column shall retain structural integrity in this fire scenario with the proposed (nil) level of fire protection.

C1.3.2 Steel Beam Assessment

The flame height is calculated as per Annex C of BS EN 1991-1-2:2002 and based on the fire size (equation shown in Section C1.2).

The input parameters for Scenario 3 are as follows:

Table 15 Scenario 3 fire input parameters

Parameter	Value
Area	0.5m² to 2m²
Q	350kW
D	0.8 to 1.6m
Lf	1.63 to 0.82m

Therefore, the length of the flame is therefore 1.63 to 0.82m.

The temperature in the plume is found from equation C.2, Annex C of BS EN 1991-1-2:2002 (equation shown in Section C1.2) with the input parameters as follows:

Parameter	Value
Q_c	0.8 x Q = 280kW
z	4.25 – 0.8 = 3.45
z_0	0.27

The plume temperature at the steel beam is therefore 159.3°C to 117.4°C. As plume temperature range is less than the limiting steel temperature (700°C), the beam is not calculated to fail in this scenario with the proposed (nil) level of fire protection.

Appendix D

Radiative Heat Assessment

D1 Radiative Heat Assessment

D1.1 Calculating the received radiation

The Arup developed tool FlashOva is used, which is based on view factor and heat flux calculations.

The following inputs are used:

- The radiating panel emits radiation at a heat flux of 84kW/m² for a typical office, residential, assembly or recreation purpose groups[23]. This value is more onerous than what is expected in the corporate level of Sydney Speedway and is considered an acceptable conservative approach. This heat flux is equivalent to a flame temperature of approximately 860°C.
- As the walls of Level 1 are not fire rated, they are assumed to fail in a fire event. As such, the width of the fire compartment of origin (one corporate box) is used as the width of the radiative panel.

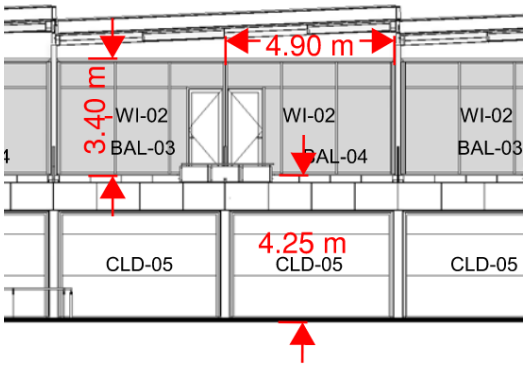

Figure 25 Geometry of Level 1

- The 2.0m Level 1 walkway (Figure 26) is expected to shield the external hydrants on the Ground Floor from a fire within a Level 1 room. The horizontal length in the radiative heat assessment incorporates this 2.0m in addition to the 2.7m offset of the hydrants from the Ground Floor (Figure 27).

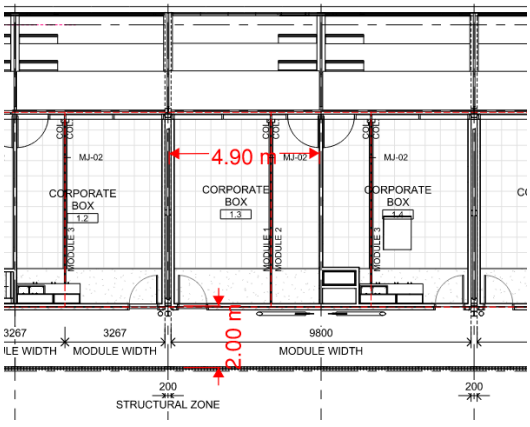

Figure 26 Radiative panel dimensions

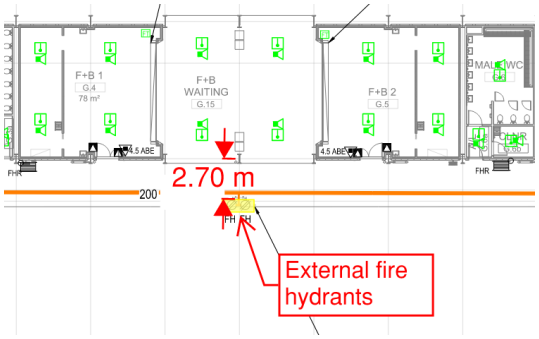

Figure 27 External hydrants location

- The distance between the Level 1 compartment (radiator) and the closest external fire hydrant (receiver) is 4.7m horizontally and 6.51m vertically to the lower end of the panel. Due to the overhanging balcony area the shielded area of the corporate box is discounted from the radiative panel dimensions. The panel is at an angle of 138.5° from the radiating panel to the hydrant.

D1.2 Results

The input values and results of the analysis are shown in Figure 28 below. As can be seen in the above figure, the heat flux received at the external hydrant in this scenario is 0.142kW/m^2. As this is below the 3kW/m^2 threshold, the location of the external hydrants is considered to meet the acceptance criteria.

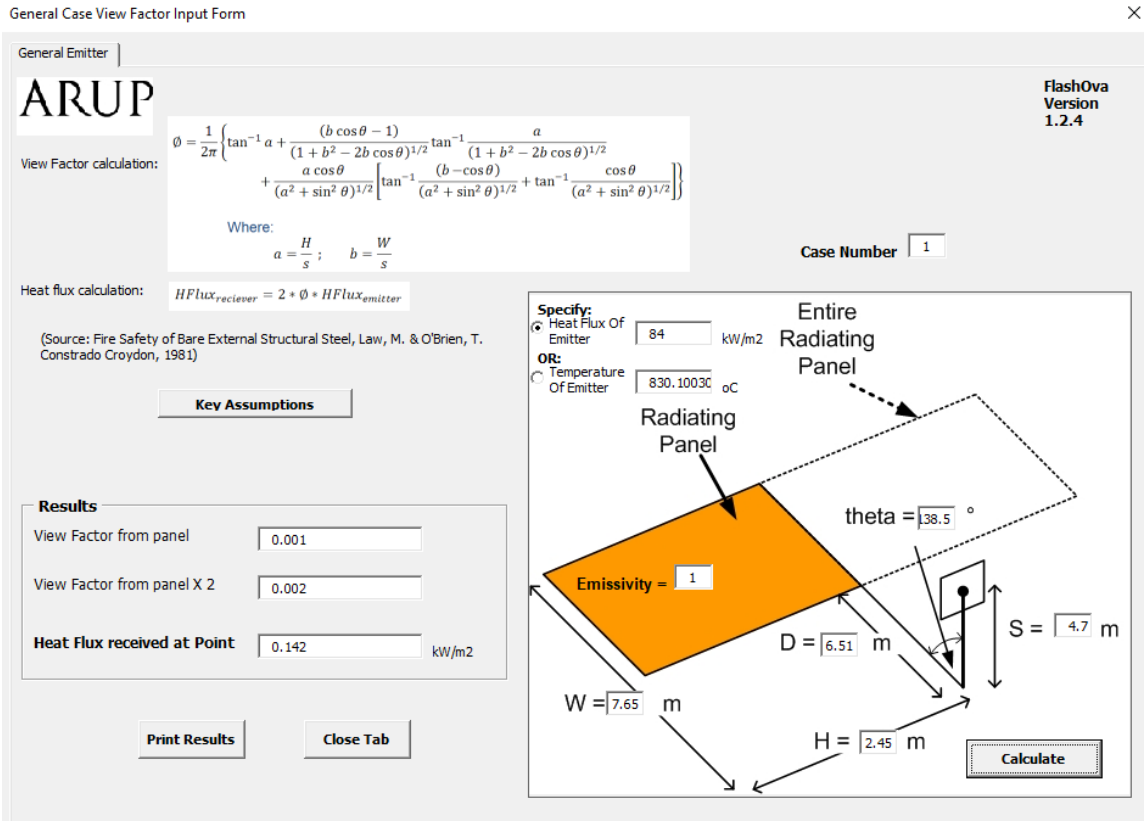

Figure 28 Radiative assessment results

Appendix E

FRNSW FEBQ Comments

E1 FRNSW FEBQ Comments

Fire Engineering Brief Questionnaire (FEBQ)

1 Document control

Applicant reference number Enter ref. no.

FRNSW reference number FRN20/2128
(V2: BFS20/2006)

Ver.	Author	Organisation	Status	Date
01	Alistair Morrison Grant Wang Tess Van Der Veen	Arup	Initial submission	2/07/2020
02	Duke Ismael	FRNSW (#12037)	Response to FEBQ Ver. 01	19/08/2020

2 Applicant

2.1 Agreement

As the applicant, I confirm the following:

- I agree to pay Fire and Rescue NSW (FRNSW) the charges set out in Clause 46 of the *Fire Brigades Regulation 2014* (see Section 10).
- I agree to forward with this application the following documentation for FRNSW to review and provide advice on the assessment methods and acceptance criteria proposed for the given performance solution:
  - ☐ Copy of proposed building plans and specifications
    (e.g. relevant floor plans, elevations, site plan, section views, hydrant plan and schematic)
  - ☐ BCA report or letter from an accredited certifier that identifies all non-compliances (if available)
  - ☐ CFD/zone modelling inputs form (if applicable)
  - ☐ Report extract of the trial design requirements/proposed fire safety measures (optional).

Name of fire engineer	Alistair Morrison	BPB number	2136
Company name	Arup		
Fire engineer's phone no.	02 9320 9320		
Fire engineer's email	Alistair.Morrison@arup.com		

2.2 Remittance advice information

Invoices will be issued based on the information provided below:

ASIC company name	Cox Architecture Pty Ltd		
Australian business number	78426 372646	Trading name	Cox Architecture
Remittance contact name	Cathy Zhu		
Remittance street address	Level 6, 155 Clarence St Sydney NSW 2000		
Remittance email address	cathy.zhu@cox.com.au		
Remittance phone number	02 92679599	Remittance fax number	02 9264 5844
Purchase order ref. no.	If applicable	Project code ref. no.	If applicable

Project leader contact name	Barnaby Hartford – Davis
Project leader contact email	Barnaby.Hartford-Davis@cox.com.au

3 Consultation

3.1 Stakeholders

Role	Name and BPB number	Organisation and phone	Email address
BCA consultant	Andrew Rhys BPB0356	Steve Watson and Partners 02 9283 6555	arys@swpartners.com.au
Certifier	Michael Potts BPB2516	Blackett Maguire + Goldsmith 02 9283 6555	michael@bmplusg.com.au
FRNSW reviewers	A/Insp Murray Mackne Engineer Duke Ismael	Fire and Rescue NSW 02 9742 7434	firesafety@fire.nsw.gov.au

3.2 Meeting details

In conjunction with the written comments provided in response to this FEBQ, FRNSW may at its discretion hold a meeting with the applicant to discuss aspects of the proposed performance solution.

Type of meeting preferred ☐ No meeting ☑ Telephone meeting ☐ Face-to-face meeting

4 Project details

4.1 Premises

Premises name	Sydney Speedway
Primary street address	Ferres road, Eastern Creek, Sydney
Secondary street address	Secondary street address (if applicable)
Premises suburb	Eastern Creek
Lot and DP numbers	N/A

4.2 Proposed works

☑ New building
☐ Refurbishment of an existing building
☐ Extension of an existing building
☐ Change in use within an existing building
☐ Other: (provide details)

Applicable NCC: NCC 2019

For existing buildings:
Approximate year of construction: **Year**
Building code when constructed: **Select**

How many performance solution issues are proposed in this FEBQ? 6

Note: The number of performance solution issues must address all identified non-compliances.

Have all departures from the deemed-to-satisfy (DtS) provisions of the *National Construction Code* (*NCC*) been identified for this proposed design (i.e. a BCA report or letter from an accredited certifier)? Yes

Note: Any advice given is subject to all non-compliances being identified. Any new DtS departures identified, including any from the certifier determining the application for construction certificate, may affect FRNSW advice in respect to this performance solution.

Identify if any previous performance solution applies to the building:

No

Identify if any application has been/will be submitted under Clause 188 of the *Environmental Planning and Assessment Regulation 2000*:

N/A

Identify if the premises is or will be subject to any development application (DA) conditions or special regulatory approvals (e.g. BPB conditions, ministerial conditions, crown building works):

Note: FRNSW will not comment on existing buildings subject to voluntary upgrade or change of use prior to the issuing of any DA conditions of consent, or conditions of an existing consent have been modified (i.e section 4.55 of *Environmental Planning and Assessment Act 1979*). Comment will also not be provided if an order has been issued unless the Council agrees. The Council may seek advice during the DA review.

Crown.

Will the premises be subject to a fire safety study, risk assessment or dangerous goods study? No

Note: Any study/risk assessment should be completed prior to submitting this FEBQ and should be attached to this application.

4.3 Description of building occupancy

Main occupancy class	9b	Largest fire compartment (within the building)	Area (m^2)	Approx 1145m^2
Other occupancy classes	6		Volume (m^3)	**Volume**
Type of construction	B		Height (m)	
Effective height (m)	4m	Ground floor area (m^2)		Appox. 1,100m^2
Rise in storeys	2	Total floor area (m^2)		Approx. 2,365m^2
Levels contained	2	Total volume (m^3)		TBC

Outline any additional building characteristics:

The proposed Sydney Speedway Grandstand and Ticketing Building (the Grandstand) is a new building at the relocated Sydney Speedway at Motorsport Park, Ferres Road, Eastern Creek. The Grandstand design consists of semi-modular construction, with prefabricated elements erected within a primary structural frame. Seating terraces are located on the fill embankment.

Sydney Speedway will be serviced by Huntingwood Fire Station, 42 Huntingwood Drive, Huntingwood, located 4.1km from the main site entrance. As a secondary option, Smithfield Fire Station, 875 The Horsley Drive, Smithfield will service the site.

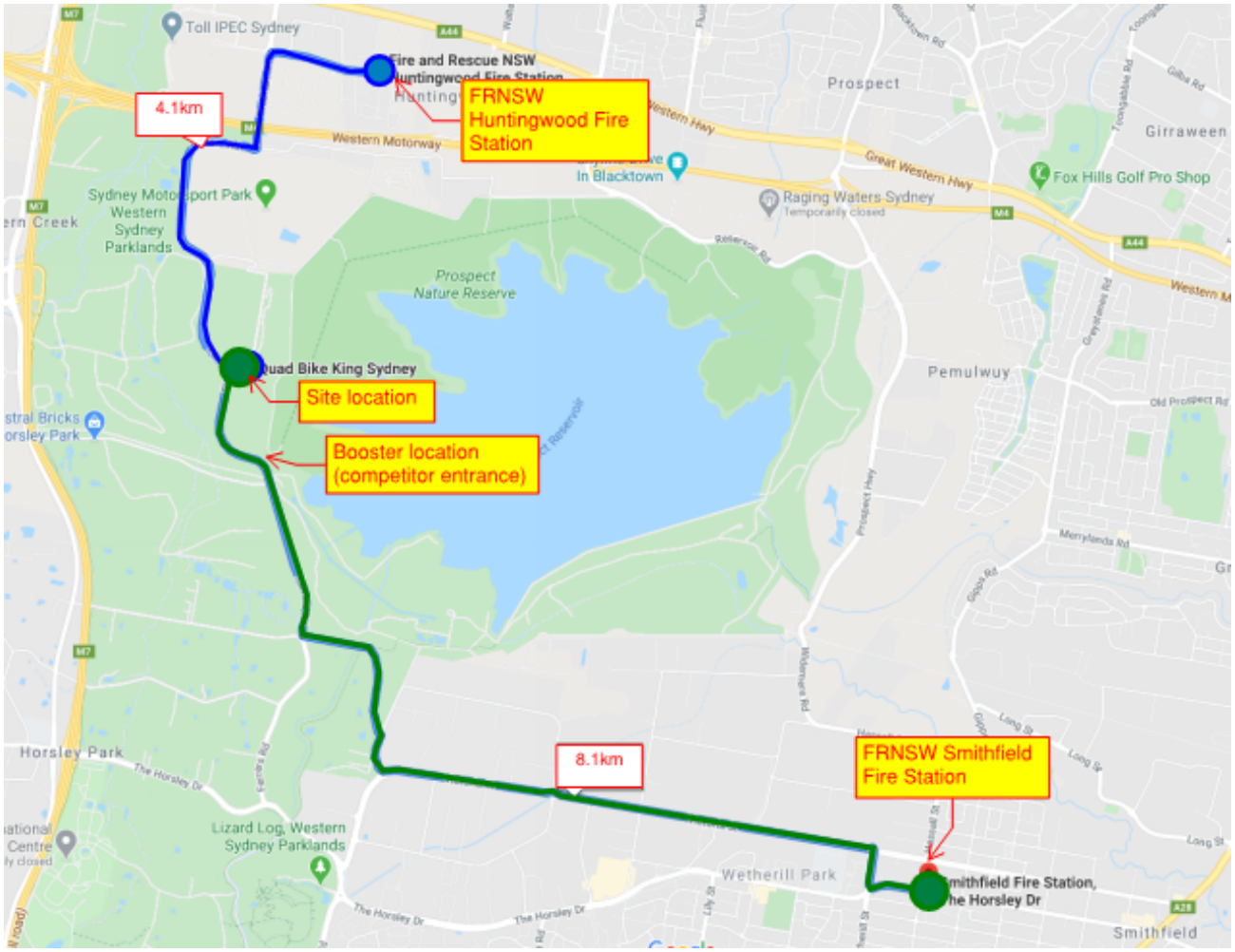

Figure 1 FRNSW Stations servicing Sydney Speedway, Eastern Creek

The Grandstand will be located along the western edge of the speedway track. The Ground Floor consists four food and beverage (F&B) outlets with large openings into the F&B waiting space for food service, amenities, plant room, merchandise room and comms room (Figure 2).

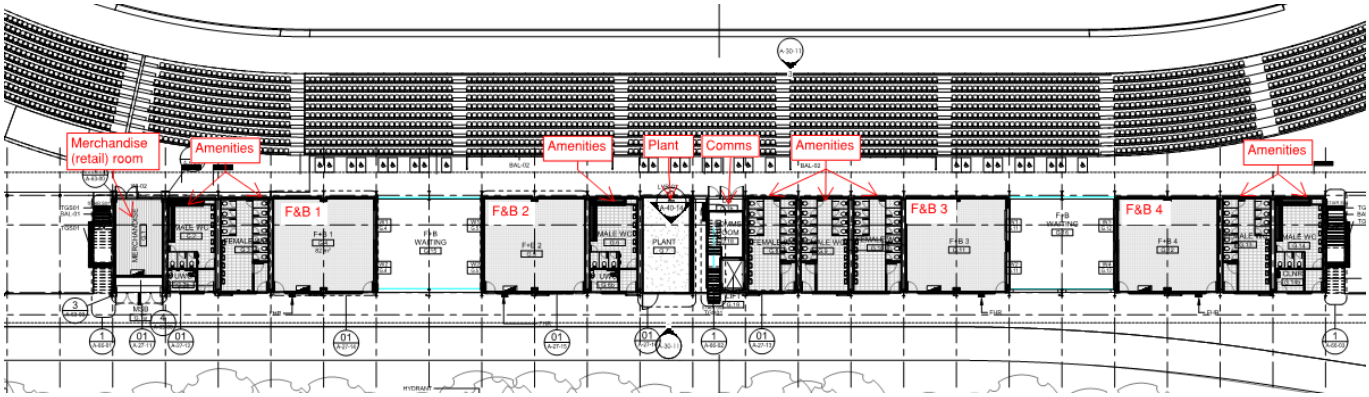

Figure 2 Ground Floor GA Plan

Level 1 of the Grandstand contains corporate boxes and one tier of seating which is accessible from the corporate boxes. Egress from the tiered seating is through the corporate boxes into a circulation hallway. Level 1 is serviced by three exits.

Level 1 floor of the Grandstand is to be constructed by using precast concrete hollow-core slabs and precast concrete terrace seating plates seating on bottom flange of steel beams. The steel beams are supported by steel columns (steel frames). The central portion of the design in Figure 2 will be prefabricated lightweight modular

floors. The construction is semi-modular and Typical structural arrangement for Level 1 is illustrated on Figure 3 below.

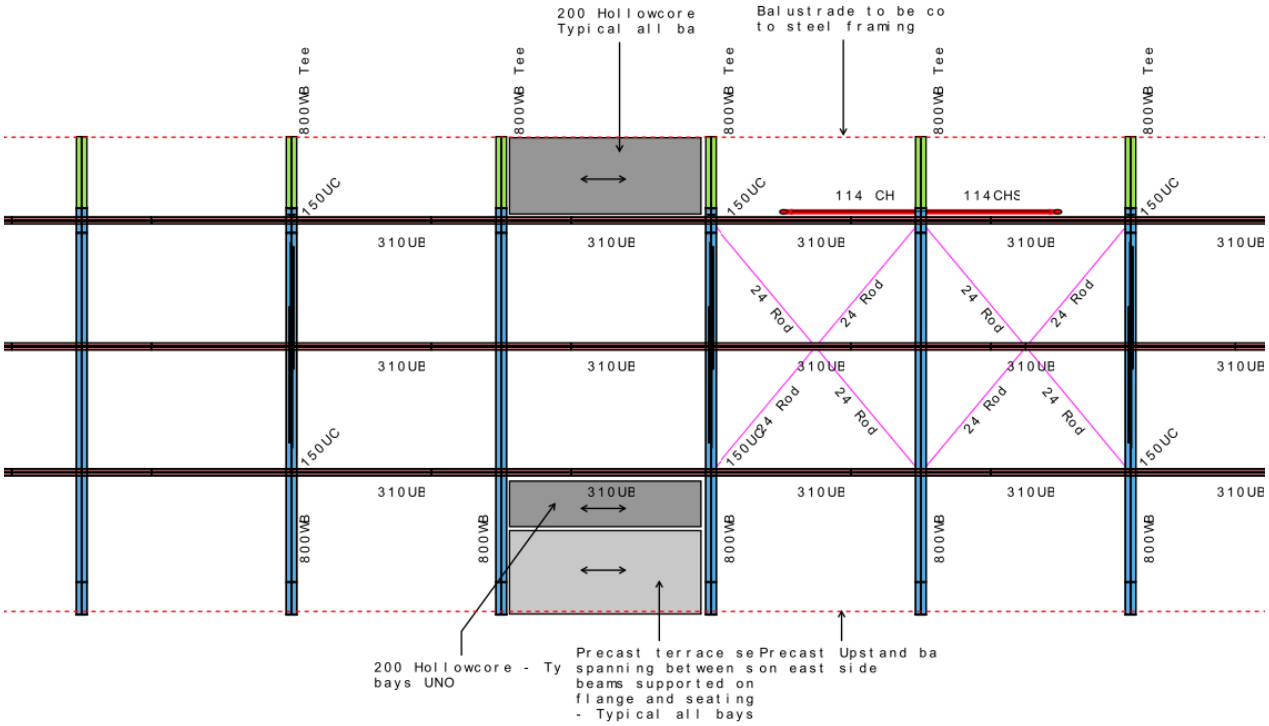

Figure 3 Typical Structural Arrangement – Level 1 Floor

In addition to the above, the following single-storey buildings are also to be located on the site:

- Workshops & Garages – Class 8;
- Ticket Booth – Class 6.

No performance solutions will be applied to these single-storey buildings.

List key occupant characteristics for the building:

- Spectators
  The total capacity of the Grandstand is 3900 spectators. This is broken down into 400 people in the building component and 3500 people in the outdoor seating component.
- Competitors
- Retail staff of food and beverage outlets
- Speedway staff (5% of total spectator population value)

5 Hazards

Outline any hazards unique to the building:

Provide details

- ☐ Combustible external cladding
- ☐ Combustible waste (i.e. waste facility)
- ☐ Hazardous chemicals / dangerous goods
- ☐ Electricity supply system (e.g. substations)
- ☐ Battery system (e.g. BSS, BESS, ESS)
- ☐ Alternative electrical generation (e.g. solar, tri-gen)
- ☐ Insulated sandwich panels
- ☐ Podium type building
- ☐ A basement level
- ☐ An atrium (Part G3 of BCA)
- ☐ Car stacker
- ☐ Other: (provide details)

Note: Clauses E1.10 and E2.3 of the NCC should be addressed when special hazards exist (e.g. car stacker, hazardous chemicals/dangerous goods).

6 Preventative and protective measures

Identify fire safety measures that are, or will be, provided throughout the building, including anything undecided, which should be mentioned as part of the FEBQ review. Additional information may be added to the comments section below to better describe any systems or indicate systems that may be subject to a performance solution.

Suppression system	Detection system	Facilities for emergency services
☐ CA16 (existing building)	☐ AS 3786:2014	☐ Emergency lifts
☐ AS 2118.1-2017	☐ AS 3786-1993 (existing building)	☐ Fire control centre
☐ AS 2118.1-2006	☑ AS 1670.1:2018	☐ Fire control room
☐ AS 2118.1-1999 (existing building)	☐ AS 1670.1:2015 (existing building)	☑ Perimeter vehicular access
☐ AS 2118.2-2010 (wall-wetting)	☐ AS 1668.1:2015	☐ Standby power supply system
☐ AS 2118.3-2010 (deluge)	☐ AS 1670.3-2018 (monitored)	**Occupant warning system**
☐ AS 2118.4-2012 (residential)	☐ AS 1670.3-2004 (existing building)	☑ Building occupant warning
☐ AS 2118.5-2006 (domestic)	☐ Smoke alarms	☐ EWIS
☐ AS 2118.6-2012 (combined)	☐ Heat alarms	☐ SSISEP
☐ FPAA101D (class 2 or 3)	☐ Smoke detectors	☐ Break glass unit
☐ FPAA101H (class 2 or 3)	☑ Heat detectors	☐ Visual / tactile alarm devices
☐ Fast response heads	☐ Flame detectors	**Signage**
☐ ESFR	☐ CO detectors	☑ Emergency lighting
☐ Storage mode sprinklers	☐ Multi-criteria fire detectors	☑ Exit and direction signs
☐ Gaseous suppression system	☐ Aspirated smoke detection	☑ Warning and operational signs
☐ Water mist system	☐ Beam detection	**Protection of openings**
Hydrant system	**Water supply**	☑ Fire doors
☑ AS 2419.1-2017	☐ Reticulated town main	☐ Smoke doors
☐ AS 2419.1-2005	☐ Private water main	☑ Solid core doors
☐ AS 2419.1-1994 (existing building)	☑ Onsite storage tank	☐ Fire windows
☐ Ordinance 70 (existing building)	☐ Gravity tank/reservoir	☑ Fire shutters
☑ External hydrants	☐ Dual supply	☐ Wall-wetting sprinklers
☐ Internal hydrants	**Smoke hazard management**	☐ Fire curtain
☐ Internal dry-riser (for Class 2/3)	☐ Zone smoke control	☐ Smoke curtain
☐ Street hydrant coverage only	☐ Purge system (existing building)	☐ Safety curtain for openings
☑ Hydrant booster assembly	☐ Smoke and heat vents	☐ Fire dampers
☑ Pumpset	☐ Smoke exhaust	☐ Smoke dampers
Firefighting equipment	☐ Smoke baffles	☐ Fire seals (intumescent)
☑ Portable fire extinguishers	☐ Ridge vents	☐ Hot smoke seals (>200ºC)
☑ Fire hose reels	☐ Stair pressurisation	☐ Medium temp. smoke seals
	☐ Impulse / jet fans (in carpark)	

Additional information:

Provide any additional information relevant to the measures

7 Departures from the Deemed-to-Satisfy provisions

Issue number: 1 **Title:** Reduction of FRL's to selected steel columns supporting the Level 1 floor and external seating decks

Details of departures from DtS provisions:

BCA DtS Provisions

Table 4 of Specification C1.1 of the BCA states that for a building of Type B construction, the FRL for Class 6 shall achieve no less than 180/180/180 FRL.

Departure from DtS Provisions

The level 1 floor of the Grandstand will be constructed using precast concrete hollow core slabs for walkways and precast concrete terrace seating plates seated on the bottom flange of the steel beams. The steel beams are supported by steel columns. The central portion of the level 1 floor will be prefabricated lightweight modular floors. The F&B on ground level and corporate boxes on the level 1 will be semi-modular construction.

The FRL of the steel columns is required to achieve an FRL of 180/-/-. The selected structural elements and the reduced/omission of FRL in lieu of the BCA requirements achieved are as follows:

- No fire protective covering is to be provided to the columns exposed to fire from sanitary facilities or circulation area on the ground floor, and
- No columns are to be exposed to a fire from a F&B concession (Class 6), merchandise or plant room which is to be enclosed by fire rated construction achieving and FRL of -/30/30.

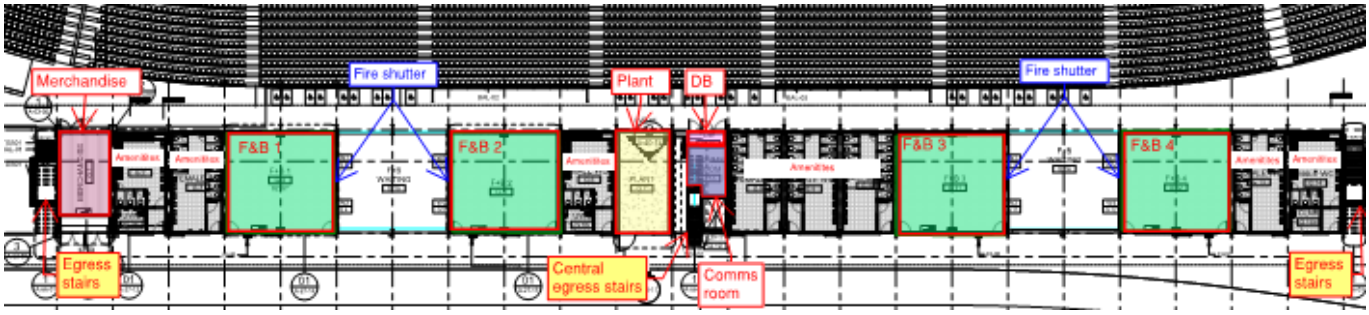

Figure 4 GA Plan Ground Floor Compartmentation. Fire rated walls indicated by red outlines.

Applicable DtS provisions:	Table 3 of Spec C1.1	Performance requirements:	CP1, CP2

List key fire safety measures:

- A fire separating floor between the Ground Floor and level 1 is to be provided that will achieved using one of the following DtS solutions:
  - The Level 1 floor to have an FRL of 30/30/30 (this should be a tested floor system); or
  - A ceiling below the floor to have an incipient spread of fire rating of 60 minutes if the above cannot be achieved.

Any gaps present between the modular construction are required to be sealed with a fire-stopping system as specified by Cox Architecture, achieving an FRL of at least -/30/30 FRL when tested to AS1530.4 and in a manner as they will be installed. For gaps greater than 50mm this is proposed to be a compressible fire rated expansion joint.

- F&B rooms, merchandise and the plant rooms (Hazard Rooms) will be fully enclosed in -/30/30 FRL construction from the internal side such that structure will be outside this zone and shielded by the fire rated construction.
- The doors to the F&B rooms are required to be -/30/30 FRL and fitted with self-closing devices. Door hold open devices shall be provided to the doors to ensure they are held wedged open and will close on fire trip of the detection system.

- The window to the F&B room will be fitted with a fire rated shutter (FRL -/30/-) that shall close on activation of the fire detection system in the room.
- Thermal detection designed in accordance with AS1670.1:2018 shall be provided to all rooms at ground and first floor and will be connected to raise the general fire alarm for the Grandstand.
- Bin locations shall be designed such that they will not encroach the space within 1m of the steel columns and management provisions shall re-enforce this.
- The inherent structural fire rating of the unprotected steel columns shall be not less than 20mins to provide for redundancy in the design (this has been confirmed by the structural engineer).

Proposed performance solution:

The intent of the required FRL applied to the selected steel columns is for structural stability to be maintained during a fire event appropriate to the situation, including, fire size and location, function and use of the building, evacuation and fire brigade intervention.
The proposed solution is as follows:

- The Guide to Safety at Sports Ground, the 'Green Guide', categorises a high fire risk area as an area where combustible elements are present or where structural elements could promote the spread of fire, heat and smoke (Section 15.11). Some common sources of ignition are identified as cooking appliances, food warmers and electrical equipment (Section 15.13). It is also important to limit the spread of fire and smoke from adjacent areas or the egress path. The F&B rooms, merchandise, Comms room, distribution board (DB) and plant room are considered to be of high fire risk. These rooms are required to be fire rated as follows to minimise risk of exposure of the selected steel columns to fire and to maintain a safe egress route.
    - The hazard rooms shall consist of fire rated construction to achieve -/30/30 from the internal side (Figure 4).
    - The Comms and DB (MSB) rooms shall achieve an FRL of 120/120/120.
    - In accordance with Clause C3.5 of the BCA, the doors in the fire-rated walls shall have an FRL of -/30/30.
    - A fire rated shutter is required for the trading opening in the F&B stalls with an FRL of -/30/-. In accordance with the guidance provided in the 'Green Guide', the shutter must be capable of operating both manually and on activation of the fire alarm (Section 15n.).
    - The above is therefore consistent with the floor fire rating provided in line with the DtS provisions for Type B construction, which is deemed suitable for the evacuation of occupants and fire fighting intervention.
- The female and male amenities are considered to be of a low fire hazard with very limited fuel loads and ignition sources. Combustible materials are not expected limiting the possibility of fire spread. As such, a fire directly affecting these areas and subsequently the selected steel columns of nil applied fire protection is unlikely.
- A BCA DtS non-required automatic detection system consisting of thermal detectors, designed in accordance with AS 1670.1:2018 shall be provided throughout including all rooms at ground and first floor and will be connected to raise the general Building Occupant warning system for the Grandstand. A DtS Building of this type and size would not require any detection and alarm and therefore the detection will provide for earlier occupant warning throughout.
- Thermal detection is to be provided F&B rooms to limit the occurrence of spurious alarms due to cooking, dust, etc common in this area. Activation of the F&B detection is to activate the fire shutters into the closed position and raise an alarm through the building. This will enable occupants to egress earlier than in a DtS case with no detection. Additionally, there is no ducted air-conditioning that would enable smoke spread between compartments.
- The inherent FRL of not less than 20 minutes (as confirmed by structural engineer) for the steel columns and the shielding protection from the enclosing -/30/30 construction to hazard rooms will allow time for occupants to egress safely from Level 1 in the event of a fire in an F&B room long before 30 minutes of a standard fire exposure.
- To mitigate the risk of waste/litter accumulation near the unprotected columns that may serve as a fuel source, the design must include designated bin location not less than 1m from the steel columns. Management plans must include timely removal of the waste and no storage or litter within 1m of the steel columns. The plans will also require no storage around the columns, limiting fuel and ignition sources

- DtS fire rated separation shall be provided to separate the ground floor and Level 1 and sufficiently mitigate the risk of upwards fire spread, sufficient to enable means of escape.
- As the proposed design incorporates a modular design that is subject to change, it is important that the fire protection system adopted will not be compromised. Any gaps present between the modular construction are required to be sealed with a fire-stopping system as specified by Cox Architecture, achieving an FRL of at least -/30/30 FRL when tested to AS1530.4 and in a manner as they will be installed.
- Given the relatively straightforward egress arrangements and open deck nature of the exit paths, fire fighting activities will largely focus on suppression. This is achieved externally from the building with good access around and hydrants protected sufficiently, as outlined below.
- Appropriate first aid fire fighting extinguishers shall be provided for the cooking hazards in the F&B and Distribution boards enclosures in addition to DtS locations.

Performance solution:

☑ A2.2(1)(a) - Comply with all relevant performance requirements
☐ A2.2(1)(b) - Be at least equivalent to the DtS provisions

Assessment methods:

☐ A2.2(2)(a) - Evidence of suitability
☐ A2.2(2)(b)(i) - Verification methods provided in the NCC
☑ A2.2(2)(b)(ii) - Other verification methods accepted by the appropriate authority
☐ A2.2(2)(c) - Expert judgement
☐ A2.2(2)(d) - Comparison with the DtS provisions

Assessment approach:

☑ Comparative ☑ Qualitative ☐ Deterministic
☑ Absolute ☐ Quantitative ☐ Probabilistic

IFEG sub-systems used in the analysis:

☑ A – Fire initiation and development and control ☐ D – Fire detection, warning and suppression
☐ B – Smoke development and spread and control ☐ E – Occupant evacuation and control
☑ C – Fire spread and impact and control ☑ F – Fire services intervention

Acceptance criteria and factor of safety:

The design will be considered acceptable if:

- The fire resistance level of the steel columns is adequate for the potential fire risks within the building to enable safe evacuation and firefighting intervention.

Fire scenarios and design fire parameters:

The following fire scenarios will be considered in the design:

Scenario 1: Fire in Amenities

A severe fire occurring inside the toilets is considered unlikely as the ignition risks and the fuel load are low. The IFEG [1] recommends a fuel load of approximately zero for water closets. Notwithstanding this, a fire inside the toilet will be considered for conservatism.

The worst credible design fire used for analysis is considered a paper filled wastepaper basket fire with the following characteristics:

- Peak heat release rate = 0.12MW [2] for a waste-paper basket fire;
- Diameter = 0.29m [3] to represent the base of a waste-paper basket.

Scenario 2: Rubbish bin fire – circulation area, Ground Floor

A rubbish bin fire in the circulation area on the ground floor is conservatively assumed to be a large, densely packed trash bag, with a peak HRR of 350kW. The duration of the bin fire is approximately 10 minutes. The

management procedures should ensure bins are emptied daily and display material is limited. Therefore, the design fire adopted in the design is conservative for a bin fire.

In order to assess the impact of localised fire to the unprotected structural members at the circulation area (i.e. the concourse), the fuel bed area of the bin fire is assumed to be in the range of 0.5m^2 to 2.0m^2.

[1] "International Fire Engineering Guidelines, Edition 2005", Australian Building Codes Board, Canberra, Australia, 2005.

[2] Särdqvist, S., Department of Fire Safety Engineering Lund University, Paril 1993. Initial Fires RHR, Smoke Production and CO Generation from Single Items and Room Fire Tests – one sack with paper rubbish

[3] Ikea, 2012. FNISS Wastepaper basket. [online] Available at <www.ikea.com> [Accessed 4 February 2013].

Describe how fire brigade intervention will be addressed or considered:

The simple layout and clear path of travel through Level 1 means it is unlikely that rescuers would have to transverse any distance larger than the extended. Hydrants are external at ground floor and hazard rooms enclosed.

Verification/validation analyses:

☐ Sensitivity studies ☐ Redundancy studies ☐ Uncertainty studies ☑ None

Provide details of the study or justification why one was not undertaken

Provide details on proposed modelling/assessment tools:

Not proposed.

FRNSW Comment: It is noted that "management plans" are proposed to ensure that fuel loads within proximity to the unprotected columns are removed throughout the life of the building. To clarify, FRNSW recommend this be implemented for all areas of the building, including the amenity areas. FRNSW recommend the proposed management plans are to be included as Essential Fire Safety Measures for the building and are to be reviewed (with inspection/rectification actions to be undertaken) every 6 months.

FRNSW recommend additional measures such as signage be provided for the areas to ensure that storage is not undertaken by both tenants and patrons for the life of the building. These additional measures should be included as Essential Fire Safety Measures for the building and be listed in the Fire Safety Schedule.

Issue number: 2 **Title:** Extended travel distance of 45.5m in lieu of 40m to an exit

Details of departures from DtS provisions:

BCA DtS Provisions

Clause D1.4(c) of the BCA requires that for Classes 5 to 9, no point on a floor must be more than 20m from an exit, or a maximum distance of 40m to one of those exits from a point in which travel in different directions to 2 exits is available.

Departure from DtS Provisions

Level 1 of the grandstand comprises of 17 corporate boxes in addition to an office and communication/media rooms. The level is serviced by three exits stairs and two exits are available for occupants at any point on this level. The maximum travel distance from within a corporate box is 48m (Figure 5). This does not comply with D1.4(c) as the travel distance is 5.5m in excess.

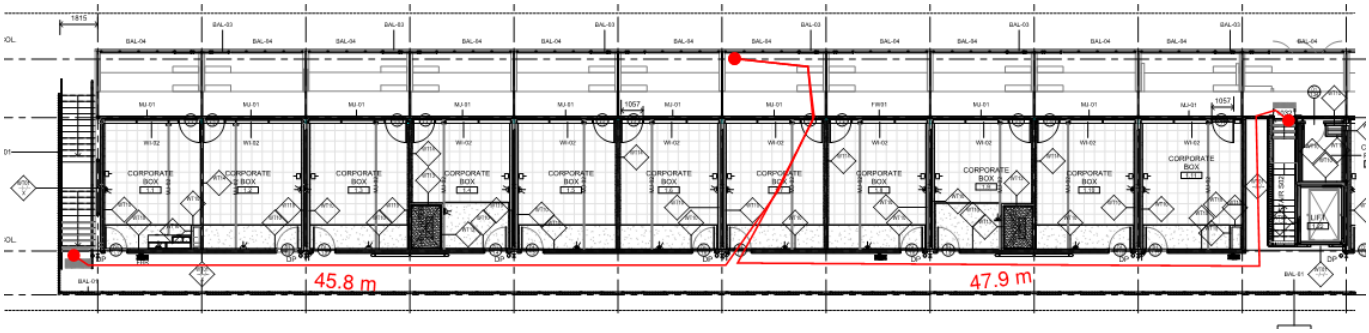

Figure 5 Level 1 extended travel distance

Applicable DtS provisions:	D1.4(c)	Performance requirements:	DP4, EP2.2

List key fire safety measures:

- Heat detection designed in accordance with AS1670.1:2018 shall be provided to all rooms at ground and first floor and will be connected to raise the general fire alarm for the Grandstand.
- Emergency lighting and exit signage are to be provided in accordance with BCA Part E4 and AS/NZS 2293.1-2018.
- DtS fire separation between the Ground Floor and Level 1 is to be provided to achieve resistance an FRL of 30/30/30 or to incipient spread of fire not less than -/60/60. This may be achieved by an appropriate fire rating to the Level 1 ground floor in addition to the inherent fire resistance of the slab, or a ceiling may be provided below the Level 1 floor that will achieve this resistance.

- Proposed performance solution:

The design having an increased travel distance to an exit is acceptable based on the following:

- In the unlikely event of a fire in the egress hallway, occupants are provided with a clear line of sight through the straight open sided corridor with the exception of the corridor to the central stair. Occupants will have direct line of sight to any obstacles or hazards that might be blocking an exit and will be able to choose their path of travel without unnecessarily walking towards one exit. Although occupants will likely be spectators/visitors and unfamiliar with the space, the exit signage and clear lines of sight of exits and hazards shall enable them to identify the most suitable egress path.
- The maximum extended distance on Level 1 is up to 8m to one of the two available exits which would equate to an additional travel time of between 8 and 10 seconds (taking an average walking speed of 1 m/s or 0.8m/s for less able-bodied people for awake and alert occupants).
- The Grandstand will be provided throughout with an automatic detection system in accordance AS 1670.1:2018 with occupant warning system to initiate evacuation throughout the building in the early stages of a fire event. The enhanced fire life safety systems provided are expected to lead to earlier fire detection and alarm compared to a DtS design that does not require detection or occupant warning system. As such, the additional 8-10 seconds of travel is not expected to significantly increase the risk to occupants during evacuation.

Performance solution:

☑ A2.2(1)(a) - Comply with all relevant performance requirements
☑ A2.2(1)(b) - Be at least equivalent to the DtS provisions

Assessment methods:

☐ A2.2(2)(a) - Evidence of suitability
☐ A2.2(2)(b)(i) - Verification methods provided in the NCC
☑ A2.2(2)(b)(ii) - Other verification methods accepted by the appropriate authority
☐ A2.2(2)(c) - Expert judgement
☑ A2.2(2)(d) - Comparison with the DtS provisions

Assessment approach:

☑ Comparative ☐ Qualitative ☐ Deterministic
☐ Absolute ☑ Quantitative ☐ Probabilistic

IFEG sub-systems used in the analysis:

☐ A – Fire initiation and development and control
☐ B – Smoke development and spread and control
☐ C – Fire spread and impact and control
☑ D – Fire detection, warning and suppression
☑ E – Occupant evacuation and control
☐ F – Fire services intervention

Acceptance criteria and factor of safety:

The assessment is to demonstrate that the risk of occupants being overcome or blocked by a fire whilst moving to an exit is not increased and the overall evacuation time is equivalent to a DtS Design.

Fire scenarios and design fire parameters:

Comparable to DtS building.

Describe how fire brigade intervention will be addressed or considered:

The simple layout and clear path of travel through Level 1 means it is unlikely that rescuers would have to transverse any distance larger than the extended travel distance of 8m in a scenario requiring a rescue.

The grandstand is a standalone building with clear access points for fire brigade intervention. It is expected that the compromised area during a fire event will be easily visible and accessible. As Level 1 is the uppermost level at 4m high, vertical travel time will be minimal.

Verification/validation analyses:

☐ Sensitivity studies ☐ Redundancy studies ☐ Uncertainty studies ☑ None

Provide details of the study or justification why one was not undertaken

Provide details on proposed modelling/assessment tools:

Provide details on modelling/assessment tools – attach CFD/zone modelling inputs form if applicable

FRNSW Comment: FRNSW recommend some form of a quantitative assessment be undertaken to demonstrate that the proposed additional measures shall offset the risks associated with the extended travel distance.

The DTS design for comparison should also be clearly detailed as part of the analysis.

Consideration should be given to mobility-impaired occupants (and their travel speed), if these are likely to be present / are proposed to be accepted to enter the building.

Issue number: 3 **Title:** Extended travel distance between alternative exits

Details of departures from DtS provisions:

BCA DtS Provisions

BCA Clause D1.5 requires that exits that are required as alternative means of egress must be not more than 60m apart.

The intent of limiting the distance between alternative exits is in the BCA is to provide reasonable travel distances for occupants who may move towards one exit, find their route blocked, and can then safely move to the alternative exit.

Departure from DtS Provisions

Level 1 of the Grandstand is serviced by three exits. The distance between the northern and centre exits is 67m as shown in Figure 6. The distance between the central and southern stair is 69m as shown in Figure 7.

The hazard associated with these egress arrangements is that occupants must travel an increased distance, thus increasing their potential risk of being exposed to untenable conditions during evacuation and being trapped in the building.

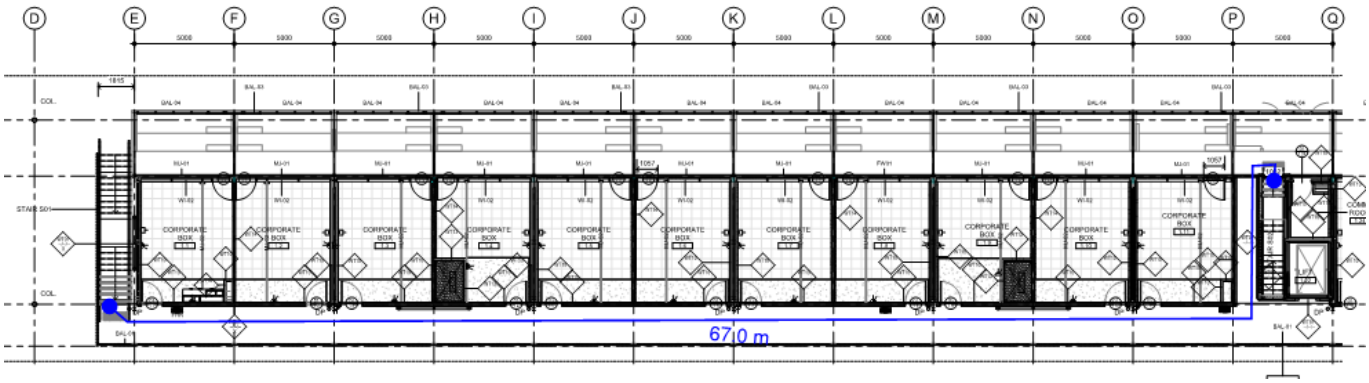

Figure 6 Level 1 extended travel distance between northern and central exits

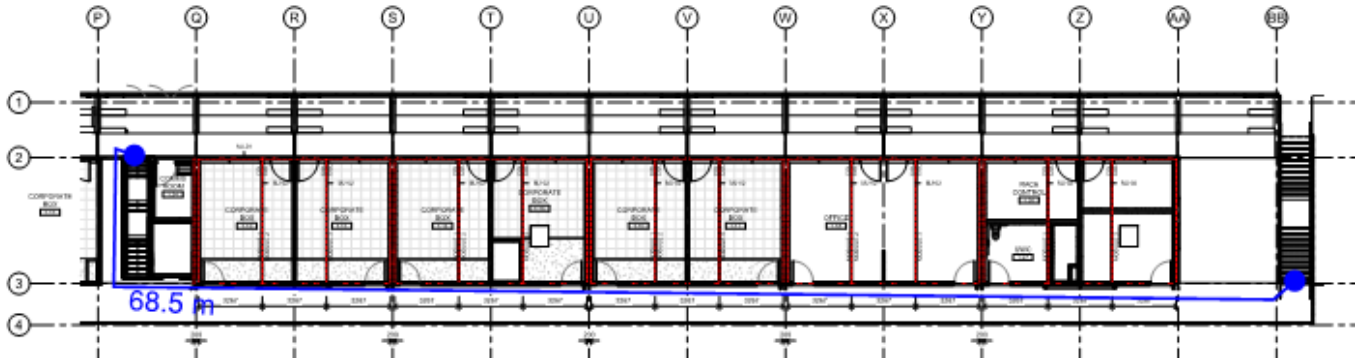

Figure 7 Level 1 extended travel distance between central and southern exits

Applicable DtS provisions:	D1.5	Performance requirements:	DP4, EP2.2

List key fire safety measures:

- Heat detection designed in accordance with AS1670.1:2018 shall be provided to all rooms at ground and first floor and will be connected to raise the general fire alarm for the Grandstand.
- Emergency lighting and exit signage are to be provided in accordance with BCA Part E4 and AS/NZS 2293.1-2018.
- A DtS fire separating floor between the Ground Floor and level 1 is to be provided to achieve an FRL of 30/30/30, which is compliant with the DtS Provisions. Alternatively, a ceiling may be provided below the Level 1 floor that will achieve resistance to insipient spread of fire not less than -/60/60.

Proposed performance solution:

The design having an increased travel distance between exits is acceptable based on the following:

- The extended path of travel is through a transient hallway that will be required to be clear for general access and egress. As such, it shall contain minimal fire load with no storage of combustibles. It is therefore considered unlikely for a fire to initiate in the corridor and impede egress towards a chosen exit.
- In the unlikely event of a fire in the egress hallway, occupants are provided with a clear line of sight through the open sided corridor with the exception of the corridor to the central stair. Occupants will have direct line of sight to any obstacles or hazards that might be blocking an exit and will be able to choose their path of travel without unnecessarily walking towards one exit.
- In the event of the central exit being unavailable due to a hazard not visible from the egress corridor, occupants will still have a choice of two exits, the northern and southern stair, for egress.
- The additional risk when exits are located at a distance from each other is that wayfinding may become more complicated, and occupants may not be able to easily find their way to an exit. However, for the case of the subject building, the alternative egress paths which offer a choice of escape are considered to be obvious to occupants as there is only one path of travel through the building. The exit paths shall be signed to direct occupants to the exits in the event of a fire. Therefore, wayfinding between the exits is not considered to adversely impact occupants' egress.
- All rooms on the Ground Floor and Level 1 will be provided with thermal detection designed in accordance with AS1670.1-2018 with occupant warning system to initiate evacuation throughout the building in the early stages of a fire event. The enhanced fire life safety systems provided are expected to lead to earlier fire detection and alarm compared to a DtS design that does not required detection or occupant warning system. As such, the additional 6-7m of travel is not expected to significantly increase the risk to occupants during evacuation.

Performance solution:

☑ A2.2(1)(a) - Comply with all relevant performance requirements
☑ A2.2(1)(b) - Be at least equivalent to the DtS provisions

Assessment methods:

☐ A2.2(2)(a) - Evidence of suitability
☐ A2.2(2)(b)(i) - Verification methods provided in the NCC
☑ A2.2(2)(b)(ii) - Other verification methods accepted by the appropriate authority
☐ A2.2(2)(c) - Expert judgement
☑ A2.2(2)(d) - Comparison with the DtS provisions

Assessment approach:

☑ Comparative	☐ Qualitative	☐ Deterministic
☑ Absolute	☑ Quantitative	☐ Probabilistic

IFEG sub-systems used in the analysis:

☐ A – Fire initiation and development and control	☑ D – Fire detection, warning and suppression
☐ B – Smoke development and spread and control	☑ E – Occupant evacuation and control
☐ C – Fire spread and impact and control	☐ F – Fire services intervention

Acceptance criteria and factor of safety:

To demonstrate both that:

- (Qualitative) The extended travel distance between alternative exits is adequately offset by the fire safety measures.
- (Qualitative) Occupants can reach a place of relative safety before the onset of untenable conditions.

Fire scenarios and design fire parameters:

Comparable to DtS building.

Describe how fire brigade intervention will be addressed or considered:

The simple layout and clear path of travel through Level 1 means it is unlikely that rescuers would have to transverse any distance larger than the extended travel distance of 8m in a scenario requiring a rescue.

The grandstand is a standalone building with clear access points for fire brigade intervention. It is expected that the compromised area during a fire event will be easily visible and accessible. As Level 1 is the uppermost level at 4m high, vertical travel time will be minimal.

Verification/validation analyses:

☐ Sensitivity studies ☐ Redundancy studies ☐ Uncertainty studies ☑ None

Provide details of the study or justification why one was not undertaken

Provide details on proposed modelling/assessment tools:

N/A

FRNSW Comment: FRNSW recommend some form of a quantitative assessment be undertaken to demonstrate that the proposed additional measures shall offset the risks associated with the extended travel distance.

The DTS design for comparison should also be clearly detailed as part of the analysis.

Consideration should be given to mobility-impaired occupants (and their travel speed), if these are likely to be present / are proposed to be accepted to enter the building.

Issue number: 4 **Title:** External fire hydrant locations to be within 10m of the building

Details of departures from DtS provisions:

BCA DtS Provisions

Clause E1.3(b)(i) of the BCA states that a fire hydrant system must be installed in accordance with AS 2419.1. Clause 3.2.2.2 of AS 2419.1-2017 outlines the location requirements for external fire hydrants.

Clause 3.2.2.2(e) of AS 2419.1-2017 states that when external fire hydrants are located within 10m of a building they should be protected unless safeguarded by construction:

i. Having an FRL not less than 90/90/90;

ii. Extending 2 m each side of the fire hydrant outlet; and

iii. Extending not less than 3 m above the ground adjacent to the fire hydrant or the height of the building, whichever is the lesser.

Clause 3.2.2.2(f) of AS 2419.5-2017 states that external hydrants shall be located in a position so that the fire hydrant is not obstructed or obscured by obstacles, stored goods, vehicles, vegetation etc.

The intent of Clause E1.3 is to ensure hydrant coverage is provided in order to facilitate the needs of the fire brigade appropriate to fire-fighting operations, the floor area of the building and the fire hazard. Likewise, the booster location should be located such that it facilitates firefighting operations.

Departure from DtS Provisions

The proposed locations of external fire hydrants are to be within 10m of the building but are not provided with protective fire rated construction as required by Clause 3.2.2.2(e) of AS 2419.1-2017 (Figure 8).

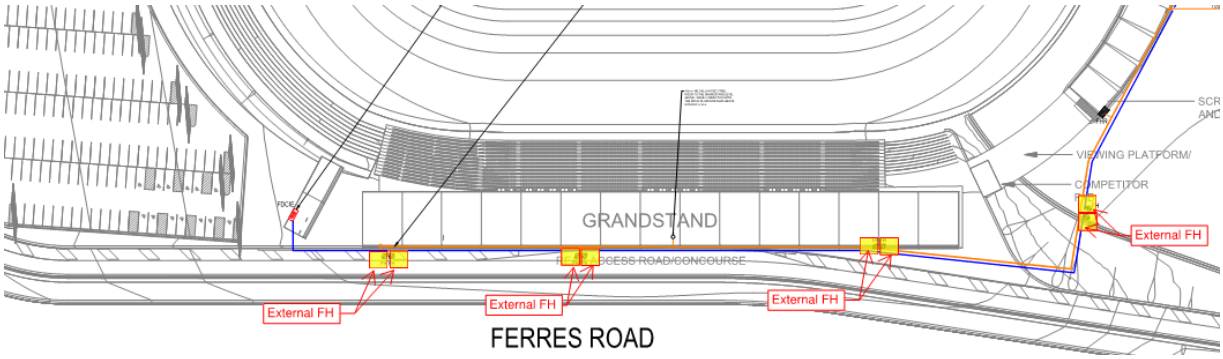

Figure 8 External fire hydrant locations.

Applicable DtS provisions:	E1.3	Performance requirements:	EP1.3

List key fire safety measures:

- Automatic thermal detection designed in accordance with AS1670.1-2018 shall be provided to all rooms at ground and first floor and will be connected to raise the general fire alarm for the Grandstand.
- Bollards shall be used to protect the external hydrants if required.
- Coverage of hydrants from adjacent hydrants within 60+10m.
- Fire protection of hazard rooms at ground floor with construction achieving -/30/30.

Proposed performance solution:

The assessment is considered acceptable based on the following:

- A radiant heat assessment will be undertaken during the detailed fire engineering stage of the project to assess the radiation received in the event of a fire in the building. The assessment will demonstrate that the radiation received at the hydrant will not exceed the limiting tenability criteria for fire brigade personnel (3kw/m^2) as specified in the SFS Practice Notes.
- Should a fire occur in a location that compromises one of the external hydrants, coverage to this area can be achieved via an alternative hydrant (within 60m + 10m). Therefore, in the unlikely event that one hydrant is jeopardised, fire brigade personnel can choose to take resource off the other ones provided.

- The external hydrants are located on the Ground Level. As Level 1 of the grandstand is fire separated from the Ground Level, it is expected that smoke and flames from a fire in Level 1 will vent upwards and out away from the hydrants. Likewise, the high-risk areas of the F&B rooms are fire separated and therefore not likely to allow fire spread that will compromise the external hydrants.
- The hydrants are proposed to be located within walkways and adjacent to Ferres Road. As these areas are circulation spaces it is considered unlikely that obstacles would be stored in a location that could block access to the hydrants or serve as a fuel source.
- Furthermore, bollards may be positioned to protect the hydrants from obstruction via vehicles or stored goods to comply with Clause 3.2.2.2(f) of AS 2419.5-2017.

Performance solution:

☑ A2.2(1)(a) - Comply with all relevant performance requirements
☑ A2.2(1)(b) - Be at least equivalent to the DtS provisions

Assessment methods:

☐ A2.2(2)(a) - Evidence of suitability
☐ A2.2(2)(b)(i) - Verification methods provided in the NCC
☑ A2.2(2)(b)(ii) - Other verification methods accepted by the appropriate authority
☐ A2.2(2)(c) - Expert judgement
☑ A2.2(2)(d) - Comparison with the DtS provisions

Assessment approach:

☐ Comparative	☑ Qualitative	☐ Deterministic
☑ Absolute	☐ Quantitative	☐ Probabilistic

IFEG sub-systems used in the analysis:

☐ A – Fire initiation and development and control	☐ D – Fire detection, warning and suppression
☐ B – Smoke development and spread and control	☐ E – Occupant evacuation and control
☐ C – Fire spread and impact and control	☑ F – Fire services intervention

Acceptance criteria and factor of safety:

To demonstrate that attending fire brigade are provided with adequate provisions to safely undertake fire-fighting operations and that the Booster and FIP locations facilitate firefighting operations.

For the supporting radiation assessment, it shall be demonstrated that the radiation received will be less than the limiting criteria for fire brigade personnel to take resource of the external hydrant (3 kW/m^2).

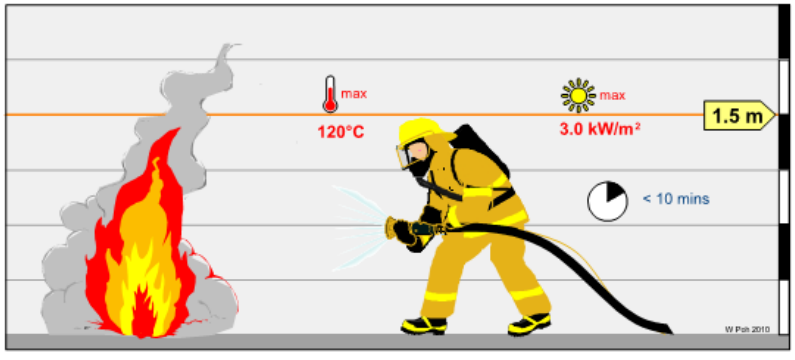

Figure 10: Tenability for Fire Fighters (up to 10 minutes)

Figure 9 Fire brigade tenability during fire-fighting operations extracted from SFS Practice Notes

Fire scenarios and design fire parameters:

N/A

Describe how fire brigade intervention will be addressed or considered:

As per the assessment above.

Verification/validation analyses:

☐ Sensitivity studies ☐ Redundancy studies ☐ Uncertainty studies ☑ None

Provide details of the study or justification why one was not undertaken

Provide details on proposed modelling/assessment tools:

Radiation calculation

FRNSW Comment: In principle support is provided subject to the analysis in the FER demonstrating compliance with the performance requirements of the NCC.

Issue number: 5 The location of the booster will not be within sight of the main entrance.

Details of departures from DtS provisions:

BCA DtS Provisions

Clause E1.3 of the BCA states that a fire hydrant system must be provided to serve a building that has a total floor area of greater than 500m^2 and the fire brigade station is no more than 50km from the building and equipped with equipment capable of utilising a fire hydrant.

Clause E1.3(b)(i) of the BCA states that a fire hydrant system must be installed in accordance with AS 2419.1. Additionally, a fire hydrant system must be installed in accordance with AS2419.1, where it states that a fire brigade booster assembly must be located within sight of the main entrance.

Departure from DtS Provisions

The main Fire Indicator Panel (FIP) will be located adjacent to the pump room at the competitors' exit (Figure 10, Figure 11). This location will be accessed by via the main entrance and through the rear competitor road. The competitor road is one way from north the south. A mimic panel linked to the main FIP shall be provided further down the road at the competitor administration.

The potential hazard associated with the proposed design is that attending fire brigade may be unable to safely access the external fire hydrants in the event of a fire.

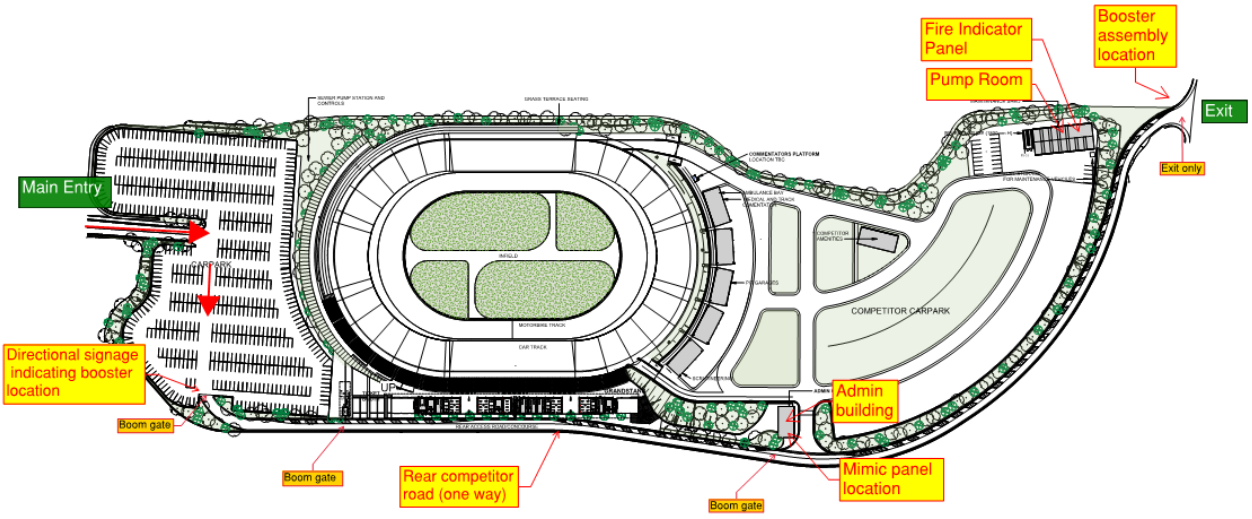

Figure 10 Site Plan with Booster, Pump Room and FIP location

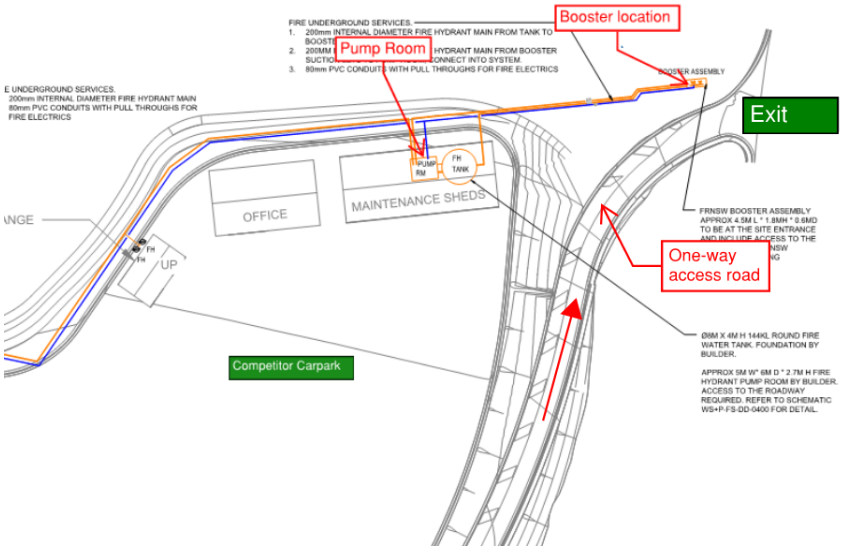

Figure 11 Fire Services Plan with Booster, Pump Room and FIP location

Applicable DtS provisions:	E1.3	Performance requirements:	EP1.3

List key fire safety measures:

- Signage shall be provided at the FIP, booster and main entry via the public carpark indicating the location of the FIP and Booster.
- Red strobes lights are to be installed at the booster and FIP and activate upon an alarm signal from the FIP.
- A mimic Fire Indicator Panel is to be provided in the competitor administration building as indicated in Figure 10 and will be interlinked with the main FIP.

Proposed performance solution:

The assessment is considered acceptable based on the following:

- The main entrance to the Speedway is off Ferrers road through the general public carpark. This path is a one-way road from North to South and is utilised by all staff, spectators, competitors and emergency services (Figure 10). The booster shall be located at the rear exit and may be accessed via the southern connection to Ferrers road (competitors' exit) or through the main entrance.

  In an emergency event general traffic conditions will not apply, and the brigade will operate in a contraflow manner to enter from the Southern connection (competitors' entry) and travel against the one-way road to the Grandstand. The 7m wide road accommodates two-way vehicular circulation and therefore allows traffic on the competitor road (unexpected in an emergency event) to give way and allow clear passage for the brigade.

  Alternatively, the brigade may enter through the public carpark and use the rear competitor road to access the booster. To assist with wayfinding, signage shall be provided in the public carpark indicating the booster location.
- The boom gates along the one-way access road are required to open upon GFA to assist with brigade intervention.
- To enable the attending fire brigade personnel to easily locate the booster and FIP, red strobe lights must be provided at both locations. The lights will be activated by an alarm signal from the fire indicator panel that serves any on site automatic smoke or thermal detection.
- Signage is to be provided at the FIP indicating the Booster location. Block plans shall also be provided at the indicating the FIP location. Along with the red strobe lights, this will enable FRNSW to quickly and easily identify the Booster location.
- Signage is to be provided at the main entrance through the public carpark to provide direction to the attending brigade if the access the site from this point rather than the rear entrance.
- A mimic Fire Indicator Panel is to be provided near the Booster assembly and will be interlinked with the main FIP. This will enable the fire brigade to easily assess the situation from the Booster assembly.
- A hardstand shall be provided at the booster.
- The building management will be aware that the first attending appliances may arrive at this (not main entrance) location.

Performance solution:

☑ A2.2(1)(a) - Comply with all relevant performance requirements
☑ A2.2(1)(b) - Be at least equivalent to the DtS provisions

Assessment methods:

☐ A2.2(2)(a) - Evidence of suitability
☐ A2.2(2)(b)(i) - Verification methods provided in the NCC
☑ A2.2(2)(b)(ii) - Other verification methods accepted by the appropriate authority
☐ A2.2(2)(c) - Expert judgement

☑ A2.2(2)(d) - Comparison with the DtS provisions

Assessment approach:

☐ Comparative	☑ Qualitative	☐ Deterministic
☑ Absolute	☐ Quantitative	☐ Probabilistic

IFEG sub-systems used in the analysis:

☐ A – Fire initiation and development and control	☐ D – Fire detection, warning and suppression
☐ B – Smoke development and spread and control	☐ E – Occupant evacuation and control
☐ C – Fire spread and impact and control	☑ F – Fire services intervention

Acceptance criteria and factor of safety:

To demonstrate that attending fire brigade are provided with adequate provisions to safely undertake fire-fighting operations and that the Booster and FIP locations facilitate fire fighting operations.

Fire scenarios and design fire parameters:

N/A

Describe how fire brigade intervention will be addressed or considered:

As per the assessment above.

The Grandstand is provided with fire hydrants and hose reels to assist with fire brigade intervention.

Verification/validation analyses:

☐ Sensitivity studies ☐ Redundancy studies ☐ Uncertainty studies ☑ None

Provide details of the study or justification why one was not undertaken

Provide details on proposed modelling/assessment tools:

N/A

FRNSW Comment: It is noted that the booster feed will be large bore. As the large bore connections are semi rigid, consideration of pumper positioning is required to ensure that once connected the pumper will not block access to the site for further responders.

Please review the following link to Fire Safety Guideline, *Access for Fire Brigade Vehicles and Firefighters* in particular section8 Hardstand to confirm pumper positioning will be as required.

https://www.fire.nsw.gov.au/gallery/files/pdf/guidelines/vehicle_access.pdf

In principle support is provided subject to the above comment being addressed and the analysis in the FER demonstrating compliance with the performance requirements of the NCC.

Issue number: 6 FHR will not be provided to the fire rated rooms on the ground floor.

Details of departures from DtS provisions:

BCA DtS Provisions

Clause E1.4(f) of the BCA states that FRH must be located so that the fire hose will not need to pass through doorways fitted with fire or smoke doors

Departure from DtS Provisions

FHR will not be located within the fire rated rooms located on the ground floor (Figure 4) and will not be serviced by FHR located outside the rooms.

Applicable DtS provisions:	E1.4(f)	Performance requirements:	EP1.1

List key fire safety measures:

- Additional ABE type fire extinguishers are to be provided in the F&B, comms, plant and DB rooms as these areas are considered to be high hazard areas.
- Water based fire extinguishers are to be provided outside the merchandise room.

Proposed performance solution:

The assessment is considered acceptable based on the following:

- Compliant FHR coverage is generally provided throughout the Grandstand; it is only the fire rated tenancies within the ground floor where coverage does not comply with Clause E1.4(f) due to the compartmentation.
- Additional ABE type portable fire extinguishers designed in accordance with AS2444:2001 are to be provided in lieu of hose reels within the F&B, plant, comms and DB rooms (Figure 12). Portable extinguishers can support attack on multiple types of fire, instead of only fires attackable by water and are therefore better suited for first response firefighting in these areas. Use of this equipment will not require the door within the compartmentation to remain open but still provides a method of first response firefighting and is therefore considered equivalent to a DtS design and less likely to lead to doors being held open by hose.
- The F&B and DB rooms will be accessible by staff only who are expected to be familiar with the first response firefighting equipment available within the area.
- The provision of an additional water-based fire extinguisher outside the merchandise room provides an alternative method of first response firefighting within this room that is not reliant on the FHR (Figure 12). This is equivalent to a DtS design.

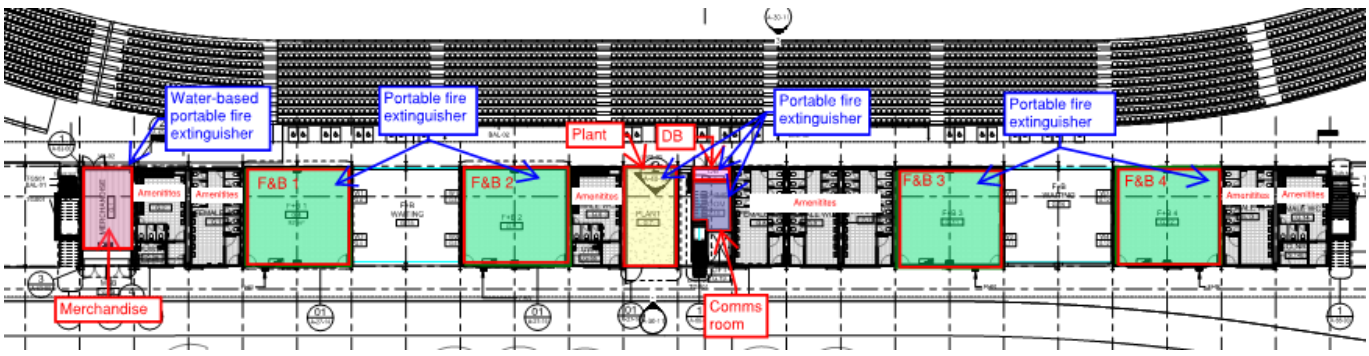

Figure 12 Ground floor – indicative locations of additional portable fire extinguishers

Performance solution:

☐ A2.2(1)(a) - Comply with all relevant performance requirements
☑ A2.2(1)(b) - Be at least equivalent to the DtS provisions

Assessment methods:

☐ A2.2(2)(a) - Evidence of suitability
☐ A2.2(2)(b)(i) - Verification methods provided in the NCC
☐ A2.2(2)(b)(ii) - Other verification methods accepted by the appropriate authority
☐ A2.2(2)(c) - Expert judgement
☑ A2.2(2)(d) - Comparison with the DtS provisions

Assessment approach:

☑ Comparative ☑ Qualitative ☐ Deterministic
☑ Absolute ☐ Quantitative ☐ Probabilistic

IFEG sub-systems used in the analysis:

☐ A – Fire initiation and development and control
☑ B – Smoke development and spread and control
☑ C – Fire spread and impact and control
☐ D – Fire detection, warning and suppression
☐ E – Occupant evacuation and control
☐ F – Fire services intervention

Acceptance criteria and factor of safety:

To demonstrate that first response firefighting equipment will not result in smoke or fire spread between compartments and that CP2 and EP1.1 are satisfied.

Fire scenarios and design fire parameters:

N/A

Describe how fire brigade intervention will be addressed or considered:

As per the assessment above.

Verification/validation analyses:

☐ Sensitivity studies ☐ Redundancy studies ☐ Uncertainty studies ☑ None

Provide details of the study or justification why one was not undertaken

Provide details on proposed modelling/assessment tools:

N/A

FRNSW Comment: The fire engineering assessment should specifically assess (in the context of the subject building's specific details) the following factors when demonstrating compliance against Performance Requirement EP1.1:

- The size of the *fire compartment*;
- The function or use of the building (or part of the building being assessed); and
- The *fire hazard*.

8 Construction, commissioning, management, use and maintenance

What considerations does the performance solution require during the construction phase?

The proposed performance solutions do not require any special consideration during the construction phase.

How will the performance solution affect commissioning of the systems (e.g. listed on fire safety schedule as essential or critical measure, combined new and old installations)?

The performance solutions are part of an overall fire engineering strategy. As best practice, the commissioning of all the fire safety systems will need to be done as part of the integrated commissioning and testing. Fire engineering inspections and witnessing the integrated testing will form part of the sign off from the fire engineer for the Occupation Certificate.

How will the performance solution be addressed for ongoing building management and use (e.g. details to be provided in a 'fire safety management plan' for the building manager)?

- The building is required to be managed under a fire safety policy which includes:
- An emergency management plan in accordance with AS 3745; including procedures for the safety of people in buildings, structures and workplaces during emergencies, the appointment of an Emergency Planning Committee and setting up of an Emergency Control Organization.
- Good house-keeping and fire prevention procedures such as maintaining clear evacuation routes.
- Regular maintenance of all fire safety systems as outlined in this FEBQ.
- Fire training of staff, including evacuation procedures, undertaken at regular intervals.

How will any restrictions on fuel load/use/populations within the performance solution be managed and enforced (e.g. details to be provided in 'fire safety management plan')?

Management plans will require no storage around the columns, limiting fuel and ignition sources.

Additional procedures will be needed to manage waste, and ensure there are no blockages to external hydrants and/or exits during events.

How will the performance solution be addressed for maintenance (e.g. details included on fire safety schedule, location of fire engineering report on site, plain English summary adjacent to FIP)?

The maintenance of fire and other safety systems is a mandatory requirement for building owners under the provisions of the Environmental Planning and Assessment Act 1979 and the Environmental Planning and Assessment Regulation 2000.

9 Additional comments

Provide any additional comment relevant to the FEBQ

Note: Any in principle support extended for performance solution issues through consultation is contingent upon all assumptions, analyses and conclusions in the fire engineering report being fully justified, and referenced as appropriate, to demonstrate how the relevant performance requirements have been satisfied to the extent required by the agreed acceptance criteria.

10 Scheduled charges

FRNSW charge for the provision of services performed in connection with statutory fire safety as per the schedule of charges identified in clause 46 and schedule 3 of the *Fire Brigades Regulation 2014*.

The charge applicable is $2,600 for each day (or part of a day) spent by the Commissioner or a fire brigade member providing advisory, assessment or consultancy services.

Note: For a full description of the charges applicable including terms, payment options, applying for a waiver or reduction of the charges, please refer to the FRNSW website at firesafety.fire.nsw.gov.au.

11 Submission of this form

This completed form is to be emailed to firesafety@fire.nsw.gov.au.

All plans and specifications required by FRNSW for assessment are to be attached to the email (or sent separately if necessary due to file size). Refer to Submitting plans and specifications to FRNSW for further information.

12 Contact us

For further information contact the Fire Safety Branch on (02) 9742 7434 or email firesafety@fire.nsw.gov.au.

Alistair Morrison

From: Fire Safety <FireSafety@fire.nsw.gov.au>
Sent: Monday, 8 November 2021 10:01 AM
To: Barnaby.Hartford-Davis@cox.com.au
Cc: Michael Potts; Karin Ke; Grant Wang; Tess Van Der Veen; Alistair Morrison; cathy.zhu@cox.com.au
Subject: FEBQ Will not be provided - Sydney Speedway - Ferrers Road Eastern Creek

CAUTION: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Good Morning,

Fire & Rescue NSW (FRNSW) acknowledge receipt of your application and supporting documents for a Fire Engineering Brief Questionnaire submitted on 5/11/2021 .

In this instance, FRNSW advises that an Fire Engineering Brief Questionnaire will not be provided.

The decision not to assess the Version (V3 – 5/11/2021) submitted is not to be interpreted as FRNSW support for the proposal nor an objection to the proposal, only that FRNSW does not have the resources to review and provide stakeholder comment on this proposal.

For any future correspondence regarding this matter, we request that you quote your job / reference number:

Project Reference:	FRN20/2128
Job Number:	BFS21/4242
SRID Number:	8000018111

Should you have any further queries regarding this matter, please contact the Fire Safety Branch on 02 9742 7434.

Regards
Michelle Trajkovski

Administration Officer
FIRE SAFETY ADMINISTRATION UNIT
COMMUNITY SAFETY DIRECTORATE

T: 02 9742 7434
E: firesafety@fire.nsw.gov.au
1 Amarina Ave, Greenacre, NSW 2190
Locked Mail Bag 12, Greenacre, NSW 2190
www.fire.nsw.gov.au

Appendix F

Fire Hazard Assessment

F1 Fire Hazard Assessment

An assessment of fire hazards and their consequences to the proposed development and the safety of its occupants is detailed in this section, in relation to the different types of use throughout the development. This assessment will be the basis for the fire scenarios proposed for analysis.

The primary use of the building will be as an assembly venue for use primarily as a stadium for events of the speedway. The building also contains retail, electrical/DB/comms rooms, food and beverage facilities, carparking and plant rooms.

Statistical data indicates that the most likely fire sizes are small, extinguished by occupants. These fires do not challenge the fire safety design elements of a building, and hence are not considered in the analysis.

Figure 29 below, adapted from NFPA 92B[9] shows a typical time-based illustration of the heat release rate of a continuously growing fire, known as a t^2 fire. The incubation period may range from seconds to hours, however it is very difficult to predict.

For the purposes of this assessment, it shall be assumed that the fire begins to grow immediately, and the incubation period is ignored. This should be recognised as a very conservative approach. The incubation period is normally characterised by smouldering combustion which still produces small amounts of smoke that may be sufficient to activate detection systems or alert occupants.

Once the growth phase of the fire begins, the fire will develop at a rate dependent on its location and the fuel and ventilation available.

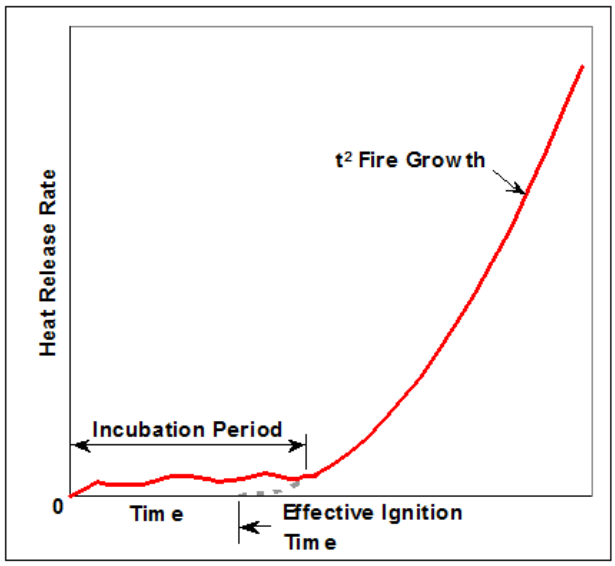

Figure 29: Typical Actual Fire Growth Curve.

In terms of fire safety, the Grandstand consists on compartmentalised rooms, clear circulation areas and a straight, clear walkway on Level 1. Occupants are

considered to be in a place of relative safety once they have exited the Grandstand.

It is considered that the development of a fire would be quickly recognised either via automatic thermal detection or visual detection by staff. in the back of house areas or visual detection by staff. The natural ventilation in Level 1 assist in maintaining tenable conditions during egress.

F1.1 Retail areas

It is possible for a fire to start in retail areas however, the likelihood of this event remains quite low given that retail areas do not have a large number of ignition sources. Staff members are expected to be present at all times during normal operating hours. Initial visual fire detection by the occupants of the retail units is highly likely as the space will not be left unattended during normal operating hours, the public would also be able to notify staff of a fire incident. If a fire occurs after hours, it is unlikely there would be occupants to detect the fire; however, the thermal detection system should prevent significant fire growth and spread. If a fire were to occur outside operating hours, it is unlikely many people would be affected.

Retail areas can accumulate waste packaging throughout the event/opening hours. Packaging and shipping materials can pile up inside and outside of the retail area which has the potential to become a fuel load. Good housekeeping and store management can restrict the accumulation of waste with efficient and safe disposal of these items.

Fires in stores and other mercantile properties represent approximately 3% of all structure fires.[25] Fires in this property type have fallen substantially over the past 35 years with reported fires within this group has seen a decline of 63% from 1980 to 2013.[25] Grocery stores account for 28% of all fires which is the largest quantity of structure fires by property use, the remaining breakdown of structure fires is shown in Table 16 below.

Table 16: Structure fires in stores by property use, 2009-2013 annual averages.[25]

Property Use	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Grocery or convenience store	**3,740**	**(28%)**	**1**	**(5%)**	**66**	**(22%)**	**$94**	**(16%)**
Convenience store	810	(6%)	0	4%	11	4%	$26	4%
Food and beverage sales, grocery store	2,920	(22%)	0	2%	56	19%	$67	11%
Unclassified or unknown-type mercantile or business	**2,930**	**(22%)**	**1**	**9%**	**59**	**20%**	**$126**	**21%**
Service station or vehicle sales, service or repair	**1,920**	**(14%)**	**4**	**31%**	**81**	**27%**	**$116**	**19%**
Service station or gas station	460	3%	0	0%	14	5%	$15	2%
Motor vehicle or boat sales, services or repair	1,460	11%	4	31%	67	22%	$101	17%
Laundry, dry cleaning, professional supplies or services	**1,480**	**11%**	**1**	**5%**	**25**	**8%**	**$42**	**7%**
Laundry or dry cleaning	1,040	8%	0	3%	19	6%	$16	3%
Professional supplies services	440	3%	0	2%	6	2%	$26	4%
Specialty shop	**1,280**	**9%**	**3**	**23%**	**22**	**7%**	**$85**	**14%**
Department store or unclassified general retail	**1,010**	**(7%)**	**1**	**(4%)**	**21**	**(7%)**	**$73**	**(12%)**
Unclassified general retail	630	(5%)	1	(4%)	11	(4%)	$56	(9%)
Department or discount store	380	(3%)	0	(0%)	10	(3%)	$17	(3%)
Personal Service, recreational or home repair	**670**	**5%**	**1**	**12%**	**15**	**5%**	**$28**	**5%**
Personal service, including barber or beauty shops	500	4%	1	6%	9	3%	$16	3%
Recreational, hobby, home repair sales or pet store	170	1%	1	6%	6	2%	$12	2%
Household goods sales or repairs	**290**	**2%**	**0**	**2%**	**6**	**2%**	**$26**	**4%**
Textile or apparel sales	**260**	**2%**	**1**	**8%**	**5**	**2%**	**$14**	**2%**
Total	**13,570**	**100%**	**12**	**100%**	**299**	**100%**	**$604**	**100%**

Data from NFPA suggests that fires are more common during normal operating hours (9am to 6pm).[25] However, fires that do not occur during this period account for the most property damage (9pm to 5am) (45%) as shown in Figure 30. This shows that that early visual detection by occupants and first aid firefighting is key to extinguish or delay fire growth during a fires initial stages. This highlights the need for automatic detection and suppression systems to further protect occupants and the property when not occupied.

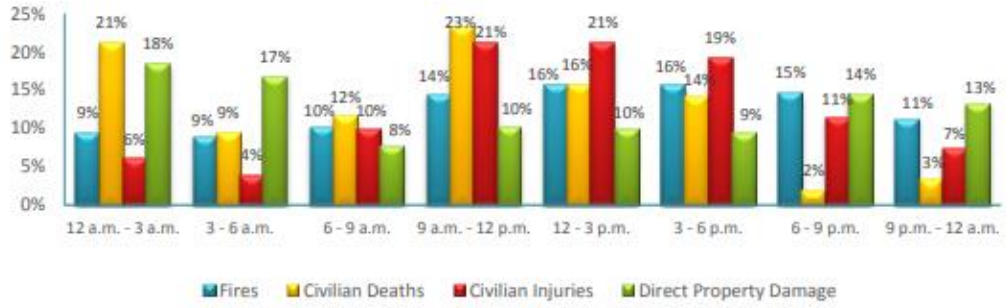

Figure 30. Fires and losses in stores by alarm hour, 2009-2013.[25]

Data from the NFPA show the leading cause of fires in stores was cooking equipment which was responsible for 21% of fires.[25] Other leading causes were Electrical distribution (15%), heating (11%) and intentional (11%). The leading causes of fires in this property type is shown in Figure 31 below. Cooking materials were the first item to be ignited in 13% of fires however only accounted

for 2% of all property damage, in this case it is likely first attack firefighting limited the fire growth to the object of origin.

NFPA data over the period of 2009-2013 show that 72% of the fires in stores did not extend beyond the room of origin. During this period only 3% of fires extended beyond the building of origin.[25]

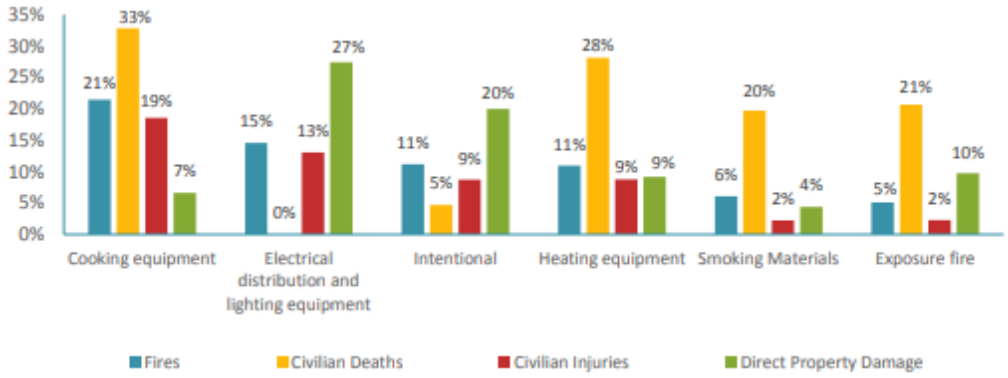

Figure 31. Structure fires in stores by leading cause, 2009-2013.[25]

F1.2 Eating and Drinking Facilities

The grandstand consists of four F&B rooms with cooking facilities.

Eating and drinking facilities can have a medium/ high fuel load due to the furniture, furnishings and storage of combustible goods. Occupants within the space are expected to be awake and alert, however, may not be familiar with the layout of the building and egress routes. Staff within the establishment are expected to be awake and alert, familiar with the building and evacuation procedures. As alcohol is permitted on the premises there is a likelihood occupants are intoxicated. Occupants that are intoxicated typically respond slower to visual and audible cues and have general decision making inhibited.

During 2014-2016, FEMA has shown that eating and drinking establishments accounted for 8.6% of non-residential building fires.[26] NFPA has shown during 2010-2014 the leading cause of fires in these properties is cooking equipment accounting for three out of five fires and 38% of direct property damage.[27] Other leading causes within this property type are electrical and lighting equipment (9%), heating (9%), smoking materials (7%) and intentional fire setting (4%) as shown in Figure 32 below.

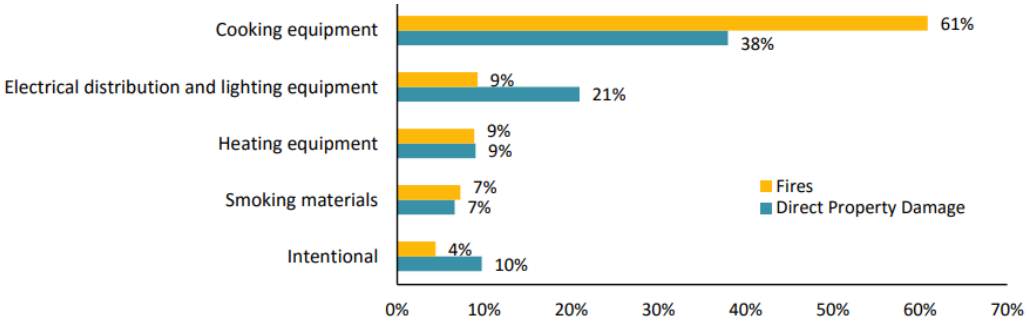

Figure 32. Structure fires in eating and drinking establishments by major cause 2010-2014 (top 5 shown).[27]

Deep fryers were involved in 21% of fires and ranges/cooktops were involved in 14% of all cooking equipment fires. Cooking materials were also noted to be the first thing ignited accounting for 43% of fires.[27]

During 2010-2014 structure fires have been classified depending on the occupancy type as shown in Table 17 below. Restaurants and Cafeterias accounted for 78% of all fires in eating and drinking establishments during this period.

Table 17. Structure fires in eating and drinking establishments by property use 2010-2014.[27]

Property Use	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Restaurant or cafeteria	5,810	(78%)	1	(40%)	91	(83%)	$119	(72%)
Unclassified eating or drinking places	830	(11%)	0	(0%)	7	(6%)	$19	(11%)
Bar or nightclub	770	(10%)	2	(60%)	12	(11%)	$27	(16%)
Total	7,410	(100%)	3	(100%)	110	(100%)	$165	(100%)

Statistics from NFPA show that for all structure fires in eating and drinking establishments 68% of fires were contained to the object of origin. [27] Only 1% of all fires extended beyond the building of origin. The extend of flame damage within this property type is shown in Figure 33 below. As most fires occurred during the day there is a high likelihood of early visual detection of a fire incident from occupants. If safe to do so, a member of staff can commence an initial first attack on the fire delaying fire growth or fully extinguishing the fire to the object of origin.

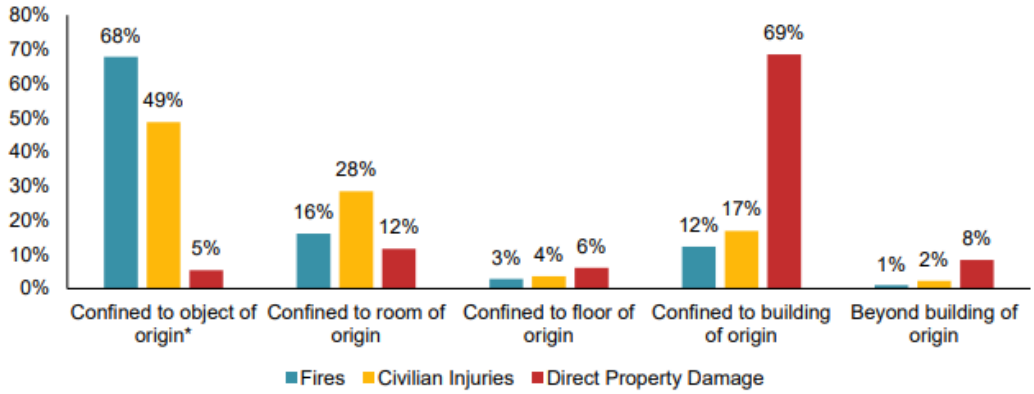

Figure 33. Extent of flame damage within eating and drinking establishments, 2010-2014.[27]

Fires were more common to occur on Fridays and the weekend. Fires were less common during overnight hours (midnight to 6am), however, fire incidents that occurred overnight caused the most damage. Fires during this time are less likely to affect many occupants as it is outside of normal operating hours. This highlights the need for suppression and detection systems during this time when there are less occupants to provide early visual detection.

F1.3 Plant rooms

The overall fire safety risk in a plant room is assessed in terms of both probability of occurrence and extent of harm to people. There may be a reasonable number of ignition sources, such as electrical failure and heat transfer to combustibles. However appropriate maintenance can significantly mitigate this risk. Even if an ignition source is present, the fire load is typically low and a fire is likely to be small and have a slow growth rate.

Plant areas remain largely unoccupied except for maintenance purposes and these occupants should be alert and responsive, which implies a limited risk of harm to people.

Automatic detection is provided in the plant rooms which is particularly relevant for times when plant areas are unattended.

F1.4 Fire brigade intervention

Fire Brigade intervention is first and foremost aimed at protecting life. Upon arrival, the first consideration is life safety. If occupants require assistance, rescue operations will take priority. If occupants are considered to be out of immediate danger, brigade activities will focus on fighting the fire.

In the case of this building, compartmentation should limit fire spread to a small area, with only a single floor fire affected. As all occupants should be awake, evacuation of occupants most at risk should be relatively quick. Consequently, it is likely that brigade activities will focus on fighting the fire.

The health and safety of fire fighters must be considered by the officer in charge at the time, however this is significantly addressed by the provision of sprinklers, appropriate hydrant provisions and pressurised fire stairs. Sprinklers reduce the amount of smoke, significantly reduce the heat in a compartment, generally prevent flashover, limit fire spread, and help prevent structural failure.

Fire brigade also aim to protect the environment. In particular, this fire engineered strategy supports the environmentally sustainable design objectives for the project by minimising the likely adverse impact of a fire scenario.

Appendix J

Speedway Promotions Work Health & Safety Management System

Attached as a separate document

Appendix K

Planning Approval Consistency Assessment Form: Amended Access

Planning Approval Consistency Assessment Form

SM-17-00000111

Metro Body of Knowledge (MBoK)

Assessment name:	Sydney International Speedway – Operational hours
Prepared by:	Jacobs / Arcadis / Ethos Urban
Prepared for:	Sydney Metro and Speedway Promotions
Assessment number:	SIS06
Status:	Final
Version:	1
Planning approval:	SSI 10048
Date required:	October 2021
iCentral number:	SM-21-00417424

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For information – do not alter:

Applicable to:	Sydney Metro
Document Owner:	Director, Environment, Sustainability & Planning
System Owner:	Deputy Chief Executive, Operations, Customer & Place-making
Status:	Final
Version:	3.0
Date of issue:	27 November 2020

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The Planning Approval Consistency Assessment Form should be completed in accordance with SM-17-00000103 Planning Approval Consistency Assessment Procedure.

1. Existing Approved Project

Planning approval reference details (Application/Document No. (including modifications)):

- SSI 10048 Sydney International Speedway

Date of determination:

- SSI 10048: 23 December 2020

Type of planning approval:

- State significant infrastructure (Division 5.2)

Description of existing approved project you are assessing for consistency:

- Construction and operation of the Sydney International Speedway including:
  - A new world-class clay-based racetrack for both speedway cars and motorcycles, including sprint, wingless sprint, street stockers, V8 dirt modified and Formula 500 cars
  - A new grandstand and terraced seating to accommodate up to 7000 spectators
  - Public amenities, corporate boxes and food, beverage and merchandise outlets
  - Dedicated parking for speedway competitors and spectators
  - Additional overflow parking with flexibility to be used for dragway events
  - Dual access to the precinct by creating new vehicle access to the speedway pit area via a new intersection built off Ferrers Road
  - A dedicated competitor pit area to service the speedway
  - Workshops, garages and trackside support services.

Based on the Sydney Speedway 2019-2020 season schedule (45 racing events per year) it is anticipated that there would be an average of one event at the Sydney International Speedway per week across the racing season (generally September to May), with a number of midweek events (typically Wednesday and Friday nights) across the Christmas and early January period. On average, it is expected that

there would be about four major events held at the speedway each year, attracting around 4000 to 6000 people per event, with smaller events spread frequently across the racing season expected to attract around 500 to 1500 spectators per event.

The racing events would typically be held on Saturdays with gates opening about 2 pm and racing occurring in the early evening between 6 pm and 10 pm. During events some incidents or track maintenance activities may result in racing extending beyond 10 pm. Such racing beyond 10 pm is expected to occur infrequently, for a relatively short duration and would not carry on through to the late night time period. Some events might then conclude with firework displays.

There is no Condition of Approval that specifies hours of operation.

Relevant background information (including EA, REF, Submissions Report, Director General's Report, MCoA):

- *Sydney International Speedway Environmental Impact Statement* including accompanying technical papers (August 2020)
- *Sydney International Speedway Submissions Report* (November 2020)
- *Sydney International Speedway Amendment Report* (November 2020)
- Instrument of Approval (dated 23 December 2020).

The above documents are available on the NSW planning portal: https://www.planningportal.nsw.gov.au/major-projects/project/30111

All proposed work identified in this assessment would be undertaken in accordance with the mitigation measures identified in the EIS, Submissions Report and Amendment Report and the conditions of approval.

2. Description of proposed development/activity/work

Describe ancillary activities, duration of work, working hours, machinery, staffing levels, impacts on utilities/authorities, wastes generated or hazardous substances/dangerous goods used.

This proposal comprises an amendment of typical operating hours for the approved Sydney International Speedway to enable racing to occur more frequently until 11 pm. Whilst the *Sydney International Speedway Submissions Report* (November 2020) provides clarification that incidents or track maintenance activities may result in infrequent racing extending beyond 10 pm, this proposal would formalise the operating hours to be one additional hour later than the approved project as described by the *Sydney International Speedway Environmental Impact Statement* (August 2020) and allow racing to occur up to 11 pm on a frequent basis.

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3. Timeframe

When will the proposed change take place? For how long?

The proposed change to typical operating hours would be implemented from opening of the operational Sydney International Speedway (anticipated to be December 2021) and would continue for the duration of the operation.

4. Site description

Provide a description of the site on which the proposed work are to be carried out, including, Lot and Deposited Plan details, where available. Map to be included here or as an appendix. Detail of land owner.

The Sydney International Speedway is being developed on land owned by the NSW Government, managed by Greater Sydney Parklands (previously known as the Western Sydney Parklands Trust). The Sydney International Speedway is located on the following lots:

- Lot 1, deposited plan (DP) 1077822
- Lots A, B & C DP 408966
- Lot 2 DP 1062965.

No changes to the approved project area are required for the proposal. The approved project area as per the Amendment Report is shown in Appendix A.

5. Site Environmental Characteristics

Describe the environment (i.e., vegetation, nearby waterways, land use, surrounding land use), identify likely presence of protected flora/fauna and sensitive area.

The proposal would be consistent with the approved project area, as described in Section 3 of the Amendment Report. The approved project, which is currently under construction, is located within the Western Sydney Parklands. The new speedway is located alongside the existing Sydney Dragway to the north and east and the Sydney Motorsports Park (operated by the Australian Racing Drivers' Club) to the north.

The existing land uses bounding the project area are commercial/industrial to the south and west, with major road corridors further to the west (M7 Motorway) and north (M4 Motorway). Prospect Reservoir is located to the east of the approved project. Existing sources of noise in the study area include existing commercial/industrial facilities, road traffic noise and noise from existing motorsport events at Sydney Motorsport Park and Sydney Dragway.

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The nearest residential receivers are around one kilometre to the south of the project area along Chandos Road and about one kilometre to the north-west, beyond the Lighthorse (M4/M7) Interchange. Residential receivers are sparsely distributed on either side of the M7 Motorway.

6. Justification for the proposed work

Address the need for the proposed work, whether there are alternatives to the proposed work (and why these are not appropriate), and the consequences with not proceeding with the proposed work.

The amendment of typical operating hours until 11 pm would accommodate any delays to the completion of racing, to allow the full program of racing to take place. Typically, incidents during racing result in minor delays to proceedings, but it is not unusual that an incident results in an extended delay. Such delays are unlikely to be accommodated within the 6 pm and 10 pm typical racing hours identified in the Environmental Impact Statement without requiring a reduction in the number of programmed race classes, number of races, or number of laps for each race. These programming changes would adversely impact the number of racing entrants and the experience for spectators, which may in turn impact on entrants and spectators returning for other events. The proposed extension to typical operating hours until 11 pm would therefore allow the operator of the Sydney International Speedway to confidently program a racing schedule that includes all classes, races and laps, and is value for money for both competitors and spectators as a result, encouraging continued patronage and ensuring financial feasibility of the Sydney International Speedway operations.

An earlier start time for racing to accommodate delays has been considered as an option. However, track lighting and race control is designed for dusk and night time racing. Running speedway cars on the clay racetrack during daylight hours could create dust and debris hazards. In addition to being a hazard for drivers, such excessive dust would lessen the spectator experience and increase the likelihood of dust impacting on nearby receivers (including Sydney Dragway). Therefore, racing commencing earlier than 6 pm has been discounted as a viable option.

7. Environmental Benefit

Identify whether there are environmental benefits associated with the proposed work. If so, provide details:

There would be no environmental benefits associated with the proposed change to operating hours.

8. Control Measures

Will a project and site specific EMP be prepared? Are appropriate control measures already identified in an existing EMP?

As per the approved project, an Operational Environmental Management Plan would be prepared and implemented by the operator of the Sydney International Speedway. The plan would provide the overarching framework for the management of all potential environmental

impacts resulting from the operation of the project. The scope of the plan would be confirmed by the operator, but would likely contain noise management measures, including:

- Establishing vehicle noise control limits for events and monitoring to verify compliance with these limits
- Managing the use of the public address system to minimise noise
- Coordination with other motorsports operators to minimise noise from concurrent events
- Establishment of a complaints handling and response procedure.

The following conditions which are most specifically relevant to the proposed change in operating hours include:

Condition D1

An Operational Environmental Management Plan (OEMP) must be prepared in accordance with the Environmental Management Plan Guideline for Infrastructure Projects (Department Planning, Industry and Environment 2020). The OEMP must detail how the performance outcomes, commitments and mitigation measures made and identified in the documents listed in Condition A1 will be implemented and achieved during operation. This condition (Condition D1) does not apply if Condition D2 of this approval applies.

Condition E29

At-property treatment must be provided to the properties identified in Table 38 of the Noise and Vibration Technical Paper (dated July 2020), unless otherwise agreed by the Planning Secretary.

9. Climate Change Impacts

Is the site likely to be adversely affected by the impacts of climate change? If yes, what adaptation/mitigation measures will be incorporated into the design?

Climate change adaptation impacts from this proposal would be consistent with those assessed in the Environmental Impact Statement.

10. Impact Assessment – Construction

The proposed change relates only to operation of the project, so no changes to the approved project would occur during construction.

Aspect	Nature and extent of impacts (negative and positive) during construction (if control measures implemented) of the proposed/activity, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
Flora and fauna	No change from the approved project.	No additional measures required.	Y	Y	
Water	No change from the approved project.	No additional measures required.	Y	Y	
Air quality	No change from the approved project.	No additional measures required.	Y	Y	
Noise and vibration	No change from the approved project.	No additional measures required.	Y	Y	
Indigenous heritage	No change from the approved project.	No additional measures required.	Y	Y	
Non-indigenous heritage	No change from the approved project.	No additional measures required.	Y	Y	
Community and stakeholder	No change from the approved project.	No additional measures required.	Y	Y	
Traffic	No change from the approved project.	No additional measures required.	Y	Y	
Waste	No change from the approved project.	No additional measures required.	Y	Y	
Social	No change from the approved project.	No additional measures required.	Y	Y	
Economic	No change from the approved project.	No additional measures required.	Y	Y	

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Aspect	Nature and extent of impacts (negative and positive) during construction (if control measures implemented) of the proposed/activity, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
Visual	No change from the approved project.	No additional measures required.	Y	Y	
Urban design	No change from the approved project.	No additional measures required.	Y	Y	
Geotechnical	No change from the approved project.	No additional measures required.	Y	Y	
Land use	No change from the approved project.	No additional measures required.	Y	Y	
Climate Change	No change from the approved project.	No additional measures required.	Y	Y	
Risk	No change from the approved project.	No additional measures required.	Y	Y	
Other	No change from the approved project.	No additional measures required.	Y	Y	
Management and mitigation measures	No change from the approved project.	No additional measures required.	Y	Y	

11. Impact Assessment – Operation

Attach supporting evidence in the Appendix if required. Make reference to the relevant Appendix if used.

Aspect	Nature and extent of impacts (negative and positive) during operation (if control measures implemented) of the proposed activity/work, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
Flora and fauna	No change from the approved project.	No additional measures required.	Y	Y	
Water	No change from the approved project.	No additional measures required.	Y	Y	
Air quality	No change from the approved project.	No additional measures required.	Y	Y	
Noise and vibration	**Operational motorsport noise** The operational noise assessment for the approved project considered the potential impacts of operational motorsport noise up to 10 pm. It predicted that worst-case noise levels from motorsport events for neutral and adverse weather conditions were below existing background levels for most receiver locations, in the absence of mitigation measures. Where noise levels at receivers were predicted to exceed background noise levels (RBL) by more than 5 dB, at-property treatment would be provided at each affected property to mitigate the impact (mitigation measure NV02). A quantitative operational noise assessment has been carried out for motorsport noise up to 11 pm (see Appendix B). The assessment identified that, in the absence of mitigation measures, the worst-case noise levels during neutral weather conditions are predicted to exceed background levels at the nearest receivers while racing is underway during events for certain race classes. Residential receivers to the south of the project are expected to be most affected due to	No additional measures required – the control measures identified for the approved project would be applied to the additional receivers identified in this assessment as required (see Appendix B).	Y	Y	

Aspect	Nature and extent of impacts (negative and positive) during operation (if control measures implemented) of the proposed activity/work, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
	receivers in this catchment being the closest to the approved project. There would be no additional receivers affected and generally, the predicted noise impacts from 10 pm to 11 pm would be within 1 dB of the predicted noise impacts up to 10 pm for the approved project. Therefore, these potential impacts are consistent with the approved project. Due to the potential occurrence of temperature inversions during the night time period in winter months, this assessment has also considered the effects of temperature inversions on the prediction of noise levels to represent the potential worst case during adverse weather conditions. Assessment in accordance with the *Noise Policy for Industry* (EPA, 2017) requires temperature inversions to be considered for night time impacts only. Therefore, temperature inversions were not previously considered for the typical operating hours of the approved project (which were limited to the evening period). It is unlikely that these adverse weather conditions would coincide with speedway events, as temperature inversions only occur during the winter months (June to August), which is generally outside of the speedway racing season (September to May). The assessment concluded that for worst case potential impacts during a temperature inversion, 24 receivers additional to those that were identified for the worst case predictions for the approved project would experience predicted average noise levels of more than 5 dBA above the background level. Further information, including the locations of these receivers, is provided in Appendix B. The approved project included a specific mitigation measure for operational motorsport noise impacts				

Aspect	Nature and extent of impacts (negative and positive) during operation (if control measures implemented) of the proposed activity/work, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
	(NV02) that states that at-property treatment will be provided for residential receivers which were predicted to have average noise level exceedances of more than 5 dB above the background level. Whilst events are not planned to be scheduled during winter months, should events regularly occur between June and August past 10pm, at-property treatment for the additional receivers identified in this assessment would be further investigated and implemented in accordance with mitigation measure NV02. This would reduce both the likelihood and consequence of potential impacts, consistent with the approved project. **Sleep disturbance** A quantitative sleep disturbance assessment was not required for the approved project, given the typical operating hours were limited to the evening period (up to 10 pm). However, a qualitative sleep disturbance assessment was provided in *Sydney International Speedway Submissions Report* (November 2020) to consider potential impacts of racing occurring after 10 pm due to minor delays. As the proposed extension of typical operating hours would result in racing during the night time period (10 pm to 11 pm), a quantitative sleep disturbance assessment has been carried out (see Appendix B). While exceedances of the *Noise Policy for Industry* (EPA, 2017) screening levels are predicted at some of the nearest residential receivers, the exceedances are considered relatively minor. Existing noise monitoring data shows that existing maximum noise levels above those predicted for the proposed change to typical operating hours are a regular feature of the area. These exceedances are not likely to result in sleep disturbance when compared against *Road*				

Aspect	Nature and extent of impacts (negative and positive) during operation (if control measures implemented) of the proposed activity/work, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
	Noise Policy (Department of Environment, Climate Change and Water NSW, 2011) advice on assessing noise impacts and are therefore consistent with the conclusions of the qualitative sleep disturbance assessment of the approved project in the *Sydney International Speedway Submissions Report* (November 2020). **Operational traffic noise** Operational traffic from the project (including after 11 pm) is predicted to result in an increase in road traffic noise levels of less than 2 dB, which does not trigger the requirement to consider additional noise mitigation and is consistent with the impacts of the approved project.				
Indigenous heritage	No change from the approved project.	No additional measures required.	Y	Y	
Non-indigenous heritage	No change from the approved project.	No additional measures required.	Y	Y	
Community and stakeholder	No change from the approved project. Additional consultation has been carried out with Greater Sydney Parklands and the Office of Sport on the proposed change.	No additional measures required.	Y	Y	
Traffic	No change to traffic volumes or the peak arrival hour from the approved project. The proposed change would result in change of peak departure hour from between 9 pm and 10 pm as per the approved project, to 10 pm to 11 pm, with some departures also taking place between 11pm and 12am. Traffic impacts are expected to be minor given the likelihood of less vehicles on the existing network at this later time, and would be consistent with the approved project.	No additional measures required.	Y	Y	

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Aspect	Nature and extent of impacts (negative and positive) during operation (if control measures implemented) of the proposed activity/work, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
Waste	No change from the approved project.	No additional measures required.	Y	Y	
Social	No change from the approved project.	No additional measures required.	Y	Y	
Economic	No change from the approved project.	No additional measures required.	Y	Y	
Visual	No change from the approved project.	No additional measures required.	Y	Y	
Urban design	No change from the approved project.	No additional measures required.	Y	Y	
Geotechnical	No change from the approved project.	No additional measures required.	Y	Y	
Land use	No change from the approved project.	No additional measures required.	Y	Y	
Climate Change	No change from the approved project.	No additional measures required.	Y	Y	
Risk	No change from the approved project.	No additional measures required.	Y	Y	
Other	No change from the approved project.	No additional measures required.	Y	Y	
Management and mitigation measures	No change from the approved project	No additional measures required.	Y	Y	

12. Consistency with the Approved Project

Based on a review and understanding of the existing Approved Project and the proposed modifications, is there is a transformation of the Project?	No. The proposed change to typical operating hours would not transform the approved project.
Is the project as modified consistent with the objectives and functions of the Approved Project as a whole?	Yes. The proposed change to typical operating hours would be consistent with the objectives and functions of the approved project.
Is the project as modified consistent with the objectives and functions of elements of the Approved Project?	Yes. The proposed change to typical operating hours would be consistent with the objectives and functions of elements of the approved project.
Are there any new environmental impacts as a result of the proposed work/modifications?	All risks would be adequately addressed through the application of the mitigation measures for the approved project relevant to the assessment in this document, and the required OEMP, including any sub-plans. There would be no new environmental risks as a result of the proposed work.
Is the project as modified consistent with the conditions of approval?	Yes. The proposed change to typical operating hours would be consistent with the conditions of approval.
Are the impacts of the proposed activity/work known and understood?	Yes. The impacts of the proposed change to typical operating hours are understood and will be accounted for by implementing the control measures within this document and the OEMP, including any sub-plans.
Are the impacts of the proposed activity/work able to be managed so as not to have an adverse impact?	Yes. The impacts of the proposed change to typical operating hours can be managed so as to avoid an adverse impact.

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13. Other Environmental Approvals

Identify all other approvals required for the project:	N/A

Author certification

To be completed by person preparing checklist.

I certify that to the best of my knowledge this Consistency Checklist: • Examines and takes into account the fullest extent possible all matters affecting or likely to affect the environment as a result of activities associated with the Proposed Revision; and • Examines the consistency of the Proposed Revision with the Approved Project; is accurate in all material respects and does not omit any material information.			
Name:	Carys Scholefield	Signature:	
Title:	Senior Environmental Planner		
Company:	Jacobs	Date:	22/10/2021

This section is for Sydney Metro only.

Application supported and submitted by			
Name:	Yvette Buchli	Date:	25/10/2021
Title:	Associate Director Planning Approvals	Comments:	
Signature:			

Based on the above assessment, are the impacts and scope of the proposed activity/modification consistent with the existing Approved Project?

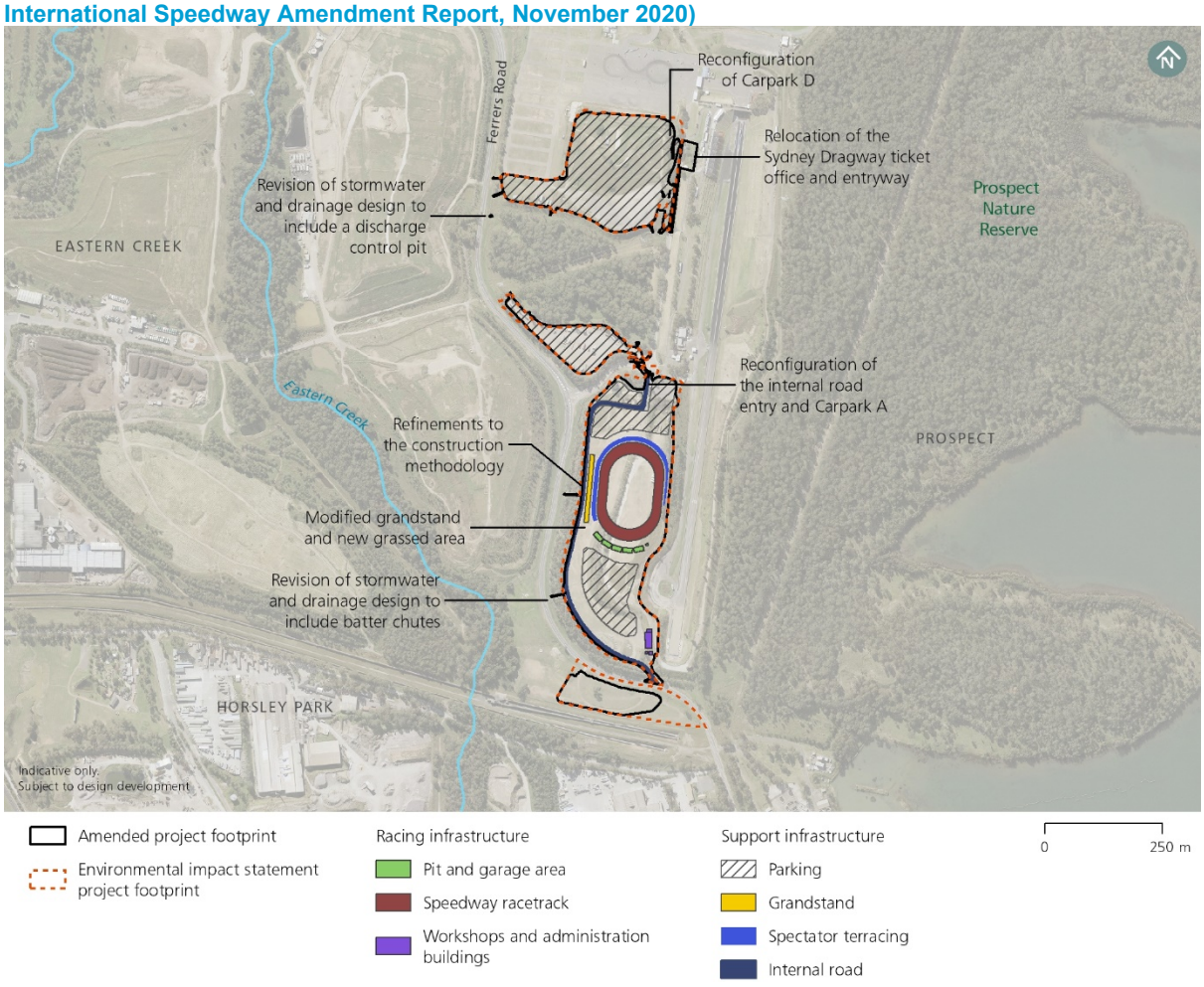
Yes	☒	The proposed activity/work are consistent and no further assessment is required.
No	☐	The proposed work/activity is not consistent with the Approved Project. A modification or a new activity approval/ consent is required. Advise Project Manager of appropriate alternative planning approvals pathway to be undertaken.

Endorsed by			
Name:	Stuart Hodgson	Date:	25/10/2021
Title:	Director ESP Sydney Metro West	Comments:	None
Signature:			

Appendix A Sydney International Speedway approved project area

The approved project area is shown as the amended project footprint in Figure A1, taken from the Sydney International Speedway Amendment Report (November, 2020). There is no change to the approved project area as part of this proposed change.

Figure A1 The approved project area, labelled as the Amended project footprint (Source: Sydney International Speedway Amendment Report, November 2020)



Appendix B Noise and vibration memorandum

Memorandum

To:	Carys Scholefield	**At:**	Jacobs
From:	Aaron McKenzie	**At:**	SLR Consulting Australia Pty Ltd
Date:	22 October 2021	**Ref:**	610.18331-M13-v1.1-20211022.docx
Subject:	Sydney International Speedway Night-time Operations - Noise Assessment		

1 Introduction

This technical memorandum has been prepared to assess the potential noise impacts associated with the proposed extension of operating hours for the Sydney international speedway from 10pm till 11pm.

The Sydney international speedway is being relocated from Rosehill to a new location within Western Sydney Parklands' Precinct 5: Eastern Creek Motor Sports. This assessment has been prepared with reference to the *Sydney International Speedway EIS noise and vibration technical paper* (SLR Consulting 2020) referred here on as the EIS NVIA, which previously assessed operation of the speedway between the hours of 7am and 10pm.

The scope of this investigation includes:

- Describe the existing acoustic environment with respect to the extended hour of operation and establish noise criteria for the extended hour of operation till 11pm
- Determine noise impacts including sleep disturbance impact potential during the extended hour of operation
- Identify feasible and reasonable noise mitigation and management measures to be incorporated in the detailed design and operational planning stage of the project.

2 Existing Environment

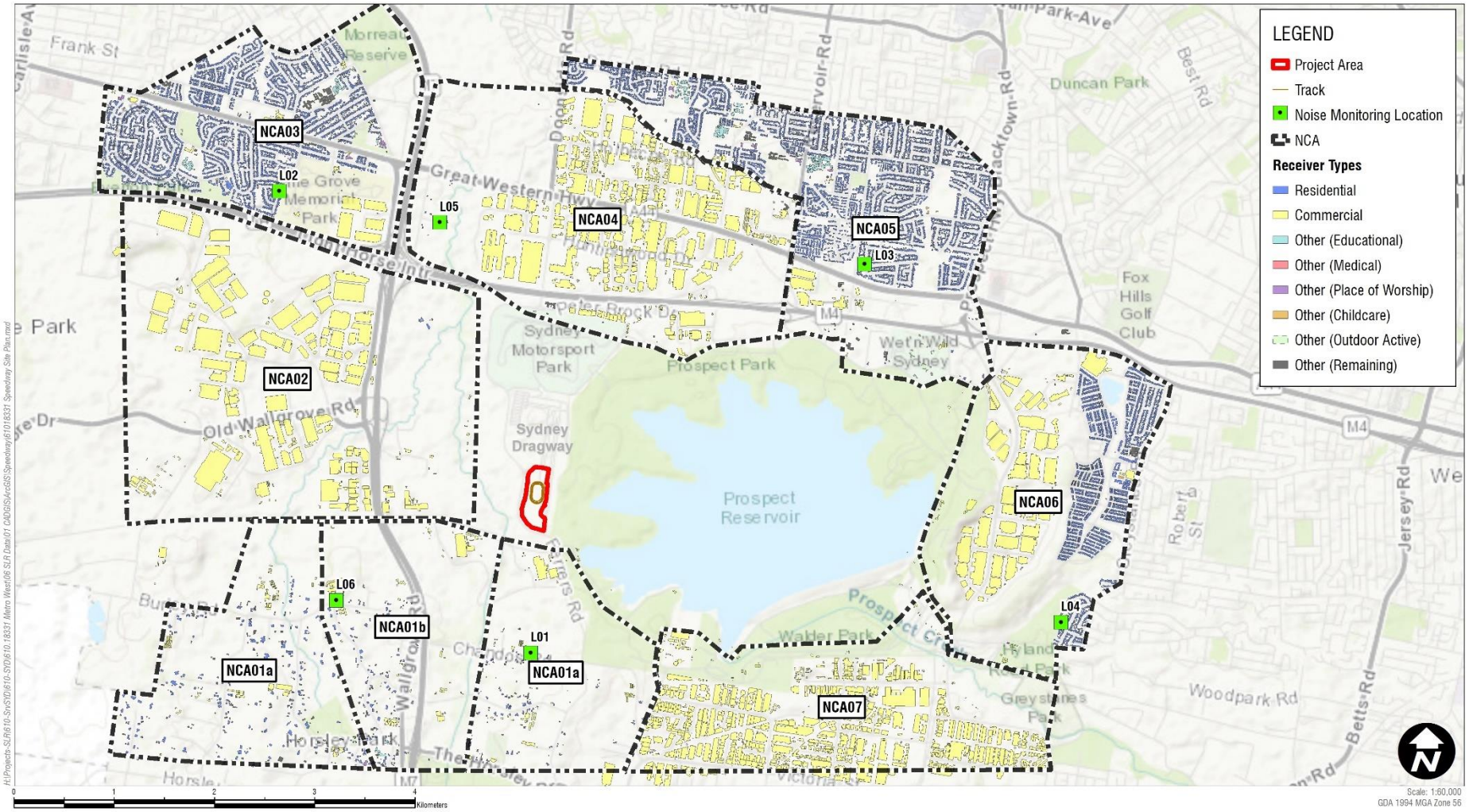
The project is located in the Blacktown Local Government Area (LGA) within the Western Sydney Parklands Precinct 5: Eastern Creek Motor Sports. The existing land uses near the site are commercial/industrial to the south and west, with major road corridors being further to the west (M7 Motorway) and north (M4 Motorway). Prospect Reservoir is located to the east of the project. The nearest residential receivers are located to south beyond the existing industrial area and to the northwest beyond the Lighthorse (M4/M7) Interchange.

Ambient noise monitoring was completed in the study area in January and February 2020 as part of the EIS NVIA. The measured noise levels have been used to determine the existing noise environment and to set criteria to assess the potential impacts from the project. This assessment for the extended hours of operation has reviewed the monitoring data with further consideration of the 10pm to 11pm night-time shoulder period.

A review of publicly available monitoring data measured at receivers near the M7 Motorway south west of the project area was conducted to quantify representative background levels. This resulted in an additional noise catchment area (NCA) representative of these receivers (NCA 01b) when compared to the EIS NVIA.

The study area, NCAs and noise monitoring locations are shown in **Figure 1.**

Figure 1 Study Area



The monitoring results are summarised in **Table 1**. Descriptions of each monitoring location together with graphs of the daily measured noise level are included in Appendix B of EIS NVIA.

Table 1 Summary of Unattended Noise Monitoring Results

Location ID	NCA	Address	Noise Level (dBA)[1,2]							
			Background Noise (RBL)				Average Noise Level (LAeq)			
			Day	Evening	Night	Night shoulder	Day	Evening	Night	Night shoulder
L01	NCA01a & NCA02	150-151 Chandos Road, Horsley Park	39	39[3] (actual 40)	39[3] (actual 40)	39[3] (actual 42)	49	49	48	47 (46 no insects)
L02	NCA03	8 Farrington Street, Minchinbury	41	41[3] (actual 45)	41	41 (actual 45)	55	57	49	52
L03	NCA05	94 Ollier Crescent, Prospect	43	43	38	42	54	54	49	50 (49 no insects)
L04	NCA06	48 Munro Street, Greystanes	35	35[3] (actual 36)	35[3] (actual 39)	35 (actual 43)	48	48	47	49 (45 no insects)
L05[4]	NCA04	51 Pikes Lane, Eastern Creek	47	47	41	44	52	51	52	52
L06[5]	NCA01b	58 Burley Road, Horsley Park	42	42[3] (actual 47)	42[3] (actual 43)	42[6]	52	57	51	51[6]

Note 1: The RBL and L_{Aeq} noise levels have been determined with reference to the procedures in the Noise Policy for Industry

Note 2: Daytime is 7.00am to 6.00pm, evening is 6.00pm to 10.00pm and night-time is 10.00 pm to 7.00am, Night-time shoulder 10:00pm – 11:00pm.

Note 3: RBL for evening set at no greater than the daytime, and RBL for night-time set no greater than the day or evening following principles outlined in the NPfI.

Note 4: Data from noise monitoring undertaken by SLR in December 2018 as part of a nearby project.

Note 5: Data obtained from monitoring conducted by Arup between 6 February to 17 February 2020, Western Sydney Energy and Resource Recovery Centre, Chapter 13 Noise and Vibration, 2020.

Note 6: The publicly available data could not be recalculated for the night shoulder period, hence the night time level was adopted.

The unattended noise monitoring results indicate existing daytime background noise levels (RBL) are dominated by road traffic noise from distant major roads, including the M7 Motorway, M4 Motorway and Great Western Highway. Nearby insect noise is considered likely to have influenced the evening and night-time measurements during the survey which is common during warmer months. The EIS NVIA used guidance from the Noise Policy for Industry (NPfI) (NSW EPA 2017) to determine the RBLs for the day, evening and night-time periods at each location.

The noise monitoring data was re-analysed to determine RBL and average noise levels for the night-time shoulder period from 10pm to 11pm. The analysis indicated that the measured background noise levels during this shoulder period were typically higher than the night-time (10pm to 7am) period and at two locations (L01 and L04) higher than the evening period. As shoulder period noise levels are likely to have been influenced by insect noise at certain locations, the evening period RBL has been used for the night-time shoulder period in NCA01a, NCA01b, NCA02, NCA03 and NCA06. This is consistent with the approach in the EIS NVIA.

2.1 Meteorology

An assessment of meteorological data during the night-time shoulder period has been undertaken to determine the occurrence of seasonal noise enhancing weather conditions. Weather data from the Bureau of Meteorology Horsley Park Equestrian Centre #67119 weather station between 2016 and 2020 was reviewed.

The results of the analysis indicated noise enhancing winds (0.5 – 3m/s) from the south west occurred for 30% of the night-time shoulder period during the autumn and winter months. As per the EIS NVIA temperature inversion conditions were also considered a feature of the area during the winter months which would typically occur during calm conditions and very light winds. As such the following weather conditions have been assessed:

- Calm conditions with Neutral Class D atmospheric stability
- Noise enhancing (3m/s) south west winds with Neutral D atmospheric stability
- Noise enhancing temperature inversion Stable Class F atmospheric stability.

3 Noise Guidelines

3.1 Assessment Criteria

The EIS NVIA provides a summary of relevant noise guidelines for the assessment of noise impacts from motor sport events being held at the facility.

The assessment of the night-time shoulder period has been undertaken on the basis of the predicted exceedance of the background noise level. This is consistent with the EIS NVIA.

3.2 Sleep Disturbance

Guidance for assessing the potential for sleep disturbance impacts on nearby residences is provided in Section 2.5 of the NPfI, which states:

> Where the subject development/premises night-time noise levels at a residential location exceed:
>
> - $L_{Aeq,15min}$ 40 dBA or the prevailing RBL plus 5 dB, whichever is the greater, and/or
> - L_{AFmax} 52 dBA or the prevailing RBL plus 15 dB, whichever is the greater,
>
> a detailed maximum noise level event assessment should be undertaken.

The night-time sleep disturbance L_{Amax} screening noise levels for the residential areas near the development are shown in **Table 2**.

Table 2 Night-time Sleep Disturbance Screening Noise Levels

Residential Receiver Area	Noise Level (dBA)	
	Night-time Shoulder RBL	Sleep Disturbance Screening Noise Level (L_{Amax})
NCA01a & NCA02	39	54
NCA01b	42	57
NCA03	41	56
NCA04	44	59
NCA05	42	57
NCA06	35	52

The NSW *Road Noise Policy* (RNP) contains the following additional advice relating to potential sleep disturbance impacts:

> "*From the research on sleep disturbance to date it can be concluded that:*
>
> - *maximum internal noise levels below 50–55 dB(A) are unlikely to awaken people from sleep*
> - *one or two noise events per night, with maximum internal noise levels of 65–70 dB(A), are not likely to affect health and wellbeing significantly."*

It is generally accepted that internal noise levels in a dwelling with windows open for ventilation are 10 dB lower than external noise levels. The equates to external noise events of 60 dBA to 65 dBA being unlikely to cause awakening reactions.

3.3 Operational Road Traffic Noise

When traffic related to the project is on the public road network, vehicle movements are regarded as 'additional road traffic' (rather than as part of the site operations) and are assessed under the RNP.

The RNP recognises that fewer opportunities generally exist to reduce the noise impacts from new land use developments generating additional traffic on existing roads and suggests that any increase in the total traffic noise level resulting from the project should be limited to 2.0 dB above the existing level.

The RNP criteria applicable to the Project is reproduced below in **Table 3**.

Table 3 Road Noise Policy Criteria for Assessing Additional Vehicles on Public Roads

Road Category	Type of Project/Land Use	Assessment Criteria (dBA)	
		Daytime (7 am - 10 pm)	Night-time (10 pm - 7 am)
Freeway/ arterial/ sub-arterial roads	Existing residences affected by additional traffic on existing freeways/arterial/sub-arterial roads generated by land use developments	$L_{Aeq(15hour)}$ 60 (external)	$L_{Aeq(9hour)}$ 55 (external)
Local roads	Existing residences affected by additional traffic on existing local roads generated by land use developments	$L_{Aeq(1hour)}$ 55 (external)	$L_{Aeq(1hour)}$ 50 (external)

4 Methodology

The noise modeling approach, parameters and assumptions in the EIS NVIA have been used in this assessment. Weather conditions during the night-time shoulder period have also been considered (see **Section 2.1**).

Publicly available reports have been reviewed to determine the likely maximum noise emissions from sprint car racing at speedways locally and internationally. This review concluded that an L_{Amax} sound power level (SWL) of around 139 - 142 dB is appropriate sprint car racing. This noise source has been modelled as a single point emission at any location around the track circuit to provide an estimate of maximum noise emissions during racing.

5 Speedway Noise Assessment

5.1 Night-time Shoulder Period Motorsport Noise Levels Relative to Existing Background Level

A summary of the modelling results for motorsport noise emissions during the night-time shoulder period is shown in **Table 4** for neutral weather and **Table 5** for adverse weather conditions. To indicate the extent of the predicted impacts, noise contours for the highest noise events (i.e. sprint cars) have been generated. The predicted noise levels are shown in for **Figure 2** neutral weather conditions and in **Figure 3** for adverse weather conditions. The figures show the location of the potentially affected residential receivers.

The assessment shows the following at residential receivers:

- The predicted noise impacts during the night-time shoulder period are generally the same (ie within 1 dB) as was predicted in the EIS NVIA for the daytime/evening period. This is due to the background levels in the study area being relatively constant. Where shoulder period background levels were found to be higher than the daytime/evening they were reduced to equal the evening level as per NPfI requirements.
- Due to the occurrence of temperature inversions during the night times period in winter months, this assessment has considered these effects on the prediction of noise levels for the night-time shoulder period.
- The following impacts, which are consistent with the EIS NVIA, are predicted:
    - In the absence of mitigation measures, the worst-case noise levels are predicted to exceed background levels at the nearest receivers while racing is underway during certain events. Residential receivers to the south of the project in NCA01a are expected to be most affected due to receivers in this catchment being the closest to the project.
    - During neutral weather conditions (see **Table 4**), exceedances of up to 12 dB above existing background level are predicted in NCA01a while racing is underway during the noisiest sprint car events. Noise levels in NCA01a during lower noise events, such as V8 modifieds and other events, are predicted to result in exceedances of up to 8 dB. The average exceedance of the background level in NCA01a is predicted to be 7 dB during neutral weather, consistent with the average exceedance of 7dB predicted in the EIS NVIA. During adverse weather conditions (see **Table 5**) noise levels are predicted to increase by 3 dB with exceedances of up to 15 dB during the noisiest sprint car events. The average exceedance in NCA01a is predicted to be 10 dB during adverse weather.
    - Residential receivers in NCA01b have higher background noise levels due to their proximity to the M7 Motorway. Worst-case noise levels during neutral weather conditions are predicted to exceed background levels by up to 6 dB while racing is underway during sprint car events in NCA01b, with levels during lower noise events generally being below background level. The average exceedance of the background level in NCA01b during neutral conditions is predicted to be 3 dB. During adverse weather conditions noise levels are predicted to increase by 2 dB in NCA01b.

- Residential receivers in NCA02 and NCA06 are further away from the project site and less affected. Worst-case noise levels during neutral weather conditions are predicted to exceed background levels by up to 7 dB and 8 dB while racing is underway during sprint car events in NCA02 and NCA06 respectively, with levels during lower noise events generally being below background level. The average exceedance of the background level in NCA02 during neutral conditions is predicted to be 2 dB, with NCA06 predicted to be 3 dB, consistent with the EIS NVIA. While NCA06 receivers are further away than NCA02, differing ground type and screening effects from intervening structures / buildings likely causes the differences between these NCAs. During adverse weather conditions noise levels are predicted to increase by 4 dB in NCA02 and 2 dB in NCA06 with exceedance of up to 11 dB and 10 dB, respectively.
- It is noted that the exceedance in NCA02 is at an isolated property to the north-west of the project site (165 Wallgrove Road, Eastern Creek). This receiver is situated within the project area of the approved Lighthorse Interchange Business Hub and identified as unoccupied and therefore unlikely to currently be noise sensitive. No other residential receivers in NCA02 are predicted to have noise levels above background.
- Noise levels in NCA03, NCA04 and NCA05 during neutral weather conditions are generally predicted to be below background during most events. During adverse weather conditions noise levels during the loudest events are predicted to exceed background by 2 dB in NCA03 and NCA04. Average exceedances are generally below background during adverse weather conditions in all three NCAs. This is consistent with noise levels predicted in the EIS NVIA.

Table 4 Worst-case Predicted Motorsport Noise Levels, Night-time Shoulder Period – Neutral Weather

NCA	Distance to Nearest Residential	Event	Assumed Number of Events	Noise Level LAeq(15minute) (dBA)		
				Predicted	Exceedance of Background[1]	Average Exceedance[2]
NCA01a	1200 m	Sprint cars	17	51	12	7
		Wingless Sprints	4	42	3	
		Formula 500s	4	40	1	
		Street stocks	4	42	3	
		V8 Dirt modifieds	4	47	8	
		Motorcycles	4	40	1	
NCA01b	1500 m	Sprint cars	17	48	6	3
		Wingless Sprints	4	39	-	
		Formula 500s	4	36	-	
		Street stocks	4	39	-	
		V8 Dirt modifieds	4	43	1	
		Motorcycles	4	36	-	
NCA02	1900 m	Sprint cars	17	46	7	2
		Wingless Sprints	4	37	-	
		Formula 500s	4	34	-	
		Street stocks	4	37	-	
		V8 Dirt modifieds	4	42	3	
		Motorcycles	4	34	-	
NCA03	3700 m	Sprint cars	17	39	-	<0
		Wingless Sprints	4	30	-	
		Formula 500s	4	26	-	
		Street stocks	4	30	-	
		V8 Dirt modifieds	4	34	-	
		Motorcycles	4	26	-	
NCA04	2800 m	Sprint cars	17	42	-	<0
		Wingless Sprints	4	33	-	
		Formula 500s	4	30	-	
		Street stocks	4	33	-	
		V8 Dirt modifieds	4	37	-	
		Motorcycles	4	30	-	
NCA05	3400 m	Sprint cars	17	44	2	<0
		Wingless Sprints	4	35	-	
		Formula 500s	4	31	-	
		Street stocks	4	35	-	
		V8 Dirt modifieds	4	39	-	
		Motorcycles	4	31	-	
NCA06	3200 m	Sprint cars	17	43	8	3
		Wingless Sprints	4	35	-	
		Formula 500s	4	31	-	
		Street stocks	4	35	-	

NCA	Distance to Nearest Residential	Event	Assumed Number of Events	Noise Level LAeq(15minute) (dBA)		
				Predicted	Exceedance of Background[1]	Average Exceedance[2]
		V8 Dirt modifieds	4	37	2	
		Motorcycles	4	31	-	
NCA07	n/a – no residential receivers identified in this NCA					

Note 1: Background levels during the night-time shoulder period (see **Table 1**).

Note 2: Arithmetic average weighted by the proposed number of events.

Table 5 Worst-case Predicted Motorsport Noise Levels, Night-time Shoulder Period – Adverse Weather

NCA	Distance to Nearest Residential	Event	Assumed Number of Events	Noise Level LAeq(15minute) (dBA)		
				Predicted	Exceedance of Background[1]	Average Exceedance[2]
NCA01a	1200 m	Sprint cars	17	54	15	10
		Wingless Sprints	4	46	7	
		Formula 500s	4	43	4	
		Street stocks	4	46	7	
		V8 Dirt modifieds	4	50	11	
		Motorcycles	4	43	4	
NCA01b	1500 m	Sprint cars	17	51	9	5
		Wingless Sprints	4	42	-	
		Formula 500s	4	39	-	
		Street stocks	4	42	-	
		V8 Dirt modifieds	4	46	4	
		Motorcycles	4	39	-	
NCA02	1900 m	Sprint cars	17	50	11	6
		Wingless Sprints	4	41	2	
		Formula 500s	4	38	-	
		Street stocks	4	41	2	
		V8 Dirt modifieds	4	45	6	
		Motorcycles	4	38	-	
NCA03	3700 m	Sprint cars	17	43	2	1
		Wingless Sprints	4	34	-	
		Formula 500s	4	30	-	
		Street stocks	4	34	-	
		V8 Dirt modifieds	4	38	-	
		Motorcycles	4	30	-	
NCA04	2800 m	Sprint cars	17	46	2	<0
		Wingless Sprints	4	36	-	
		Formula 500s	4	33	-	
		Street stocks	4	36	-	
		V8 Dirt modifieds	4	41	-	
		Motorcycles	4	33	-	

NCA	Distance to Nearest Residential	Event	Assumed Number of Events	Noise Level $L_{Aeq(15minute)}$ (dBA)		
				Predicted	Exceedance of Background[1]	Average Exceedance[2]
NCA05	3400 m	Sprint cars	17	47	5	<0
		Wingless Sprints	4	38	-	
		Formula 500s	4	34	-	
		Street stocks	4	38	-	
		V8 Dirt modifieds	4	42	-	
		Motorcycles	4	34	-	
NCA06	3200 m	Sprint cars	17	45	10	5
		Wingless Sprints	4	37	2	
		Formula 500s	4	33	-	
		Street stocks	4	37	2	
		V8 Dirt modifieds	4	40	5	
		Motorcycles	4	33	-	
NCA07	n/a – no residential receivers identified in this NCA					

Note 1: Background levels during the night-time shoulder period (see **Table 1**).

Note 2: Arithmetic average weighted by the proposed number of events.

Figure 2 Noise Contours – Predicted Average Noise Level from Sprint Cars, Night-time Shoulder Period – Neutral Weather

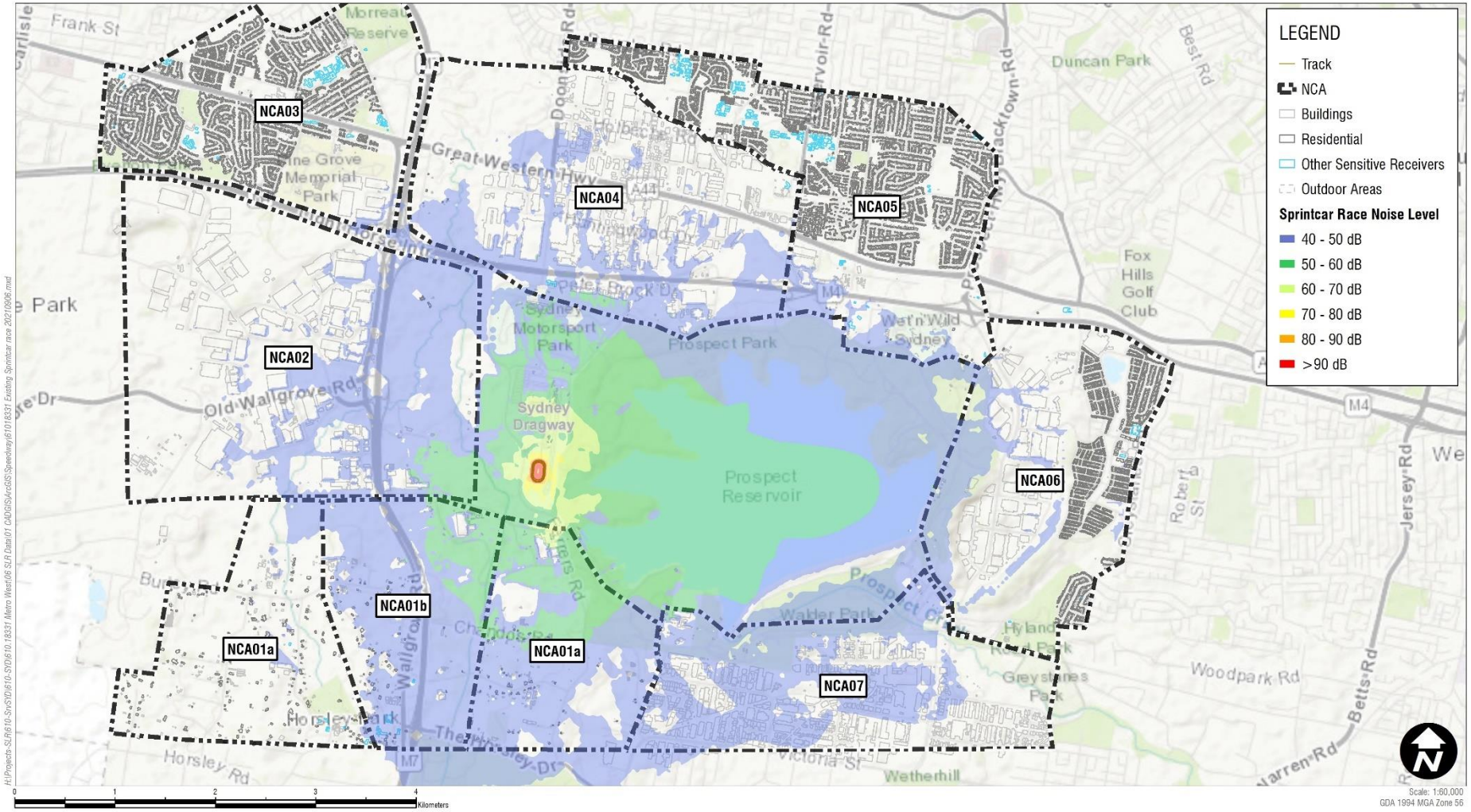
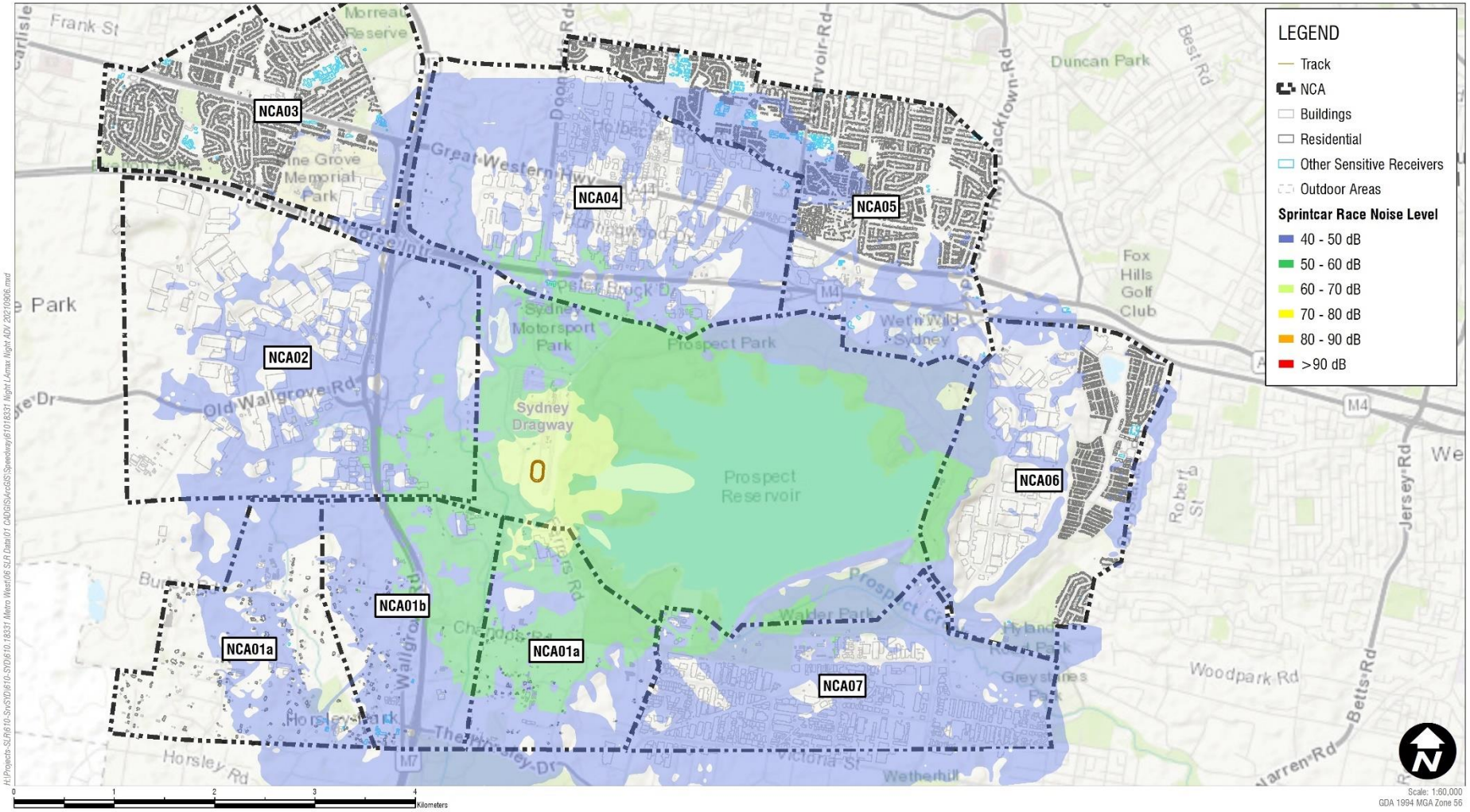


Figure 3 Noise Contours – Predicted Average Noise Level from Sprint Cars, Night-time Shoulder Period – Adverse Weather (Temperature Inversion)



5.2 Sleep Disturbance Noise Assessment

A summary of the modelling results for maximum noise emissions during the night-time shoulder period is shown in **Table 6** for both neutral weather and adverse weather conditions.

Table 6 Maximum Noise Levels – Sprint car race

NCA	Event	Sleep Disturbance Guideline Level RBL +15	Predicted Noise Level (LAmax)		Exceedance of Sleep Disturbance Screening Level
			Neutral Weather	**Adverse Weather**	
NCA01a	Sprint cars	54	58	61	4 to 7
NCA01b		57	56	59	0 to 2
NCA02		54	54	58	0 to 4
NCA03		56	47	52	-
NCA04		59	51	55	-
NCA05		57	50	54	-
NCA06		52	50	54	0 to 2

The assessment shows the following at residential receivers:

- In the absence of mitigation measures, the worst-case maximum noise levels are predicted to exceed the sleep disturbance screening level at the nearest receivers while racing is underway during Sprintcar and V8 dirt modified events. Residential receivers to the south of the project in NCA01a are expected to be most affected due to receivers in this catchment being the closest to the project.
- During neutral weather conditions exceedances of up to 4 dB above screening level are predicted in NCA01. This increases to 7 dB above the screening level during adverse weather.
- In NCA01b noise levels up to 2 dB above the screening level occur during adverse weather.
- In NCA02 noise levels up to 4 dB above the screening level occur during adverse weather.
- In NCA06 noise levels up to 2 dB above the screening level occur during adverse weather.
- No exceedances of the screening levels were predicted in NCA03, NCA04 or NCA05.
- While exceedances of the screening levels are predicted at some of the nearest residential receivers, the exceedances are considered relatively minor. Reference to the noise monitoring data in the EIS NVIA shows that existing maximum noise levels in the region of 65 to 70 dB are a regular feature of the area during the night-time shoulder period, which is higher than the maximum noise levels predicted from the proposed extension of operating hours. The predicted maximum noise levels in all NCAs are also below the levels outlined in the RNP that would be considered to have potential to cause sleep disturbance.
- Based on the above, the predicted sleep disturbance exceedances are considered of relatively low significance. Worst-case impacts are predicted to occur during temperature inversion conditions typical of winter months, which is typically outside of the speedway racing season.

To indicate the extent of the predicted impacts, noise contours for the highest maximum noise events (i.e. sprint cars) have been generated. The predicted noise levels are shown in for **Figure 4** neutral weather conditions and in **Figure 5** for adverse weather conditions.

Figure 4 Noise Contours – Predicted Maximum Noise Level from Sprint Cars, Night-time Shoulder Period – Neutral Weather

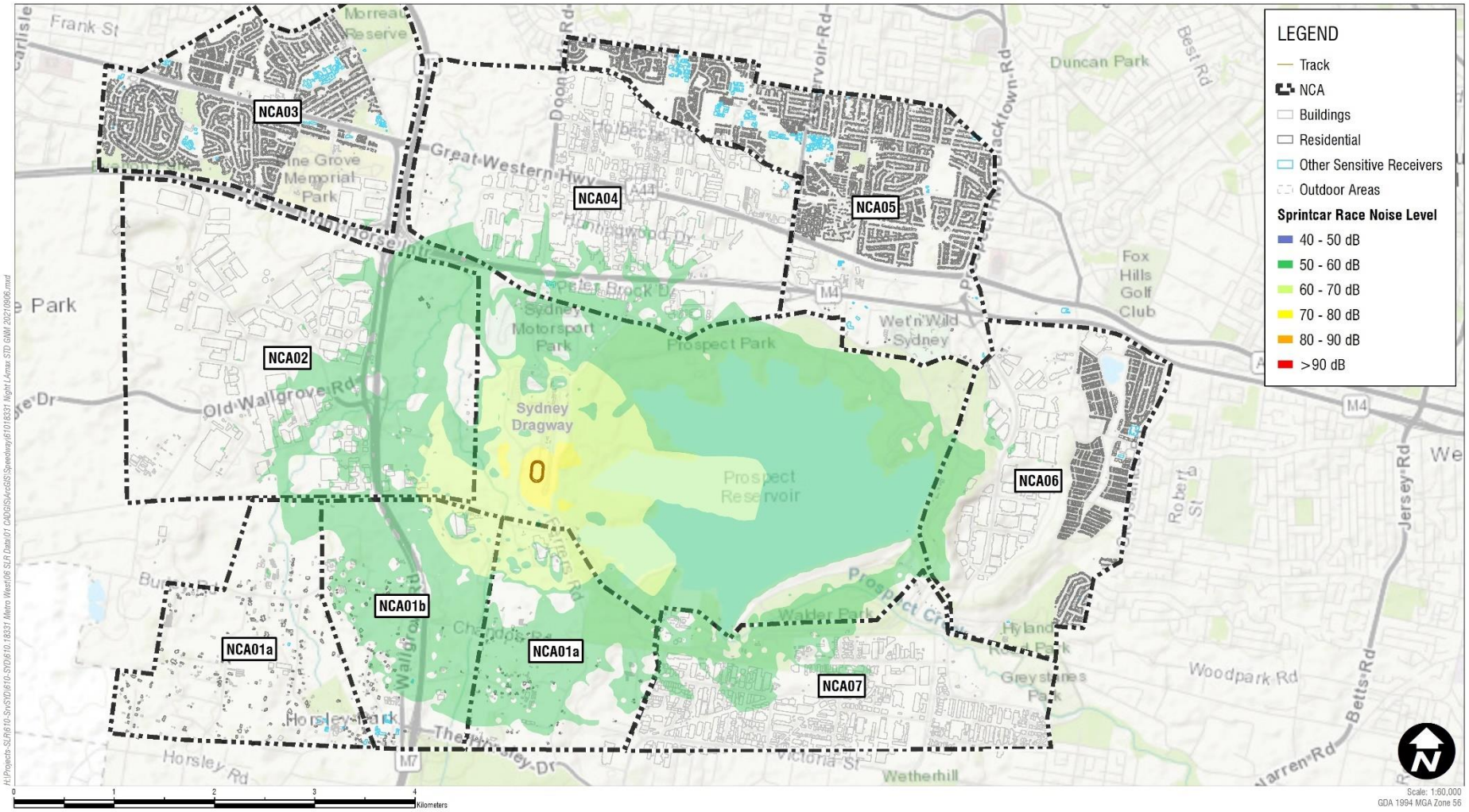
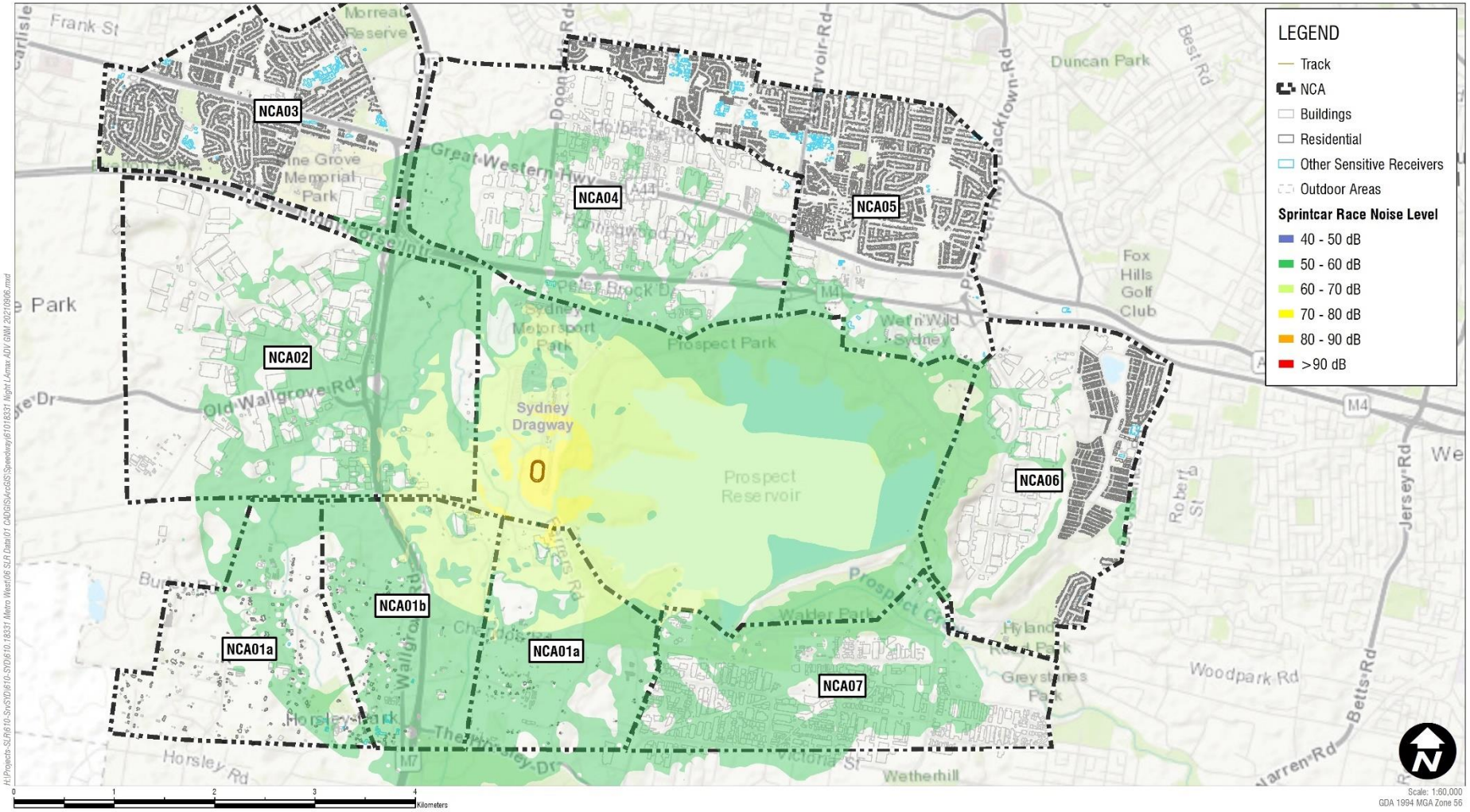


Figure 5 Noise Contours – Predicted L_{Amax} Noise Level from Sprint Cars – Adverse Weather (Temperature Inversion)



5.3 Operational Road Traffic Noise

The predicted road traffic noise levels at residential receivers on Ferrers Road are summarised in **Table 7**. No residential receivers are identified adjacent to Ferrers Road north of the project site.

The assessment shows that operational traffic from the project is predicted to result in an increase in road traffic noise levels of less than 2.0 dB which does not trigger the requirement to consider additional noise mitigation.

Table 7 Predicted Speedway Operational Road Traffic Noise Level Increase

Location	Scenario	Minimum distance to nearest trafficable lane	Predicted Increase (dBA)[1]
			Night-time $L_{Aeq(9hour)}$ 10 pm – 7 am External Noise Level
Ferrers Road residential receivers south of the project site	Saturday Major Speedway event	15-20m	1.5

Note 1: Existing road traffic noise levels are estimated based on existing (no event) traffic volumes on Ferrers Road south of the project site presented in the Traffic Impact Assessment Report

6 Mitigation Measures

6.1.1 At-property Noise Treatment

The EIS NVIA proposed at-property treatment be considered for residential receivers which were predicted to have average noise level exceedances of more than 5 dB above the background level.

The night-time shoulder period motorsport noise levels (see **Section 4.2**) are predicted to exceed the background level +5 dB noise goal at 37 receivers to the south in NCA01a. Two exceedances are also predicted at receivers in NCA02 which are not believed to be occupied and are situated within the project area of the approved Lighthorse Interchange Business Hub and therefore would not be considered noise sensitive.

A total of 39 receivers have been identified with predicted average noise levels of more than 5 dB above the background level, with 24 of these additional to the EIS NVIA. These receivers are shown in **Figure 6** and **Table 8**.

The additional receivers are triggered due to the noise enhancing effect of night-time temperature inversions during the winter months. It is noted, however, that the typical speedway racing season occurs between September to April, with race events not typically scheduled for winter months.

No additional properties are predicted to exceed the background level by more than 5 dB under neutral weather conditions. As racing events are not proposed during the 10pm to 11pm night-time period in winter months there is no requirement to considered additional mitigation from what was recommended in the EIS NVIA. In future, however, if events are regularly scheduled to occur past 10pm during winter months then at-property treatments would need to be further investigated and provided in accordance with mitigation measure NV02 of the EIS NVIA.

Figure 6 Residential Receivers Considered Eligible for At-property Treatment (NCA01 and NCA02)

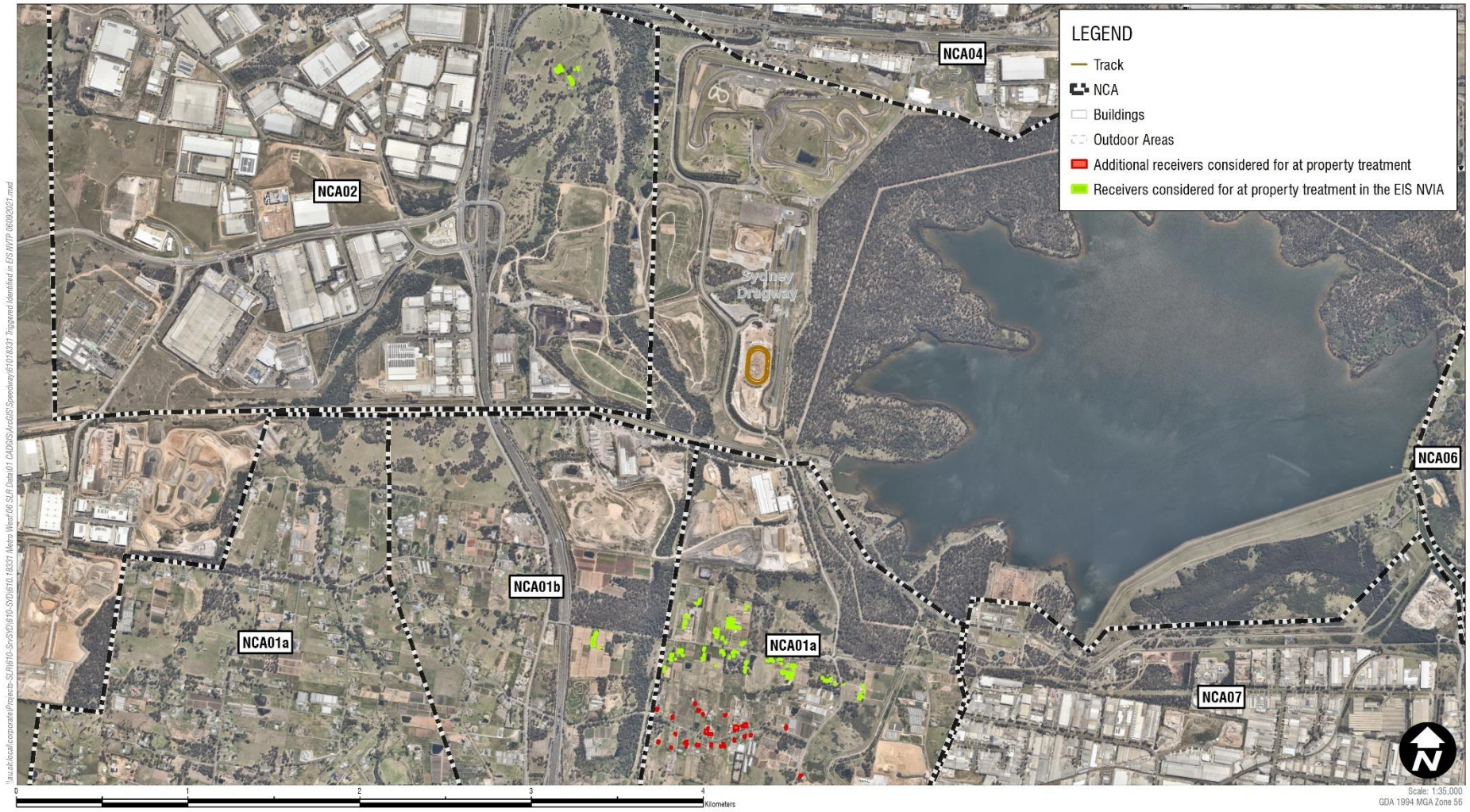


Table 8 Addresses of Identified Receivers

Number	NCA	Address	Predicted Noise Level (LAeq 15minute)		Average Exceedance of Background[2]	
			Standard Weather	Adverse Weather	Standard Weather	Adverse Weather
1	NCA01a, Identified in EIS NVIA	203-209 Chandos Road, Horsley Park	50	53	6	9
2		137-153 Chandos Road, Horsley Park	50	53	6	9
3		117 Chandos Road, Horsley Park	50	53	6	9
4		150-154 Chandos Road, Horsley Park	51	54	7	10
5		126-130 Chandos Road, Horsley Park	51	54	7	10
6		259-273 Chandos Road, Horsley Park	48	51	1	4
7		171-185 Chandos Road, Horsley Park	50	53	6	9
8		121-135 Chandos Road, Horsley Park	51	54	7	10
9		187-201 Chandos Road, Horsley Park	50	53	6	9
10		155-169 Chandos Road, Horsley Park	51	54	7	10
11		105-119 Chandos Road, Horsley Park	51	54	7	10
12		168-174 Chandos Road, Horsley Park	50	53	6	9
13		211-217 Chandos Road, Horsley Park	50	53	6	9
14	NCA02, Identified in EIS NVIA	165 Wallgrove Road, Eastern Creek[1]	44	48	0	4
15		165 Wallgrove Road, Eastern Creek[1]	44	48	0	4
16	NCA01a, Additional Receivers	215-223 Redmayne Road, Horsley Park	48	51	4	7
17		144-150 Redmayne Road, Horsley Park	47	50	3	6
18		182-190 Redmayne Road, Horsley Park	47	51	3	7
19		195-201 Redmayne Road, Horsley Park	47	50	3	6
20		143-155 Redmayne Road, Horsley Park	48	51	4	7
21		185-193 Redmayne Road, Horsley Park	48	51	4	7
22		152-170 Redmayne Road, Horsley Park	47	50	3	6
23		195-201 Redmayne Road, Horsley Park	47	50	3	6
24		203-213 Redmayne Road, Horsley Park	48	52	4	8
25		208-220 Redmayne Road, Horsley Park	47	51	3	7
26		225-245 Redmayne Road, Horsley Park	48	51	4	7
27		167-183 Redmayne Road, Horsley Park	48	51	4	7
28		172-180 Redmayne Road, Horsley Park	46	50	2	6
29		162-166 Chandos Road, Horsley Park	49	52	5	8
30		200-206 Redmayne Road, Horsley Park	47	51	3	7
31		247-263 Redmayne Road, Horsley Park	48	51	4	7
32		136-142 Redmayne Road, Horsley Park	47	50	3	6
33		136-142 Redmayne Road, Horsley Park	46	50	2	6
34		127-131 Ferrers Road, Horsley Park	49	53	5	9

Number	NCA	Address	Predicted Noise Level ($L_{Aeq\ 15minute}$)		Average Exceedance of Background[2]	
			Standard Weather	Adverse Weather	Standard Weather	Adverse Weather
35		120-134 Redmayne Road, Horsley Park	47	50	3	6
36		185-193 Redmayne Road, Horsley Park	47	51	3	7
37		222-230 Redmayne Road, Horsley Park	48	51	4	7
38		157-165 Redmayne Road, Horsley Park	47	51	3	7
39		70-84 Ferrers Road, Horsley Park	46	50	2	6

Note 1: Currently assumed to be unoccupied and situated within the project area for the approved Lighthorse Interchange Business Hub.

Note 2: Arithmetic average weighted by the proposed number of events.

Typical treatment may consist of mechanical ventilation to allow windows to be kept closed on affected facades while providing adequate ventilation. Other options may include window upgrades to glazing and/or acoustic seals. The extent and type of treatment would be confirmed during detailed design following inspection of the properties.

6.1.2 Operational Environmental Management Plan

Consistent with the recommendations in the EIS NVIA, an Operational Environmental Management Plan (OEMP) would be prepared by the operator, once appointed. The OEMP would contain an Operational Noise Management Plan (ONMP) which confirms the following aspects of the assessment, including any refinements made during detailed design:

- All major noise sources from the development
- The facilities operating hours and types of events
- The predicted numbers of light and heavy vehicle traffic created by the operation as well as the likely routes to be taken to and from the site to the main thoroughfares
- Any noise sensitive locations with the potential to be affected by activities at the site
- Site specific noise criteria
- Prevailing weather conditions applicable to the project site
- Predicted noise impacts from the project
- Mitigation measures to address any exceedances of the noise criteria
- Complaints handling and response procedure.

Community feedback received as part of the planning approvals process for this project would be incorporated into the ONMP to address concerns and expectations of the community. The aim of the ONMP should be to minimise noise impact from the venue where feasible and reasonable without unduly constraining operation of the various venues. This would likely incorporate detailed event planning informed by assessment of noise emissions from each site.

It is recommended that Blacktown City Council are consulted as part of the OEMP process.

7 Conclusion

The assessment of noise impacts from the proposed extension of operating hours for the Sydney international speedway from 10pm till 11pm has identified the following:

- Temperature inversions during winter months result in noise impacts being increased by between 2 – 4 dB at sensitive receivers surrounding the project, with a 3 dB increase at the nearest receivers to the south and south-west. It is noted, however, that the typical speedway racing season occurs between September to April, with race events not typically scheduled for winter months. No additional properties are predicted to exceed the background level by more than 5 dB under neutral weather conditions, when compared to the EIS NVIA.
- As racing events are not proposed during the 10pm to 11pm night-time period during the winter months there is no requirement to considered additional mitigation from what was recommended in the EIS NVIA. In future, however, if events are regularly scheduled to occur past 10pm during winter months then at-property treatments would need to be further investigated and provided in accordance with mitigation measure NV02 of the EIS NVIA.
- Maximum noise events during the night-time period are likely to exceed the L_{Amax} screening level at the nearest receivers to the south and south-west by up to 4 dB during neutral conditions and 7 dB during temperature inversions. However, are not likely to result in sleep disturbance when compared against RNP advice on assessing noise impacts.
- Noise management and mitigation measures as identified in the EIS NVIA remain the recommended approach to control the potential impacts.

Checked/
Authorised by: AW

Appendix L

Planning Approval Consistency Assessment Form: Operating Hours

Planning Approval Consistency Assessment Form

SM-17-00000111

Metro Body of Knowledge (MBoK)

Assessment name:	Sydney International Speedway Amended Access Proposal
Prepared by:	arc traffic + transport
Prepared for:	Sydney Metro
Assessment number:	SIS05
Status:	Final
Version:	1.0
Planning approval:	SSI 10048
Date required:	September 2021
iCentral number:	SM-21-00293889

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For information – do not alter:

Applicable to:	Sydney Metro
Document Owner:	Director, Environment, Sustainability & Planning
System Owner:	Deputy Chief Executive, Operations, Customer & Place-making
Status:	Final
Version:	3.0
Date of issue:	27 November 2020

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The Planning Approval Consistency Assessment Form should be completed in accordance with SM-17-00000103 Planning Approval Consistency Assessment Procedure.

1. Existing Approved Project
Planning approval reference details (Application/Document No. (including modifications)): • SSI 10048 – Sydney International Speedway
Date of determination: • SSI 10048: 23 December 2020
Type of planning approval: • SSI (Division 5.2)

Description of existing approved project you are assessing for consistency:

Construction and operation of the Sydney International Speedway including:

- A new world-class clay-based racetrack for both speedway cars and motorcycles including sprint, wingless sprint, street stockers, V8 dirt modified and Formula 500 cars
- A new grandstand and terraced seating to accommodate up to 7000 spectators
- Public amenities, corporate boxes, food, beverage and merchandise outlets
- Dedicated parking for speedway competitors and spectators
- Additional overflow parking with flexibility to be used for dragway events
- Dual access to the precinct by creating new vehicle access to the speedway pit area via a new intersection built off Ferrers Road
- A dedicated competitor pit area to service the speedway
- Workshops, garages and trackside support services.

The approved project has dedicated parking for Sydney Dragway to replace the existing spectator parking areas which would form part of the Sydney International Speedway project site. A summary of the carparks at the site are as follows, with a figure shown in Appendix A:

- Carpark A – Speedway parking
- Carpark B – Competitor parking which forms part of the operational speedway site
- Carpark C – Sydney Dragway parking available for use by other motorsport operators by agreement
- Carpark D (D1 and D2) – Sydney Dragway parking available for use by other motorsport operators by agreement
- The Site is provided with access to the road network at Ferrers Road via the main existing intersection to the Site (Intersection 1) and via a new intersection to Ferrers Road at the southern end of the Site (Intersection 2). All public access to/from the car parks will be via Intersection 1, while all competitor access to Car Park B and the Pit Area will be an entry via Intersection 1 and departure via Intersection 2.
- An access road (termed the Southern Access Road) links between Car Park A and Car Park B and the Pit Area. With reference to the Environmental Impact Assessment, Southern Access Road has a width of 7.3 but provides only for one-way (southbound) movements.

The proposal would provide for the section of Southern Access Road between Car Park A and the Speedway staff parking, workshop and maintenance areas to allow for two-way movements for Speedway staff and emergency vehicles only. All competitor movements (and specifically departures) would remain via Intersection 2 in line with the Speedway Approval.

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Relevant background information (including EA, REF, Submissions Report, Director General's Report, MCoA):

- Sydney International Speedway Environmental Impact Statement including accompanying technical papers (August 2020)
- Sydney International Speedway Submissions Report (November 2020)
- Sydney International Speedway Amendment Report (November 2020)
- Instrument of Approval (dated 23 December 2020).

The above documents are available on the NSW planning portal here: https://www.planningportal.nsw.gov.au/major-projects/project/30111

All proposed works identified in this assessment would be undertaken in accordance with the mitigation measures identified in the EIS, Submissions Report and Amendment Report and the conditions of approval.

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2. Description of proposed development/activity/works

Summary of the proposal

The proposal subject of this Consistency Assessment would provide for two-way access for Speedway staff and emergency vehicles as required only in Southern Access Road, which runs along the western boundary of the Speedway site, during the operation of the Sydney International Speedway (the proposal). Details include:

1. The proposal would not require any change to the design profile/environmental footprint of the Southern Access Road. The section of Southern Access Road that would be subject of the proposal has been approved to provide a sealed road with a width of approximately 7.3 metres. The proposal would not require any changes to the design profile/environmental footprint of Southern Access Road, but rather simply provide changed line-marking, including a centre-line between Car Park A and the barrier gate to the competitors Pit Area so as to provide two-way access for Speedway staff and emergency vehicles as required only.
2. Two-way access would strictly be for Speedway staff and emergency vehicles as required only.
3. The provision of barrier gates at both the entrance to Southern Access Road from Car Park A, and at the southern end of Southern Access Road separating the competitor Pit Area, will ensure that two-way movements are provided for Speedway staff and emergency vehicles as required only
4. The provision of a ‘waiting bay’ in Southern Access Road south of Car Park A; this will allow northbound Speedway staff vehicles and emergency vehicles as required to wait in a location that would not impact the swept path of a large competitor vehicle turning into Southern Access Road from Car Park A. The waiting bay will be clearly marked on the carriageway (hatched) and signposted.
5. No members of the public will be permitted to either drive or walk within Southern Access Road at any time; this will be controlled by Speedway/Event staff controlling access to Southern Access Road during events, by a barrier fence and by No Access signage.

A detailed description and assessment of the Proposal is provided in the Revised Access Proposal Transport Assessment which is provided in Appendix A.

3. Timeframe

The proposal does not include any changes to the construction timeframes required for the approved project. The proposal would be in place for the duration of Speedway operations.

4. Site description

The Sydney International Speedway (SIS) is being developed on land owned by the NSW Government, managed by the Western Sydney Parklands Trust (WSPT).

No changes to the approved project area or the approved footprint of Southern Access Road are required for the proposal.

Refer to Appendix A for further details in regard to the proposal.

5. Site Environmental Characteristics

The proposal would be consistent with the approved project area as described in section 3 of the Amendment Report. The project is located within the Western Sydney Parklands which is managed by the Western Sydney Parklands Trust pursuant to the provisions of the *State Environmental Planning Policy (Western Sydney Parklands) 2009* (Western Sydney Parklands SEPP). The objective of the Western Sydney Parklands SEPP is to implement planning controls that will enable the Western Sydney Parklands Trust to develop the Parklands into a multi-use urban parkland for Western Sydney.

Refer to Appendix A for further details in regard to the proposal.

6. Justification for the proposed works

Southern Access Road as described in the Environmental Impact Assessment for the approved project would require Speedway staff to enter the staff parking and maintenance areas from Car Park A and the Southern Access Road, then depart the Site via Intersection 2. It has since been identified that Speedway staff would require access to all parts of the Site. Under the existing one-way design, Speedway staff would be required to undertake a significant round trip using sub-regional roads to return to the Site and enter via Intersection 1.

This is not a viable or sustainable access strategy for Speedway staff and emergency vehicles

The proposal would allow Speedway staff and emergency vehicles as required to travel both northbound and southbound in the section of Southern Access Road between Car Park A and the staff parking and maintenance areas, and the barrier gate to the competitors Pit Area. It is estimated that 5 - 10 northbound vehicle trips could be generated in Southern Access Road daily rather than 5 - 10 vehicle trips that would otherwise be generated to Intersection 2.

Refer to Appendix A for further details in regard to the proposal.

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7. Environmental Benefit

There is a need for Speedway staff to be able to efficiently access all parts of the Site on both event and non-event days. Restricting access for northbound movements in Southern Access Road for Speedway staff would require them to left out (only) of the Site at Intersection 2 and travel south along Ferrers Road to the Chandos Road roundabout and then return to the north to enter via Intersection 1.

As such, the Proposal would reduce Vehicle Kilometres Travelled (VKT) for staff, and in turn vehicle omissions. It would also provide significantly improved accessibility for emergency vehicles as required

Refer to Appendix A for further details in regard to the proposal.

8. Control Measures

Measures to ensure that Speedway staff and emergency vehicles as required only are permitted to use Southern Access Road for two-way movements include:

- Barrier gates at both the entrance to Southern Access Road from Car Park A, and at the southern end of Southern Access Road separating the competitor Pit Area such as to allow two-way movements for Speedway staff and emergency vehicles as required only
- Supervision of both barrier gates during events by Speedway/Event staff
- No Access (Vehicle and Pedestrian) signage at the entrance to Southern Access Road from Car Park A for members of the public
- A maximum posted speed limit of 20km/h in Southern Access Road (consistent with all internal roads and car parks across the Speedway site).
- The preparation and implementation of an overriding Traffic Management Plan that provides guidance in regard to the use of Southern Access Road for two-way movements for Speedway staff only.

Refer to Appendix A for further details in regard to the proposal.

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9. Climate Change Impacts

The Proposal would significantly reduce Vehicle Kilometres Travelled (VKT) for staff, and in turn reduce vehicle omissions, and as such provide benefits with regard to climate change.

Refer to Appendix A for further details in regard to the proposal.

10. Impact Assessment – Construction

Attach supporting evidence in the Appendices if required. Make reference to the relevant Appendix if used.

Importantly, construction works to support the proposal would be limited to line marking and the installation of access gates. No changes to the location and construction of the Southern Access Road are proposed. As such, no construction related impacts are anticipated.

Aspect	Nature and extent of impacts (negative and positive) during construction (if control measures implemented) of the proposed/activity, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
Flora and fauna	No change from the approved project.	No additional measures required.	Y	Y	
Water	No change from the approved project.	No additional measures required.	Y	Y	
Air quality	No change from the approved project.	No additional measures required.	Y	Y	
Noise vibration	No change from the approved project.	No additional measures required.	Y	Y	
Indigenous heritage	No change from the approved project.	No additional measures required.	Y	Y	
Non-indigenous heritage	No change from the approved project.	No additional measures required.	Y	Y	
Community and stakeholder	No change from the approved project.	No additional measures required.	Y	Y	
Traffic	No change from the approved project.	No additional measures required.	Y	Y	
Waste	No change from the approved project.	No additional measures required.	Y	Y	

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Aspect	Nature and extent of impacts (negative and positive) during construction (if control measures implemented) of the proposed/activity, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
Social	No change from the approved project.	No additional measures required.	Y	Y	
Economic	No change from the approved project.	No additional measures required.	Y	Y	
Visual	No change from the approved project.	No additional measures required.	Y	Y	
Urban design	No change from the approved project.	No additional measures required.	Y	Y	
Geotechnical	No change from the approved project.	No additional measures required.	Y	Y	
Land use	No change from the approved project.	No additional measures required.	Y	Y	
Climate Change	No change from the approved project.	No additional measures required.	Y	Y	
Risk	No change from the approved project.	No additional measures required.	Y	Y	
Other	No change from the approved project.	No additional measures required.	Y	Y	
Management and mitigation measures	No change from the approved project.	No additional measures required.	Y	Y	

11. Impact Assessment – Operation

Attach supporting evidence in the Appendix if required. Make reference to the relevant Appendix if used.

Aspect	Nature and extent of impacts (negative and positive) during operation (if control measures implemented) of the proposed activity/works, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
Flora and fauna	No change from the approved project.	No additional measures required.	Y	Y	
Water	No change from the approved project.	No additional measures required.	Y	Y	
Air quality	No change from the approved project.	No additional measures required.	Y	Y	
Noise vibration	No change from the approved project.	No additional measures required.	Y	Y	
Indigenous heritage	No change from the approved project.	No additional measures required.	Y	Y	
Non-indigenous heritage	No change from the approved project.	No additional measures required.	Y	Y	
Community and stakeholder	The Proposal has been discussed with both Sydney Metro and Western Sydney Parklands Trust who have both provided input in regard to the Proposal to ensure all potential impacts arising from the Proposal have been appropriately addressed and mitigated where required.	No additional measures required.	Y	Y	

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Traffic	The Transport Assessment provided in Appendix A specifically addresses the key characteristics of the proposal, including: • Potential safety impacts (Section 3.5) • Potential pedestrian impacts (Section 3.5.2 and Section 3.5.3) • Potential intersection operation impacts (Section 3.3) • Potential traffic benefits (Section 3.2.1 and Section 3.3) • Proposed impact mitigation measures (Section 3.5) It concluded that: • There is a need for Speedway staff (approximately 5 staff on non-event days) and emergency vehicles to be able to efficiently access all parts of the Site on both event and non-event days • The approved one way road means that vehicles would likely be via Chandos Road, Wallgrove Road, Great Western Highway Brabham Drive and then Ferrers Road to Intersection 1 which is inappropriate, unsustainable and problematic for emergency vehicles • Parking for Speedway staff is to be provided in the Staff Car Park north of, and separated from, the Pit Area and Car Park B. Event staff would park in the spectator car parks, therefore no parking impacts are anticipated • The minor trip redistribution arising from the Proposal would have no potential to impact the operation of the Site intersections (or broader road network) • All of the key intersections in the vicinity of the Site would operate at an acceptable Level of Service even during peak events at the Speedway (and during combined events with the Dragway) both mid-week and on weekends • the Proposal would have no impact on general access, safety or the operation of the Site intersections and broader road network • the provision for two-way movements for Speedway staff would be detailed in the Operational Traffic Management Plan for the approved project.	The overarching Operational Traffic Management Plan for the approved project will include the following traffic management measures in accordance with Appendix A: • Barrier gates • Holding bay • Supervision of key locations during events • Maximum speed limit of 20km/h in all internal roads and car parks • Appropriate signage and supervision to restrict access to the Southern Access Road by members of the public	Y	Y	

Aspect	Nature and extent of impacts (negative and positive) during operation (if control measures implemented) of the proposed activity/works, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
Waste	No change from the approved project.	No additional measures required.	Y	Y	
Social	No change from the approved project.	No additional measures required.	Y	Y	
Economic	No change from the approved project.	No additional measures required.	Y	Y	
Visual	No change from the approved project.	No additional measures required.	Y	Y	
Urban design	No change from the approved project.	No additional measures required.	Y	Y	
Geotechnical	No change from the approved project.	No additional measures required.	Y	Y	
Land use	No change from the approved project.	No additional measures required.	Y	Y	
Climate Change	The proposal would provide climate change benefits by reducing vehicle emissions, due to the reduction in the vehicle kilometres travelled by staff to access areas of the Speedway site.		Y	Y	

Aspect	Nature and extent of impacts (negative and positive) during operation (if control measures implemented) of the proposed activity/works, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
Risk	Impact and risk management measures are proposed in Appendix A. On the majority of days Speedway staff would be the only people on-site, while during an Event there are anticipated to be few if any Speedway staff vehicle movements in Southern Access Road. No members of the public would be provided with either vehicular or pedestrian access to Southern Access Road. During Events, Speedway/Event staff would be stationed at both the barrier gates to ensure access to the Southern Access Road is provided for competitors and Speedway staff only, and No Spectator Access (Vehicle or Pedestrian) signage will be prominently displayed at the intersection of Car Park A & Southern Access Road, and along Southern Access Road itself.	No additional measures required.	Y	Y	

Aspect	Nature and extent of impacts (negative and positive) during operation (if control measures implemented) of the proposed activity/works, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
Other	No change from the approved project.	No additional measures required.	Y	Y	

Aspect	Nature and extent of impacts (negative and positive) during operation (if control measures implemented) of the proposed activity/works, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
Management and mitigation measures	One additional mitigation measure as outlined above.	One additional mitigation measure as outlined above.	Y	Y	

12. Consistency with the Approved Project

Based on a review and understanding of the existing Approved Project and the proposed modifications, is there is a transformation of the Project?	No. The design profile and environmental footprint of Southern Link Road will be unchanged, and moreover the only time the small number of Speedway staff are anticipated to require two-way vehicle access will be on non-event days. On event days, it is estimated that there would be fewer than 5 northbound staff vehicle movements
Is the project as modified consistent with the objectives and functions of the Approved Project as a whole?	Yes. The proposal would be consistent with the objectives and functions of the approved project. The proposal would provide significant benefits with regard to vehicle kilometres travelled for Speedway staff, and in turn a reduction in vehicle emissions.
Is the project as modified consistent with the objectives and functions of elements of the Approved Project?	Yes. The changes identified in this assessment are consistent with the objectives and functions of the elements of the approved project. The proposal provides for more efficient access to all areas of the Site for Speedway staff and emergency vehicles as required.
Are there any new environmental impacts as a result of the proposed works/modifications?	No, but rather the proposal provides significant benefits with regard to vehicle kilometres travelled for Speedway staff, and in turn a reduction in vehicle emissions. No changes in the construction of the approved project are required, with the only works required to accommodate the proposal being changes to the line-marking in Southern Access Road
Is the project as modified consistent with the conditions of approval?	Yes, the proposal would be consistent with the conditions of approval.
Are the impacts of the proposed activity/works known and understood?	Yes, the impacts of the proposed works are understood and will be accounted for by implementing the control measures detailed in document.
Are the impacts of the proposed activity/works able to be managed so as not to have an adverse impact?	Yes, the impacts of the proposed works can be managed so as to avoid an adverse impact.

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13. Other Environmental Approvals

Identify all other approvals required for the project:	N/A

Author certification

To be completed by person preparing checklist.

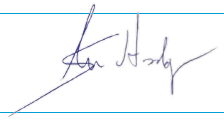
I certify that to the best of my knowledge this Consistency Checklist: • Examines and takes into account the fullest extent possible all matters affecting or likely to affect the environment as a result of activities associated with the Proposed Revision; and • Examines the consistency of the Proposed Revision with the Approved Project; is accurate in all material respects and does not omit any material information.			
Name:	Anton Reisch	Signature:	
Title:	Director		
Company:	arc traffic + transport	Date:	3/07/2021

This section is for Sydney Metro only.

Application supported and submitted by			
Name:	Yvette Buchli	Date:	01/09/2021
Title:	Associate Director Planning Approvals	Comments:	
Signature:			

Based on the above assessment, are the impacts and scope of the proposed activity/modification consistent with the existing Approved Project?

Yes	☒	The proposed activity/works are consistent and no further assessment is required.
No	☐	The proposed works/activity is not consistent with the Approved Project. A modification or a new activity approval/ consent is required. Advise Project Manager of appropriate alternative planning approvals pathway to be undertaken.

Endorsed by			
Name:	Stuart Hodgson	Date:	2 Spetember 2021
Title:	Director ESP Sydney Metro West	Comments:	
Signature:			

Appendix A

Please refer to attached P0214r2v2 Sydney International Speedway Amended Access Proposal Traffic Assessment for further detail in regard to the Proposal.

traffic + transport

Sydney International Speedway

Revised Access Proposal

Transport Assessment

for

Speedway Promotions Pty Ltd

Document Control

Project No: 0214

Project: Sydney International Speedway Southern Revised Access Proposal TA

Client: Speedway Promotions Pty Ltd

File Reference: P0214r2v4 Sydney International Speedway Revised Access Proposal TA

Revision History

Revision	Date	Details	Approved by
v1	20/07/2021	Draft 1	A. Reisch
v2	21/07/2021	Draft 2	A. Reisch
V3	30/07/2021	Draft 3	A. Reisch
v4	30/08/2021	Final 1	A. Reisch

This document has been prepared by arc traffic + traffic for the use of the stated Client only, and addresses the project specifically detailed in this document, and as such should not be considered in regard to any other project. This document has been prepared based on the Client's description of its requirements, information provided by the Client and other third parties. arc traffic + transport does not accept any responsibility for the use of or reference to this document other than intended by the stated Client.

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1 Introduction

1.1 The Speedway

A State Significant Infrastructure (**SSI 10048**) proposal for the Sydney International Speedway (the **Speedway**) was recently approved by the NSW Minister for Planning & Public Spaces in December 2020 (the **Speedway Approval**).

The former speedway site, located on Government-owned land at Clyde, was required to house the future stabling and maintenance facilities for the Sydney Metro West project. As such, the new Speedway is being constructed on land owned and managed by Western Sydney Parklands Trust (**WSPT**) east of Ferrers Road, Eastern Creek (the **Site**). The Speedway will provide:

- A new world-class clay-based racetrack for speedway cars including sprint, wingless sprint, street stockers, V8 dirt modified and Formula 500 cars;
- A new grandstand and terraced seating accommodating up to 7,000 spectators;
- Public amenities, corporate boxes, food, beverage and merchandise outlets;
- Dedicated on-site parking for speedway competitors and spectators; 2,200 dedicated dragway parking spaces and additional overflow parking for major dragway events;
- Dual egress from the precinct via a new southern exit from the raceway pit area via a new intersection to Ferrers Road;
- A dedicated competitor pit area to service the speedway; and
- Workshops, garages and trackside support areas.

Full details of the Speedway development are provided in the Speedway EIS.

1.2 Southern Access Road

The Southern Access Road runs along the western boundary of the Site, providing access between the Intersection 1 and key Site components in the southern portion of the Site, including:

- The competitor pit area (the **Pit Area**);
- The competitor car park (**Car Park B**);
- Administration offices;
- Works and maintenance buildings; and
- A small parking area for administration, works and maintenance staff.

Importantly, and with reference to the Speedway EIS, Southern Access Road is currently designated as a **one-way southbound** road, providing access **from** Intersection 1 **to** the southern portion of the Site through Car Park A.

1.4 Revised Southern Access Road Proposal

arc traffic + transport has been engaged by Speedway Promotions to examine the Speedway Conditions relating to the one-way restriction in Southern Access Road, as well as the access, traffic and safety characteristics of the proposed **provision of two-way access for Speedway staff and emergency vehicles as required only**.

The Proposal will not result in any material changes from the approved project; specifically:

- The Proposal does not provide for any changes to the existing access restrictions for competitors accessing the Pit Area and Car Park B;
- The Proposal does not provide any changes to the existing access restrictions for public movements (pedestrian and vehicle) in the Southern Access Road;
- The Proposal does not provide for any changes to the design profile/environmental footprint of Southern Access Road, and as such would have no impact on flora and fauna, noting that Southern Access Road location was previously changed (to its currently approved location) so as to minimise impacts on flora and fauna; and
- The Proposal provides significant impact mitigation measures to maximise the safety of all Speedway staff, competitors and spectators.

This Transport Assessment will accompany a Planning Approval Consistency Assessment Form, which will be submitted to Sydney Metro and Transport for NSW (**TfNSW**) for review and approval.

1.5 Assessment of the Proposal

arc traffic + transport has been engaged to prepared a Transport Assessment to examine the merits of the Proposal, with specific consideration of the Speedway Approval Conditions of Consent (**Speedway Conditions**) as well as broader access, traffic and safety issues arising from the Proposal.

1.6 Reference Documents

The following documents have been referenced in the preparation of this Transport Assessment:

- *Sydney International Speedway Environmental Impact Statement 2020*, prepared by the NSW Government and Sydney Metro (**Speedway EIS**);
- Sydney International Speedway Environmental Impact Statement Technical Paper 1: Traffic, Transport and Parking 2020, prepared by Jacobs (**Traffic Report**);
- Sydney International Speedway SSI Assessment Report 2020, prepared by DPIE (**Assessment Report**);
- Sydney International Speedway Submissions Report 2020, prepared by the NSW Government and Sydney Metro (**Submissions Report**); and

  State Significant Infrastructure 10048 Notice of Approval 2020, approved by the Minister for Planning and Public Spaces (**Speedway Approval**).

2 Approved Southern Access Road Operations

2.1 Amendment Report

Further to a review of the Speedway EIS submissions, the Amendments Report includes a number of controls relative to the operation of Southern Access Road between Car Park A and the Pit Areas (including Car Park B). Section 3.3.1 of the Amendments Report states the following:

Vehicle access to the main operational site as included in the Environmental Impact Statement was via a single connection to the existing roundabout located along the site access road. From the roundabout, the access road separates into two roads; one providing access to Carpark A, and one forming the internal one-way road along the western boundary of the main operational site, ***to provide access to the competitor pit area, Carpark B and the new left-only exit in the south of the main operational site****.*

Further design development since the preparation of the Environmental Impact Statement has included ***reconfiguration of the internal access road design to minimise the environmental impacts of this proposed amendments****, namely through a reduction in the amount of clearance of native, protected vegetation near the entry to the main operational site.*

All vehicles accessing the main operational site would continue to do so via a single connection with the existing roundabout along the site access road. However, all vehicles would then travel into Carpark A to either park (if visitors/spectators to the Sydney International Speedway), or would travel through Carpark A to access the internal access road via a gate at the western end of Carpark A ***to travel along the internal one-way access road along the western boundary of the project site to the competitor pit area, Carpark B and the new exit in the south***.

The Amendments Report does not suggest that the amendments to the Southern Access Road intersection to Car Park A, or the introduction on one-way southbound only movements in Southern Access Road, relate in any way to traffic or safety issues, but rather *to minimise the environmental impacts of this proposed amendments, namely through a reduction in the amount of clearance of native, protected vegetation near the entry to the main operational site.*

2.2 One-Way Movements

As discussed, the Speedway Approval (and final Speedway EIS documentation) provides for southbound arrival movements only in Southern Access Road for all vehicles travelling to the southern portion of the Site, and then departure movements to Intersection 2 only for all vehicles departing the southern portion of the Site.

arc traffic + transport acknowledges that limiting competitor vehicle movements in this way is appropriate, as generating heavy vehicle trips through Car Park A to depart the Site would likely have safety and general traffic movement impacts.

However, the application of the same southbound only restriction to Speedway staff using the Staff Car Park north of the Pit Area does not appear to have been given any separate consideration.

3 The Proposal

3.1 The Proposal

Speedway Promotions proposes allowing two-way movements in Southern Access Road between the Car Park A and Speedway staff parking, works and maintenance areas for Speedway staff and emergency vehicles as required. This will allow Speedway staff and emergency vehicles to access the northern part of the Site without being required to divert through the external road network.

The Proposal does not provide for any changes to the existing access restrictions for competitors accessing the Pit Area and Car Park B as detailed in the Speedway EIS and supporting documents, nor for any spectator access (vehicular or pedestrian) to be permitted in Southern Access Road.

Further to the above, and further to our consultations with Sydney Metro, arc traffic + transport has determined that the Proposal would have no impact on any other aspects of the Speedway Approval, including:

- Flora and fauna;
- Water;
- Air quality;
- Noise vibration;
- Indigenous heritage;
- Non-indigenous heritage;
- Waste;
- Social;
- Economic;
- Visual;
- Urban design;
- Geotechnical;
- Land use;
- Climate Change; or
- Risk

The proposed physical works to be provided in Southern Access Road as part of the Proposal are shown in the figures below, while further discussion of the measures proposed to minimise the potential impacts of the Proposal are detailed further in Section 3.5.

Figure 1: Access Amendment Proposal Northern Section

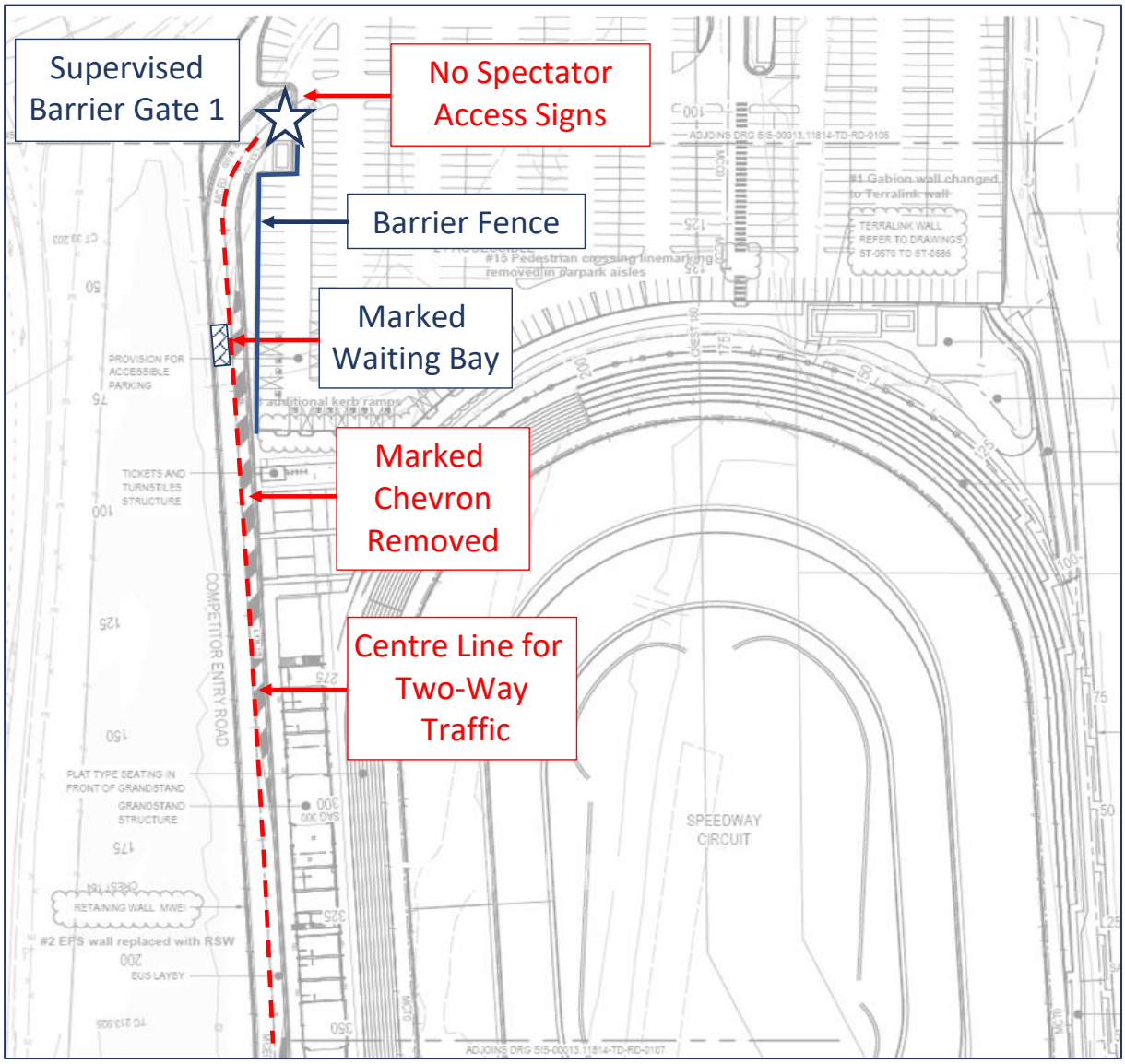


Figure 2: Access Amendment Proposal Central Section

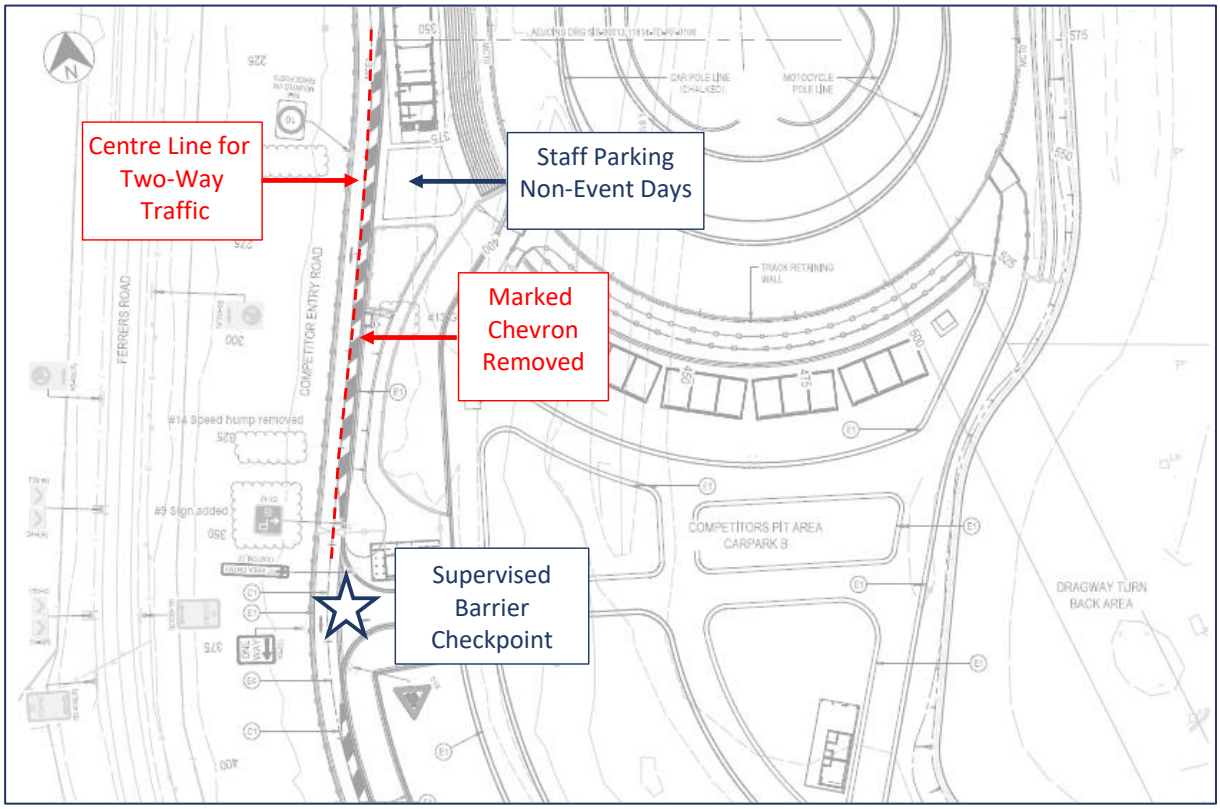
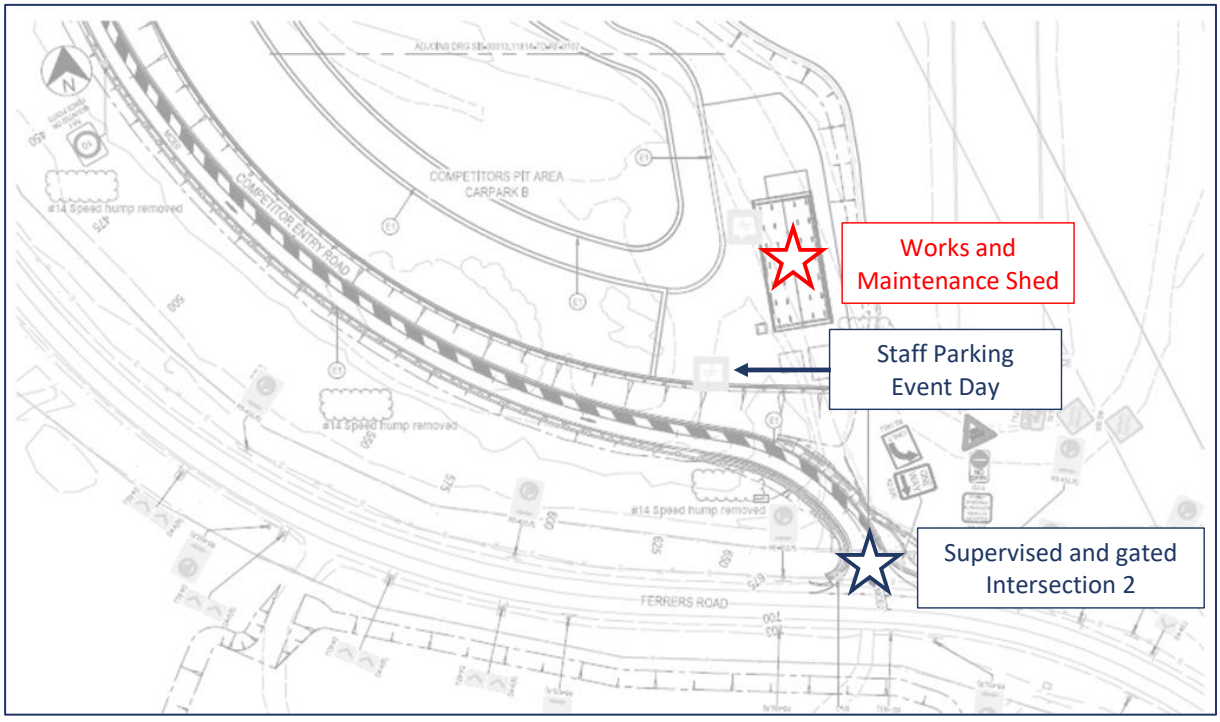


Figure 3: Access Amendment Proposal Southern Section



3.2 Speedway Staff Characteristics

3.2.1 The Need for Two-Way Speedway Staff Movements

There is a need for Speedway staff and emergency vehicles to be able to efficiently access all parts of the Site on both event and non-event days; restricting access for Speedway staff and emergency vehicles to left out only at Intersection 2 means that they would be required to depart the Site via Intersection 2 and then travel south along Ferrers Road to the Chandos Road roundabout and then return to the north to enter via Intersection 1.

Further, based on our recent work on the Horsley Drive Upgrade and numerous large industrial developments in the area, it is anticipated that the intersection of Ferrers Road & Chandos Road will be upgraded to a signalised intersection in the short-medium term. As such, the route to return to the Site would likely be via Chandos Road, Wallgrove Road, Great Western Highway Brabham Drive and then Ferrers Road to Intersection 1.

Such a route is patently inappropriate, unsustainable and with regard to emergency vehicles a potentially serious health issues, and as such the use of Southern Access Road for two-way movements by Speedway staff and emergency vehicles is supported, noting also that it would provide Speedway staff the opportunity to efficiently depart the Site to key roads to the north.

3.2.2 Speedway Staff Characteristics

- **Staff Numbers:** Based on information provided in Section 17.7.1 of the Speedway EIS (and confirmed by Speedway Promotions) it is estimated that an average of 5 Speedway staff would be on-site during a standard non-event weekday. These numbers would be augmented by additional Event staff during events, but these Event Staff will utilise the spectator car parks, not the Speedway staff parking area.
- **Working Hours:** On a standard non-event day, Speedway staff are anticipated to be on-site during normal business hours (generally 8:00am to 5:00pm). On an Event day, the hours for many Speedway staff would extend until the completion of an event, while additional Event staff would arrive during the afternoon prior to an event, and also then depart after the event.
- **Parking:** As discussed, parking for Speedway staff is to be provided in the Staff Car Park north of, and separated from, the Pit Area and Car Park B. Event staff would park in the spectator car parks.

3.3 Traffic Assessment

3.3.1 Speedway Traffic Report

Quite appropriately, the Traffic Report provides a detailed assessment of road network conditions based on the peak event operations of the Speedway (and of a combined event with the Dragway).

As such, there is no analysis of the potential impact of non-event Speedway operations on the road network; this is of course equally appropriate, given the very minor trip generation of the Site outside of event periods generated by Speedway staff and occasional visitor and servicing trip demands.

Notwithstanding, it is important to note that the Traffic Report determined that the Site intersections and indeed all of the key intersections in the vicinity of the Site would operate at an acceptable Level of Service even during peak events at the Speedway (and during combined events with the Dragway) both mid-week and on weekends. This provides a high degree of certainty in regard to the available capacity of these intersections, as discussed further below.

3.3.2 Trip Generation and Distribution

The trip generation of the Site during the AM and PM (commuter) peak periods is based on the number of Speedway staff working at the Site and their general arrival and departure times. In this regard, based on the Speedway staff characteristics outlined in Section 3.2.2, it is anticipated that the Site would generate up to 5 vehicle trips in both the AM and PM peak hours.

While all Speedway staff would arrive at the Site via Intersection 1, the Proposal would allow Speedway staff to also depart the Site to the north via Intersection 1, noting that Speedway staff departing to the south would likely use the more direct Intersection 2.

Based on the distribution profile provided in the Concept Report, approximately 60% and 40% of spectators trips are to/from the north and south respectively, and there is no information to suggest that Speedway staff would not have a similar distribution profile.

As such, it is estimated that 3 vehicles and 2 vehicles would arrive at the Site in the AM peak from the north and south respectively; and 3 vehicles and 2 vehicles would depart the Site in the PM peak to the north and south respectively.

This means that the only change to Site traffic arising from the Proposal is an additional 3 trips turning to the north at Intersection 1 during the PM peak, and 3 fewer trips travelling south at Intersection 2 in the PM peak.

3.3.3 Traffic Impacts

Clearly, the minor trip redistribution arising from the Proposal would have no potential to impact the operation of the Site intersections (or broader road network), which as discussed above have the capacity to accommodate the significantly larger peaks generated before and after events.

3.4 Access Design

3.4.1 Southern Access Road

Southern Access Road has a carriageway width of approximately 7.3m, more than adequate width to provide 2 traffic lanes (for two-way movement).

As heavy vehicles will be travelling southbound only to the Pit Area and Car Park B, the potential exists to provide a wider southbound lane (say, 4.0m) to better accommodate these large vehicles, which would still provide a more than appropriate width for the northbound lane.

It is again noted that the Proposal will not result in any changes to the design profile/environmental footprint of Southern Access Road, but only requires simple line-marking to indicate two-way movements through the provision of a marked centre-line, and the removal of the marked chevrons previously proposed in the Speedway EIS and supporting documentation.

3.5 Management Measures

A number of operational management measures will be implemented to ensure that movements between Car Park A and along Southern Access Road to both the Speedway staff parking, works and maintenance areas, and the Pit Area, are undertaken in the safest and most efficient manner possible.

3.5.1 Intersection of Car Park A & Southern Access Road

Speedway/Event staff will supervise the intersection of Southern Access Road & Car Park A through the entire duration of an Event, from the start of competitor arrivals until the Site is closed when all spectators and competitors have departed, to ensure than only authorised vehicles travel into the southern portion of the Site through the duration of an event.

3.5.2 Barrier Fence

A barrier fence is provided along the western boundary of Car Park A which restricts any pedestrian access between Car Park A and Southern Access Road.

3.5.3 Restricted Public Access

As discussed, no members of the public will be provided with either vehicular or pedestrian access to Southern Access Road. During Events, Speedway/Event staff will be stationed at both the barrier gates to ensure access to the Southern Access Road is provided for competitors and Speedway staff only, and No Spectator Access (Vehicle or Pedestrian) signage will be prominently displayed at the intersection of Car Park A & Southern Access Road, and along Southern Access Road itself.

3.5.4 Waiting Bay

The potential exists that larger competitor vehicles will require the use of the full width of the intersection Car Park A & Southern Access Road as they turn left from Car Park A to Southern Access Road.

As such, a waiting bay for northbound Speedway staff vehicles and emergency vehicles will be provided south of the intersection at a point where a larger vehicle has manoeuvred to be entirely within the southbound lane.

Based on the available plans, the sight distance between this waiting bay and the intersection (and indeed across Car Park A to the entry lane from the internal roundabout) is good, such that there is no potential for the northbound Speedway staff vehicle to conflict with an arriving vehicle.

We also note that on an Event day the intersection would be operating under the supervision of Speedway/Event staff so as to ensure that access to Southern Access Road is available to Speedway staff, competitors and emergency vehicles only. These staff would all be required to obtain the appropriate Traffic Controller qualifications, and as such also be able to supervise northbound vehicle movements and movements from the waiting bay in a safe and efficient manner.

3.5.5 Line-Marking

The Proposal provides for the removal of the chevron markings in Southern Access Road, and the provision of a new marked centre-line.

3.5.6 Internal Southern Access Road Checkpoint

Speedway/Event staff will supervise an internal checkpoint in Southern Access Road to ensure the separation of vehicles travelling to the Pit Area, and Speedway staff vehicles accessing the staff parking, works and maintenance areas. Speedway/Event staff at this checkpoint will also ensure that all competitors depart the Site only via Intersection 2.

3.5.7 Competitor Arrival Times

To the extent possible, all competitors will be required to arrive at the Site prior to the opening of Car Park A for spectator parking. One the rare occasion that a competitor arrives after Car Park A has opened, any large competitor vehicles (over 10.0m) will be required to use Intersection 2 to access the Pit Area and Car Park B. It is noted that only a small number of competitors are anticipated to arrive after the gates are opened to spectators, and as such there is little if any potential for vehicles entering via Intersection 2 to generate a queue in Ferrers Road.

4 Conclusions & Recommendations

4.1 Conclusions

Based on a detailed assessment of the Proposal, arc traffic + transport has determined that the Proposal would not result in any material changes from the approved project, and as such there is no need for a Modification or the like to implement the Proposal; rather, the provision for two-way movements for Speedway staff should simply be detailed in the future Operational Traffic Management Plan and other relevant Speedway management documentation.

In addition, arc traffic + transport has determined that the Proposal would have no impact on general access, safety or the operation of the Site intersections and broader road network.

4.2 Recommendations

To further maximise the efficiency and safety of vehicle movements in the Southern Access Road, arc traffic + transport provides the following recommendations, which have been agreed by Speedway Promotions:

- A speed limit of no more than 20km/h be provided in Southern Access Road.
- Northbound Speedway staff movements in Southern Access Road be limited to the extent possible during the competitor arrival peaks prior to an event.
- Speedway/Event staff supervision of the intersection of Southern Access Road & Car Park A to ensure than only authorised vehicles travel into the southern portion of the Site through the duration of the event.
- Speedway/Event staff supervision of an internal checkpoint in Southern Access Road to ensure the separation of competitor vehicles and Speedway/event staff, and to ensure that all competitors depart the Site only via Intersection 2.
- A requirement that to the extent possible, competitors arrive at the Site prior to the opening of Car Park A for spectator parking.
- A requirement that any large (over 10.0m) competitor vehicle arriving at the Site after the car parks are opened to spectators (anticipated to be at 3:00pm) will be required to use Intersection 2 to access the Pit Area and Car Park B. It is noted that only a small number of competitors are anticipated to arrive after the gates are opened to spectators, and as such there is little if any potential for vehicles entering via Intersection 2 to generate a queue in Ferrers Road.

With reference to the Conclusions and Recommendations outlined above, it is the opinion of arc traffic + transport that the provision of two-way access in Southern Access Road for Speedway staff and emergency vehicles only will not result in any material changes from the approved project, and is entirely supportable based on the existing Speedway Conditions, and further to our review of access, traffic and safety considerations.

Appendix M

Speedway Australia Racing Rules and Regulations

SPEEDWAY
AUSTRALIA

WE ARE AUSTRALIAN SPEEDWAY

RACING RULES & REGULATIONS

JULY 2021

WWW.SPEEDWAYAUSTRALIA.ORG

ABOUT US

SPEEDWAY AUSTRALIA'S MISSION STATEMENT

To provide unity, leadership, direction and growth as the recognised peak body of speedway racing in Australia by:

- Developing standards in safety, training, presentation and performance;
- Improving the profile and establishing a promotional image for the industry; and
- Co-ordinating, standardising & developing management skills at all levels.

SPEEDWAY AUSTRALIA'S CORE TASKS

- Licensing of competitors and tracks
- Complimentary insurance for competitors
- Public liability insurance for tracks
- Racing rules and personal safety equipment
- Track inspections and minimum operating standards
- Night of Champions: Australian Speedway Awards + Hall of Fame
- National Forum
- World Series Sprintcars
- Kids to Grids Junior Development Program
- Officials Training
- Grant Assistance and Operational Grants for venues

SPEEDWAY AUSTRALIA'S SCOPE OF OPERATIONS

- Adelaide based with 7 staff
- Offices in Sydney & Perth
- Not for profit organisation with a Committee of 9
- Licence 93 venues
- Over 15,000 licence holders
- Recognise 76 divisions

AFFILIATED ORGANISATIONS

- Nine National Divisional Bodies (e.g. SSA, SCCA, Speedcars Australia)
- State Divisional Bodies
- Australasian Speedway Promoters Association
- NSW Office of Sport

DUTY OF CARE STATEMENT

This Duty of Care Statement is to be read out to the Drivers at every Drivers' & Racing Officials Briefing before the start of any Race Meeting with no exceptions starting with the following introduction:

"My name is …… and I hold a current Speedway Australia Racing Officials card." (Hold up Racing Officials card **or phone app** for drivers to see)

It is my duty to advise you of the following;

- That motor racing can be dangerous; your equipment could be damaged or destroyed; and you may suffer serious personal injury or worse.

- If there is any aspect of this Race Meeting that causes you concern for your personal safety or for that of any member of your crew, whether that concern be with the Race Track, the venue or the manner in which the Race Meeting is being conducted it is your obligation to bring those concerns to the attention of the Clerk of the Course/Race Director or Chief Steward.

- If after doing this those concerns are not addressed to your satisfaction, you are advised to withdraw from this Race Meeting.

Does everyone understand his or her obligations and rights in this regard?

The Speedway Australia Drug and Alcohol Policy is also to be upheld and enforced*. If you have any doubts as to your ability to pass such a test with a negative or zero reading you should withdraw from this Race Meeting IMMEDIATELY.

Does anyone have any questions?

***At race meetings with SCCA divisions present the prior sentence is to be replaced with:-**

Either the Speedway Australia Drug and Alcohol Policy, or the SCCA Drug and Alcohol Policy will apply. However the SCCA Alcohol limit as per the SCCA Drug and Alcohol Policy is to be applied for SCCA conducted Sprintcar racing.

CONTACT DETAILS

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Postal Address:	PO Box 269 Stepney South Australia 5069
Phone:	08 8139 0777
Fax:	08 8363 7977
Email:	admin@speedwayaustralia.net.au
Website:	www.speedwayaustralia.org

08 8139 0777

WWW.SPEEDWAYAUSTRALIA.ORG

OUR FOCUS

As a not-for-profit organisation, Speedway Australia exists to meet the needs of our stakeholders in our favourite sport.

We are passionate about and committed to the entire speedway community, and the vast majority of our staff are speedway people who have got lucky by being able to enjoy their hobby on a full-time basis.

Similarly, our governance team is reflective of the speedway community with a broad range of experienced leaders who represent the entire country through geographic spread and representation of the groups who make up the sport.

Speedway Australia doesn't charge an affiliation fee, and works hard to which to offer most of our products and services at no cost to venue operators, clubs and divisional bodies.

Some of the services we offer at no cost include track inspections, officials training, this rulebook, Sport Development Officer assistance, COVID-19 advice and co-ordination, the Track Operators Manual, Safety & Operational Grants, Grant application assistance, the Rising Star Program, iRacing assistance, Fantasy Speedway and National title support.

Want to know more? Contact the office to be directed to the right person who can assist you.

All Sprintcar racing for SCCA registered Sprintcars in Australia will be conducted under the current SCCA Racing Rules, Regulations and Specifications book.

SCCA will enforce the Speedway Australia Pit Rules and Speedway Australia Occupational Health and Safety Rules at Speedway Australia affiliated venues where SCCA registered Sprintcar competitions is being conducted through SCCA and its State/Territory member clubs and other affiliate bodies.

The Speedway Australia Drug and Alcohol Policy is to be upheld and enforced for all except for SCCA conducted Sprintcar racing, where either the Speedway Australia Drug and Alcohol Policy, or the SCCA Drug and Alcohol Policy will apply.

More Information: 410ci and 360ci Sprintcars

Email:	secretary@sprintcarsaustralia.com
Website:	scca.com.au
Rules:	Technical Specifications & Racing Rules
SCCA on	Facebook

More Information: Wingless Sprints

Email:	secretary@awsr.com.au
Website:	www.awsr.com.au
Rules:	Technical Specifications
AWSR on	Facebook

Email: office@speedwaysedans.com
Website: www.speedwaysedans.com
SSA on: Facebook

Speedway Sedans Australia Technical Specs:

Junior Sedans
National 4's
Street Stocks
Modified Sedans
Production Sedans
Super Sedans

Email: amcanationals@gmail.com
Website: www.amcanationals.com.au
Rules: Technical Specifications
AMCA Nationals on Facebook

Email: g.mbaxter@bigpond.com
Website: formula500.com.au
Rules: Technical Specifications

Website: v8dirtmodifieds.com.au
Rules: Technical Specifications
Dirt Modifieds Australia on Facebook

Email: modlitesaustralia@outlook.com
Website: www.modlitesustralia.com.au
Rules: Techincal Specifications
Visit Modlites Australia on Facebook

Email: secretary@skaa.org.au
Website: www.skaa.org.au
Rules: Technical Specifications
Visit SKAA on Facebook

Email: speedcarsaus@gmail.com
Website: speedcarsaustralia.com/
Rules: Technical Specifications
Speedcars Australia on Facebook

Email: avcsnb@outlook.com
Visit Australian Vintage/Classic Speedway on Facebook

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WHAT THE TEXT COLOURS MEAN

Dark Green text indicates new rules or changes in March 2019
Red text indicates new rules or changes in July 2019
Purple text indicates new rules or changes in December 2019
Blue text indicates new rules or changes in September 2020
Green text indicates new rules or changes in April 2021
Maroon text indicates new rules or changes in July 2021

Affiliated Association
An association or organisation which Speedway Australia recognises as an affiliated association and includes all associations managing the Racing Divisions endorsed by Speedway Australia that are included on the web site www.speedwayaustralia.org and listed under "National Racing Divisions".

Appellant
A person aggrieved by a decision under these rules, who seeks to appeal that decision in accordance with Part 8 of these rules.

Basic Tools
Battery operated drill, bolt cutters, cable ties, chisels, crowbars, hacksaw, hammers, race tape, reciprocating saw and tin snips.

Baulk Line
Has the definition described under Appendix 4 – Rule Variations, SKAA Karts.

Chief Scrutineer
The person appointed Chief Scrutineer of a Race Meeting in accordance with rule 5.4 of these rules.

Chief Steward
The person appointed as the Chief Steward of a Race Meeting in accordance with rule 5.2 of these rules.

Chief Steward Report
The report required to be completed and submitted to the Track Operator by the Chief Steward at the end of every Race Meeting in the form set out at Section 12.

Clerk of the Course/Race Director
The person whose duties are set out in rule 5.7 of these rules.

Club
An organisation with the main purpose of providing services for its members who participate and or have an interest in the sport of speedway.

Competitor
A Participant that is competing at a Race Meeting, including a Driver, Pit Crew Member and Race Car Owner but excluding an Official.

Day Licence
A licence which allows a Driver to compete for one single event.

Defendant
Has the meaning ascribed to it under rule 7.1.1 of these rules.

Disciplinary Tribunal
The tribunal established under rule 8.1 of these rules.

Disqualification/Exclusion from Event
These are interchangeable terms meaning that a Competitor is excluded from particular Race results and is not entitled to any points or prize money in respect of that Race.

Drivers'/Racing Officials Briefing
A meeting of Drivers conducted by the Chief Steward to be held prior to every Race Meeting in accordance with rule 5.3 of these rules.

Driver's Representative
The person whose duties are set out in rule 5.11 of these rules.

Driver
The holder of a Licence to drive in an Event.

Event
Any Race, time trial, qualifying, hot lap, warm up, practice or other programmed session involving one or more Race Cars or any combination of the foregoing and includes scrutineering of Race Cars for such sessions.

Finish Line
Where transponders are used the position of the transponder loop determines the finish line and this line extends from the outer edge of the Race Track to the edge of the Infield. Where transponders are not used the finish line will be determined by the Chief Steward.

Host Club
A Club or Affiliated Association that conducts a Race Meeting. Within the case of an Event which is run by Speedway Australia (e.g. World Series Sprintcars) the Host Club shall be Speedway Australia.

Infield
The area inside the Race Track.

Infield Official
An Official who officiates in the Infield.

Infringement Card
A card which the controlling body of a Racing Division may require competing drivers to hold and to keep with their Licence for the purpose of recording breaches of these rules and other infringements.

Infringement Notice
A written notice served by the Chief Steward or nominee on any Licence Holder to notify the Licence Holder of an offence punishable by Disqualification, a fine and/or a period of Suspension including any directive that the Licence Holder is to be brought before the Disciplinary Tribunal.

Judges of Fact
Judges of Fact shall comprise of the following:
a) A person or persons nominated by the Host Club conducting the competition;
b) The Promoter appointed noise measurement officer; and
c) The Host Club or Chief Scrutineer.

Junior Driver
A Driver who holds a valid Junior Licence.

Junior Licence
Licence issued to Drivers who must be over 10 years and under 17 years at the time of application.

Lap Sheets and Charts
The official record of the positions of each Race Car on each lap of the Race taken at the Finish Line.

Log Book
Issued as part of the Race Car registration process and is used to record information of the Race Car and any identified defects requiring corrective action.

Licence
A licence issued by Speedway Australia to a person to enable that person to take part in Events after the required fees have been paid.

Licence Holder
A person who holds a current Licence.

Mandatory Appearance Offences
Has the meaning ascribed to it under rule 7.7.2 of these rules.

Nomination
An application made by a Driver to the organiser of a Race Meeting by which the Driver agrees to take part in a specific Event, usually involving the payment of a nomination fee.

Official
Any person with a speedway officials licence who is nominated to act in an official capacity at a Race Meeting.

Participant
Any person who participates in a Race Meeting in any capacity whatsoever including without limitation a Driver, Pit Crew Member, Race Car Owner and Official.

Pit Crew Member
Any person who is actively involved with a particular race car and team at a race meeting.

Pit Marshall
The person nominated and responsible for marshalling the pit area.

Pits
The restricted area of the Speedway Complex for the assembly of Race Cars and tow vehicles.

Plea Bargain
An agreement in which the Tribunal Chairperson and the defendant arrange to settle a charge of misconduct against the defendant for an agreed penalty, in exchange for a guilty plea.

Pole Line
Determined by cement kerb, gutter, line mark, or other distinct marking at inner edge of the Race Track and the commencement of the Infield.

Prohibited Substance
Any drug or substance which has been deemed to be prohibited by Speedway Australia including, without limitation, the drugs and substances listed in rule 6.3.1.

Promoter
The person or organisation promoting the Race Meeting or Event.

Race
A competition between Race Cars in which the order of finishing is the factor determining the result.

Race Car
A motor vehicle which complies with the class specifications of the controlling body for the particular Racing Division being raced at the Race Meeting.

Race Car Owner
A person who has an ownership interest in a Race Car, either directly or through an entity such as a company or trust.

Racing Division
A category for Race Car as determined by the class specifications.

Race Meeting
A series of Events held at a Race Track which is deemed to begin two hours before the scheduled time of the first Event, or at the time scrutineering commences (whichever is earlier). It includes all programmed Events and is deemed to conclude thirty minutes after the finish of the last Event on the

scheduled program or at a time after this as instructed by the Chief Steward or Promoter.

Race Secretary
The person whose duties are set out in rule 5.9.

Race Track
The designated area for speedway racing at the Speedway Complex between the Pole Line and safety fence.

Registration Decal
Proof of the registration of a Race Car by an Affiliated Association or other controlling body approved of by Speedway Australia for this purpose which is issued when a Race Car is registered and must be attached to a prominent but protected location on the Race Car.

Respondent
Any party to a decision under these rules who is in opposition to the appeal of that decision. If the Appellant is a Competitor the respondent will be the person/body who is responsible for issuing the decision against which the Appellant is appealing.

Rolling Start
A Race start in which the participating Race Cars are rolling under their own power at a regulated speed towards the Starting Line.

RSA
Racing Sedans Australia Inc.

Senior Licence
A Licence in any Speedway Australia licence category except for a Junior Licence. The Licence Holder must be over 16 years of age.

SCCA
Sprintcar Control Council of Australia Inc.

SSA
Speedway Sedans Australia.

SSAC
Has the meaning ascribed to it under rule 3.3.2 of these rules.

Scrutineer
A person approved by Speedway Australia or an Affiliated Association to act as a scrutineer or technical officer and whose duties are set out in rule 5.5 of these rules.

SKAA
Speedway Kart Association of Australasia.

Speedcar
A Race Car which complies with the relevant technical specifications to be a Speedcar as set out by the relevant controlling body of that Racing Division.

Speedway Appeal Tribunal
The tribunal established under rule 8.2 of these rules.

Speedway Australia
NASR Incorporated.

Speedway Complex
The venue at which a Race Meeting is conducted, including the Race Track, Infield, Pits, public areas and car parks and any place where scrutineering for the Race Meeting is conducted.

Sprintcar
A Race Car which complies with the relevant technical specifications to be a Sprintcar as set out by the relevant controlling body of that Racing Division.

Starting Line
As designated by the Chief Steward between turn four and the Finish Line.

Steward
An Official who has been designated as steward for the purpose of a Race Meeting and who has passed any necessary training.

Suspended Sentence
A penalty which is suspended subject to satisfactory completion of a "good behaviour bond" for a specified period of time. If the conditions of the bond are breached, the relevant Tribunal may determine whether the full penalty must be served and, if the breach involves a further breach of the rules, the Tribunal may impose an additional sentence for that offence. If the bond is completed without further breach, the sentence is not required to be served.

Suspension
A specific period of Disqualification given for a breach of these rules or the specifications, which may or may not include Disqualification and the suspension of the relevant person's Licence, applicable retrospectively.

Tribunals
The Disciplinary Tribunal and the Speedway Appeal Tribunal.

Tribunal Chairperson
The person appointed as the chairperson of the Disciplinary Tribunal or the Speedway Appeal Tribunal (as applicable).

Vintage Vehicle (V Class Licence)
Any vehicle that does not qualify to race & has been retired from racing at speedway tracks, complies with the relevant vintage vehicle member club specifications and is registered with that club.

Wingless Sprint
A Race Car which complies with the relevant technical specifications to be a Wingless Sprint as set out by the relevant controlling body of that Racing Division.

1.1 COMPLIANCE AUTHORITY

1.1.1 Speedway Australia shall be the authority for the interpretation of, and compliance auditor for, these rules and regulations, referred to from here as 'these rules'. At any Race Meeting, this authority is delegated to the Chief Steward.

1.1.2 A Racing Rules Advisory Committee, consisting of representatives of National competitor groups, and the Speedway Australia National Council, has the responsibility for the review of these rules and the presentation of recommendations to the board of Speedway Australia for approval of changes.

1.1.3 It is the responsibility of each Participant to have a copy of and be familiar with, all relevant rules and regulations. By participating in a Speedway Australia sanctioned Race Meeting, each Participant is deemed to understand and to have agreed to comply with and be bound by these rules to the exclusion of all others, except where supplementary regulations approved for a specific Event pursuant to rule 1.4 may take precedence.

1.2 DISCLAIMER

1.2.1 These rules are designed to provide for the orderly conduct of Race Meetings, (including time trials and practice Events) and to establish minimum acceptable standards for such Race Meetings.

1.2.2 No expressed or implied warranty of safety shall result from any publication, enforcement or compliance with these rules, nor any variation or deviation of these rules pursuant to rule 1.3, nor any supplementary regulations approved pursuant to rule 1.4 and such enforcement and/or compliance is in no way a guarantee against injury or death to any Participant, be they a Driver, Pit Crew Member, Race Car Owner or, Official, or any other spectator or person whatsoever.

1.2.3 Neither Speedway Australia, any Affiliated Association, Club, Promoter, Official (acting in any capacity whatsoever), or any other Participant shall be liable to any prosecution or action for anything done pursuant to these rules, nor liable for any death, injury, loss or damage arising by any alleged failure to implement these rules at a Race Meeting.

1.3 VARIATION OR DEVIATION FROM THESE RULES

1.3.1 At any Race Meeting, the Chief Steward shall be the only person empowered to permit or direct any reasonable variation from any of these rules, or to impose any further restrictions that in his or her opinion do not compromise safety nor alter the minimum acceptable standards as may be required in order to expedite the conduct of the Race Meeting. The Chief Steward must have regard to the guidelines for penalties provided in these rules or associated publications referred to in these rules (if any).

1.3.2 Neither Speedway Australia nor any Affiliated Association, Club, Promoter or Official, using or varying these rules, shall be liable to prosecution or to any action for damages for breach of contract or to an injunction order or any judgement of a court at the instance of any Participant or any other person admitted to a Speedway Complex or for anything.

1.4 SUPPLEMENTARY REGULATIONS

1.4.1 Supplementary rules and regulations, referred to from here as 'supplementary regulations', required for any Event not covered by these Rules (such as a long distance, championship, or feature Event) must be submitted by the Promoter of the Event to the State Executive of the relevant Affiliated Association at least 30 days prior to the Event to allow time for approval and publication on the nomination or entry forms.

1.4.2 Supplementary regulations may cover such items as pit stops and Infield refuelling and must demonstrate the manner in which existing safety provisions will not be compromised.

1.4.3 The State Executive or National Executive of the relevant Affiliated Association has the right to approve or reject all or part of the supplementary regulations included in the submission and may stipulate added safety precautions.

1.4.4 The submission must list the date(s) of the Event, the name of the Event and the promotional body who will be responsible. It must also list the supplementary regulations, why they are required and demonstrate the benefit(s) of such supplementary regulations.

1.4.5 Following the relevant State Executive approval, the details of any supplementary regulations must be included with any nomination or entry forms for the special Event and must be reiterated at the Drivers' Briefing.

1.4.6 If the supplementary regulations are endorsed by the State Executive, approval will be forwarded within 14 days of the application, clearly stating the date(s) of the Event, the name of the Event and a full list the supplementary regulations and an approval number for the Event.

1.4.7 In the event of extraordinary circumstances (such as a rainout or postponement) the State Executive reserves the right to alter the supplementary regulations in writing and distribute them to all Participants.

1.5 SUPERSEDED RULES

1.5.1 Adoption of these rules shall take precedence over any and all pre-existing rules that pertained to speedway racing previously conducted or regulated by Speedway Australia or other governing or regulatory body in Australia.

1.5.2 Such precedence shall not affect or change:

a) The previous operation or interpretation of any rule so annulled or superseded; or

b) Any right, privilege, obligation or liability acquired, accrued or incurred pursuant to any rule so annulled or superseded; or

c) Any penalty or Disqualification previously incurred in respect of any offence committed against any rule so annulled or superseded.

2.1. NOMINATIONS

2.1.1. The Promoter, Speedway Australia or other relevant organising bodies has the right to refuse any Nomination.

2.1.2. A Driver cannot nominate more than one Race Car for the same Racing Division at the same Race Meeting or nominate for two separate Race Meetings scheduled for the same date. A Driver may however practice in more than one Race Car at the same Race Meeting, or compete in another Race Car in another Racing Division.

a) For all events/race meetings, nominations/late nominations will be deemed to have closed at the conclusion of scrutineering. Applicable to driver or car. **Formula 500 – Refer Appendix 5, 2.1**

2.1.3. Any driver proven to have nominated for two separate race meetings scheduled for the same date, as per Rule 2.1.2, shall be liable for a fine of up to $500. The fine is to be issued by the Steward in control of the "non-attended" race meeting, within seven days, as per Rule 7.1.2.

2.1.4. At Race Tracks where Drivers are required to nominate, any Driver who is a late nomination or arrives at a Race Meeting with the intention of competing without nominating may be subject to a late nomination fee. The Driver may also be required to start at rear of field during any heat Races. For qualification into any Main/Final/Feature event, the nominated driver must have competed in at least one (1) qualifying event.
SSA - Refer Appendix 3, 2.1

2.2. LICENCES

2.2.1 All Drivers participating in any Event must be in possession of a current Licence in the relevant Racing Division and hold an Infringement Card (where applicable) that is free of unpaid fines and/or current Suspensions. All Officials participating in any Race Meeting must also be in possession of a current Licence.

2.2.2 If a person competes in a Race Meeting and subsequent to that Race Meeting it is confirmed that the person did not at the time of the Race Meeting have a Licence to drive in the Racing Division in which the person raced they shall be disqualified from that Race Meeting, suspended for three months (suspension begins from date of licence renewal) and fined $500; or

a) If a person officiates at a Race Meeting as an Official and subsequent to that Race Meeting it is confirmed that the person did not at the time of the Race Meeting have a Licence or was not accredited as an Official, they shall be fined $500.

b) If a person submits a fraudulent medical form, they will be unable to obtain a licence for 6 months.

2.2.2. Speedway Australia provides Licence categories ranging from Sprintcar Drivers (AA Licence) to Junior Mechanics (JM Licence). The definition of these categories is available from the web site (www.speedwayaustralia.org) under "Licencing", and then "Licence Categories".

2.2.3. An Infringement Card (where applicable) must be appended to each Driver's Licence and may include one day licences. Upon service of an Infringement Notice, the Chief Steward must fill in the Driver's Infringement Card. (relevant for categories with infringement cards).

2.2.4. Junior Licences are issued to Drivers from:

i) 5 years of age for JDJQMA licence holders

ii) **6 years of age for WA Outlaw Karts**

iii) 7 years of age for SKAA Juniors **& Derby Sliders**

iv) 10 years of age for Junior Sedans & F125 Juniors

v) **12 years of age for Junior Formula 500's**

(a) All juniors must be under 17 years of age, at the time of applying for their licence, subject to State Government requirements.
Exception: SSA Junior Sedans, effective 1 July 2022; All competitors must be under 16 years of age at the time of applying for a SSA Junior Sedan licence.

(b) If a Junior Licence is obtained at the age of 16 years old, the holder is eligible to finish the season on the junior licence, even if they turn 17 during the season.

2.2.5. Only persons 16 years or older may apply for a Senior Licence.

2.2.6. Once a Junior Driver has graduated to a Senior Licence category and races with a Senior Licence that Driver is ineligible for further competition as a Junior Driver.

2.2.7. Junior Drivers are not permitted to compete against Senior Drivers.

2.2.8. A Junior Licence holder is required to have a parent or guardian, who holds an Annual Speedway Australia Licence, with them whilst at a Race Meeting. These licences will be offered as a "non-competitive" licence.

a) No Junior Competitor will receive prize money from competing in a junior event.

b) Parents/Guardians need to sign a release form allowing for photos/videos to be taken of their children while competing under a Junior Licence.

2.2.9. Licences and Infringement Cards must be available for inspection by the Chief Steward, Scrutineer, Race Secretary or other authorised Official.

2.2.10. Any Driver receiving payments under any workers compensation scheme or benefits from any accident insurance policy is only permitted to compete if a recognised medical practitioner has provided a medical clearance.

2.2.11. Drivers receiving medical treatment shall produce a medical certificate stating that they are medically fit to compete before a Licence will be issued in accordance with Speedway Australia's Licensing Policy.

2.2.12. Whether through an accident, or for any other reason, a Driver is considered unfit to continue racing, the Chief Steward, after consulting with ambulance or paramedic personnel, may order that the Driver not compete for the remainder of the Race Meeting and the Driver shall not be allowed to compete for the remainder of the Race Meeting. Drivers receiving medical treatment shall produce a medical certificate stating that they are medically fit before being permitted to compete in any Event.

a) Any driver involved in an accident that the Chief Steward deems serious, will be subjected to a health check by ambulance/first aid personnel. This will be at the discretion of the Chief Steward and the driver involved will not compete further at the race meeting until such time as the health check is carried out.

b) (i) When a competitor is diagnosed with concussion by a Doctor or Medical Officer the stand-down period from racing is a minimum of 12 days, commencing from the date of the injury.

(ii) Where an Official or member of the track medical team has reason to believe that concussion or unconsciousness has occurred, the stand-down period from racing is a minimum of 12 days, commencing from the date of the injury.

(iii) In either case above a written medical clearance on the approved form is required prior to the resumption of racing. This is to be obtained from a recognised concussion clinic or the doctor who completed the competitor's most recent medical examination, as per their licence application.

(iv) A competitor diagnosed with concussion can apply to the Speedway Australia Office to have their stand-down period reduced. They will be required to provide detailed information (on the approved form) from a recognised concussion clinic or from the doctor who completed their most recent medical examination, as per their licence application.

(v) The stand-down period referred to in clauses (i) and (ii) is to be confirmed by the Steward of the Race Meeting issuing an Infringement Notice.

2.2.13. A Driver participating in any Event must have the following items at the Race Track to be allowed to participate:
   a) A current Speedway Australia Licence and an Infringement Card (if required by relevant division);
   b) A current registered Race Car;
   c) A current Log Book for that Race Car;
   d) Safety apparel complying with the relevant Racing Division specifications;
   e) Access to a current Australian Speedway Racing Rulebook download; and
   f) A current class specification book or download.

2.2.14. A passenger (as approved in some classes) must also have items (a), (d), and (e).

2.2.15. In the event of items (c) or (e) being unavailable at the Race Meeting, due to extenuating circumstances only, a temporary issue form for those items must be completed before being allowed to compete. These forms are available from the Race Secretary or Pit Marshall and must be forwarded to the secretary of the relevant Affiliated Association or other controlling body with the nominated fee.
Sprintcars – Appendix 1, 2.2
SKAA - Refer Appendix 4, 2.2

2.2.16. **Log books**
Logbooks are issued to Officials when they receive their Licences. These log books should be used to record training courses attended and also record Race Meetings where the Official participated.

2.2.17. **A One Day Licence** will only be available for open competition for Junior, SSA, B, E, V, **SKAA** and A and AA Class Sedans licenced Racing Divisions.
   a) One Day Licences are not available for 'AA' or any other 'A' class licence not listed above.
   b) One Day Licences are available for non-racing activity for all Racing Divisions (i.e. Mechanic's Days, Practice Days, Promotional/Sponsor Days).
   c) Only two One Day Licences can be purchased per Competitor per season for competition purposes. After the 2 Licences have been used the Competitor needs to upgrade to a full licence.
   d) One Day Licences are issued by Speedway Australia's national office. The details of the Speedway Australia One Day Licence Policy are available from our website under "Licensing".

2.2.18. Speedway Australia may at its sole discretion, refuse to issue or may revoke or suspend a Licence to an applicant including, without limitation, if the applicant:
   a) Does not comply with any of the rules, regulations or policies issued by Speedway Australia; or
   b) Does not properly or accurately complete an application for a Licence or does not meet all the requirements stated in the application.

2.3. NEW DRIVERS

2.3.1. New Licences will only be issued to Drivers that have passed the Speedway Australia medical examination and any theoretical Driver's examination as required by Speedway Australia's or the relevant association's Licensing Policies.

2.3.2. Drivers competing in their first Race Meeting will be required to start rear of field and continue to do so until the Chief Steward clears them to start in the field.

2.3.3. Chief Stewards are required to view a Driver's Licence and endorse the Infringement Card, if applicable, before the Driver can start in the field.

2.3.4. Upon receipt of a One Day Licence a prospective new Driver may practice with licensed Drivers at official practice sessions.

2.4. JUNIOR RACING

2.4.1. Clubs, Associations, Promoters and Speedway Venues cannot allow any Junior Events (practice or racing) to commence after 11.00pm.

2.4.2. Junior Drivers are permitted to participate in a Grand Parade.

2.4.3. Junior Drivers are permitted to "track pack", however they must not be on the track at the same time as any senior licence holder.

Please refer to Rules 2.2.5 through 2.2.8 for specific details relating to Junior Licence Holders.

3.1. RACE CAR REGISTRATIONS AND LOG BOOKS

3.1.1. All Race Cars competing in Speedway Australia sanctioned Race Meetings or Events must be registered by an Affiliated Association or other controlling body approved by Speedway Australia for this purpose.

3.1.2. Upon registration, a Log Book must be issued for each Race Car. The Log Book must remain with that Race Car for the racing season. Upon sale of a Race Car the Log Book will transfer with the Race Car to the new Race Car Owner. Log Books are not transferable between Race Cars.

3.1.3. A lost Log Book can be replaced by presenting an application form, with the appropriate fee where required, to the secretary of the Affiliated Association or other controlling body which issued the original Log Book.

3.1.4. Before competition, registered Race Cars must have a Registration Decal affixed in a prominent but protected location on the Race Car, such decal clearly showing the period of validity of the registration.

SKAA - Refer Appendix 4, 3.1.1 thru 3.1.4

3.1.5. All entries in Log Books for repairs must be completed prior to the next Race Meeting unless otherwise stated.

3.1.6. Log Books will be checked at scrutineering for validity and outstanding work orders. If the Log Book is presented with work orders outstanding, the Driver will be given the option of fixing the faults. If the Driver opts not to fix the faults, the Race Car concerned will not be cleared to race. The Log Book will be retained by Officials and forwarded to the secretary of the Affiliated Association or other controlling body which issued the Log Book.

3.2. RACE CAR COMPLIANCE

3.2.1. All Race Cars shall comply with the specification requirements of the relevant Affiliated Association or other controlling body. These bodies shall be the sole authority for Race Car compliance, and also should provide recommendations on actions or penalties in relation to Race Car non-compliance to the Chief Steward. The Chief Steward must have regard to the guidelines for penalties provided in these rules or

associated publications referred to in these rules (if any) when imposing penalties for non-compliance.

3.2.2. Prior to the commencement of each racing season and at any other time that the relevant Affiliated Association or other controlling body may direct, the Race Car Owner of every Race Car shall submit his Race Car and safety equipment for inspection at a time to be decided by the relevant Affiliated Association or other controlling body.

3.2.3. SSA – also Refer Appendix 3A

3.3. PROTECTIVE CLOTHING AND SAFETY EQUIPMENT

3.3.1. Drivers participating in any Event at a Race Meeting or official practice, must wear all approved safety equipment and protective clothing complying with the Speedway Australia minimum standards for safety apparel for the relevant Racing Division. Any other person entering the Race Track or Infield must, at all times while on the Race Track or Infield, wear high visibility clothing where applicable, or other specified safety apparel. These requirements may be relaxed for grand parades and Driver presentations, as may be authorised during the Drivers' Briefing or by the Chief Steward.

3.3.2. Speedway Australia has established a Speedway Safety Advisory Committee (**SSAC**) which researches, investigates and provides recommendations on speedway related safety matters. The SSAC has developed safety apparel standards for speedway Drivers, which have been approved by the board of Speedway Australia. The minimum standards for safety apparel for the various racing Divisions are presented at Annexure D – Minimum Speedway Safety Standard for Apparel.

3.3.3. At any Race Meeting or Event, the minimum requirements are (for practice sessions for Sprintcars & Speedcars, Refer to Rule 3.3.10):

a) Regular Race Meeting standard quantity of fire extinguishers and fire crew

b) Race Meetings and official practice sessions require:

i. A minimum of two first aid personnel (paramedics, ambulance service, doctor or qualified first aid personnel);

ii. A station wagon capable of transporting minor injury cases; and

iii. An appointed person equipped with an operative mobile phone and supplied with the phone number of the nearest road transport ambulance service.

3.3.4 It is compulsory that an approved State Service road going ambulance is present at all Sprintcar Race Meetings and is highly desirable at all other Race Meetings.

3.3.5 The local ambulance service must be notified of the holding of a Race Meeting or practice on that day.

3.3.6 A designated person (e.g. Chief Steward) is to be clearly in control of all activities on the day.

3.3.7 All Participants, including Officials and Pit Crew Members are to sign a "Release and Waiver of Liability / Assumption of Risk and Indemnity Agreement" form prior to entering the Pits.

3.3.8 All Participants must understand that in accordance with their duty of care, the choice is clearly theirs if they decide to participate under the conditions that exist at the time.

3.3.9 For any private practice or training session not covered under Rule 3.3.3 and 3.3.10, the minimum safety requirements are two persons other than the Driver, a suitable fire-extinguisher with the use of which they are familiar, an industrially acceptable first aid kit and a serviceable telephone.

3.3.10 For all Sprintcar Drivers, minimum safety requirements for practice are:

1. A minimum of two paramedic personnel or persons with a current first aid certificate issued by St John Ambulance Australia;
2. Suitable trained, attired and equipped fire fighters;
3. A station wagon or vehicle capable of transporting minor injury cases;
4. An appointed person equipped with an operative mobile phone and supplied with the phone number of the nearest road transport ambulance service;
5. The local ambulance services to be notified of the holding of a practice on that day;
6. A designated person (e.g. Chief Steward) to be clearly in control on the day;
7. Recommended only one Sprintcar to be on the Race Track at one time;
8. All Drivers and Pit Crew Members to sign an Insurer's Sprintcar Practice Waiver/Indemnity form and to be clearly informed the emergency provisions may not be to the standards of Race Meetings; and
9. All Participants must understand that the choice is clearly theirs if they decide to participate under the conditions that prevail.

REFER ALSO TO SCCA RULE 5.19 FOR FURTHER 360, 410 AND WINGLESS SPRINT REQUIREMENTS

3.3.4. At any time, all Drivers, Race Car Owners and Pit Crew Members will dress in a clean and tidy manner. Open footwear is not permitted in the Pit during a Race Meeting.

3.3.7. In accordance with the Speedway Australia Track Operators Manual a set of pit rules have been implemented for use during sanctioned Race Meetings. These rules are provided in Section 3.7

3.4. MIRRORS AND COMMUNICATION EQUIPMENT

3.4.1. No rear or side view mirrors or highly polished panels intended for this purpose are permitted on any Race Car.
Exceptions: **RSA Fender Benders Division 1 & 2 and QLD Stockcars.**

3.4.2. One-way in-car communications is permitted only from the Chief Steward (or his delegated Official) to the Driver.

3.4.3. The use of one-way in-car communications is compulsory for all National Speedway divisions and is strongly recommended for all other Racing Divisions. At the discretion of the Chief Steward a rear of field penalty may apply for non-compliance.

3.4.4. No additional communication equipment, including mobile phones, is permitted to any Driver in a Race Car on the Race Track. A minimum penalty of 12 months suspension will apply to any Driver and Race Car Owner (where the Driver is not the Race Car Owner) if found guilty of using an unauthorised communication device.

3.4.5. In car cameras must be securely mounted and may only be used as evidence for a tribunal/appeal if accepted by the Chief Steward or tribunal. Any in car camera can only be mounted on a helmet if the helmet manufacturer guidelines allow it.

3.5. NOISE CONTROL

3.5.1. The maximum level of noise that may be emitted by a Race Car is 95 dB (decibels).

3.5.2. The measurement and monitoring of noise levels is the sole responsibility of the Promoter of the Race Meeting and shall be conducted according to the latest Local, State or Federal Government guidelines, as applicable. Race Officials shall give full support to noise control monitoring procedures undertaken by the Promoter.

3.5.3. A Race Car may be disqualified from a Race for exceeding maximum permissible noise levels, but will always initially receive a noise flag warning. If they continue to exceed the noise level requirements a black flag will be shown. Failure to obey the black flag will result in a penalty in accordance with rule 4.17.2.
SSA, RSA and AMCA - Refer Appendix 3, 3.6

3.6. MINIMUM VENUE FIRE SAFETY STANDARDS

The following fire safety standards are the minimum requirements for speedway venues at race meetings.

3.6.1 Manned Quick Response Vehicle

One quick response vehicle manned with 2 fire marshals & parked on the infield with the following:

a) 6x ABE 9kg Powder Fire Extinguishers
b) 4x ATC Foam/Cold Fire (or equivalent) 9 Litre extinguisher
c) 1x 9 Litre Water Fire Extinguisher
d) 1x Jaws of Life Combination Tool (if possible)

3.6.2 Infield Fire Marshals

Two fire marshals at either end of the infield with:

a) 1x ABE Powder Fire Extinguisher
b) 1x ATC Foam/Cold Fire (or equivalent) 9 Litre extinguisher

3.6.3 Pit Fire Marshal

One fire marshal in the pits (manning the pit return road) with:

a) 1x ABE Powder Fire Extinguisher
b) 1x ATC Foam/Cold Fire (or equivalent) 9 Litre extinguisher

3.6.4 Protective Clothing

It is recommended all fire marshals should be in full protective clothing i.e. ISO Fire Suits or FIA/SFI-rated race Overalls/gloves/balaclavas, lace up leather footwear with an AS/NZS safety rating, along with protective eye and ear protection.

3.7 PIT HEALTH AND SAFETY (FORMERLY SECTION 18)

The following are the rules which should apply to the Pits. Any breach of these rules by the Driver or one of their Pit Crew Members may result in exclusion of the Driver from the Pits and racing and may also result in further action from the Officials.

3.7.1 Alcohol & Drugs

There is to be no drinking of alcohol either at least 12 hours before or during the Race Meeting and glass containers must not be used at any time in the Pits.

a) No intoxicated persons or persons under the influence of drugs are allowed in the Pits or Race Track area.
b) Smoking is not permitted in the Pits with the exception of designated areas.

3.7.2 Dress Code

Minimum dress requirements are shorts, short sleeved shirt or t-shirt and covered shoes. Open shoes must not be worn in the Pits. For people working on Race Cars in the Pits shorts should cover knees.

3.7.3 **Axle stands** must be used at all times if a person is working under a Race Car.

3.7.4 Any **fuel** brought into the Pits must be stored in an approved container.

3.7.5 **Vehicle Speed:** Cars (including Race Cars) in the Pits must be driven at a speed not exceeding a reasonable walking pace at all times.

3.7.6 **Quad Bikes**

a) Quad bikes must only ever be ridden at a speed not exceeding a brisk walking pace within the Speedway Complex.

NOTE: For SKAA Speedway Karts, 3.7.6(a) does not apply when push starting from the pits. Instead a clearly defined hot area (rope barriers etc), set as the shortest practical distance from pit to track i.e. directly in front of chute/track entry gate. The official in charge of the pit gate is to ensure that the area is completely clear before giving the call to start a race.

b) A person riding a quad bike or any vehicle with handlebars (regardless of vehicle having a roll cage), must wear a helmet complying with AS1698 as minimum standard (may be open face helmet). Drivers of all other vehicles must wear a seatbelt, however if there is no seatbelt present, a helmet must be worn.

c) Quad bike riders must hold an Adult Speedway Australia Mechanics, Officials or Competition Licence.

d) Passengers: No riding on Race Cars or additional people on quads; only riders permitted on quads.

3.7.7 **Children in the Pits**

Children under the age of 16 years are not permitted in the Pits. The exceptions are:

a) Children aged 12 to 15 years who possess a Speedway Australia Licence and/or Personal Accident Insurance; and

b) Children aged **5-11** years who possess a Speedway Australia licence and/or Personal Accident insurance and are actively competing in the race meeting.

3.7.8 **Push starts**

a) No push starting of Sprintcars, Wingless Sprints, Speedcars or any class of Race Car with or without a clutch in any part of the Pits.

b) Drivers must have permission from Pit Marshall or Race Director for push starts on Race Track prior to and during Race Meetings.

3.7.9 **Arrival of safety equipment**

Minimum standards for fire and first aid response must be in place before engine starts.

3.7.10 **Scrutineering**

All Race Cars must be scrutineered prior to practice or racing.

3.7.11 **Safety Gear**

Full racing safety gear must be worn for all engine starts, practice and racing including helmets, clothing, gloves, neck collar and all belts must be tightened.

3.7.12 Chain of Command

a) Drivers and Pit Crew Members must follow directions of Official and fire and ambulance personnel at all times.

b) Any person having problems in the Pits should bring them to the attention of the Pit Marshall immediately.

3.7.13 Injuries

Any person who has been injured at Race Meeting must report the incident to the Race Secretary on the day of the Race Meeting.

3.7.14 Abusive behaviour or misconduct is not to be tolerated and any incident must be reported to the Chief Steward immediately.

3.7.15 Withdrawals

Cars that have withdrawn from racing should advise the Pit Marshall as soon as possible.

3.7.16 Fire Extinguishers

All speedway teams (except SKAA Karts) are required to carry as a minimum in the pit area/transporters:

a) A 2.0kg Dry Chemical Powder Extinguisher OR GREATER. It must strictly be used with the following compliance points:

b) The fire extinguisher is compliant with AS (Australian Standard) 1841.5 and carries the Australian Standards Tick Certification sticker on the body of the extinguisher. AS1841.5 pertains to (powder extinguishers) design and commissioning standard.

c) The standard AS/NZS1841.1 also is stamped on the bottom or rim of the Extinguisher under the powder coat or paint. AS/NZS1841.1 pertains to (General Requirements) for Design, and Commissioning Standard.

d) The extinguisher must carry a yellow date tag in accordance to AS1851 section 15.

e) Other types of fire extinguishers that will comply to this ruling are:

- 9 Litre AFFF Foam extinguishers, AR or ATC type.
- 9 Litre Cold Fire extinguishers.

All of the above information was taken from AS1851-2005 (maintenance of fire protection systems and equipment) Australian Standard Professional Pack.

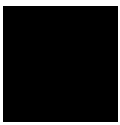
NOTE: SKAA Karts are exempt from Clause 3.7.16. above

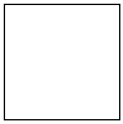
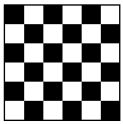
4.1 FLAG, LIGHT AND BOARD SIGNALS

4.1.1. All flags shall be a minimum of 600mm x 600mm. Stripes on flags shall be 80mm wide and spots shall be 300mm in diameter.-

4.1.2. All Race Meetings conducted at night must have serviceable green, yellow and red lights. These lights shall be used in addition to green, yellow and red flags.

4.1.3. The following light and flag signals will be used for all Racing Divisions:

	GREEN LIGHT and FLAG Start, or restart of Event, or Event is in progress
	YELLOW LIGHT and FLAG Caution - hold position at reduced safe speed
	CROSSED YELLOW and GREEN FLAGS Field to form up for a start or a complete restart
	RED LIGHT and FLAG Stop immediately and do not go past accident scene or cut across Infield - while exercising due caution
	BLACK FLAG with WHITE DIAGONAL STRIPE Warning - due to rule infringement. Driver is subject to enquiry from Chief Steward and may be penalised for infringement(s)
	**BLACK FLAG** Disqualification - Driver to withdraw from Event using caution whilst doing so

	BLACK FLAG with WHITE SPOT Mechanical defect - Driver to retire to infield, using utmost caution
	YELLOW FLAG with BLACK DIAGONAL STRIPE Noise flag - Driver may continue to race, but if noise level remains high, black flag will result
	YELLOW FLAG with RED DIAGONAL STRIPE Fire Flag – Drivers to withdraw from the race immediately in the safest practical manner.
	BLUE FLAG with YELLOW SPOT Lapping flag – Race Car is soon to be lapped. Lapped Race Car to hold line and not impede lapping traffic
	**WHITE FLAG (or light)** One lap to go
	**BLACK AND WHITE CHEQUERED FLAG** Finish of Event - reduce speed gradually

4.1.4. Where any confusion is possible as for which Race Car a flag signal is intended, the flag should be shown in conjunction with a board showing the Race Car number and where possible through the use of one-way communications.

4.1.5. In conjunction with flag signals, the following signboard signals may be shown:

- REAR OF FIELD or ROF - together with a Race Car number to avoid confusion;
- COMPLETE RESTART - for a restart in accordance with rule 4.12;
- SINGLE FILE RESTART - for a restart in accordance with rule 4.13.

4.2. DIRECTION OF RACING

The direction of racing is anticlockwise for the majority of Racing Divisions, however where applicable, the direction of racing will be determined by the supplementary regulations for the relevant Racing Division.

4.3. DUMMY GRID LINE UP

4.3.1. Race Cars should take up their correct position on the dummy grid ready to race before entering the Race Track. The Pit Marshall will close up any spaces left by any scratching by moving Race Cars forward in their rows.
SSA – Refer Appendix 3, 4.3.1
Formula 500 - Refer Appendix 5, 4.3.1

4.3.2. Any Driver whose Race Car is not positioned on the dummy grid and has notified the Pit Marshall, may be given two minutes to have their Race Car ready at the gate to go on to the Race Track. The two minute time commences when all the Race Cars in the Race are on the Race Track and moving.
SKAA – Refer Appendix 4, 4.3.2

4.3.3. No work or adjustment can be carried out on a Race Car while it is on the dummy grid. Any Race Car requiring any work or adjustment must be taken from the dummy grid and returned to the Pits. The driver may be disqualified from that event if not adhered to.

4.3.4. Once the Race Cars are on the Race Track, prior to the start of a Race and there is a withdrawal then the Race Cars move straight forward to fill the gap.

4.4. PUSH STARTS

4.4.1. Each Race Car is allowed one push start without penalty before the initial Race start and a push restart following any red light/flag stoppage where the incident did not involve that Race Car, and the car stopped due to the red light, or the Race Car was an innocent party in the stoppage.
Sprintcars - Refer Appendix 1, 4.4
Speedcars - Refer Appendix 2 4.4

4.4.2. For all Race Cars, when a Race Car is receiving a push start, if that Race Car does not start within one lap then the Race Car must be shown the mechanical defect flag and directed onto the Infield.

4.5. RACE STARTS

4.5.1. Drivers are responsible for knowing their grid positions and maintaining these positions until the green light/flag. Any Race Car that delays the start of a Race by more than two minutes will go rear of field. Any Race Car still not ready by the time the green is shown will be excluded from the Race.
SSA – Refer Appendix 3, 4.5.1

4.5.2. If a Race is to be gridded up using a pace car, once the pace car is established on the Race Track, no Race Car may pass the pace car (either on the Race Track or by running across the Infield) for the purpose of chasing and joining the field. Offending Drivers will be subject to a $100 fine. The correct method is to slow down and allow the field to catch up, and then merge into position.

4.5.3. When the field is formed up and a start is imminent, the yellow lights and flags will be switched off and withdrawn, during the first half of the final roll-up lap.

4.5.4. The Starting Line may be represented by a white line placed across the circuit at a location to be determined by the Chief Steward between turn 4 and the Finish Line. At a point determined by the Chief Steward (approximately mid-track), a white T line can be positioned which will intersect the Starting Line, running parallel to the circuit fence. These lines will be identified to the Drivers prior to the start of each Race.

4.5.5. The Race Car starting from position one will be the pole Race Car.

4.5.6. The Race Car starting on pole must pass beneath the T line and the Race Car starting on the outside of the front row must pass outside of the T line. Any Driver starting in the first row who crosses this T line will be shown the warning flag for the first offence and will go rear of field for the second offence.

4.5.7. The pole Race Car determines the speed of the start, but must bring the field to the acceleration zone at a constant moderate pace. The acceleration zone is defined as the zone between the exit of turn four (which may be marked by a white line) and the Finish Line. As the pole Race Car reaches the acceleration zone, or somewhere within this zone, the green light/flag will be shown.

4.5.8. A start will not be aborted, but if the Chief Steward declares a 'no start', the yellow light/flag signal will be given after about half a lap, and the field will be required to carefully slow down and grid up again.

4.5.9. Where time trials are used to determine starting positions in heat Races any Race Car that is unable to do a lap in time trials will automatically start rear of field in the heat Races for that Race Meeting.

4.5.10. Any Driver not taking their time trial in the correct time trial order has the option of completing one lap at the end of the time trial, with 11th the best possible qualifying position.

4.6. STARTING OPTION

4.6.1. In Race formats where the highest point scorer starts the feature Race on pole, the highest point scoring Driver may be given the option of starting in either the inside or outside position of the front row.

4.6.2. The option given to a Driver under rule 4.6.1 must be exercised prior to the Race Cars forming up on the dummy grid. There will be no change to any other starting positions.

Sprintcars – Refer Appendix 1, 4.6

4.7. BREAKING FORMATION OR JUMPING THE START

4.7.1. All Drivers must hold their correct positions and not accelerate until the green light/flag is shown. Any Race Car, including the pole Race Car, that breaks formation or jumps the start will be shown the warning flag or advised per their race receiver for the first offence and will go rear of field for the second offence. A car that baulks or slows down will also be considered to have broken the start.

4.7.2. If a Race Car breaks formation or jumps the start from within the field, but the Chief Steward wishes the Race to continue, the warning flag will be shown to the offending Driver and the Driver may be penalised. If the jumped start enabled Race Cars to be passed unfairly, the Driver will be put back two positions for each Race Car so passed. This penalty will be applied at the next stoppage, or if no stoppage, will be applied in the results.

4.8. RECKLESS OR DANGEROUS DRIVING

4.8.1. Except for specific Racing Divisions (fender benders, etc.), speedway racing is a non-contact sport. No Driver shall ever allow his or her Race Car to make deliberate, reckless or negligent contact with any other Race Car or driven dangerously either in roll-up laps, during the Event, after the Event or in the Pits.

4.8.2. Unless directed by an Official, any Driver who drives his or her Race Car at speed on the Infield will be considered to be driving dangerously.

4.8.3. Any Driver driving contrary to rules 4.8.1 and 4.8.2 will be excluded from the Race. For serious offences the Driver could also be subject to an Infringement Notice. As it is not possible to be certain whether contact between Race Cars has been deliberate, and so that it cannot be argued in a Driver's defence

at a dispute hearing or a subsequent appeal, an Infringement Notice relating to reckless or negligent driving will not use the word 'deliberate'.

4.8.4. Any driver who accelerates their vehicle in a manner that instigates a break in traction, whilst the race is under caution (Yellow Flag/Light) may be penalised as per Rule 4.8.3. The Chief Steward and/or Clerk of Course/Race Director are the sole authority to allow permission to be in breach of this Rule.

4.9. PASSING

4.9.1. Any Driver who intends to overtake (pass) another Race Car, must first be reasonably sure that the passing move is possible without making contact with the other Race Car and then must execute the move as cleanly as possible.

4.9.2. Any Driver who becomes aware that another Race Car is making a passing move must not change line so as to inconvenience the passing Race Car, nor deprive that Race Car of adequate space on the Race Track. However, unless the Race Car being passed is a lapped car, there is no obligation for this Race Car to facilitate the passing move, the only obligation being not to change line in such a way that is intended to impede or to make the passing move more difficult.

4.9.3. If the Chief Steward believes that any passing move has been made contrary to rules 4.9.1 or 4.9.2, the offending Driver will be subject to a warning flag. This applies to both a Driver trying to pass and a Driver trying to impede the pass. Any Driver who makes gains by careless passing will be penalised two positions for each Race Car passed. This penalty will be applied at the next Race stoppage, or if no stoppage, will be applied in the results of the Race.

4.9.4. No Driver shall put any wheel on the Infield (below the Pole Line) when racing and in particular when to attempting a passing move. Any Driver who uses the Infield to pass another Race Car will be put back two positions for each Race Car passed. This penalty will be applied at the next Race stoppage, or if no stoppage, will be applied in the results of the Race.
Sprintcars – Refer Appendix 1, 4.9.4

4.9.5. If a Driver persistently breaches rule 4.9.1, 4.9.2 or 4.9.4, a rear of field penalty will be applied at the next Race stoppage, or if no stoppage, applied in the results of the Race. At the Chief Steward's discretion an offending Driver may be disqualified.

4.9.6. A summary of offences which will give rise to a loss of positions are listed in Annexure C of the Penalties Guideline, Part 4.

4.10. RACE TRACK RE-ENTRY

4.10.1. Any Driver who loses control to the Infield or who otherwise leaves the Race Track for any reason and wishes to re-join the Race may do so only with the utmost care and consideration for the safety of other Drivers. To avoid conflict, Race Cars must re-enter the Race Track at the most acute angle possible and re-entry on corners should be avoided.

4.10.2. If the Chief Steward believes that any Race Track re-entry has been careless or reckless, the Driver will be subject to a warning flag, a rear of field penalty or Disqualification and/or a fine, depending on the severity of the offence.

4.11. RACE INCIDENTS AND STOPPAGES

4.11.1. Following a crash or incident for which the Chief Steward orders yellow caution lights and flags, all Race Cars not directly involved in the incident must slow down to a safe speed and hold their position.

4.11.2. Any Race Car that passes Race Car(s) while rolling around the race Track under yellow lights may be subjected to being put back two positions for each Race Car passed.

4.11.3. Following a more serious crash of a Race Car rolling over or if an ambulance appears necessary the Chief Steward will order red lights and flags to stop the Race.

4.11.4. Once the red light/flag has been instigated, all Drivers will bring their Race Cars to an immediate safe stop. They are not to pass the accident scene or drive across the Infield past the accident. Any Driver failing to stop may incur a minimum fine of $100 and/or be sent to the rear of the field for the restart and may be disqualified from that Event and or Race Meeting.

4.11.5. Any Race Car stopping due to a red light, but not involved in the incident and not judged to be a contributing cause will be reinstated in the restarting order, regardless of whether a push start is required (although such a push start is subject to rule 4.4).
SSA – Refer Appendix 3, 4.11.5

4.11.6. Any Race Car judged by the Chief Steward to be the absolute and sole cause of any stoppage will go to the very rear of field in the restart, regardless of whether the Race Car stopped and regardless of whether other Race Cars required a push start.
Lightning Sprints – Refer Appendix 7, 4.11

4.11.7. If the Chief Steward is unable to determine the primary cause of an incident, or judges more than one Driver to be at fault, two or more Race Cars may be sent rear of field, with the Race Car suspected of being most at fault placed at the very rear. This is to

be applied regardless of whether any particular Race Car stopped or required a push start.

4.11.8. Any Driver considered by the Chief Steward to have been the primary cause of two stoppages in the same Race may be disqualified from that Race.

4.11.9. Any work on Race Cars during a yellow or red light stoppage may be carried out pursuant to rule 4.26 of these rules.

4.11.10. Any Race Car/Kart involved in an incident, but judged by the Chief Steward to be completely blameless, unless a Sprintcar, Wingless Sprint or a Speedcar requiring a push start, will be reinstated in the starting order.

4.11.11. Any Driver who fails to obey any signal or direction given by the Chief Steward or an Official appointed by the Chief Steward may be subject to a fine up to $1,000 and/or suspension up to 12 months and/or Disqualification.

4.12. COMPLETE RESTARTS

4.12.1. If a first lap stoppage has no obvious cause, except for too many cars/karts on the same area of Race Track, the Chief Steward may order a complete restart with no rear of field penalties applicable, except for Sprintcars, Wingless Sprints and Speedcars where push starts are required.

4.12.2. Once the race has started no Driver may switch cars.

4.12.3. If a stoppage occurs before the last running car has completed one full lap, a complete two wide restart (or three wide if applicable for a particular division) will be ordered with grid positions as for the initial start, but modified by exclusions and Race Cars sent rear of field. If there are any Race Cars not taking their original starting position then the Race Cars move straight forward to fill the gap.

4.12.4. Any Race Car being penalised with a rear of field penalty will restart at the rear of the longest row.
Late Model titles – Refer Appendix 3C, 4.12.5

4.13. SINGLE FILE RESTARTS

4.13.1. If a stoppage occurs after the last running Race Car has completed at least one full lap, a single file restart will be ordered, with the starting order as for the previously recorded complete lap, but modified by exclusions and Race Cars sent rear of field.

4.13.2. For single file restarts a cone marker will be located at the Finish Line. The cone should be placed approximately mid track ensuring that there is sufficient room between the cone and the fence for Drivers to safely pass the cone while accelerating.

4.13.3. Any Driver refusing to accept the restart position directed by the Officials will be shown a warning flag for the first refusal, will be sent rear of field for the

second refusal and will be disqualified for the third refusal in any one Race.

4.13.4. Laps under the caution flag will not be counted on lap score sheets.

4.13.5. When the single file is correctly formed up and a start is imminent, the yellow lights will be switched off and flags withdrawn. The lead Race Car determines the speed of the start, but must bring the field to the cone marker at a constant moderate pace. As the leader reaches the cone marker, the green light/flag will be shown.

Lightning Sprints – Refer Appendix 7, 4.13

4.13.6. As the leader Race Car approaches the cone, no passing move may be commenced until the cone is passed. Any Race Car that jumps the start, drives in part or wholly beside another vehicle, hits the cone or passes it on the inside or passes another Race Car before the cone will be sent rear of field at the next stoppage, or if no stoppage, applied in the results of the Race.

SSA – Refer Appendix 3A, 4.13.6

Late Models – Refer Appendix 3C, 4.13.6

4.13.7. A Race Car that has not completed a recorded lap of the Race after any restart shall not re-join the Race at a later stage, including if the Driver was shown a mechanical defect flag.

4.13.8. If a Race is stopped with one lap remaining the restart will be run over two laps (i.e. green, white, chequered).

4.13.9. If at a restart, a Race Car has either of the outside tyres flat, the relevant Driver will be shown the mechanical defect flag (see 4.25).

Sprintcars - Refer Appendix 1, 4.13

4.14. WARNING FLAG

4.14.1. Any Driver who is judged by the Chief Steward during a Race to be driving in an overly aggressive manner, to have made careless contact with any other Race Car, to have changed line to impede a passing move or any other act of driving contrary to these rules, will be warned by one-way radio and/or warning flags.

4.14.2. If confusion is possible, the Race Car number will be shown with the flag.

4.14.3. Having received a warning flag, if a Driver continues to drive in a careless or contrary manner and receives a second warning via a warning flag or through their race receiver, the Driver will be either sent rear of field, or at the Chief Steward's discretion may be given the black flag. The rear of field penalty will be applied at the next stoppage, or if no stoppage, applied in the results of the Race.

4.15. REAR OF FIELD

4.15.1. Any Driver who is shown the rear of field board (or instruction via receiver) during a Race stoppage must follow that instruction and go to the rear of the line up in the restart. If any confusion is possible, the Race Car number will be shown with the rear of field board.

4.15.2. When a Race Car on the lead lap goes to the rear of the field, it goes to the rear of the line-up which includes lapped Race Cars but will remain on the lead lap.

4.15.3. If more than one Race Car is sent rear of field, cars which either caused an incident or breached a racing rule, will be placed at the very rear. If more than one car is sent rear for these reasons, the cars will either be placed in their previous race order (at the very rear) or in an order determined by the Chief Steward.

Race Cars sent rear of field due to needing a push start only, will start at the rear, but in front of the other Race Cars which were deemed to have caused an incident or to have breached a racing rule.

4.15.4. Any Driver who refuses to go rear of field when ordered will be disqualified and shown the black flag (see 4.17).

4.16. REAR OF FIELD OFFENCES

A summary of offences for which a Driver may be sent to the rear of field are listed in Appendix 8 - Penalties Guideline.

4.17. BLACK FLAG

4.17.1. Any Driver who is shown the black disqualification flag, either during the Race or at a Race stoppage must immediately and safely withdraw from the Race. If any confusion arises, the Race Car number will be shown with the flag.

4.17.2. Any Driver who fails to comply with a black flag disqualification order or refuses to leave the Race Track when ordered will be served with an Infringement Notice. The minimum penalty for failure to comply with a black flag is a $300 fine and/or a one month Suspension.

4.17.3. Any Driver who continues to ignore the black flag will be fined an additional $100 per lap and/or the Driver and Race Car will be disqualified from the Race Meeting. The maximum penalty for failure to comply is a $2,000 fine and/or suspension of 2 years.

4.17.4. Any Driver who elects to dispute an Infringement Notice served due to their refusal to accept the

black flag can only dispute the refusal to accept the black flag. The Driver will be unable to dispute the incident that originally led to the black flag or use any aspects of that incident as a defence in the dispute hearing.

4.18. BLACK FLAG (DISQUALIFICATION) OFFENCES

A summary of offences for which a Driver may be shown a black flag, are listed in Appendix 8 - Penalties Guideline.

4.19. DROPPING OF DEBRIS

4.19.1. Any Race Car that drops any body part, suspension component or other debris on the Race Track which leads to a Race stoppage must go rear of field at the restart, unless it is judged by the Chief Steward not to be that Race Cars fault, in which case that Race Car may be restarted in its previous racing position.

4.19.2. Any Race Car that stops after running over another Race Car's debris will not be penalised.

4.19.3. If any part of the engine cover of a Race Car is lost or damaged and, in the Chief Steward's opinion, compromises the Driver's safety, the Race Car will be shown the Mechanical Defect flag.

4.20. LAPPED CARS

4.20.1. When a Race Car receives the lapping flag the Driver of that Race Car must expect to be lapped sometime within the next lap or soon after. The lapped Race Car must hold line (high line or low line) and must not race or impede the lapping Race Car or Race Cars. The lapping flag will continue to be shown to a Driver on each lap that being lapped by any other Race Car is likely.
Lightning Sprints – Refer Appendix 7, 4.13

4.20.2. If the Chief Steward believes that a lapped Race Car is ignoring the lapping flag by impeding lapping traffic or otherwise not complying with rule 4.20.1, the lapped- Driver may be shown the black flag.

4.20.3. Any damaged or disabled Race Car rolling around at a slow speed is to be shown the mechanical defect flag and the Race Car must go immediately to the Infield.

4.20.4. In all restarts, lapped Race Cars will retain their positions in the line-up as per the previously recorded lap or as directed by the Chief Steward.
Sprintcars - Refer Appendix 1, 4.20
Speedcars – Refer Appendix 2, 4.20
SSA – Refer Appendix 3, 4.20
V8 Dirt Modifieds – Refer Appendix 6, 4.20

4.21. STOPPING ON TRACK TO FORCE A STOPPAGE

Any Driver who, in the opinion of the Chief Steward, has purposely spun or stopped on the Race Track to force a Race stoppage will be automatically disqualified. The Chief Steward's interpretation of a Driver's intent in this regard is final and will not be subject to later discussion or complaint.

4.22. GETTING OUT OF CAR

4.22.1. Following a Race stoppage, until damaged Race Cars are removed to the Infield, Drivers are required to remain in their Race Cars unless there is the risk of fire, or other obvious inherent danger or there is a specific request to get out by the Clerk of the Course/Race Director or Infield Official.

4.22.2. Unless directed to do so with the approval of the Chief Steward, any Driver (with the exception of Sprintcar Drivers) who removes or breaks their seat belts or any safety apparel or safety equipment whilst in the confines of the Race Track shall be excluded from the Race. For a second offence during the same Race Meeting, a driver will be excluded from the remainder of the Race Meeting.
Sprintcars - Refer Appendix 1, 4.26
SKAA – Refer Appendix 4, 4.22.2

4.22.3. Any Driver who gets out of a Race Car to remonstrate or make any defamatory gesture to any Official or other Driver, or who parades in an undignified manner on the Race Track will receive an Infringement Notice and be excluded from the Race Meeting. A minimum fine of $100 up to maximum fine of $2,000 and/or up to a maximum 12 month Suspension applies.

4.22.4. After Race Cars have been removed to the Infield, Drivers may not approach any Official or other Driver for the purpose of abuse or protest. A Driver behaving contrary to this rule will receive an Infringement Notice and the penalties specified in rule 4.22.3 will apply.

4.22.5. If a car withdraws from a race and the car remains on the infield, the driver must remain with the car until it is removed, unless they otherwise have permission from the Chief Steward, or require medical attention. The driver may be subject to a minimum $100 fine and/or disqualified from the race meeting.

4.23. COMPLETION OF A RACE

4.23.1. When a Race Car has passed under the chequered flag, it must stop racing and slow down in a safe manner and complete a slowdown lap at a reasonable speed.

4.23.2. A Race is declared complete when the chequered flag has been displayed and the last Race Car running has passed under that flag. Race results will

be determined from the transponder records or lap scorer charts, based upon the order in which the Race Cars cross the Finish Line completing all the laps of the Race. The remainder of the field will be classified by the greater amount of laps completed and then the order in which they crossed the Finish Line on the last completed lap.

4.23.3. The Chief Steward will declare a Race complete once the lead Race Car has passed the chequered flag. If the yellow lights/flags are shown after the lead Race Car crosses the Finish Line for an incident all the Race Cars receiving the chequered flag will finish in the order they crossed the Finish Line. The remaining Race Cars (excluding those deemed to be unable to restart) will be recorded as finishing in the order of their last completed lap not withstanding any penalties which could be applied by the Chief Steward.
SSA – Refer Appendix 3A, 4.23.3
F500 – Refer Appendix 5, 4.23.3

4.23.4. When a Race is completed, placing will be provisional until:
a) The lap sheets and/or transponder lap charts have been checked by the Chief Steward;
b) The Scrutineers have given clearance to each Race Car; and
c) The Chief Steward has declared the results of the Race.

4.23.5. When a Race runs over more or less than the advertised number of laps and the chequered flag is shown, the Chief Steward will declare the Race positions in the order of the Race Cars at the chequered flag.

4.23.6. For all races, Race Cars that get the green flag to start the Race but are non-finishers may be eligible for points and/or prize money.

4.23.7. For heat Races, Race Cars that take the green flag to start the Race but are non-finishers, may be eligible for points. Otherwise, the driver must receive the chequered flag under their own power and have completed at least one half of Race distance to be eligible for points and/or prizemoney.
SSA – Refer Appendix 3, 4.23.7

4.23.8. Any Driver who has received the black flag or is otherwise disqualified from a Race is not eligible for points and/or prizemoney.

4.23.9. The Chief Steward may declare complete a final Race in which the lead Race Car has less than one lap to complete the Race or in a non-final Race of greater than eight laps in which the lead Race Car has less than two laps to complete the Race.

4.23.10. For heat races where simply receiving the green start flag does not automatically entitle them to receive points, a Driver receiving a mechanical defect flag or who voluntary withdraws and wishes to finish the Race, is permitted to re-join the Race (no push start)

to receive the chequered flag, after the last running Race Car has finished.

4.23.11. All prize money must be held until the Chief Steward has declared the results of the Race.

4.23.12. A Driver who is awarded a prize that becomes a disputed prize within 14 days of that Race must return that prize to the organisation awarding the prize. The Driver shall be notified of the reasons for the return of the prize. There shall be no grounds for return of a prize after 14 days have elapsed since the running of the Race.

4.24. FEATURE RACES DECLARED SHORT

4.24.1. A feature Race must be run over the advertised number of laps, except when rule 4.13.8 applies, unless it is required to be declared short by the Chief Steward due to:

a) Weather or Race Track conditions;
b) Time or noise curfew;
c) A serious incident involving injury;
d) Any request by the police; or
e) Extreme or exceptional circumstances.

4.24.2. When feature Races are not completed:

a) If the feature Race is declared with less than one-half of the scheduled laps completed, all prize-money and series points will be divided equally amongst all starters;
b) If the feature Race is declared with at least one-half of the scheduled laps completed, all prize-money and series points will be fully allocated for placings scored as at the last completed lap, modified by any exclusions or rear of field relegations; and
c) Any Race Cars involved in an incident/s at the time of the Race being declared must be cleared by a Scrutineer to be capable of restarting the balance of the nominated laps.

4.25. MECHANICAL DEFECTS

4.25.1. Whether by the Chief Steward's own judgment or on the advice of the Infield Official, it is determined that a Race Car cannot safely continue to race, or for any reason is judged to be a potential hazard to other Competitors, the Driver will be shown the mechanical defect flag, together with the Race Car number, if required, to avoid confusion.

4.25.2. Upon receiving the mechanical defect flag, a Driver must immediately withdraw from the Race, using utmost caution. Any Driver refusing to withdraw when directed will be shown the black flag. Failure to obey the black flag will result in a penalty in accordance with rule 4.17.2 and 4.17.3.

4.25.3. Any outside tyre which is flat will be shown the mechanical defect flag.

4.26. WORKING ON CARS

4.26.1. At any Race stoppage all work must be performed only on the Infield at the designated work area.

4.26.2. If a Race Car requires repairs at a Race stoppage, a time limit of two minutes may be given from the time the Chief Steward approves the request.

4.26.3. If work has not been completed in time to restart with the field, the Race Car may re-join the Race at the rear of the field in a subsequent restart if no further completed laps have been recorded.

4.26.4. A wheel change (due to a flat tyre) is only permitted for Sprintcars, Speedcars, V8 Dirt Modifieds and Wingless Sprints during a red light/flag stoppage on the first lap of a State or National title or for other major or feature Events where this is approved by a supplementary regulation. Two minutes only will be given for the wheel change. Any Race Car that has had a wheel change will go rear of field in the restart.

4.26.5. If the Chief Steward has declared an "Open Red Light" situation during a red light/flag stoppage for a Sprintcars or Speedcars Race only three Pit Crew Members may work on the Race Car. Prior to the opening of the pit gate and allowing Pit Crew Members into the designated work area to work on during an "Open Red Light" situation the Chief Steward must consider factors such as time available, number of Race Cars involved in incident and OH&S responsibilities.

4.26.6. Following a Race stoppage when the Chief Steward has deemed the Race Track to be clear the yellow light/flag will signal for Race Cars to be started. Cars may be given two minutes from the time the last ready Race Car to be started has moved onto the Race Track. Race Cars delaying the restart beyond the two minutes and not ready by the time the green is shown shall be excluded from the Race.

4.26.7. With the exception of Sprintcars, Speedcars, V8 Dirt Modifieds and Wingless Sprints, the only work permitted on Race Cars after they enter the Race Track is to be done by Infield Officials and is limited to the removal of damaged body panels and the effecting of repairs using Basic Tools. The Driver must not break his seat belts or get out of the Race Car unless requested to do so by the Clerk of the Course/Race Director or Infield Official, otherwise the Race Car will be disqualified.

SKAA – Refer Appendix 4, 4.26

Formula 500 – Refer Appendix 5, 4.26.7

4.26.8. Infield Officials are not permitted to add fuel, oil or water, change wheels (except under rule 4.26.4), wash radiators, do any mechanical adjustments or change any setting.

4.26.9. If all Race Cars in an uncompleted Race leave the Race Track and return to the Pits due to any Race delay, when the Race resumes it will be using transponder/lap score placings as recorded at the stoppage. Race Cars must have been able to restart/re-join the Race at the point of stoppage.
Sprintcars – Refer Appendix 1, 4.26
***Speedcars* – Refer Appendix 2, 4.26**

4.27. UNAUTHORISED ENTRY TO RACE TRACK

4.27.1. Any Pit Crew Member or other person, proven to be associated with a Driver or Race Car, who enters the Race Track under yellow or red light situations without the express authority of the Chief Steward will be subjected to a $500 fine. The associated Driver will also be fined $500 and/or disqualified from the Race Meeting at the discretion of the Chief Steward.

4.27.2. Subsequent incidents of unauthorised entry to the Race Track will result in a 12 month Suspension for the offender and a $1,000 fine and/or Disqualification from the Race Meeting for the Driver.

4.28. REFUELLING

No Infield refuelling is permitted unless provided for by a supplementary regulation approved pursuant to rule 1.4 and such approval will only be granted for special long distance Events. The refuelling procedures will be specifically detailed in the supplementary regulations and also reiterated during the Drivers Briefing.
Sprintcars - Refer Appendix 1, 4.28

4.29. SUBSTITUTE CARS

4.29.1. A substitute Race Car may be used during a Race Meeting by a nominated Driver provided that:

a) The substitute Race Car has been nominated for that Event;
b) If the substitution occurs before the Event has begun, the Race Car starts from the Driver's original drawn position in the heats;
c) If the substitution occurs after the Event has begun, the substitute Race Car starts from the rear of the field in its remaining Heat Races;
d) If the substitution occurs after all the heats have been run, the substitute Race Car starts rear of the field in the final Race, providing that the Race Car has competed in at least one previous heat;
e) The Chief Steward is notified and has given permission for the substitution;
f) If more than one Race Car is used by one Driver in one Event, they are all subject to engine and/or fuel checks; and

g) Points will be allocated to the Driver.
Sprintcars - Refer Appendix 1, 4.29
SSA Refer Appendix 3, 4.29
SKAA Refer Appendix 4, 4.29
F500 Refer Appendix 5, 4.29

4.30. NATIONAL TITLES AND SERIES AND STATE TITLES

4.30.1. To be eligible to compete in a National Title and Series, and State Titles, a Driver must not be provisionally licensed and must have competed in a minimum of two Race Meetings, or more at the discretion of the Affiliated Association or other body conducting the Title (**Organising Body**) in the current season or previous 12 months in the Racing Division for the Title and have their Licence accordingly endorsed by a Chief Steward.

4.30.2. At the discretion of the relevant Organising Body, dispensation can be provided if the Driver has driven in an affiliated class or a Racing Division determined by the Organising Body as providing requisite experience, in the current season or previous 12 months.

4.30.3. The previous year's champion shall be allowed to defend the title but must compete in the heats. However, if the champion fails to qualify in this manner a rear of field start is permitted in their own or a substitute Race Car.

Heat points for National Racing Divisions Australian and State Titles are as follows:

	SSA & Dirt Mods	SCCA & SKAA	Speedcars	Formula 500	RSA
1	36	22	25	20	33
2	28	19	20	19	26
3	23	17	16	18	21
4	17	15	13	17	18
5	13	13	11	16	15
6	10	11	10	15	13
7	8	9	9	14	11
8	6	7	8	13	9
9	5	5	7	12	8
10	4	4	6	11	7
11	3	3	5	10	6
12	2	2	4	9	4
13	1		3	8	5
14			2		3
15			1		2
16					1

5.1. RECOGNITION OF RACING OFFICIALS

a) Speedway Australia will administer a Racing Officials Card **(physical or electronic)** for all Stewards and Scrutineers. A requirement to hold one of these cards is that all Stewards and/or Scrutineers are to be signed off by their club/division, and attend a Training Course as recognised by their division. To retain their recognition level, Officials must attend a training refresher course every two years (Level 1 and 2 only) whilst also fulfilling all duties, as per Rule 5.1.2.
SSA - Refer Annexure E, Part C, 5.1

The structure of Racing Officials Recognition Levels for Stewards and Scrutineers is provided below:

b) Trainee Steward/ Scrutineer (Level 4 - Yellow)
Cannot steward Race Meetings
To Upgrade Recognition:

i) Must assist officiate/scrutineer six meetings prior to Expiry of a Racing Officials Card
ii) Must attend a Speedway Australia Recognised Division approved refresher course every two years.
iii) Must be assessed by Level 2 Club Steward/Club Scrutineer (or above), and deemed, in the opinion of the assessing Steward/Scrutineer, as competent.
iv) Must be approved by Level 1 Steward/Scrutineer

c) Assistant Steward/Scrutineer (Level 3 – Yellow)
Can steward/scrutineer Race Meetings, but only under Level 2 Supervision
To Upgrade Recognition:

i) Must assist officiate/scrutineer six meetings prior to Expiry of a Racing Officials Card.
ii) Must attend a Speedway Australia Recognised Division approved refresher course every two years.
iii) Must be assessed by Level 2 Club Steward/Scrutineer (or above), and deemed, in the opinion of the assessing Steward/Scrutineer, as competent.
iv) Must be approved by Level 1 Steward/Scrutineer.

d) Club Steward/Scrutineer (Level 2 – Orange)
Can steward/scrutineer Race Meetings
To Maintain Recognition:

i) Must officiate/scrutineer three meetings prior to Expiry of a Racing Officials Card.
ii) Must attend a Speedway Australia Recognised Division approved refresher course every two years.

To Upgrade Recognition:

i) Must officiate/scrutineer six meetings prior to Expiry of a Racing Officials Card.
ii) Must be assessed by Level 1 Chief Steward/Scrutineer, and deemed, in the opinion of the assessing Steward/Scrutineer, as competent.
iii) Must attend a Speedway Australia Recognised Division approved refresher course every two years.

e) Chief Steward/Scrutineer (Level 1 – Red)

Eligible to steward/scrutineer all National & State Competitions

To Maintain Recognition:

i) Must officiate/scrutineer three meetings prior to Expiry of a Racing Officials Card.
ii) Must attend a Speedway Australia Recognised Division approved refresher course every two years.

5.2 ELIGIBILITY

5.2.1. Any Licence Holder applying for a Racing Officials Card for the first time is required to detail on their application any previous Speedway experience/Record of Prior Learning, to allow their division to consider whether they approve an application for a Licence Holder to become a Level 1 or Level 2 Racing Official.

5.2.2. Any official participating at Events involving Junior Drivers must satisfy any state laws and/or other requirements, where applicable, before officiating.

5.2.3. Any Racing Officials working at a Race Meeting must attend the Drivers/Racing Officials Briefing.

5.3. CHIEF STEWARD

5.3.1. For these rules, the Chief Steward is defined as the Speedway Australia or Affiliated Association Licensed Steward who is in charge of the relevant Racing Division for the applicable Race Meeting.

At any Speedway Australia or Affiliated Association sanctioned Race Meeting, the Chief Steward for the relevant Racing Division is the sole authority for that Racing Division, for the interpretation and enforcement of these rules in all respects. All other Stewards and Officials are responsible to the Chief Steward who has the power to direct or instruct such Officials in the conduct of their duties.

5.3.2. Duties and responsibilities of the Chief Steward include:

a) The control of all Drivers, Pit Crew Members and Officials from the time the Participants enter the Speedway Complex (including public areas and car parks) until 30 minutes after the completion of the last Event on the Race Meeting program;

b) The briefing of the Drivers prior to the commencement of competition. Details of the Drivers Briefing are shown in rule 5.4 below;
c) Briefing the Officials of the Race Meeting;
d) The interpretation and enforcement of these rules;
e) The power to deal with any incident that occurs at a Race Meeting, whether on or off the Race Track, that is not specifically covered by these rules;
f) The right to inquire into the circumstances of any incident and to ask any Licence Holder to report to him, and this includes the requirement to act upon any information brought to notice;
g) The power to order the removal from the Speedway Complex of any person who is interfering with the efficient running of the Race Meeting;
h) The sole authority to exclude, disqualify, suspend or fine any person, or issue Infringement Notices;
i) The checking of lap scoring charts and sheets, approval of any alterations to those sheets, the confirmation of any Disqualifications and/or relegations, and the final approval and declaration of all Race results; and
j) Ensuring that Chief Steward Report is completed at end of the Race Meeting in the form set out and available from www.speedwayaustralia.org/officials.

5.4. DRIVER'S/RACING OFFICIALS BRIEFING

5.4.1. Drivers and their Race Cars should be at the Speedway Complex a minimum of one hour prior to the advertised starting time although this requirement could be varied through any supplementary regulations.
5.4.2. Prior to competition in Speedway Australia or Affiliated Association sanctioned Race Meetings, all Drivers must attend the Drivers' Briefing.
5.4.3. Only with the consent of the Chief Steward, may the Race Car Owner or Pit Crew Members attend the Drivers' Briefing in place of the Driver and be responsible for taking notes and then relaying all relevant information to the Driver.
5.4.4. The scheduled time for the Drivers' Briefing must be publicised so that all Drivers can ensure that they are present. Unless arrangements have been made in accordance with rule 5.4.3, any Driver who fails to attend the Drivers' Briefing may be penalised by being required to start rear of field in all heats, or other suitable penalty that the Chief Steward may impose. Any Driver failing to attend is responsible for ensuring that he is aware of the content of the Drivers' Briefing and of any supplementary regulations. If applicable, the Driver shall also sign a Release and Indemnity form suitable to the State/Territory laws before being permitted to race.

5.4.5. The Drivers' briefing is to include the following:
a) Introduction of key Officials, particularly the Clerk of the Course/Race Director, Pit Marshalls, Drivers Representative, Scrutineer and any other Officials determined by the Chief Steward;
b) Location of firefighting areas and emergency fire procedures;
c) Details of any supplementary regulations pursuant to rule 1.4;
d) Explanation of any Driver introductions or parade laps;
e) Any other information that the Chief Steward thinks is relevant; and
f) Reading of the duty of care statement.

5.5. CHIEF SCRUTINEER

5.5.1. For these rules, the Chief Scrutineer is defined as the Speedway Australia or Affiliated Association licensed Scrutineer who is in charge of the relevant Racing Division for the applicable Race Meeting. At any Speedway Australia or Affiliated Association sanctioned Race Meeting, the Chief Scrutineer is the sole authority for the interpretation of the class specification manual for the relevant Racing Division.

5.5.2. All other Scrutineers are responsible to the Chief Scrutineer who has the power to direct or instruct such Officials in the conduct of their duties. However, any dispute between the Chief Scrutineer and a Race Car Owner or Driver is to be referred to the Chief Steward for resolution.

5.6. SCRUTINEERING

5.6.1. Prior to competing at a Race Meetings, all Race Cars must be scrutineered by a Scrutineer who may be the Chief Scrutineer or an assistant Scrutineer or technical officer who is responsible to the Chief Scrutineer

5.6.2. During scrutineering, the Scrutineers duties and responsibilities are to check:
a) The validity of the Driver's Licence;
b) The Driver's Infringement Card, if applicable, for any current suspension or unpaid fines;
c) The Race Car's Log Book for previously issued work orders or outstanding items of non-compliance;
d) The Race Car for general compliance with the class specification manual applicable for the relevant Racing Division; and
e) All safety equipment and protective clothing for compliance with the requirements for the relevant Racing Division.

5.6.3. Upon passing scrutineering, the Scrutineer will endorse the Race Car Log Book accordingly and the Log Book will be signed by the relevant Driver and then returned to the Race Car Owner or Driver, or retained until the completion of the Race Meeting depending on the relevant licensing body.

5.6.4. Any Race Car that is not presented for scrutineering at least 60 minutes prior to the advertised starting time, may be required to start rear of field in the heats, or other suitable penalty that the Chief Steward may impose.

5.6.5. During competition, the Chief Scrutineer or an assistant Scrutineer should be stationed on the Infield as an Infield Official to advise upon the serviceability of Race Cars either during a Race or following a crash. In respect to a Race Car's serviceability, the Infield Official opinion will be final.

5.6.6. At any time during a Race stoppage, a Driver may enter the Infield to enable the Infield Official to check the Race Car's serviceability, and then restart the Race without penalty, but if a push start is required, the Race Car will go to rear of field. Work on Race Cars may be carried out in accordance with rule 4.26. *(not applicable to SSA)*

SKAA – Refer Appendix 4, Rule 5.5.6

5.6.7. At any time during a Race Meeting the Infield Official or Chief Scrutineer may request that, following repair work, a Race Car involved in a crash must be re-presented for scrutineering before further competition in that Race Meeting. Incident and outcome to be noted in log book.

5.7. INDEMNIFICATION OF SCRUTINEERS AND OFFICIALS

5.7.1. The safety standard of any Race Car, equipment or apparel is a joint responsibility of the Race Car Owner and Driver. Any safety check carried out by a Speedway Australia or an Affiliated Association licensed Official does not guarantee that the Race Car is without fault and does not absolve the Race Car Owner or Driver of this joint responsibility.

5.7.2. The safety check does not impose any level of liability whatsoever upon the Official, Speedway Australia or any Affiliated Association and no expressed or implied warranty of safety shall result from any safety check carried out by any Speedway Australia or an Affiliated Association licensed Official.

5.7.3. By agreeing to have a Race Car scrutineered, both the Race Car Owner and Driver are deemed to have indemnified the Official, Speedway Australia and any Affiliated Association against any prosecution, claim, or action for any death, injury, loss or damage arising from any alleged breach of Race Car safety.

5.8. CLERK OF THE COURSE/RACE DIRECTOR

5.8.1. The Clerk of the Course/Race Director shall be responsible directly to the Chief Steward for the safe and efficient 'on track' operation of the Race Meeting with duties including:

a) The responsibility to ensure that prior to Race starts or restarts, ambulance or approved paramedic personnel, flag marshalls, track and grid marshalls, suitably attired and equipped fire fighters, and push and tow vehicles are at their stations and are ready;
b) The supervision and co-ordination of the various on track personnel, particularly during driver rescue and wreck removal operations;
c) The declaration of the Race Track to be 'clear' when all obstructions and debris from a prior stoppage have been removed from the Race Track; and
d) The performance of other Infield duties as requested by the Chief Steward.
e) Under the direction of the Steward, assisting the Steward in charge of the Race Meeting with the management and implementation of the Australian Speedway Racing Rules & Regulations.

5.9. RACE SECRETARY

5.9.1. The Race Secretary shall be responsible directly to the Chief Steward for the 'off track' operation of the Race Meeting, with duties including:

a) Being available to Drivers and the chief Pit Crew Members throughout the Race Meeting to help with queries or concerns relating to the conduct of the Race Meeting;
b) Being the first point of contact between Drivers, Race Car Owners and the chief Pit Crew Members with the Chief Steward;
c) The responsibility for the supervision of grid draws, the calculation of heat points, determination of grid positions for subsequent Races and the notification of all Drivers of their grid positions and amendments to these;
d) The duties of, or supervision of, the Pit Marshall whose duties are to position Race Cars on the dummy grid, advise Drivers of late changes to grid positions, and then to marshall Race Cars onto the Race Track;
e) Being available to Drivers and the chief Pit Crew Members to advise on responsibilities and options relating to Infringement Notices, Disqualifications, charges of misconduct, and rights of dispute, and the supply of official Speedway Australia forms; and
f) Being available to receive payments for fines and disputes fees, and the endorsing of Infringement Cards accordingly.

5.10. ASSISTANT STEWARDS AND OFFICIAL OBSERVERS

5.10.1. Assistant Stewards and official observers are Officials or Drivers, who are not driving in that Race Meeting, that are positioned around the Race Track and are in radio contact with the Chief Steward to give advice, as requested on Race incidents. Regardless of the advice so given, the Chief Steward's judgement and decision is final.

5.10.2. Drivers, Race Car Owners and Pit Crew Members shall not enter into discussions about any on track incident with the assistant Stewards or official observers, who are responsible only to the Chief Steward and not answerable to Participants.

5.11. LAP SCORERS/TRANSPONDER OPERATORS

5.11.1. Lap scorers or transponders shall record the position of each Race Car as it crosses the Finish Line, regardless of whether it is lapped or not.

5.11.2. Lap Scorers must be positioned adjacent to the Finish Line to enable Race Car positions to be accurately recorded. *This rule does not apply for Transponder Operators.*

5.11.3. During a stoppage, lap scorers/transponder operators shall provide the order of Race Cars scored as at the last completed lap.

5.11.4. Lap scorers must ensure that lap-scoring sheets are not altered except by direction of the Chief Steward. Lap scorers/Transponder Operators must also ensure that the Chief Steward approves any alterations and the final results of the Race.

5.12. DRIVERS REPRESENTATIVE

5.12.1. The Drivers Representative must be accessible to the Drivers for the duration of the Race Meeting and to assist them without bias or favour.

5.12.2. The Drivers Representative is required to attend the Drivers' Briefing and also to liaise between the Promoter and Officials on all matters that have an effect on Drivers.

5.12.3. The Drivers Representative must have a current Licence and should be conversant with the relevant racing rules and regulations (including these rules) and be able to advise Drivers on the best method of dealing with matters arising from the conduct of the Race Meeting.

6.1. SPEEDWAY AUSTRALIA DRUG AND ALCOHOL POLICY

6.1.1. The Speedway Australia Drug and Alcohol Policy applies to all Race Meetings and activities held under the sanction of a track permit issued by Speedway Australia, except for SCCA conducted Sprintcar Racing, where either the Speedway Australia Drug and Alcohol, or the SCCA Drug and Alcohol will apply.

6.1.2. Speedway Australia condemns the use of illegal drugs and alcohol in speedway and their use is contrary to the ethics of sport and potentially harmful to speedway participants and others.

6.1.3. Speedway Australia has a zero tolerance regarding the use of drugs and alcohol in sport.

6.1.4. Each Licence Holder must ensure that any prescribed medication does not contain a Prohibited Substance as listed in rule 6.3.

6.1.5. Any individual applying for a Licence or participating in Speedway Australia sanctioned Race Meeting shall be deemed to have consented to any tests for alcohol and Prohibited Substances required by Speedway Australia or its designated administrator.

6.1.6. Unannounced testing of Licence Holders for Prohibited Substances and alcohol during a Race Meeting will be conducted from time to time by an independent drug program administrator (**IDPA**). These tests can be conducted under the following conditions:

Random Selection Testing

Random selection testing of Licence Holders for Prohibited Substances and/or alcohol, will be conducted from time to time at the discretion of Speedway Australia and the IDPA. Selection of Licence Holders for testing shall be made at random by the IDPA with all Licence Holders having equal chance of selection. Individuals who are not selected for random testing, but wish to voluntarily participate in testing shall be subject to the same testing requirements and subsequent penalties of selected Licence Holders. Speedway Australia or any Affiliated Association can request random selection testing to be conducted.

Critical Incident Testing

Licence Holders may be required to submit to a procedure for the purpose of testing for Prohibited Substances and/or alcohol following any incident or accident involving injury or death, or when the potential for either has occurred or where there is an accident or damage to property (**Critical Incident**).

Cause or Target Testing

Licence Holders may be required to submit to a procedure for the purpose of testing for Prohibited Substances and/or alcohol where there has been no Critical Incident but where there is a concern that a responsible person is suspected of having recently ingested drugs or alcohol and may be in breach of the Speedway Australia zero tolerance policy.

6.1.7. A Licence Holder commits a violation of the Speedway Australia Drug and Alcohol Policy if that Licence Holder refuses to provide a sample for testing when requested by the assigned testing authority.

6.1.8. A Licence Holder may be required to submit to a procedure for the purpose of testing for Prohibited Substances and/or alcohol following any incident or accident involving injury or property damage or there is reason to believe that a Licence Holder is affected by alcohol or drugs.

6.2. PROCEDURE FOR DRUG TESTING

6.2.1. The testing for Prohibited Substances will be conducted utilising oral fluid (saliva) based drug-screening equipment and can occur any time during a Race Meeting.

6.2.2. Those Licence Holders chosen for testing will not be able to participate in the Race Meeting until such time as the test is complete (including until such time a second test is conducted if such a test is required).

6.2.3. Failure to produce a suitable sample for testing will be deemed to be a non-negative result, and a serious misconduct or a breach of the Speedway Australia Drug & Alcohol Policy.

6.2.4. Drivers who return a non-negative result will be required to present their Licence to the Chief Steward immediately and will be unable to participate any further in the Race Meeting and will not be able to enter any restricted areas for the duration of the Race Meeting.

6.2.5. Any Licence Holder other than a Driver who returns a non-negative result will not be able to continue participating in the Race Meeting and will not be able to enter the Pits or any other restricted areas for the duration of the Race Meeting.

6.3. PROHIBITED SUBSTANCES

6.3.1. While Speedway Australia reserves the right to change the list of Prohibited Substances the broad classes of substances prohibited in speedway include:

a) THC (marijuana, hashish);
b) Methamphetamines;
c) Amphetamines;
d) Cocaine;
e) Benzodiazepines; and
f) Opiates (opium, heroin, codeine, morphine).

6.3.2. Licence Holders are required to present to Speedway Australia a written request from a qualified medical practitioner for the use of Prohibited Substances. Speedway Australia will then be the sole authority, in conjunction with their Medical Assessor, to approve the use of the Prohibited Substance. Such approval may only be given if use of the Prohibited Substance is for a therapeutic purpose and will not affect the Licence Holder's judgement. In this respect, it should be noted that most of the psychiatric medications are liable to cause some degree of drowsiness or diminished concentration on performance and the individual response to these drugs is very difficult to predict and the drugs may be taken for many different conditions and in varying dosages.

6.4. PROCEDURE FOR ALCOHOL TESTING

6.4.1. The testing for the presence of alcohol in the body is by the analysis of expired air. Testing should be carried out prior to any Race but may be undertaken at any time during the Race Meeting.

6.4.2. An initial test will be undertaken and should this test return a positive reading a second test will be undertaken within twenty minutes under controlled conditions to confirm the initial positive test result.

6.4.3. Any Licence Holder detected with a blood alcohol content above 0.0 milligrams per 210 litres of air will be declared unfit by the Chief Steward for further participation in the Race Meeting.

6.4.4. Any Licence Holder returning a positive breath test result shall be excluded from taking any further part in the Race Meeting by the Chief Steward and, if that Licence Holder is a Driver at the relevant Race Meeting, will be required to attend the Disciplinary Tribunal where they may be subjected to further penalties. Any Licence Holder returning a test result above the required limit will be required by the Chief Steward to leave the Pits or any other restricted area.

6.4.5 SSA also refer to Appendix 3A

6.5. POSSESSION OF ALCOHOL

The possession on one's person or the drinking of alcohol in the Pits at any time before a Race Meeting, and up until the completion of the feature of their division, is prohibited. The Chief Steward or their delegate will order the removal from the Pits of any person (including any Licence Holder) in breach of this rule, and if that person is a Driver, Race Car Owner or Pit Crew Member, will immediately disqualify the relevant Driver from the Race Meeting. If the person in breach of this rule is a Driver at the relevant Race Meeting they will be required to attend the Disciplinary Tribunal where they may be subjected to further penalties.

6.6. PENALTIES

6.6.1. Any Licence Holder alleged to be in breach of a rule in part 6 of these rules (other than rule 6.1.7) will be served with an Infringement Notice by the Chief Steward requiring:

a) The Licence holder's SA Licence to be immediately suspended
b) The Licence holder appear before a Disciplinary Tribunal
c) The Licence holder to be removed from all restricted / controlled area (pits etc.) as soon as practicable

6.6.2. If the Disciplinary Tribunal finds a Licence Holder to be in breach of any of the rules in this Part 6 (other than rule 6.1.7) they may impose a penalty on the Licence Holder as per below:

d) For a first offence under this Part 6 within the last ten years, a maximum penalty of $1000 fine and two years suspension;
e) For a second offence under this Part 6 within the last ten years, a maximum penalty of $2500 fine and five year suspension; and
f) For a third offence under this Part 6 within the last ten years, a maximum penalty of $5,000 fine and ten year suspension.

6.6.3. If a Licence Holder refuses to provide a sample for testing and commits a violation of rule 6.1.7, the Chief Steward will issue an Infringement Notice and the Licence Holder will be subjected to the maximum penalty of ten (10) years suspension and $5,000 fine.

Note: Penalties for an offence under rule 6 are listed in Appendix 8 - Penalties Guideline.

With respect to the payment of all fines and fees, GST is included.

7.1. INFRINGEMENT NOTICE

7.1.1. An Infringement Notice is a written notice served by a Speedway Australia recognised Chief Steward or their delegated nominee on any Licence Holder to notify the Licence Holder of an offence punishable by Disqualification, a fine and/or a period of Suspension including any directive that the Licence Holder is to be brought before the Disciplinary Tribunal.
An Infringement Notice for a racing or on track incident is to be served, or the Driver verbally advised, within one hour of the completion of the Race in which the alleged offence occurred and is to include details of any punishment. However, if this is not practical then it should be forwarded to the alleged infringing party (**Defendant**) by hand or registered mail within 7 days of the incident occurring. It may be forwarded by electronic mail but must also be forwarded to the Defendant with hard copy by registered mail. The Defendant will have the right of appeal as specified in rule 8.1.

7.1.2. For non-race offences, the Infringement Notice should be served by the Chief Steward or their delegated nominee within one hour of the alleged offence being committed.
However, if this is not practical then it should be forwarded to the Defendant by hand or registered mail within 7 days of the incident occurring. The Defendant will have the right of appeal specified in rule 8.1.

7.1.3. The maximum penalty that can be handed down by a Chief Steward for any offence, without sending the Licence Holder to a Disciplinary Tribunal, is a fine of $1000 &/or a six months suspension, as per Rule 7.7.2(e).
NOTE: SSA Maximum suspension above is 12 months.
NOTE: This rule does not apply to offences listed under Rule 7.9(Technical), where minimum & max penalties are determined by Judges of Fact.

7.1.4. When a Chief Steward or a delegated Official issues an Infringement Notice the following should apply:
a) **Top Copy:** to Speedway Australia or Affiliated Association state branch (to accompany any appeal documentation).
b) **Duplicate:** to the Defendant.
c) **Triplicate** retained by the issuing body/Steward.

7.1.5. Any Driver who refuses to receive the Chief Steward's Infringement Notice will forfeit their right to appeal the determination and penalties set out in the Infringement Notice either under these rules or at law.

7.1.6. The Chief Steward will not be required to issue an Infringement Notice for penalties given and carried out during a Race.

7.1.7. The fine and/or period of Suspension will be determined by the Chief Steward and nominated on the Infringement Notice, except for charges pursuant to a Mandatory Appearance Offence, in which case the matter will be determined and any fine and/or suspension will be set by the Disciplinary Tribunal.

7.1.8. A matter set out in the Infringement Notice can be finalised by payment of the fine and/or serving the period of Suspension, as applicable. Any fine nominated on the Infringement Notice must be paid to the Host Club or other relevant authority by the Driver or the Race Car Owner. The Chief Steward issuing the Infringement Notice is to determine where the fine is to be paid to.

7.1.9. If a period of Suspension is nominated on the Infringement Notice, further competition at that Race Meeting is not permitted.

7.1.10. Any Driver who has a Suspension under an Infringement Notice under appeal in accordance with rule 8.1.5 may only compete at any later Race Meeting only after the appeal has been heard in accordance with rule 8.1 or if special dispensation is given under rule 7.1.12.

7.1.11. If an Infringement Notice is served for any Mandatory Appearance Offence, or any other offence where the Infringement Notice does not set out a Suspension but requires a Licence Holder to appear before a Tribunal, further competition by that Licence Holder is not permitted until the matter has been dealt with by the relevant Tribunal and all judgments have been satisfied unless special dispensation has been given under rule 7.1.12.

7.1.12. In circumstances where any delays in conducting a Tribunal could unreasonably affect the future competition of a Driver who has received an Infringement Notice, Speedway Australia or the controlling body of the relevant Racing Division may provide written dispensation allowing competition in future Race Meetings until a Tribunal can be held. The Driver shall not be eligible for any prize money or points until after the Tribunal hearing.

7.1.13. Any Official who incurs a Suspension will be suspended from any activity at a Speedway Complex as an Official and Competitor and, for the avoidance of doubt, may not act in any official position they held from the time the Suspension was imposed to the time the Suspension has expired.

7.1.14. Any administrative or typographical errors or omissions by the Chief Steward on an Infringement Notice does not alter the effectiveness of the Infringement Notice and may be subsequently corrected.

7.2. VERBAL AND PHYSICAL ABUSE

7.2.1. No Licence Holder at a Race Meeting shall verbally or physically abuse or assault or attempt to physically abuse or assault any person, or use any intimidating or threatening language or actions.

7.2.2. Where any person at a Race Meeting receives any form of Verbal or Physical abuse from, or is assaulted by a Licence Holder, this may be reported to any Official who shall refer the matter to the Chief Steward, or the Chief Steward directly, who may investigate, and if he deems that a charge is warranted, disqualify the relevant Licence Holder from the Race Meeting and serve an Infringement Notice on the relevant Licence Holder.

7.2.3. Where any Driver, Race Car Owner or Pit Crew Member reports verbal or physical abuse or assault from any Licence Holder, unless the abuse or assault has been witnessed by an Official who can give an accurate report to the Chief Steward, the aggrieved person will be advised to lodge a charge of misconduct and therefore have the matter dealt with directly by a Disciplinary Tribunal. Lodging a charge of misconduct requires completion and lodgement of the Request for Disciplinary Tribunal form (as set out in Section 12, 12.2) in accordance with rule 7.5.3.

7.2.4. Any Licence Holder who verbally abuses or assaults another person or attempts to physically abuse or assault another person whilst at a Race Meeting shall be liable to a minimum fine of $100 up to a maximum fine of $2,000 and/or up to a maximum 12 month Suspension.

7.2.5. Any Licence Holder who strikes or in any way physically assaults another person whilst at a Race Meeting shall be liable to a minimum fine of $100 up to a maximum fine of $5,000 and/or a maximum two year Suspension.

7.2.6. The penalties in rules 7.2.4 and 7.2.5 may be in addition to any misconduct and penalty referred to in rule 7.5.

7.2.7. As per Rule 7.7.2, only offences with a potential penalty greater than what is set out in (d) will be classed as a Mandatory Appearance Offence.

7.3. CONTROL OF PIT CREW

7.3.1. A Driver shall be held responsible for the appearance and actions of his or her Pit Crew Members and the Race Car Owner for the duration of the Race Meeting whilst those people are at the Speedway Complex.

7.3.2. So that the Pit Crew Members for which a Driver is responsible are known and documented, at scrutineering a Driver should submit a list of their Pit Crew Members. It is desirable that all listed Pit Crew Members are in possession of a current Licence. Licence numbers should be included on the list.

7.3.3. Conduct by any Race Car Owner or Pit Crew Member that is contrary to rule 7.2 may lead to action by way of Disqualification of the Driver and/or an Infringement Notice being served upon one or more of the Race Car Owner, Pit Crew Member or the Driver.

7.3.4. As per Rule 2.2.9, any parent or guardian of a junior driver must hold a minimum of a Speedway Australia Mechanic's Licence.

7.4. RECIPROCAL CONDUCT

All Participants will conduct themselves in a professional and sportsmanlike manner at all times. This is particularly important when in the presence of members of the public. The courtesy expected to be shown to Officials by Competitors must be reciprocated by courteous and professional conduct being shown to Competitors by Officials.

7.5. MISCONDUCT – AT RACE MEETING

7.5.1. A Licence Holder must not engage in misconduct at a Race Meeting. For the purposes of this clause misconduct is defined as any action or behaviour which will bring, or has the potential to bring, the sport of speedway racing or the activities of Speedway Australia or its Affiliated Associations into disrepute.

7.5.2. Misconduct under clause 7.5.1 includes but is not limited to assault, intoxication and the breach of the rules, regulations and policies of Speedway Australia, or its members and conduct unbecoming to the sport of speedway.

7.5.3. A charge of misconduct:

a) A Licence Holder, Speedway Australia and/or another Official (**Complainant**) may refer a charge of misconduct against another Licence Holder to the Disciplinary Tribunal pursuant to these rules.

b) A charge of misconduct shall be referred in the form set out at Section 12, 12.2 to the Chief Steward before the expiry of the duration of the Race Meeting.

c) A charge of misconduct shall be forwarded by the Host Club or Chief Steward to the secretary of the Affiliated Association or other Club of which the Licence Holder charged with misconduct is a member, who shall refer it to the executive of the said Affiliated Association or Club within three days, together with a fee of $500 payable by the Complainant (waived for Speedway Australia and Officials) that is non-refundable if charges are dropped, money to be refunded if charge proceeds.

7.6. MISCONDUCT – CHARGE BROUGHT BY SPEEDWAY AUSTRALIA

7.6.1. Without limiting rule 7.5.1, a Licence Holder must not engage in misconduct or behaviour which is prejudicial to the interest of the sport of speedway. Misconduct for the purpose of this rule is defined as any action or behaviour which is or is not publicly known and in the absolute discretion of Speedway Australia would, or would likely, bring the Licence Holder, the sport of speedway racing, Speedway Australia or an Affiliated Association into disrepute.

7.6.2. Misconduct under clause 7.5.1 includes but is not limited to:

a) Being charged with, and/or convicted of, a criminal offence;
b) Being involved in violence or inciting violence;
c) Intoxication in public;
d) Making a detrimental, offensive, threatening, discriminatory or false public statement in any media (including social media) about the Chief Steward, a Participant, another Licence Holder, Speedway Australia, or an Affiliated Associations and their sponsors, employees or officeholders;
e) Failure to follow a policy issued by Speedway Australia; and
f) Failure to follow a reasonable direction of Speedway Australia.

7.6.3. If Speedway Australia believes that a Licence Holder has breached clause 7.6.1 then Speedway Australia may, by notice in writing to the Licence Holder, impose a maximum penalty on the Licence Holder of:

a) $5,000; and/or.
b) 10 year Suspension.

7.6.4. Any fine imposed by Speedway Australia under clause 7.6.3 must be paid to Speedway Australia.

7.6.5. Any charge issued under Rule 7.6 may be appealed as per Rule 8.2.2.

7.6.6. SOCIAL MEDIA MISCONDUCT PROCESS

a) Social Media Misconduct includes, but is not limited to the following:- misuses of networking, harassing, intimidating or threatening another person by means of posting or sending inappropriate or derogatory email messages, instant messages, text messages, phone messages, images or website posting including those social networking sites such as Facebook, Twitter etc. and is irrespective of whether the page could be viewed by a broader community or not.

b) All licence holders must also be aware that postings, comments and/or messages from an individual account, IT tool or mobile phone, whether actioned by themselves or another person will remain the responsibility of the account owner.

c) Allegations of social media misconduct must be forwarded to the Speedway Australia office, with copies of the appropriate evidence.

d) A please explain letter will then be issued to the relevant licence holder, giving them 14 days to respond to the charges. Copies of the evidence will be supplied.

e) Verified offending will be graded in order of severity, with penalties issued in accordance with the following matrix:-

Severity	Explanation
1 - Mild	Single post - throwaway remark, e.g "Speedway Australia are a bunch of clowns"
2	Single post - personalised abuse, e.g. "John Smith/Car 49 is a clown"
3	Single post - extreme threat, e.g. "John Smith is a [profanity] clown"
4	Multiple posts - throwaway remarks at a Level 1 severity
5	Multiple posts - personalised abuse at a Level 2 severity
6	Sustained severe abuse &/or racial, cultural, gender identity or sexual orientation
7 - Severe	Death threats

Severity	Penalty
1 - Mild	Warning, no further penalty
2	Probation - any issues within 12 months automatic suspension/referral
3	One month suspension + 12 month probation
4	Two month suspension + 12 month probation + $100 fine
5	Three month suspension + 12 month probation + $200 fine
6	Six month suspension + 12 month probation + $300 fine
7 - Extreme	12 month suspension + 12 month probation + $500 fine

i) Admission of guilt in "please explain" letter = reduction of 1 grade penalty

ii) Public apology (unprompted) = reduction of 1 grade penalty

f) If a licence holder is charged with a severe offence (grades 4-7), they will be suspended until such time as the referral is dealt with.

g) A penalty issued under this process can be appealed in accordance with rule 8.2.2.

7.7. INFRINGEMENT NOTICE OFFENCES AND PENALTIES

7.7.1. The summary of offences for which a Driver will receive an Infringement Notice and the applicable penalties are listed in Appendix 8 - Penalties Guideline, Part 3.

7.7.2. Offences for which an Infringement Notice will be served requiring a mandatory appearance before the Disciplinary Tribunal for determination (**Mandatory Appearances Offences**) are:

a) A Driver returning a positive alcohol breath test - refer to rule 6.4;

b) A Licence Holder in possession of or drinking alcohol in the Pits during a Race Meeting - refer to rule 6.5;

c) A Licence Holder under the influence of or in possession of any Prohibited Substance - refer to rules 6.1 and 6.2; and

d) Acts of verbal or physical abuse, where the offence is, in the opinion of the Chief Steward, worthy of a penalty greater than $1000 fine and/or six month suspension - refer to rule 7.2.

e) Any offence where the Chief Steward deems that the penalty may be greater than a fine of $1000 and/or a suspension period of greater than six (6) months.

7.8. PROTESTS

Sprintcars – Refer Appendix 1, 7.8
SSA Sedans - Refer Appendix 3, 7.8
SKAA – Refer Appendix 4, 7.8
F500 – Refer Appendix 5, 7.8

7.9. TECHNICAL

Note: The offences in this rule 7.9 are not appealable (see rule 8.1.3)

7.9.1. All Race Cars must comply with the class specification requirements of the relevant Affiliated Association or other controlling body for the relevant Racing Division, as amended from time to time. The Driver is responsible for ensuring the Race Car meets these specifications.
SSA Sedans - Refer Appendix 3, 7.9.1

7.9.2. If at any time during a Race Meeting or during subsequent inspection after a Race Meeting, a Race Car is found to be not complying with the specification requirements the Chief Steward will issue an Infringement Notice to disqualify that Driver and Race Car from the Race Meeting and, in the Chief Steward's discretion, impose a fine of up to $2,000 and/or a suspension of up to two years on the Driver.

7.9.3. Without limiting rule 7.9.2, a minimum penalty of 12 months and a maximum penalty of 24 months suspension and/or a $2,000 fine may be imposed upon a Driver or other Licence Holder for any of the following:
   a) Any unauthorised person altering or person misrepresenting a Log Book;
   b) Any person making a false Log Book declaration or knowingly provides wrong information for the registration of a Race Car;
   c) The deliberate destruction of a Log Book;
   d) Any person misrepresenting a Race Car or safety apparel;
   e) Use of any engine, Race Car or other component which offends against the published specifications;
   f) Any person refusing to have their engine checked;
   g) Any use of traction control;
   h) Any abuse of speedway property or safety equipment; or
   i) Any use of illegal fuel or additives.

7.9.4. Sprintcar Technical
Sprintcars – Refer Appendix 1, 7.9

7.9.5. SSA Technical
SSA – Refer Appendix 3, 7.9

7.10. FINES AND PENALTIES

7.10.1. Drivers or Race Car Owners who have incurred a fine, fines or penalty for infringement of any of these rules shall not be allowed to compete or, in the case of a Race Car Owner, have their Race Car compete in any subsequent Race Meeting until such time that the fine, fines or penalties are paid in full to the satisfaction of body that issued the fine, fines or penalties.

7.10.2. Any suspension period will take effect from the date of the infringement notice. Suspensions however will not be lifted until confirmation is received that any monetary fine incurred, in conjunction with the suspension, has been paid in full. Failure to pay the fine in full will see an extension of the suspension period until such time.

7.10.3. A Driver must be notified of an offence or penalty arising from a Race Meeting by either:
   a) Boards or flags displayed by the Chief Steward or a delegated Official whilst the Race is in progress;
   b) Verbal notification during a Race or at the completion of the Race (including over the race receiver);
   c) Notification by way of an Infringement Notice issued in accordance with rules 7.1.1 and 7.1.2.

7.10.4. Any fine or suspension will be noted on the Driver's Infringement Card, if applicable.

8.1. DISCIPLINARY TRIBUNAL

8.1.1. A Licence Holder may appeal to the Disciplinary Tribunal immediately, and as per the procedures below, against a penalty imposed by a Chief Steward upon him or her in an Infringement Notice or otherwise.

8.1.2. The Disciplinary Tribunal shall also hear any charge referred to it under rule 7.5 and any Mandatory Appearance Offence.

8.1.3. Notwithstanding any other rule or regulation, any breach of the following rules, as determined by Judges of Fact as nominated from time to time, shall be final and binding:

a) Race Car specifications (rule 7.9.1);
b) Noise requirements (rule 3.5); and
c) Technical inspections (rule 7.9.2).

8.1.4. The Disciplinary Tribunal is appointed by the President or equivalent officeholder of the Host Club and:

a) Will consist of three independent members with one to be nominated as Chairperson; and
b) Will not consist of anyone who has participated in the subject Racing Division as a Driver, Race Car Owner or Pit Crew Member within the last 12 months.

8.1.5. In respect of an appeal against a penalty imposed by a Chief Steward:

a) The procedure for instituting an appeal is to lodge the prescribed form (headed "Appeal Form" and set out in Section 2, 12.1) with the Drivers Representative, Chief Steward or Host Club/Divisions within 24 hours of being informed of the Chief Steward's decision (whether verbal or by way of Infringement Notice) together with an appeal fee of $500 however if the Infringement Notice is only received on a day after the relevant Race Meeting, the Licence Holder shall have 48 hours to lodge the prescribed form with the Host Club;
b) The appeal is to be heard as soon as practicable after the last Race of the Race Meeting during which the incident giving rise to the decision appealed against arose or, in the case of a penalty imposed in an Infringement Notice, as soon as practicable after the appeal is lodged;
c) An appeal can, at the discretion of the Tribunal Chairperson, be heard at 9.00am on the day following the Race Meeting during which the appeal arose (i.e. for a Race Meeting held on a Saturday – the Disciplinary Tribunal may be held on the following Sunday);

d) An appeal can, at the discretion of the Tribunal Chairperson, be heard via technological means such as a phone link up, conference call or SKYPE.
e) The appeal shall not operate as a stay of the decision of the Chief Steward the appeal relates to;
f) It is recommended for appeals relating to any Championship Events that a secure venue (separate to the Speedway Complex if no suitable venue is available at the Speedway Complex) be utilised to conduct any Disciplinary Tribunal; and
g) The Disciplinary Tribunal may affirm, overturn or vary the decision appealed against, including a suspended sentence if appropriate, in such a manner as it shall think fit.

8.1.6. In respect of a charge of misconduct under rule 7.5 and any Mandatory Appearance Offence:

a) The Tribunal Chairperson may consider a plea bargain. The Tribunal Chairperson and the Defendant can arrange to settle the case against the Defendant without conducting a hearing, where the Defendant agrees to plead guilty in exchange for an agreement from the Tribunal Chairperson as to the penalty. A plea bargain requires adequate consultation with the Defendant and the relevant Host Club. The Tribunal Chairperson must seek the views of the Defendant and the relevant Host Club about plea bargaining prior to determining the penalty. Once an agreement has been reached by both parties there can be no appeal against this decision;
b) Within 14 days of being appointed, the Disciplinary Tribunal shall set an appropriate date and place for the hearing of the charge ;
c) A charge may only be heard by the Disciplinary Tribunal if the person charged has been informed in writing by certified mail lodged 7 days prior to the hearing of the charge of the following particulars:
d) The nature of the charge; and
i. The factual basis upon which the charge is preferred against him/her;
ii. The Disciplinary Tribunal may, in its' absolute discretion, impose any penalty it thinks fit for a charge arising from the charge including a suspended sentence so long as such penalty does not exceed the maximum (if any) prescribed in these rules) and any suspension period applied as a penalty cannot reduce the minimum suspension (if any) as prescribed in these rules and;
iii. Where a Licence Holder has been found guilty of a charge they may, at the discretion of the Disciplinary Tribunal, be liable to pay all reasonable costs incurred by the Host Club in hearing the matter as determined by the Disciplinary Tribunal.

8.1.7 It is the responsibility of the Appellant/Defendant to provide to the hearing any witness or evidence, including video evidence, he/she may choose to

present as allowed by the Disciplinary Tribunal in accordance with rule e)6.

8.1.8 If an appeal is upheld, the appeal fee will be returned to the Appellant. If an appeal is dismissed, the appeal fee will be retained by the Host Club convening the Disciplinary Tribunal.

8.1.9 Other than by way of appeal under rule 8.2, the decision of the Disciplinary Tribunal shall be final and there shall be no further avenue for appeal or recourse to any court in relation to any aspect of the decision. The finality of the appeal must be acknowledged by all Appellants in writing prior to the commencement of the appeal hearing in accordance with the Appeal Form in Section 12, 12.1.

8.1.10 Where any inconsistency arises between this rule 8.1 and any Host Club's rules with respect to the conduct of the Disciplinary Tribunal, the rules contained herein shall prevail.

8.1.11 A decision of the Disciplinary Tribunal may be appealed to the Speedway Appeal Tribunal provided that rule 8.2 is satisfied.

8.2 SPEEDWAY APPEAL TRIBUNAL

8.2.1 A person may appeal against the decision of a Disciplinary Tribunal to the Speedway Appeal Tribunal if the penalty handed down or upheld by the Disciplinary Tribunal includes either:

a) A fine an amount in excess of $1,000; or
b) A period of suspension for a period of six months or more.

8.2.2 A person may appeal against the penalty set down by Speedway Australia under rule 7.6 to the Speedway Appeal Tribunal if the penalty handed down by Speedway Australia includes either:

a) A fine an amount in excess of $1,000; or
b) A period of suspension for a period of six months or more.

8.2.3 Any person who wishes to appeal against the decision of a Disciplinary Tribunal or Speedway Australia under rules 8.2.1 or 8.2.2 shall:

a) Give verbal notification (of their intention to appeal) to the relevant association and Speedway Australia National Office within 24 hours of the relevant decision; and
b) Lodge a written appeal with this to the Speedway Australia National Office in the form of Section 12, 12.3 together with a fee of $1,500 within 14 days of the conclusion of the club Disciplinary Tribunal or handing down of the penalty by Speedway Australia, PROVIDED that an appeal may be lodged by another person acting on behalf of the aggrieved party where the aggrieved party is injured or otherwise unable to lodge the appeal themselves.

8.2.4 The Speedway Appeal Tribunal shall consist of three independent members who are appointed by

Speedway Australia and comprise the following membership:

a) No person who was participating at a the relevant Race Meeting as a Race Car Owner, Driver, Pit Crew Member or Official (if applicable), or who is directly or indirectly concerned with the matter under consideration;
b) No person who is an employee or officeholder of Speedway Australia; and
c) Where appropriate to the particular appeal, a person knowledgeable about the conduct of speedway racing or the technical specifications.

8.2.5 The Speedway Appeal Tribunal may be appointed for a period of time, or from time to time, although some commonality of membership and consistency of approach is desirable.

8.2.6 Speedway Australia shall elect a chairperson of the Speedway Appeal Tribunal.

8.2.7 The Speedway Appeal Tribunal shall:

a) Satisfy itself that the appeal is eligible to be heard by the Speedway Appeal Tribunal and proper documentation has been completed within the prescribed time limits and accompanied by the appropriate fees;
b) Dismiss the appeal if the proper documentation, time limits and fees have not been complied with, unless the default in documentation is of a minor nature;
c) Ensure that all parties have been given adequate notice of the hearing, such notice being not less than 7 days, unless otherwise agreed by all parties, including notice of the right to call witnesses and present any other relevant evidence;
d) Cause a tape recording of the hearing to be taken and retained by relevant Speedway Australia State Branch (and each Licence Holders consents to such tape recording); and
e) Maintain a record of the matters heard by the Speedway Appeal Tribunal and communicate to the Speedway Australia and the Appellant any decision of the Speedway Appeal Tribunal, including its reasons for decision within 14 days of a decision being given.

8.2.8 Decision of the Speedway Appeal Tribunal

a) The Speedway Appeal Tribunal may decide that a decision appealed against be upheld or dismissed or substituted by another decision and that the penalty appealed against be waived, mitigated, increased or a fresh penalty imposed, but it shall not order any Event or Race to be re-run.
b) A Suspended Sentence is an option for Speedway Appeal Tribunal consideration.
c) Any decision of the Speedway Appeal Tribunal shall be final and there shall be no further avenue for appeal or any recourse to any court in relation to any aspect of the decision.

d) The Speedway Appeal Tribunal may order that the fee paid upon the lodgement of the appeal be forfeited, reimbursed or partly forfeited and partly reimbursed to the Appellant.
e) The Speedway Appeal Tribunal may order that an unsuccessful Appellant pay the reasonable costs of any other party where it judges the appeal to have been vexatious or frivolous or brought without reasonable grounds.

8.3 TRIBUNAL PROCEDURE

8.3.1 Each Tribunal will be bound by the following requirements:

1. It must observe the principles of natural justice and provide the Appellant or Defendant with the opportunity to be heard and to make submissions in relation to the alleged charge and any proposed sanction;
2. It is not bound by the rules of evidence usually applicable to proceedings in a court of law and may inform itself on any matter in such manner as it thinks fit;
3. It will conduct its hearings with as little formality and technicality and with as much expedition as the proper consideration of the matter permits;
4. Hearings may occur in such manner as the Tribunal Chairperson decides, including by telephone or video conferencing;
5. The parties to an appeal or hearing before a Tribunal will not be entitled to be represented by a barrister or solicitor or any other legal representation save:
   i. With the leave of the Tribunal, which leave will only be given in exceptional circumstances and, if given, may be given unconditionally or on such conditions as the Tribunal thinks fit; or
   ii. Where the Appellant or Defendant holds a Junior Licence and then only a parent/guardian is permitted to represent the Appellant or Defendant; and
6. It will allow Licence Holders to call upon any person or persons to give evidence, or provide any video/photographic evidence, which it deems necessary to reach an unbiased and lawful decision however such witnesses shall only be present at the hearing when giving evidence (unless they are one of the parties to the hearing);

7. It may adjourn the hearing of an appeal or charge if it considers such an adjournment appropriate in the circumstances; and
8. It will give its decision, and may give an oral decision, as soon as practicable at the conclusion of or after the hearing, and will provide the parties to the appeal or hearing with a statement of the reasons for its decision as soon as practicable after the hearing.

8.3.2 Neither Tribunal shall have the authority to order any Event or Race to be rerun and the final decision of the Chief Steward during an Event or Race regarding a field of play decision shall not be reviewable unless the decision was made outside of the Chief Steward's authority or was the product of fraud, corruption, partiality or other misconduct of the Chief Steward.

8.3.3 To the extent that it is not prescribed by these rules, the Tribunals shall determine its own procedure.

8.3.4 In addition to any other means of giving notice, any notice required to be given to a Defendant or Appellant under this Part 8 will be taken to have been given properly if it is delivered or sent by ordinary pre-paid post, facsimile transmission or email to the address notified to Speedway Australia in respect of the Licence Holder's last application for a Licence. A notice will be taken to have been given:

g) If posted, on the third day following the date of posting (whether actually received or not);

h) If sent by facsimile, at the time of transmission provided that the sender's machine produces a transmission report confirming the successful transmission; and

i) If by email, at the time of transmission unless a message stating that the email failed to reach the intended recipient is received by the sender.

9.1. DEMOLITION DERBY RULES AND REGULATIONS

Demolition Derbies are intended to provide safe competition and enjoyment for the participants and spectacular entertainment for spectators.
At all times the Steward's decision shall be final and no protests or appeals will be considered by Promoter. The Promoter has the right to refuse the entry of any driver.

ALL competitors must hold a valid Speedway Australia full competition or one day licence to compete in any extraneous event.

See separate rules for a Main Straight Derby, Ramp Race or Figure 8 event.

9.2. SAFETY REQUIREMENTS

9.2.1. Full faced helmet with visor must be worn which meets or exceeds AS/NZS 1698:2006 or UN ECE 22.05 standard.
9.2.2. Neck Brace must be worn – SFI Foam collar to be used.
9.2.3. One piece driving suit or one piece cotton drill overalls to be worn with covered footwear. No synthetic or nylon clothing allowed. No exposed skin allowed. All drivers must wear full length, long sleeved overalls. Leather gloves, boots or shoes must be worn, NO THONGS or SNEAKERS. NO NYLON CLOTHING
9.2.4. No thongs to be worn in pit area during meeting
9.2.5. Gloves of fire retardant material to be worn.
9.2.6. Padding to be placed on all bar work and protrusions to protect the driver
9.2.7. Window net for driver door mandatory. Net to be secured at bottom and clipped at top. Maximum hole size in webbing 75mm x 75mm.
9.2.8. Centre of steering wheel to be padded, with airbags disconnected or removed.
9.2.9. Driver's side door to be painted red with large white cross.
9.2.10. If passengers participate the same safety requirements for the drivers must be adhered to, for example passenger's door to be painted red with white cross and window net to be fitted.

9.3. MINIMUM AGE

No person under the age of 16 years (under 17 years in NSW) shall ride in, drive, or be in charge, of any motor vehicle during the conduct of the event.

9.4. DRUGS AND ALCOHOL

9.4.1. Drivers may be required to submit to an alcohol and/or drug test before the event and pit crew may also be tested at random. Drivers must be able to return a result of 0.0 or a negative reading.

9.4.2. No drinking of alcohol in the pits until the completion of the meeting.

9.5. VEHICLE REQUIREMENTS

Vehicles can be any Sedan, Station Wagon, Panel Van or Utility. Please note, however, that no full chassis vehicles are permitted ie vehicle where the chassis can be unbolted or separated from the body for the full length of the vehicle.
Only original manufacturers body panels and equipment to be used in its entirety.

9.5.1. V8 vehicles are not encouraged

9.5.2. Uniform engine capacity specification (i.e. 8, 6 and 4 cylinder vehicles not to be combined).

9.5.3. Vehicle must use original type manufacture engine and transmission mounted in original position

9.5.4. Engine and gearbox mounts may be welded and/or restraint chains or cables are permitted but original rubber mounts must be retained

9.5.5. Engine fan may be removed if desired.

9.5.6. Type and means of gear shift is optional but hole must be less than 200mm x 200mm if fitting floor shift.

9.5.7. No extra weights or reinforcing of suspension parts

9.5.8. No relieving of guards or panels to allow greater wheel clearance

9.5.9. All holes in the firewall and front floor are to be covered

9.5.10. Bumpers must be for type and model of vehicle being used and all over-riders must be removed

9.5.11. Grills must not be replaced with any material considered to be stronger than original.

9.5.12. Tow bars and bull bars to be removed

9.5.13. All glass must be removed

9.5.14. All interior linings, trims, interior/exterior door handles, ornaments chrome strips and lights to be removed

9.5.15. Windscreen mesh to be securely fitted using 75mm x 75mm x 5mm mesh (min).

9.5.16. All doors and tailgate to be chained shut around door pillars using 6mm chain and bolted using 10mm bolts. Chain to go twice around door pillars and be bolted. Both front doors to be securely chained (6mm), bolted or welded shut.

9.5.17. If vehicle has tailgate it must be chained closed with 6mm chain and bolted using 10mm bolts.

9.5.18. Car numbers to be 600mm high x 400mm wide and 100mm thick clearly written on each side of car behind front door.

9.5.19. No obscene or offensive sign writing on cars.

9.5.20. Driver's side door to be painted in contrasting colour with large white cross

9.5.21. Drivers Name to be printed clearly on the roof above the driver
9.5.22. Vehicles may be fitted with a 300mm x 300mm white flag attached to 6mm wooden dowel so that bottom of flag is no lower than 300mm above roof line when dowel is attached with tape to right hand door pillar. Driver is to break flag off as soon as their vehicle is immobilised indicating that the vehicle is no longer in the event and is no longer a target.

9.6. SEATS AND SEAT BELTS

9.6.1. A seat incorporating a headrest must be used.
9.6.2. Seat back to be hard against and fixed to a horizontal brace attached to roll cage.
9.6.3. Road type regulation lap and shoulder harness securely fixed is a minimum.
9.6.4. Belts to be in good condition and repair.
9.6.5. Competition 75mm 4, 5 or 6 point harnesses are permitted and recommended. If race harness is used, it must be mounted to roll cage.

9.7. FUEL SYSTEM

9.7.1. Original fuel tank must be removed.
9.7.2. Jerry can or boat type fuel tank minimum permitted, maximum capacity 20 litres
9.7.3. Pick up and breather pipes to enter top of tank.
9.7.4. No electric fuel pumps unless original manufacturer equipment
9.7.5. Fuel tank to be securely mounted to bar work with steel straps or similar in back seat area.
9.7.6. Fuel line to have flexible section close to tank
9.7.7. Tap to be fitted in line within reach of driver and clearly marked in a contrasting colour – FUEL ON/OFF
9.7.8. A non-spill vent is to extend through floor well clear of exhaust pipe. Fuel tank must otherwise be sealed.

9.8. OTHER MECHANICAL REQUIREMENTS

9.8.1. Radiator (and transmission cooler if original) must be used and flowing & fixed to original mounting points.
9.8.2. Additional radiators, transmission cooler or holding tanks not permitted.
9.8.3. Brakes, steering and exhaust to be roadworthy. All cars to be below 95 DBA.
9.8.4. Tail shaft loops to be fitted within 150mm of universal joints
9.8.5. Locked differentials are optional.

9.9. ELECTRICAL SYSTEM

9.9.1. Battery to be mounted to bar work in left side of car. MUST be securely fitted in box and sealed with rubber.
9.9.2. Two secured batteries may be used.
9.9.3. Effective kill switch to be mounted in centre cowl panel & marked in contrasting colours KILL SWITCH.
9.9.4. All wires to be suitably grommeted where they pass through firewall.
9.9.5. Wires not to be attached to fuel lines.

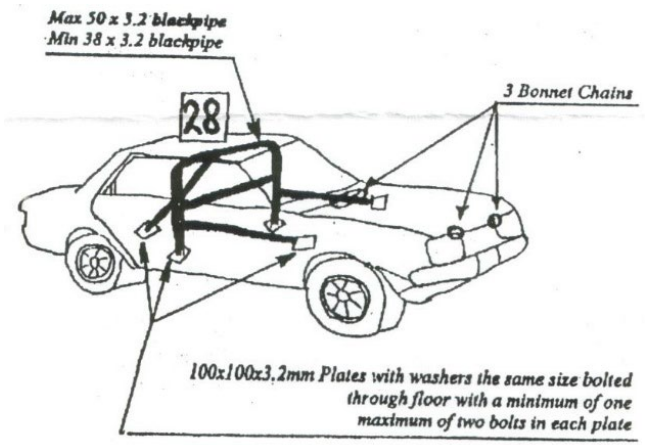
9.10. WHEELS AND TYRES

No racing rims or racing tyres permitted

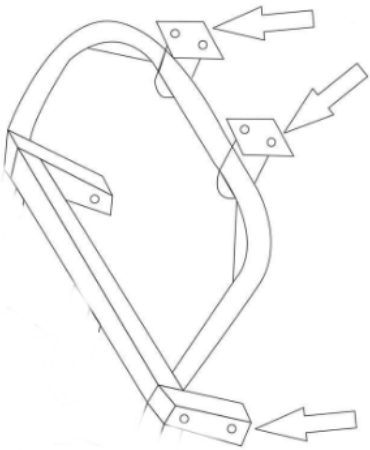
9.11. ROLL CAGE AND CONSTRUCTION REQUIREMENTS

Also refer to diagram below

9.11.1. All bar work to be minimum 38mm x 3.2mm black steel pipe – max 50mm x 3.2mm steel pipe.
9.11.2. Bar work to be in cabin area only.
9.11.3. All plates and washers to be 100mm x 100mm x 3.2mm minimum thickness.
9.11.4. All bolts to be 12mm minimum.
9.11.5. Main bar to be one piece and mandrel bent only not heat formed. No galvanized pipe permitted. Bar to be placed as close as possible to the rear of the driver's seat.
9.11.6. The bars of the roll cage to be mounted securely and bolted to the floor pan using 12mm bolts minimum and 100mm x 100mm x 3.2 mm plates
9.11.7. All joints to be professionally welded
9.11.8. Main roll bar to have horizontal brace bar at approx. just below shoulder height.
9.11.9. One rearward brace bar only, from top centre of main hoop to a plate bolted in rear of car.
9.11.10. Side intrusion bars on both side to be bolted to wheel well and extend back to main roll bar at centre door height.
9.11.11. Drivers side only to have 6mm steel plate one piece attached to both front door pillars and the side intrusion bar, using 12mm U bolts (No drilling of bar work) and or angle iron brackets and 12 mm bolts or welded. Plate must extend from bottom of door to window opening.
9.11.12. Padding to be placed on all bar work and protrusions to protect driver.



9.11.13 Option Two: Approved alternative rollbar



a) Minimum specifications for round pipe:-
38mm x 3mm wall thickness
b) Minimum specifications for RHS:-
65mm x 65mm x 3mm wall with 100x100 triangle gussets in the corners
c) Minimum specification for U-Bolts: 12mm

9.12. DEMO DERBY RACING RULES

9.12.1 All cars must be at the track at the allocated time and date to be scrutineered. Any cars not passed will have the opportunity to correct any problems and be re-inspected prior to event. Cars that are not in pit area by specified time will not be eligible to compete until scrutineering fee is paid.

9.12.2 Crash helmets and seat belts must be worn at all times during the event until the event has been completed.

9.12.3 The track is to be watered before the Demolition Derby commences to reduce dust and speed.

9.12.4 The event is started when RED light is turned Green or Green flag is dropped. The Officials may at any time change the lights back to RED in the event of an accident or fire. All action must cease immediately when the Red light is on or RED flag waved.

9.12.5 Any car immobilised for longer than two minutes will be deemed to be out of the event. Driver must remain strapped into car until told by Official to vacate car.

9.12.6 If given a black flag a driver must immediately cease driving.

9.12.7 If vehicle has tail gate which opens or is lost during the event that vehicle is disqualified immediately.

9.12.8 Any car deemed by Officials not to be actively participating in the demolition of fellow competitors and making solid contact with another MOBILE

vehicle at least every two minutes will be automatically disqualified.

9.12.9 Drivers who drive outside of designated competition area will be disqualified.

9.12.10 Any competitor deemed to have hit on purpose a fellow competitor driver's door or driven into roof of an over turned car will be instantly disqualified.

9.12.11 It is recommended that First and reverse gears are to be used only.

9.12.12 Last car still MOBILE as judged by Officials will be deemed to be the winner provided that all rules have been observed.

9.12.13 The winning car will be re-inspected after the event before official result is given.

9.12.14 Decisions of Officials are final and no protest will be considered.

9.13. SALVAGE

It is responsibility of each entrant to remove their vehicle from the Speedway premises within 24 hours of the event. Any vehicle left on Speedway property overnight is at owner's risk. Any cars not removed within 24 hours will become the property of the Promoter and will be disposed of in any manner they select.

9.14 DEMO DERBY TEAMS RACING: ADDITIONAL TECHNICAL SPECIFICATIONS

9.14.1 All cars to be tidy in appearance and professionally signwritten.

9.14.2 All glass except interior mirror to be removed.

9.14.3 Cars that contain rust in critical areas e.g. door pillars or hinges will not be permitted.

9.14.4 Side intrusion bar to be fitted between drivers door pillars (same size and material as roll bar).

9.14.5 All vehicles must be fitted with an interior roll bar (not full cage) fitted behind the front seat, above the drivers normal seated position, as per diagram over.

9.14.6 Rollbar material: 38mm OD 3.2mm wall thickness steampipe or RHS.

9.14.7 Diagonal cross must be fitted inside roll bar.

9.14.8 Rollbar to be mounted to mounting plates at floor and middle of roof.

9.14.9 Mounting plates to be 125mm x 125mm x 6mm.

9.14.10 A headrest 280mm x 150mm x 3mm to be fitted centrally behind drivers helmet and securely mounted to rollbar.

9.14.11 Radiators to remain in original position but fan may be removed.

9.14.12 Fuel tanks must be mounted in the boot area centrally and as far forward as possible without intruding into the rear passenger area.

9.14.13 Fuel lines to be secured with no leaks or kinks and of

an approved type.

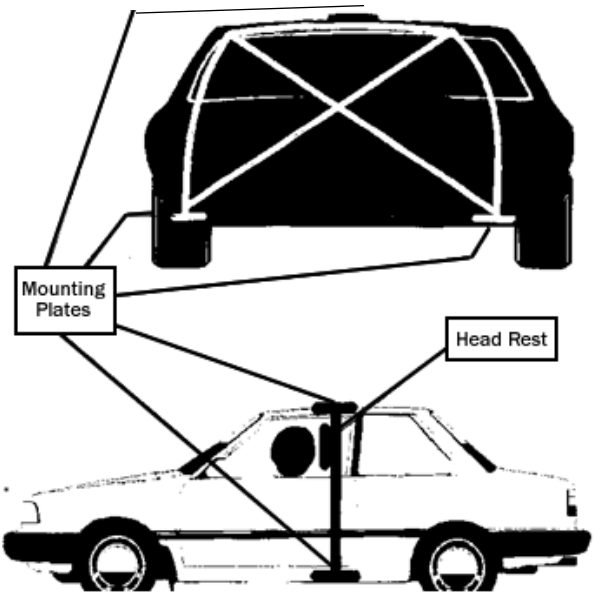
9.14.15 All bolts used to effect modification are to be a minimum of 10mm in diameter.

9.14.16 Car only to carry 10ltrs of fuel

9.14.17 Electric fuel pumps must have a shut off switch accessible from outside the vehicle

9.14.18 Must have a 4, 5 or 6 point racing harness (harness must be serviceable but may not be in date)

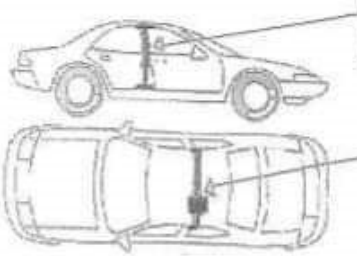
Pictured below: Roll bar as required in Teams Derby Rules 9.14.5 – 9.14.10



9.14.16 Derby Teams Rollbar Option B – as per diagrams below

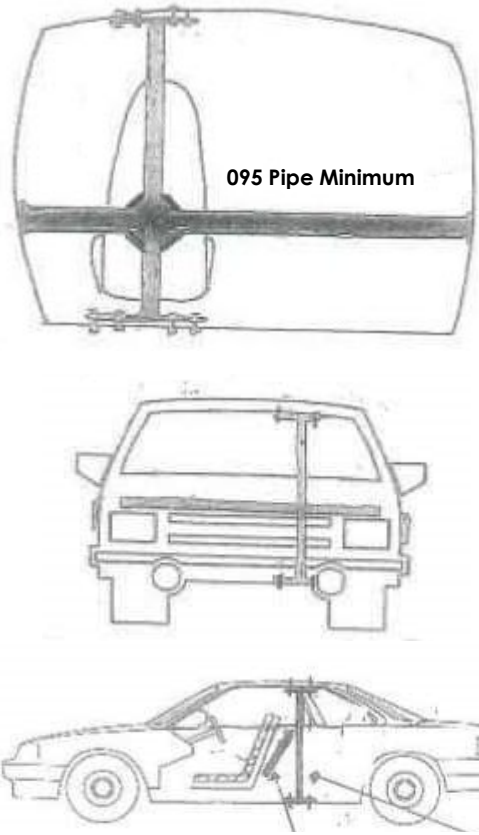
a) 50x50mm RHS 3mm wall thickness plates on sides and floor and roof 300mm x300mm x 3mm thick.

b) A side intrusion bar on the driver's side should run from front of front door pillar to rear of rear door pillar at centre door height.



095 Rollover post. Flat plate welded top and bottom. Bolted through roof and floor

095 pipe behind drivers seat, welded from B-pillar to B-pillar



B-Pillar to B-Pillar bar **Rollover post can be behind B-Pillar bar**

9.15 DEMO DERBY TEAMS RACING: ADDITIONAL RACING RULES

9.15.1 Racing may take place during the meeting.
9.15.2 No competitor shall manoeuvre their vehicle into the path of others so their door is exposed.
9.15.3 No hitting any stationary vehicles
9.15.4 All competitors must race in the race direction.
9.15.5 In the event of a rollover the car is out of the race unless it returns to its wheels without assistance.
9.15.6 Teams will consist of 2 to 4 members at the promoter's discretion
9.15.7 One way communication to Chief Steward is required.

9.16. DEMOLITION DERBY RULES AND REGULATIONS

PLEASE READ THE FOLLOWING RULES CAREFULLY-ALL RULES WILL BE STRICTLY ENFORCED. Note: All vehicles must be in standard condition except for modifications allowed in these specifications.

9.16.1. Format: Forward only slalom Demo Derby for front wheel drive 4 Cylinder with a maximum capacity of 1.8 litre
9.16.2. Open to Front Wheel Drive 4-cylinder vehicles ONLY eg: Hyundai Excel, Daewoo, Ford Laser, Mazda 323, Suzuki, Swift, Daihatsu Charade, Toyota Corolla – if you're not sure please seek clarification on cars.
9.16.3. NO PASSENGERS ARE ALLOWED
9.16.4. No relieving of guards or panels to allow greater wheel clearance
9.16.5. Diff's are open
9.16.6. Wheels and tyres are not restricted – All wheel weights must be removed.
9.16.7. All mouldings, head lights, tail lights and badges must be removed (NOT BROKEN)
9.16.8. All glass must be removed properly, NOT BROKEN IN. PLEASE NO GLASS fragments left in vehicle.
9.16.9. All cars are to be cleaned out (no loose objects)
9.16.10. All doors must be tied with Seat Belts or chained, and not lightened or cut out ie. Not altered in any way. • Window mesh in front of driver's door optional
9.16.11. Webbing strap or chain for the extreme front of bonnet is acceptable. No bolting, welding or strengthening of any bonnet, boot lid, mudguard, bumper bar or seam.
9.16.12. No tow bars.
9.16.13. Battery must be securely mounted, covered with RUBBER MATTING
9.16.14. Radiators must be of original type and in original position.
9.16.15. Fan blades may be removed.
9.16.16. No additional heater tanks, radiators or top-up bottles.
9.16.17. Fuel Tanks -If original tanks are used a maximum of 20 litres of fuel can be carried
9.16.18. Fuel Tanks - alternative tank must be a steel "jerry can or outboard motor fuel tanks", which must be secured to the middle of the rear seat on the floor in a safety cradle. Original must be holed.

9.16.19. Absolutely No plastic bottles permitted.
9.16.20. The original fuel line must be used from the engine bay to the entrance of the fuel tank where an approved one metre (maximum length) flexible fuel hose may be used. Professionally constructed – no plastic tanks.
9.16.21. Located immediately behind the driver's seat one tube steel bar from pillar to pillar (centre pillars or rear doors OK) must be used. Round Tube or Square tubing must be at least 38mm x 3.0mm. A Vertical bar may be used behind the driver's seat from roof to floor with a plate or a rope from pillar to pillar to stop right hand seat collapsing.
9.16.22. On the end of each bar plates of not less than 100mm x 100mm are to be welded on each end and bolted to pillars (not welded) by at least two bolts each side through pillars or rear doors and plates. Bolts must be no less than 6mm thick and bolted from outside inwards.
9.16.23. Approved seat belts must be fitted to the vehicle – Standard vehicle seatbelts are allowed or proper fitted Competition four-point harness are permitted and recommended.
9.16.24. Belts must be in good condition -i.e. no frayed edges.
9.16.25. Car numbers must be in large lettering on both sides of the vehicle. Preferably, both passenger doors.
9.16.26. The driver's door must be painted RED OR WHITE WITH A LARGE WHITE X (CROSS) OR NUMBER to be a contender in event. No X/Number = No start.
9.16.27. All sign writing will be inspected. Anything deemed to be in bad taste by the officials must be removed.
9.16.28. Any foam cushioning is acceptable and recommended
9.16.29. All brakes must be in working order

9.17 MAIN STRAIGHT DERBY RACING RULES

Note for Promoters: For a derby between 20 to 30 cars, the track size is recommended to be a maximum of 75 to 100 metres long and 40 to 50 metres wide. The track size may be increased with higher car counts.

9.17.1 Open to all competitors, male and female, over the age of 16 years, with a full or one day Speedway Australia competition licence.

9.17.2 No consumption of alcohol less than 12 hours before said event. Anybody found intoxicated will be banned from the current and any future Demolition Derbies. No drinking of alcohol in the pits until the completion of the race meeting.

9.17.3 This Demo Derby is FORWARD only.

9.17.4 The event is started 2 to 4 wide with each car touching the car in front nose to tail when the YELLOW light is turned to GREEN

9.17.5 In the event of a yellow light being shown cars are to move under caution to the start line to restart 2 to 4 wide with each car touching the car in front nose to tail when the YELLOW/RED light is turned to GREEN.

9.17.6 The officials may at any time change the lights back to RED in the event of an accident or fire. All action must cease immediately when the RED light is on.

9.17.7 Crash helmets, neck braces (mandatory) and seat belts must be of an approved type and be worn at all times.

9.17.8 Competitors must be dressed from head to toe – no exposed skin. No Nylon or synthetic clothing allowed. Cotton drill overalls or better is strongly advised and work boots must be worn. NO THONGS, SHORTS, T-SHIRTS ARE ALLOWED.

9.17.9 Uniforms should be clean and free from oil, grease and petrol.

9.17.10 Any cars immobilized for longer than one minute will be deemed to be out of the event

9.17.11 ANY CARS DEEMED BY OFFICIALS NOT TO BE PARTAKING IN THE DEMOLITION DERBY WILL BE AUTOMATICALLY DISQUALIFIED.

9.17.12 DRIVER'S USING THE INFIELD GRASS AREA WILL BE DISQUALIFIED.

9.17.13 ANY DRIVER'S DOOR DEEMED TO BE HIT ON PURPOSE BY A FELLOW COMPETITOR; THE OFFENDING DRIVER WILL BE INSTANTLY DISQUALIFIED.

9.17.14 On receipt of paid entry, a number will be allocated.

9.17.15 Decision of Judges, Referees and Scrutineers are final. No protest will be considered.

9.17.16 Management has the right to refuse the entry of any driver without reason.

10.1. FIGURE 8/RAMP RACE RULES AND REGULATIONS

Figure 8/Ramp events are intended to provide safe competition and enjoyment for the participants and spectacular entertainment for the spectators.
The cars will be required to nominally complete 15 laps. All jumps on the course must be negotiated by the vehicles. Cars must use the track proper or face disqualification and there should be no deliberate contact.
At all times the stewards decision shall be final and no protests or appeals will be heard.

10.2. SAFETY REQUIREMENTS

10.2.1. Full faced helmet with visor must be worn which meets or exceeds AS/NZS 1698:2006 or UN ECE 22.05 standard.
10.2.2. Neck Brace must be worn
10.2.3. One piece driving suit or one piece overalls to be worn with covered footwear. No synthetic or nylon clothing allowed.
10.2.4. Gloves of fire retardant material to be worn.
10.2.5. Padding to be placed on all bar work and protrusions to protect the driver
10.2.6. Double thickness garden mesh acceptable, window net preferred, to be securely attached inside car. Maximum hole size in webbing 75mm x 75mm.
10.2.7. Centre of steering wheel to be padded.

10.3. AGE REQUIREMENTS

No person under the age of 16 years (under 17 years in NSW) shall ride in, drive, or be in charge, of any motor vehicle during the conduct of the event.

10.4. DRUGS AND ALCOHOL

Drivers may be required to submit to an alcohol and/or drug test before the event and pit crew may also be tested at random.
No consumption of alcohol less than 12 hours before event. Anybody found intoxicated will be banned from the current event and any further events at the venue.
No drinking of alcohol in the pits until the completion of the meeting.

10.5. VEHICLE REQUIREMENTS

10.5.1. Any passenger type mono construction **4 cylinder** 2 wheel drive vehicles permitted and only to use original manufacturers body panels and equipment in its entirety

10.5.2. Vehicle must use original type manufacture engine and transmission mounted in original position with original equipment
10.5.3. No extra weights or reinforcing of suspension parts
10.5.4. No relieving of guards or panels to allow greater wheel clearance
10.5.5. All holes in the firewall and front floor are to be covered
10.5.6. Bumpers must be for type and model of vehicle being used and all over-riders must be removed
10.5.7. Tow bars and bull bars to be removed
10.5.8. All glass must be removed except dashboard
10.5.9. All interior linings, trims, interior and exterior door handles, ornaments, chrome strips and lights to be removed
10.5.10. Windscreen mesh to be securely fitted using 75mm x 75mm x 5mm mesh (min).
10.5.11. All doors to be chained shut around door pillars using 6mm chain and bolted using 10mm bolts. Chain to go twice around door pillars and be bolted
10.5.12. Boot to be chained shut in two places
10.5.13. Bonnet to be chained shut in three places, 2 at the front and 1 in centre rear
10.5.14. Roof number to be fitted min 300mm x 300mm in contrasting colours
10.5.15. No obscene or offensive sign writing on cars
10.5.16. Driver's side door to be painted in contrasting colour with large white cross
10.5.17. Drivers Name to be printed clearly on the roof above the driver

10.6. SEATS AND SEATBELTS

10.6.1. A seat incorporating a headrest must be used
10.6.2. Seat back to be hard against and fixed to a horizontal brace attached to roll cage
10.6.3. Road type regulation lap and shoulder harness securely fixed is a minimum
10.6.4. Belts to be in excellent condition
10.6.5. Competition 75mm 4, 5 or 6 point harnesses are permitted and recommended. If race harness is used, it must be mounted to roll cage.

10.7. FUEL SYSTEM

10.7.1. Original fuel tank must be removed.
10.7.2. Jerry can or boat type fuel tank minimum permitted, maximum capacity 20 litres
10.7.3. Pick up and breather pipes to enter top of tank.
10.7.4. No electric fuel pumps unless original manufacturer equipment
10.7.5. Fuel tank to be securely mounted to bar work with steel straps or similar in left hand back seat area.
10.7.6. Fuel line to have flexible section close to tank
10.7.7. Tap to be fitted in line within reach of driver and clearly marked in a contrasting colour – FUEL ON/OFF
10.7.8. A non-spill vent is to extend through floor well clear of exhaust pipe. Fuel tank must otherwise be sealed.

10.8. OTHER MECHANICAL REQUIREMENTS

10.8.1. Radiator (and transmission cooler if original equipment) must be used and flowing and fixed to original mounting points.
10.8.2. Additional radiators, transmission cooler or holding tanks not permitted
10.8.3. Brakes, steering and exhaust to be roadworthy. All cars to be below 95 DBA.
10.8.4. Tail shaft loops to be fitted within 150mm of universal joints
10.8.5. Locked differentials are optional.

10.9. ELECTRICAL SYSTEM

10.9.1. Batteries to be securely mounted and covered with rubber.
10.9.2. Battery to be mounted to bar work in left side of car. MUST be securely fitted in box and sealed with rubber.
10.9.3. Effective kill switch to be mounted in centre cowl panel & marked in contrasting colours KILL SWITCH.
10.9.4. All wires to be suitably grommeted where they pass through firewall.
10.9.5. Wires not to be attached to fuel lines.

10.10. WHEELS AND TYRES

No racing rims or racing tyres permitted

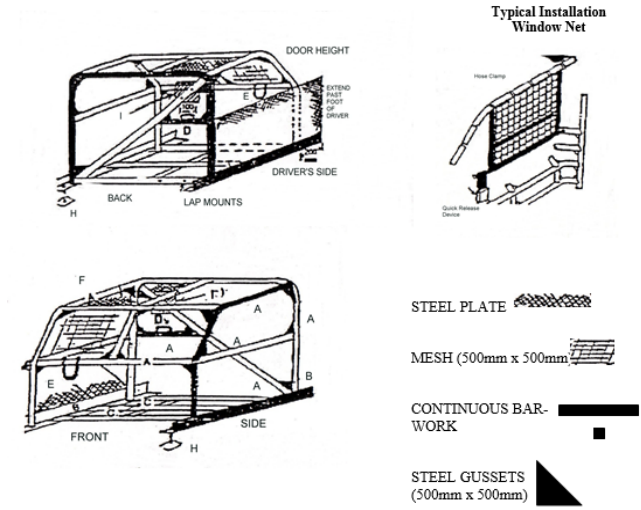
10.11. ROLL CAGE AND CONSTRUCTION REQUIREMENTS

10.11.1. All bar work to be minimum 38mm x 3.2mm black steel pipe – max 50mm x 3.2mm steel pipe.
10.11.2. Bar work to be in cabin area only.
10.11.3. All plates and washers to be 100mm x 100mm x 3.2mm minimum thickness.
10.11.4. All bolts to be 12mm minimum.
10.11.5. Main bar to be one piece and mandrel bent only not heat formed. No galvanized pipe permitted. Bar to be placed as close as possible to the rear of the driver's seat.
10.11.6. The bars of the roll cage to be mounted securely and bolted to the floor pan using 12mm bolts minimum and 100mm x 100mm x 3.2 mm plates
10.11.7. All joints to be professionally welded
10.11.8. Main roll bar to have horizontal brace bar at approx. just below shoulder height.
10.11.9. One rearward brace bar only, from top centre of main hoop to a plate bolted in rear of car.
10.11.10. Side intrusion bars on both side to be bolted to wheel well and extend back to main roll bar at centre door height.
10.11.11. Drivers side only to have 3mm steel plate one piece attached to both front door pillars and the side intrusion bar, using 12mm U bolts (No drilling of bar work) and or angle iron brackets and 12 mm bolts or

welded. Plate must extend from bottom of door to window opening.

10.11.12. Padding to be placed on all bar work and protrusions to protect driver.

10.11.13. FIGURE 8 &/OR RAMP ROLL CAGE SPECIFICATIONS



10.12. REFERENCE FOR ROLL CAGE DIMENSIONS

A	CONTINUOUS STEEL PLATE (38mm ID x 42mm OD)
B	CONTINUOUS ANGLE IRON
C	SEAT LOCATION (MOUNTS)
D	12mm SOLID STEEL LOOP FOR SEAT BELTS (100mm wide)
E	12MM SOLID STEEL LOOP FOR STEERING COLUMN
F	HEAD PLATE 3mm THICK, 500mm x 500mm
G	SIDE PLATE 6mm THICK
H	STEEL BOLT (12mm) + PLATE (100mm x 100mm) TO SECURE ROLL CAGE TO FLOOR
I	PADDED HEAD REST (3mm THICK PLATE 300mm x 300mm)

10.13. RAMP HEIGHT

Maximum ramp height is 200mm (8 inches) x 1500mm long. Dirt, steel/timber of solid construction

10.14. SIGNALS AND FLAGS

Flags and signals will be explained at the drivers briefing and any driver failing to obey these signals will be disqualified.

- Green: Race start
- Red : All cars must come to an immediate stop and remain stopped
- Black: Driver must withdraw from the event or face fines of $20 per lap.

10.15. RACING RULES FOR EVENT

Figure 8 and/or Ramp races are run as a spectator event and the competitors must comply with the following rules as a condition of entry.

10.15.1. The nights racing can consist of two heats at the start of the race meeting. Each car will compete in one heat over five minutes no time stoppages unless the chief steward deems it necessary. The running of these heats will be for qualifying positions for the A main. eg. Heat 1 will determine grid positions 1,3,5,7,9,11 etc and Heat 2 will determine grid positions 2,4,6,8,10 etc….

10.15.2. Cars must come to a complete stop within 5 seconds of the red light. Any car that continues to move or gains a position under the red will be penalised 2 laps by being shown the warning flag (Black with White diagonal stripe). A second offence will result in a black flag and exclusion from the event.

10.15.3. Red light will only be used when there is a rollover or in extreme circumstances.

10.15.4. If you roll over and break your belts, you will be excluded from the event. If the belts are not broken and the car is deemed still safe to continue, you will be turned back onto your wheels and the event will restart.

10.15.5. A designated push car will be in the infield to clear the cross over when it becomes blocked, with no stoppage allowing the event to continue.

10.15.6. Any car caught missing a ramp more than once when in control of their vehicle, which will be determined by the steward, will be penalised 2 laps.

10.15.7. There will be a start finish line positioned at the left hand exit of the cross over. This will be used to separate cars on the same lap. Once the race time has elapsed, the chequered flag will be waved and each car will cross the start/finish line, then pull onto the infield. The finishing order will then be worked out in by the amount of laps completed and in order of crossing the line. eg 2 cars on 15 laps, whichever car crossed line first finishes ahead of the other.

10.16. SALVAGE

It is the responsibility of the entrants to remove their vehicle from the track within one hour of the completion of the event. No prize money should be paid out until all cars are removed from the track before the track closes and all excess rubbish on the track and centre has been cleared.

11.1. SAFETY REQUIREMENTS

11.1.1. All competitors will wear long sleeve shirts, long trousers and covered shoes.

11.1.2. **No thongs, shorts or T-shirts allowed** and no synthetic or nylon clothing to be worn.

11.1.3. Seat belts must be worn and properly adjusted during competition.

11.1.4. Helmets can be full face or open face and must meet one of the following standards:
AS/NZS 1698, ECE 22-05, **SFI: 31.1 or 41.1**
FIA: 8858-2010, 8859-2015 or 8860-2010
Snell: SA2010, SA2015, SA2020, M2010, M2015 or SAH2010

11.1.5. Safety barriers must be provided for officials and also cars held in staging area near burnout pad.

11.1.6. No officials or photographers are to be closer than 6 metres to a vehicle when competing on burn out pad.

11.1.7. No official or photographer is allowed to stand directly in the path of a vehicle conducting a stationary burnout.

11.1.8. Driver and passenger must keep their torso within the confines of the vehicle. The passenger must remain in a position to be restrained by the seatbelt.

11.1.9. Qualified First Aid personnel must be in attendance.

11.1.10. Firefighting equipment and personnel trained in its use must be in attendance.

11.2. DRIVERS

11.2.1. No one under the age of 16 years (under 17 years in NSW) shall ride in, drive, or be in charge, of any motor vehicle during the conduct of the event.

11.3. DRUGS AND ALCOHOL

11.3.1. Drivers may be required to submit to an alcohol and/or drug test before the event and pit crew may also be tested at random.

11.3.2. No consumption of alcohol less than 12 hours before event. Anybody found intoxicated will be banned from the current event and any further events at the venue.

11.3.3. No drinking of alcohol in the pits until the completion of the meeting.

11.4. VEHICLES

11.4.1. The driver's seating position must have a securely mounted and approved seat belt fitted.

11.4.2. All doors must have secure locking mechanisms.

11.4.3. The battery must be securely fastened.

11.4.4. The engine and underbody must be free from any oil or coolant leaks.

11.4.5. A minimum 600mm coolant overflow tank/ bottle must be held securely in place.

11.4.6. Fuel cells/ tanks and batteries must be isolated from the cabin area.

11.4.7. No liquid/ fluids to run through the cabin area unless fully enclosed in metal housing and approved by the scrutineer.

11.4.8. No sprays to be used anywhere on the vehicle, including, but not limited to tyres, radiators or intercoolers.

11.4.9. Blower belt guard, approved restraint system and aluminium shear mounting studs are required for all out of bonnet superchargers.

11.4.10. Mechanical fuel injection must have fuel shut-off that is operational from the driver's compartment.

11.4.11. A 4 litre engine oil puke tank minimum.

11.4.12. NITROUS REGULATIONS- the following safety rules apply for all vehicles using nitrous oxide at burnout events.

(a) Bottles must be mounted outside of the engine compartment. A bottle located inside the driver compartment must be mounted with metal brackets secured to a structural point of the body, vented outside of the driver's compartment to the atmosphere.

(b) Bottles must be upright or semi-upright, inverted bottles are not permitted.

(c) Bottles must be equipped with on/off taps.

(d) Bottles must be purpose built for use of nitrous oxide.

(e) All bottles must use two supporting brackets locked with the supplied nut and bolt.

(f) Nitrous lines must be outside of the driver's compartment, except where the bottle is mounted in the driver's compartment as near as possible to the bottle outlet.

(g) Where lines pass the converter or flywheel area, they must be encased in a minimum of 3mm (1/8 inch) thickness steel tubing.

(h) High pressure rated hose minimum 1500PSI is required, and a sintered bronze filter, fit for purpose, must be fitted in the gas supply line.

(i) Both solenoids must operate from common switch and the system must be capable of being switched off by three means

1. When throttle is closed,

2. By a special arming switch that provides power to the solenoids,

3. Through the normal ignition switch).

(j) All vehicles using nitrous oxide must display special markers located on the outside of the vehicle, in the area where the supply bottle is located and in the top left corner of the front windscreen. The marker shall be a yellow diamond, with n20 printed in black letters. These are available from ANDRA.

(k) A prominent blue warning light must indicate when the system is armed and be in full view from outside the vehicle by track and safety staff.

11.4.13 The fuel tank, if not original, is to be of a professional construction standard, or fuel cell type and securely mounted.

11.4.14 Scatter shields to be fitted to all modified vehicles fitted with manual transmission.

11.4.15 Bonnets must be fitted, and front mudguards should be fitted.

11.4.16 No fuel or oil to be placed on wheels, either by manual or mechanical application.

11.4.17 All wheels must have all wheel nuts fitted and secured.

11.4.18 All wheel weights must be removed from drive wheels.

11.4.19 No dress rims or hubcaps to be fitted.

11.4.20 Modified floor pan/ fire wall and tunnel to be inspected by scrutineers for approval.

11.4.21 A minimum tread depth should apply to drive tyres, depth can be set by organisers.

11.5 PIT AREA/INFIELD

11.5.1 No person under the age of 16 years (under 17 years in NSW) will be permitted in the infield area during the conduct of an event.

11.5.2 The maximum speed of vehicles in the pit area is 15kph.

11.5.3 Burn outs are not permitted anywhere within the pit area or around the event complex or on any transporter.

11.6 BURNOUT PAD

11.6.1 Pad should be level concrete.

11.7 COMPETITION RULES

11.7.1 Any competing vehicle failing to keep within the defined pad area is either automatically disqualified or penalised points as determined by the promoter/organiser.

11.7.2 Authority of track officials to stop a competitor include fire, dropping fluids or debris onto the pad including oil or coolant, dropping glass or plastic from broken headlights/ lenses etc., dangerous driving, static burnout (burnout must be done whilst moving), not performing a burnout (driving in circles), exceeding the time limit.

11.7.3 Ignoring an official's direction to stop may result in loss of points or disqualification.

11.7.4 BURNOUT CLASSES

While every effort will be made to cater for all entrants, event organisers have the discretion to appropriately assign entrants to nominated classes.

(a) Pro Class

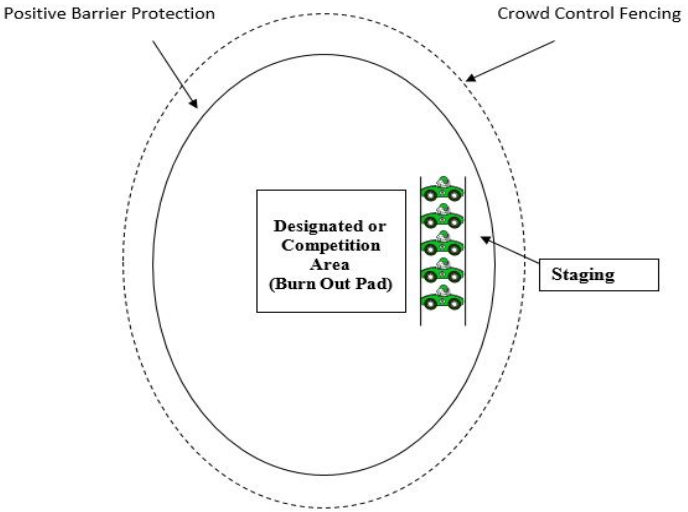
- **Engine- aftermarket supercharged, turbocharged, nitrous oxide**
- **Fuel- petrol, E85, Ethanol or Methanol**

(b) Open Class

- **Engine- naturally aspirated or standard OEM supercharged/ turbocharged (i.e. Factory standard XR turbo or I67)**
- **Fuel- (NITROUS OXIDE NOT PERMITTED) Petrol, E85, Ethanol or Methanol**

(c) 6 Cylinder Class

- **Engine- Naturally aspirated 4 or 6 cylinder**
- **Fuel- (NITROUS OXIDE NOT PERMITTED) Petrol, E85, Ethanol or Methanol**



12.1 Appeal Form

This form is to be used by any Licence Holder who wishes to appeal against a penalty imposed by a Chief Steward upon him or her in an Infringement Notice of otherwise, as per Rule 8.1.1.

12.2 Request for Disciplinary Tribunal

This form is to be used by any Licence Holder who wishes to lodge a charge of misconduct, in accordance with Rule 7.5.3.

12.3 Request for Speedway Appeal Tribunal

This form is to be used by any Licence Holder who wishes to appeal against a decision of a Disciplinary Tribunal, if the penalty handed down includes a penalty as per Rule 8.2.1. This form is also to be used by any Licence Holder who wishes to appeal against a penalty set down by Speedway Australia under Rule 7.6.

Chief Steward Report

Please refer to www.speedwayaustralia.org for the most up to date paper Chief Steward's Report Form.

The online Chief Stewards form can be completed at www.speedwayaustralia.org/officials

12.1: APPEAL FORM

NOTE:

a) An appeal may be lodged by a Race Car Owner, Driver or Official against a penalty imposed by a Chief Steward upon them to the Disciplinary Tribunal.
b) The procedure for instituting an appeal is to lodge this form with the Drivers' Representative, **Chief Steward or Host club/Division** within 24 hours of being informed of the Chief Steward decision together with an appeal fee of $500 to be paid to the Host Club (unless an Infringement Notice is only received on a day after the relevant Race Meeting, in which case this appeal form must be lodged within 48 hours to the Host Club).
c) The appeal is to be heard immediately after the last Race of the Race Meeting during which the appeal arose and shall not operate as a stay of the decision of the Chief Steward.
d) It is the responsibility of the Appellant to provide to the hearing, any witnesses or evidence he/she may choose to present (which may or may not be allowed by the Disciplinary Tribunal in accordance with rule e)6.
e) The decision of the Disciplinary Tribunal shall be final and an appeal shall only be allowed in accordance with rule.
f) The finality of the appeal must be acknowledged by all.

Date _____

Venue _____

Race No. _____

Race Title _____

APPEAL DETAILS IN FULL

_____

_____

_____

_____

_____

_____

_____

Declaration:

I, _____ the person making this appeal, hereby acknowledge that the decision of the Disciplinary Tribunal shall be final, and (other than in accordance with rule 0) there shall be no further appeal or recourse to any court.

Signature of Appellant:

_____

Date: _____ /_____/20 _____

Signature of Receiving Officer:

_____

Position of receiver:

_____

Time of Lodgement_____

12.2 REQUEST FOR DISCIPLINARY TRIBUNAL

Details of the person making the charge

Name _____

Position _____

Licence No. _____

Phone No. _____

Address _____

_____

Signed _____

Date _____

Request for formation of Disciplinary Tribunal, under rule 7.5 (Misconduct at a race meeting) to hear following charge:

1. **Nature of Charge**

   _____

2. **Against Whom**

   _____

3. **Date of Race Meeting**

   _____

4. **Speedway**

   _____

5. **Reasons for the bringing of this appeal are; (Set out facts including description of incident, time of incident)**

_____

_____

_____

_____

_____

_____

_____

Office use only

Date received .....

Office Signature .....

Fee received. Yes No

12.3 REQUEST FOR SPEEDWAY APPEAL TRIBUNAL

Details of the person making the charge

Name _____

Position _____

Licence No. _____

Phone No. _____

Address _____

_____

Signed _____

Date _____

Request the Speedway Appeal Tribunal to hear my appeal, under rule, against the decision of a Disciplinary Tribunal or decision of Speedway Australia

1. **Nature of Appeal**

   _____

2. **Against which Disciplinary Tribunal/Speedway Australia**

   _____

3. **Date of Hearing**

   _____

4. **Reasons for the bringing of this appeal are: (Set out facts)**

_____

_____

_____

_____

_____

_____

I, _____ the person making this appeal, hereby acknowledge that the decision of the Speedway Appeal Tribunal shall be final, and there shall be no further appeal or recourse to any court.

Signature of Appellant_____

Date_____

Signature of Receiving Officer_____

Position _____

Time of Lodgement_____

Office use only
Date received .....

Office Signature .....

Fee received. Yes No

13.1 BLACK FLAG OFFENCES

- Race Car continuing to exceed maximum noise level - rule 3.5.3
- Race Car being push started does not start within one lap – rule 4.4.2
- Travelling at speed across Infield - rule 4.8.2
- Deliberate, reckless or negligent contact with another Race Car - rules 4.8.3
- Persistently careless driving during passing - rule 4.9.5
- Driver repeatedly passing on the Infield - rule 4.9.5
- Reckless Race Track re-entry - rule 4.10.2
- Primary cause of two Race stoppages – rule 4.11.8
- Driver persistently refusing to accept restart position - rule 4.13.3
- Persistent careless driving - rule 4.14.3
- Driver refusing to go rear of field when directed - rule 4.15.4
- Any part of engine cover is lost or damaged and compromises Driver safety – rule 4.19.3
- Lapped Race Car impeding lapping traffic - rule 4.20.2
- Driver stopping on the Race Track to force a stoppage - rule 4.21
- Driver (except Sprintcar) who removes or undoes safety apparel while in confines of Race Track - rule 4.22.1
- Driver ignoring mechanical defect flag - rule 4.25.2
- Driver (except Sprintcar, Speedcars, V8 Dirt Modifieds and Wingless Sprints) undoes safety apparel and gets out of Race Car – rule 4.26.7

13.2 REAR OF FIELD OFFENCES

- Non-compliance with requirement to use one-way in-car communications – rule 3.4.2
- Sprintcars and Speedcars that become stationary in red light/flag stoppage and require a push start - rule 4.4.1
- Delaying Race start by more than two minutes - rule 4.5.1
- Race Car crossing centre T line at Race starts - rule 4.5.54.5.6
- Race Car unable to do time trials will start rear of field in the heat Races - rule 4.5.9
- Second occasion breaking formation or jumping star after warning for first offence - rule 4.7.1
- Careless driving during passing moves - rule 4.9.5
- Driver repeatedly passing on the Infield - rule 4.9.5
- Reckless Race Track re-entry - rule 4.10.2
- Failing to stop on red light - rule 4.11.4

- Primary cause or contributing cause of Race stoppage - rules 0 and 4.11.7
- Second refusal to accept restart position - rule 4.13.3
- Jumps the start, hits the cone or passes on the inside of the cone, or passes another Race Car before the cone - rule 4.13.6
- Sprintcar with flat tyre (except LHF) at restart - rule 4.13, Annexure E, Part A
- Persistent careless driving - rule 4.14.3
- Race Car which drops debris on Race Track which leads to Race stoppage – rule 4.19.1
- When work not competed in time Race Car may re-join at subsequent restart if no further laps of Race completed - rule 4.26.3
- Changing a wheel on Sprintcar, Speedcar, V8 Dirt Modified or Wingless Sprint during red light/flag on first lap of a State or National Title or other agreed major Event – rule 4.26.4
- Speedcar that removes wheel from any axle – rule 4.26, Annexure E, Part B
- Driver (or agreed representative) failing to attend Drivers' Briefing – rule 5.4.4
- Car entering Infield to check serviceability and requires a push start - rule 5.6.6

13.3 FINE, SUSPENSION AND DISQUALIFICATION OFFENCES

- Unauthorised use of communication equipment – 12 month disqualification - rule 3.4.2.
- In car camera not securely mounted during an event – maximum $100 fine – rule 3.4.5.
- Exceeding noise limit and ignoring black flag - $100 per lap and Race Car and Driver excluded from Race Meeting - rule 3.5.3
- Passing pace car - $100 fine - rule 4.5.2
- Serious deliberate, reckless or negligent contact with another Race Car - maximum fine of $2,000 and/or maximum suspension of 2 years - refer to rule 4.8.3
- Failing to stop on red light - $100 minimum fine and/or sent rear of field and option to disqualify from Race Meeting - rule 4.11.4
- Failure to accept black flag – minimum penalty $300 and/or 1 month suspension - rule 4.17.2
- Ignoring black flag – additional $100 per lap and/or the Driver and Race Car disqualified from the Race Meeting with maximum penalty $2,000 fine and/or 2 year suspension – rule 4.17.3
- Driver gets out of Race Car to remonstrate or make defamatory gestures – disqualified from Race Meeting with a maximum fine of $2,000 and/or maximum suspension of 2 years - rule 4.22.3
- Driver abandons car on the infield before its removal and without permission to do so - $100 fine and/or disqualification from race meeting – rule 4.22.5
- Pit Crew Member enters Race Track under red or yellow light/flag situation without Chief Steward authority - $500

fine to both Pit Crew Member and Driver and/or disqualification from Race Meeting – rule 4.27.1

- Subsequent unauthorised Race Track entry will result in 12 month suspension for offender and a $1,000 fine and/or disqualification from Race Meeting for Driver - rule 4.27.2
- Refusal to provide a sample for drug testing – excluded from Race Meeting, up to a maximum 10 year suspension and $5,000 fine (penalty see rule 6.6.3) – rule 6.1.7
- Driver who tests positive to drug test required to present Licence to Chief Steward - unable to participate in Race Meeting and not allowed in any restricted areas – rule 6.2.4
- Driver who goes to the Disciplinary Tribunal for a breach of rule 6.1 (other than rule 6.1.7) – maximum fine of $5,000 and/or maximum ten (10) year suspension (note that minimum penalties also apply – (see full penalties in 6.6.2).
- Returning positive alcohol breath test – excluded from Race Meeting, and required to leave Pits and, if a Driver, maximum fine of $5,000 and/or maximum ten (10) year suspension – (see full penalties in 6.6.2) - rule 6.4.4
- Possession or drinking of alcohol in Pits before or during a Race Meeting – removal of person(s) from Pits and Driver disqualified from the Race Meeting and, if a Driver, maximum fine of $5,000 and/or maximum ten (10) year suspension – (see full penalties in 6.6.2) – rule 6.5
- Verbal assault or abuse or attempt to strike – minimum $100 to maximum $2,000 fine and/or maximum 12 months suspension – rule 7.2.4
- Striking or physical assault – minimum $100 to maximum $5,000 fine and/or maximum 2 year suspension – rule 7.2.5
- Misconduct – at the discretion of the Tribunal and/or Speedway Australia (as applicable) with a maximum fine of $5,000 and/or maximum 10 year suspension depending on the gravity of the misconduct – rules 7.5 and 7.6.
- Non-compliance with technical specifications - fines up to $2,000 and/or suspensions up to two years - rule 7.9

13.4 LOSS OF POSITIONS OFFENCES

- Race Car breaks formation or jumps start within field enabling Race Cars to be passed unfairly - rule 4.7.2
- Careless passing - rule 4.9.3
- Passing another Race Car with any wheel on Infield - rule 4.9.4
- Passing another Race Car while rolling under yellow lights may be subjected to penalty - rule 4.11.2

14: MINIMUM SAFETY STANDARDS FOR APPAREL

The minimum safety standards listed in this section are compulsory.

The definition of Licence category is available from the website (www.speedwayaustralia.org) under "Safety".

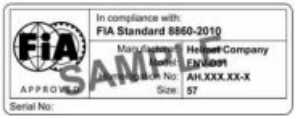
All items of Safety Apparel must meet the relevant standard shown below and this standard must be clearly identified on the item.

SAMPLE IDENTIFICATION STICKERS – HELMETS

SNELL RATED HELMETS

SFI RATED HELMETS

FIA RATED HELMETS



BRITISH STANDARD HELMETS

EUROPEAN STANDARD HELMET (ECE 22.05)

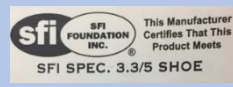
The ECE mark also consists of a circle surrounding the letter E followed by the distinguishing number of the country which has granted approval. The 05 denotes compliance with ECE 22.05.

SAMPLE IDENTIFICATION LABELS – APPAREL

SFI RATED APPAREL EXAMPLES – SUITS

SFI RATED APPAREL EXAMPLES – Undergarments, balaclava, shoes, socks & gloves

Undergarments



Shoes

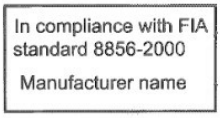
Balaclava

Arm Restraints

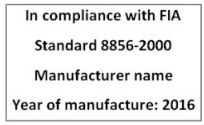
Horse Collar

FIA RATED APPAREL EXAMPLES – SUITS

FIA RATED APPAREL EXAMPLES – Undergarments, balaclava, socks, shoes & gloves



(pre-2016)



(2016 onwards)

The newest Standard FIA 8856-2018 for suits/underwear etc. carries a *10 year expiry date* and the "not valid after" date will be shown on the FIA label.

SECTION 14.1 SEATBELTS

All racing divisions (except **SKAA** Karts), must be fitted with a safety harness/seat belts of the lever latch style, which must be certified by an authoritative body (such as SFI) and must conform to all of their policies including fitment, care/maintenance and replacement period.

See your division's specification documentation for any possible additional requirements to this standard.

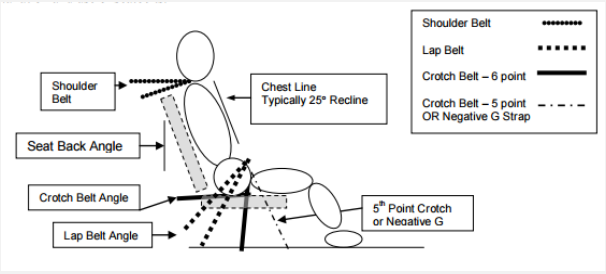
SFI labels prior to 2017

Current SFI labels

SEATBELT HANDY HINTS

SFI INSTALLATION GUIDE FOR UPRIGHT SEATING

DOWNLOAD HERE



15: SAFETY APPAREL AA, SSA & A OPEN WHEEL

APPLICABLE LICENCE CATEGORIES

AA ***All Divisions except SKAA Karts***
A ***All Open Wheeled Divisions***
SSA ***Super Sedans***
JD ***Junior Formula 500's***

15.1. Race Suit
Minimum standard of a 1 piece complying with either SFI 3.2A/5, FIA 8856-2000, **FIA 8856-2018** or a higher standard apparel.

15.2. Boots
Comply with SFI 3.3, FIA 8856-2000 **or FIA 8856-2018**. Socks must comply with SFI 3.3, FIA 8856-2000 **or FIA 8856-2018**.

15.3. Arm Restraints
Arm restraints must be worn in all classes where a window net is not fitted. Must comply with SFI 3.3 or FIA.

15.4. Balaclavas
Comply with SFI 3.3, FIA 8856-2000 **or FIA 8856-2018** and must be worn.

15.5. Gloves
Comply with SFI 3.3, FIA 8856-2000 **or FIA 8856-2018**. It is recommended they are the Gauntlet style glove and must not be modified in any way.

15.6. Underwear
Must be worn and **c**omply with SFI 3.3, FIA 8856-2000 **or FIA 8856-2018**, must be long sleeved, long legged and must have a neck collar. Drivers must only wear cotton under-garments (e.g. no synthetic boxer shorts), and no underwires on bras. No synthetic attire & no jewellery to be worn by a competitor whilst competing.

15.7. Helmets
Full faced and comply with one of the following:-

1) Snell SA-2020
2) Snell SA-2015
3) Snell SA-2010 **(Please note all Snell SA2010 Standard Helmets cannot be used after 1 July 2021)**
4) FIA 8858-2010
5) FIA 8859-2015
6) FIA 8860-2010

15.8. Head and Neck Restraint
Meet FIA and/or SFI 38.1 Standard and must be worn. (A horse collar is optional when wearing a Head and Neck Restraint).

16: SAFETY APPAREL A (SEDANS), SSA, B, JUNIOR & VINTAGE

APPLICABLE LICENCE CATEGORIES

A ***All Sedan Divisions***
SSA ***All Divisions except Super Sedans***
B ***All Divisions***
JD ***Junior Competitors except Jr F500's***
V ***Vintage***

16.1. Race Suit
Minimum standard of a 1 piece complying with either SFI 3.2A/1, FIA 8856-2000, **FIA 8856-2018** or a higher standard of apparel.

16.2. Boots
Comply with SFI 3.3, FIA 8856-2000 **or FIA 8856-2018**. Socks must comply with SFI 3.3, FIA 8856-2000 or **FIA 8856-2018**.

16.3. Balaclavas
Comply with SFI 3.3, FIA 8856-2000 **or FIA 8856-2018** and must be worn

16.4. Gloves
Comply with SFI 3.3, FIA 8856-2000 **or FIA 8856-2018**. It is recommended they are the Gauntlet style glove and they must not be modified in any way.

16.5. Underwear
Must be worn and comply with SFI 3.3, FIA 8856-2000 **or FIA 8856-2018**, must be long sleeved, long legged and must have a neck collar. Drivers must only wear cotton under-garments (e.g. no synthetic boxer shorts), and no under wires on bras. No synthetic attire and no jewellery to be worn by a competitor whilst competing.

16.6. Helmets
Full faced and comply with one of the following:-

1) **Snell SA-2020**
2) Snell SA-2015
3) Snell SA-2010 **(Please note all Snell SA2010 Standard Helmets cannot be used after 1 July 2021)**
4) BS 6658-85 Type A/FR, AS/NZS 1698:2006 or UN ECE 22.05 standard. (must be no older than 5 years from manufacturer date).
5) FIA 8858-2010
6) FIA 8859-2015
7) FIA 8860-2010

For JD (Junior Divisions) only, the following helmets are also approved for use.

8) SFI 24.1
9) CMR2016
10) CMS2016

16.7. Horse Collar

Compulsory if Driver is not using a Head and Neck Restraint, except Vintage uncaged cars.
Must comply with SFI 3.3.

16.8. Head and Neck Restraint

Recommended but not mandatory. If worn a Head and Neck Restraint must conform with FIA or SFI 38.1. An AS/NZS 1698:2006 or UN ECE 22.05 helmet must not be modified in any way. Only a Snell or FIA helmet can be modified to wear a Head and Neck restraint device.

16.9 Arm Restraints

Arm restraints must be worn in all classes where a window net is not fitted. Must comply with SFI 3.3 or FIA.

Please note that SFI Spec 38.1 Head & Neck restraints must have an in-date compliance sticker on them. The SFI 38.1 Spec requires them to be re-certified every five years. Competitors and officials please take time to check the dates on all Head and Neck Restraints to ensure compliance with these rules.

HANS Device Recertification
Revolution Racegear
www.revolutionracegear.com.au

Safety Solutions / Simpson Hybrid + variants & R3 Frontal Head Restraints
Simpson Safety Equipment Australia
www.simpsonraceproducts.com.au

Defnder Head & Neck Restraints
Australian Racing Products
www.australianracingproducts.com.au

APPLICABLE LICENCE CATEGORIES

K ***SKAA Karts incl Juniors***

17.1. Drivers Suits

Drivers must wear abrasive resistant overalls (to the satisfaction of the Scrutineer). No press-studs are allowed, and disposable type overalls are not acceptable.

17.2. Boots

Approved karting boots should be fire resistant (i.e. nomex woollen etc).

17.3. Gloves

Gloves are mandatory. Can comply with SFI 3.3, FIA 8856-2000 **or FIA 8856-2018**; Kart specific gloves and Motorcycle 'competition' gloves and mechanics type safety gloves, made of leather or other material of similar or greater durability, are acceptable. They must not be modified in any way. Gloves with integral knuckle protection are also recommended.

17.4. Helmets

Full faced with visor (no goggles), and comply with one of the following:-

1) **Snell SA-2020**
2) Snell SA-2015
3) Snell SA-2010 **(Please note all Snell SA2010 Standard Helmets cannot be used after 1 July 2021)**
4) FIA 8858-2010
5) FIA 8859-2015
6) FIA 8860-2010

For JD (Junior Divisions) only, the following helmets are also approved for use.

7) SFI 24.1
8) CMR2016
9) CMS2016

BS 6658-85 Type A/FR, AS/NZS 1698:2006 or UN ECE 22.05 Standard are also permitted until 30 June 2022

17.5. Head and Neck Restraint

A Head and Neck Restraint is mandatory (Horse Collars cannot be used).

Any Head and Neck restraint worn must be a commercially produced Head and Neck restraint system which is manufactured specifically for Kart or Motocross competition.

Only a Snell or FIA helmet can be modified to wear a Head and Neck restraint device.

Some Available Brands: 360 Device, EVS, Alpine Stars, Leatt Brace, Omega Brace and Atlas

2.2 LICENCES

2.2.16 The logbook is to accompany the Sprintcar at all times and shall be passed to the new owner on sale of the Sprintcar. Replacement of the book will be made when it is full or beyond reasonable use. Old logbooks will be returned to the issuing club.

4.4 PUSH STARTS

i. Each Race Car is allowed one push/engine start without penalty before the initial Race start and following any red light/flag stoppage where the incident did not involve that Race Car, and the Race Car stopped due to the red light. For other push/engine starts, the Race Car will be required to go rear of field.

ii. Any Race Car involved in a yellow light/flag stoppage, whether or not a contributing cause, and has become stationary, and for whatever reason requires a push/engine start, will be required to go rear of field in the restart.

iii. Any Race Car involved in a red light/flag stoppage, whether or not a contributing cause, and has become stationary before the red light is shown, and for whatever reason requires a push/engine start, will be required to go rear of field in the restart.

4.6 STARTING OPTION

4.6.2 The option given to a Driver under rule 4.6.1 may be exercised after entering the track and upon initial form up. After this, there will be no change to any other starting positions.

4.9 PASSING

4.9.4 If it is considered a driver has gained a position or advantage by passing or driving on the infield (anything more than the left-hand front wheel under the pole line), the driver will be put back 2 positions. This will apply to each Sprintcar passed and will be applied at the first available opportunity, i.e. race stoppage or on final race results.

4.13 SINGLE FILE RESTARTS

4.13.6 Any car that passes beneath the cone, hits the cone or passes another car before reaching the cone will be put back 2 positions. The race will continue and the driver will be shown the rule infringement flag and the penalty applied during a subsequent yellow/red light stoppage or at the end of the event.

4.13.7 Other than the first lap of a Race, Drivers unable to make a previous start, may return to the rear of the field provided that a complete racing lap has not been recorded since their withdrawal.

4.13.9 Any car with a flat tyre, except LHF must go rear of field at any yellow/red light stoppage. However, the driver will be shown the mechanical defect flag at the earliest opportunity if the car is deemed to be unsafe at the restart.

Any tyre may be changed on a Red Light or Yellow Light on the first lap of a main event. All work must be carried out in the work area and within the given time limit. Once any tyre has been changed the car will restart ROF.

4.20 LAPPED CARS

a) In any restart, **any running Sprintcar at the time of the stoppage, one or more laps down will be credited one lap, placing them in the same running order prior to the stoppage.** Lapped Sprintcars are to take their positions as per the last recorded lap in order of placing behind those Sprintcars on the current lap.

4.26 WORKING ON CARS

a) During an open red light/flag stoppage, Pit Crews Members may work on a Race Car, but on the Infield at designated area only. The Driver may get out of the Race Car if necessary. A wheel may be removed and replaced to change the offset or to allow for repairs, but only after notifying an Official so that it can be verified that the same wheel is put back on.

4.28 REFUELLING

a) On track or Infield refuelling is only permitted during a red light/flag stoppage. Before refuelling, fire-fighters must be alerted, the engine must be switched off and extreme caution must be exercised to avoid spillages.

4.29 SUBSTITUTE CARS

a) If a Sprintcar/Wingless Sprint Driver uses a substitute Race Car for time trials, he may use a substitute Race Car but time trial from last position and only able to qualify as high as position 11.
b) When a multi-day/night Race Meeting is conducted, Sprintcar/Wingless Sprint Drivers may change chassis after each day/night's racing has been concluded and retain their points.

7.8 PROTESTS

a) No driver is allowed to race under protest. All protests/appeals for disqualification shall be heard after the race meeting is completed, not during. Any driver stopping on the track to protest will be disqualified from the race.

7.9 TECHNICAL

a) Engines will be checked at the completion of all State Championships and sanctioned Events and may be checked at any other time by Officials.
b) Sealed engines need not be rechecked unless specified in the entry conditions for that Event with the exception of Australian and State Titles.
c) When engines are checked, it will be with an approved engine capacity checker or similar operated per the SCCA procedure.
d) If an engine is measured with an SCCA approved instrument and found not to comply with the vehicle specifications, the Race Car Owner/Driver will be given the opportunity to remove the heads within a time limit of one hour.
e) The placegetters in all sanctioned Events, State and Australian Titles to have their fuel checked for illegal additives.
f) The width of wings will be checked on all Sprintcars after all sanctioned Events. Penalty for wing infringement will be disqualification for the Driver from that Race.
g) Any Driver and Race Car Owner that prescribes the use of any engine, car or other component which offends against the published specifications, uses traction control, uses illegal fuel or additives, refuses to have his/her engine checked, damages or destroys SCCA property will be disqualified from the Race Meeting and will be suspended for a minimum of nine months to a maximum of twelve months from that date.

WINGLESS SPRINTCARS ONLY – CAR NUMBERS IN HEATS

For Wingless Sprintcar Heats, there will be a maximum of 12 cars permitted on the track at any one time.

SPEEDCAR RULE VARIATIONS

4.4 PUSH STARTS

(a) Each Race Car is allowed one push/engine start without penalty before the initial Race start and following any red light/flag stoppage where the incident did not involve that Race Car, and the Race Car stopped due to the red light. For other push/engine starts, the Race Car will be required to go rear of field.

(b) Any Race Car involved in a yellow light/flag stoppage, whether or not a contributing cause, and has become stationary, and for whatever reason requires a push/engine start, will be required to go rear of field in the restart.

(c) Any Race Car involved in a red light/flag stoppage, whether or not a contributing cause, and has become stationary before the red light is shown, and for whatever reason requires a push/engine start, will be required to go rear of field in the restart.

4.20 LAPPED CARS

a) In any restart, lapped Speedcars are to take their positions as per the last recorded lap in order of placing behind those Speedcars on the current lap.

4.26 WORKING ON CARS

a) During a red light/flag stoppage, Pit Crew Members may work on a Race Car, but on the Infield at designated area only. The Driver must remain in the Race Car at all times.

b) Any Race Car that removes any wheel from the axle at any time will go rear of field at the restart.

SSA RULE VARIATIONS

2.1 PRE RACE REQUIREMENTS

a) At a race meeting where drivers are required to nominate (e.g. State and National Titles) and the driver fails to appear at the event without withdrawing their nomination by the end of scrutineering, may be subject to an infringement notice.

3.2.3 WEIGHING OF CARS

a) Any driver who fails to present their race car to scales for weighing when directed to do so by an official will be disqualified from the event they have completed in immediately prior to the directive being given.

b) Furthermore the driver is expected to go directly to the scales area without deviation once the directive is given and failure to do so will result in disqualification.

3.6 ROOF NUMBER PLATES

a) A roof number plate is mandatory for all Race Meetings. However, supplementary regulations may advise otherwise where transponders are being used to record laps.

b) The roof number is a number issued for identification of a Race Car on Race day and may be distinct from the Race Car registration number. It shall be a metal plate 30cm square with a 5cm right angle fold at the bottom where 2 holes at 20cm centres shall be drilled to take 6 mm bolts.

c) Number one is reserved for the current National and State Title holders with Australia 1 taking precedence at National Titles and the defending State Number 1 taking precedence at State Titles. All clubs recognise State title holders who wish to run Number 1 as their roof number, but home State title holders will take precedence at Club Meetings.

d) The roof plate number shall be bolted to the roof of the vehicle at an angle from the left hand front to the right hand wheel arch or parallel with the side of the Race Car depending on lap scoring requirements. The number shall be painted using a black background and white numbers. 20, 30, 40, etc. shall not be used.

4.3 DUMMY GRID LINEUP

4.3.1 Cars should take up their correct position on the dummy grid ready to race before entering the track. The Pit Marshall will cross cars over rows to close up any spaces as a result of scratching's.

4.5.1 STARTING

The maximum field size in any heat race is 16 cars.

4.11 RACE INCIDENTS AND STOPPAGES

4.11.5 Any Race Car stopping due to a red light, but not involved in the incident and not judged to be a contributing cause will be reinstated in the restarting order, regardless of whether a push start is required.

4.13 SINGLE FILE RESTARTS

a) As the leader Race Car approaches the cone, no passing move may be commenced until the cone is passed. Any Race Car that is driven in part or wholly beside (overlapping) the race car in front of it but does not gain a position will be subject to a 2 position penalty that will be applied at the next stoppage or if no stoppage applied in the race results.

b) Any Race car that hits the cone or passes it on the inside or passes another Race Car before the cone will be sent rear of the field at the next stoppage, or if no stoppage, applied in the results of the Race.

4.20 LAPPED CARS

4.20.4 Lapped cars will be placed at the Rear of the Field at a race restart for heats and finals.
They will be placed in the order that they were lapped or as directed by the Chief Steward.

4.23 COMPLETION OF A RACE

4.23.3 The Chief Steward will declare a Race complete once the lead Race Car has passed the chequered flag. If the yellow lights/flags are shown after the lead Race Car crosses the Finish Line for an incident all the Race Cars receiving the chequered flag will finish in the order they crossed the Finish Line. The remaining Race Cars will be recorded as finishing in the order of their last completed lap not withstanding any penalties which could be applied by the Chief Steward.

4.23.7 For heat races, Race Cars that get the green flag to start the Race but are non-finishers may be eligible for points and/or prize money.

4.29 SUBSTITUTE CARS

If a driver repairs their car, they can take up their position without penalty as per the original draw.

5.1 ACCREDITATION OF OFFICIALS

a) All SSA Officials must have undertaken and passed an accreditation program and be the holder of a current Working with Children (WWC) to be eligible to officiate at SSA sanctioned meetings.

5.5 SCRUTINEERING

Rear of field does not apply.

6.4.5 SSA PROCEDURE FOR ALCOHOL TESTING

Testing of SSA licenced drivers and officials to determine the presence of alcohol in their body by analysis of their expired air, is appropriate and necessary for the safety of everyone involved in race meetings and events of Speedway Sedans Australia, it's state associations and its affiliated member clubs.

1. The testing for the presence of alcohol in the body is by the analysis of expired air. Testing will be conducted by a person trained and deemed competent to operate such equipment. Testing should be carried out prior to any Race but may be undertaken at any time during the Race Meeting.
2. An initial test will be undertaken and should this test return a positive reading a second test will be undertaken within twenty minutes under controlled conditions to confirm the initial positive test result. During this twenty minute period the person subject to the second test will not be permitted to take anything by mouth.
3. Any SSA Licence Holder detected with blood alcohol content above 0.0 milligrams per 210 litres of air will be declared unfit by the Chief Steward to participate further in the Race Meeting.
4. Any SSA Licence Holder returning a positive breath test result shall be excluded from taking any further part in the Race Meeting by the Chief Steward, surrender their SSA licence to such Steward and will be subjected to a penalty of up to 12 months suspension and a fine up to $1000.
5. Any Licence Holder returning a test result above the required limit will be required by the Chief Steward to leave the Pits or any other restricted area. 5. Any SSA licence holder who refuses to provide a sample when requested to do so will be issued an infringement notice by the Chief Steward with a penalty of 10 years suspension and a $5000 fine.

The process prior to the above and after are as per the existing rules in Section 6.

First offence disqualified from meeting, after that as per Section 6 of rule book.

7.6.6 SOCIAL MEDIA/NETWORKING POLICY

Outlining Principles

Speedway Sedan Australia Inc. (SSA) has an obligation to maintain a safe physical and emotional environment within the organisation for Association Officials, Stewards, Technical Personnel, Registered Drivers, State Branches, Club Members, Volunteers, Tracks, Spectators and Sponsors. The responsibility is not entirely confined to the race track and/or at race meetings.

The SSA takes seriously its responsibility in providing guidelines and a policy for its members in relation to what is deemed acceptable and appropriate online ethics and behaviours. Members of the SSA, State Associations and Clubs have a responsibility to ensure that all online communications are aligned with the Associations expectations in relation to appropriate and respectful interactions with designated officials, technical personnel, track personnel, drivers, pit crews, parents, spectators and sponsors.

Social Media Misconduct includes, but is not limited to the following misuses of networking; harassing, intimidating or threatening another person by means of posting or sending inappropriate or derogatory email messages, instant messages, text messages, phone messages, images or website posting including those social networking sites such as Facebook, Twitter etc. and is irrespective of whether the page could be viewed by a broader community or not.

All persons must also be aware that postings, comments and/or messages from ones individual account, IT tool or mobile phone, whether actioned by themselves or another person will remain the responsibility of the account owner.

(a) Procedure

If a member of the SSA or State/Club affiliated association wishes to make a report and/or complaint about an online issue, the established procedures listed below must be followed.

1. **A report and/or complaint made during the conduct of a race meeting and directly linked to that race meeting will be made directly in writing to the Chief Steward and will be subject to an investigation by the Chief Steward and may be subject to a Stewards hearing or referred to the SSA Disciplinary Tribunal.**
2. **A report and/or complaint made outside of a race meeting will be made in writing to the relevant State Secretary. Provide the sufficient evidence where the State will assess the validity of the evidence to determine if the complaint is to proceed with the State Steward issuing a 30 day instant suspension to the offender, associated licence holder, registered car owner and/or car registration whilst the complaint is**

forwarded to SSA within 3 days to determine if an additional suspension is deemed necessary.

3. **All members of the SSA, State Associations and individual clubs must be aware that in certain circumstances where action has transpired to criminal meaning or a crime may have been committed, they may also be subjected to a criminal investigation by the relevant authority (police) over which the associations and/or club will have no control.**

(b) Penalties

Any driver presented before the Disciplinary Tribunal on a social media misconduct or online abuse offence must be aware that the penalties available to the tribunal are not limited to but include a complete deregistration or suspension of the SSA Licence/Infringement card.

Any proven charges determined by the Disciplinary Tribunal will automatically lead to a minimum of a three month SSA Licence/Infringement Card suspension for registered drivers. Consideration will be given to the seriousness of the issue, the impact on not only the offended individual, but the SSA, the State Association, club and/or track in deciding the final penalty.

In the case of a non-licence/Infringement card holder (i.e. parent, sibling, club member, pit crew, friend etc.) being proved to have engaged in online misconduct, the licensed driver engaging or otherwise directly associated with the person at the time of the conduct shall be deemed to be liable for the conduct of the person and will be charged and penalised as determined by the Chief Steward of the race meeting or a Disciplinary Tribunal.

7.8 PROTESTS

a) Any Driver who considers they have been aggrieved by the actions of another Driver during a Race may lodge a protest at the completion of a Race with the Chief Steward, within 2 minutes of the completion of the Race and before leaving the Race Track or Infield area
b) Protests must be presented in person, but the Drivers Representative may be present.
c) The Chief Steward will consider the case put by the Driver and may interview other Drivers or Officials where necessary to reach a decision. That decision will be given to the Drivers involved
d) No fee is required nor is a form needed
e) The Chief Steward may serve an Infringement Notice as a result of the protest.

7.9 TECHNICAL

a) If a race car is passed to compete by a scrutineer and another driver wishes to lodge an objection, that driver may lodge a technical appeal against the vehicle's eligibility or the engine eligibility.

b) A Technical appeal can be lodged at any time during that race meeting. The appeal must state the specification(s) with which the car does not comply.

c) The appeal form can be obtained from the Appeals Officer and it must be fully completed and returned to the respective official within 30 minutes with the appropriate fee.

d) Appeal lodgement fee must accompany the completed appeal form. Appeal lodgement fee $500, exception; engine eligibility which the appeal lodgement fee is $5,000.

e) If the appeal is upheld the lodgement fee is returned.

f) If the appeal is dismissed the lodgement fee is retained, unless engine disassemble was required, in which case, the Appeal lodgement fee is given to the respondent to assist with re-assembly.

7.9.1 Where required and due to a Technical Infringement, a suspension of a SSA Car Registration may be imposed.

SECTION 14 - SAFETY APPAREL

Any abuse of safety apparel will incur a penalty.

RSA & AMCA RULE VARIATIONS

2.1 PRE-RACE REQUIREMENTS

b) At a race meeting where drivers are required to nominate (e.g. State and National Titles) and the driver fails to appear at the event without withdrawing their nomination by the end of scrutineering, may be subject to an infringement notice.

3.4 MIRRORS

3.4.1 No rear or side view mirrors or highly polished panels intended for this purpose are permitted on any Race Car.
Exception: RSA Fender Benders Division 1 & 2

3.6 ROOF NUMBER PLATES

e) A roof number plate is mandatory for all Race Meetings. However, supplementary regulations may advise otherwise where transponders are being used to record laps.

f) The roof number is a number issued for identification of a Race Car on Race day and may be distinct from the Race Car registration number. It shall be a metal plate 30cm square with a 5cm right angle fold at the bottom where 2 holes at 20cm centres shall be drilled to take 6 mm bolts.

g) Number one is reserved for the current National and State Title holders with Australia 1 taking precedence at National Titles and the defending State Number 1 taking precedence at State Titles. All clubs recognise State title holders who wish to run Number 1 as their roof number, but home State title holders will take precedence at Club Meetings.

h) The roof plate number shall be bolted to the roof of the vehicle at an angle from the left hand front to the right hand wheel arch or parallel with the side of the Race Car depending on lap scoring requirements. The number shall be painted using a black background and white numbers. 20, 30, 40, etc. shall not be used.

4.11 RACE INCIDENTS AND STOPPAGES

4.11.5 Any Race Car stopping due to a red light, but not involved in the incident and not judged to be a contributing cause will be reinstated in the restarting order, regardless of whether a push start is required.

4.29 SUBSTITUTE CARS

If a driver repairs their car, they can take up their position without penalty as per the original draw.

7.9 TECHNICAL

g) If a race car is passed to compete by a scrutineer and another driver wishes to lodge an objection, that driver may lodge a technical appeal against the vehicle's eligibility or the engine eligibility.

h) A Technical appeal can be lodged at any time during that race meeting. The appeal must state the specification(s) with which the car does not comply.

i) The appeal form can be obtained from the Appeals Officer and it must be fully completed and returned to the respective official within 30 minutes with the appropriate fee.

j) Appeal lodgement fee must accompany the completed appeal form. Appeal lodgement fee $500 exception; engine eligibility which the appeal lodgement fee is $1,000.

k) If the appeal is upheld the lodgement fee is returned.

l) If the appeal is dismissed the lodgement fee is retained, unless engine disassemble was required, in which case, the Appeal lodgement fee is given to the respondent to assist with re-assembly.

SECTION 14 - SAFETY APPAREL

Any abuse of safety apparel will incur a penalty.

LATE MODEL RULE VARIATIONS

4.12.5 COMPLETE RESTARTS: NATIONAL AND STATE TITLES ONLY

a) At a yellow or red light stoppage before a lap has been completed of the final title deciding race, any car/s that sustains a flat tyre/s may be permitted to change it and restart in the race.
b) Such car/s will go to the designated work area when instructed to do so by the Chief Steward and facilitate the change as quickly as possible.
c) Other than pulling damaged body panels clear of tyres by hand NO OTHER WORK IS PERMITTED.
d) Failure to facilitate the change in the designated work area or the carrying out of work more than permitted will see that car/s immediately disqualified from the race.
e) When the tyre/s change is completed the car/s will rejoin at the rear of the field regardless of whether they were the cause of the stoppage or not.
f) Any primary cause car will still go to the very rear of the field.
g) The allowing of the tyre change can only be given by the Chief Steward and time constraints and curfews will be taken into account before he implements it.

4.13.6 SINGLE FILE RESTARTS

a) At the cone on single file restarts any car that drives partially or wholly beside the car restarting in front of them (overlapping) but does not gain a position will have a 2 position penalty given to them at the next stoppage or if no stoppage occurs the penalty will be applied to the race results.
b) For hitting the cone, driving inside the cone or passing a car before the cone the penalty will remain the same, being sent rear of field at the next stoppage or if no stoppage occurs the penalty with be applied to the race results.

SKAA KART RULE VARIATIONS

2.2 LICENCES

Add ". . . Infringement Card/Drivers Log Book" at all references under 2.2.
e.g. 2.2.1 All Drivers participating in any Race Meeting must be in possession of a current Licence in the relevant category and Racing Division and an Infringement Card/Drivers Log Book that is free of unpaid fines and current suspensions. All Officials participating in any Race Meeting must be in possession of a current Licence in the relevant category.

3.1 RACE CAR REGISTRATIONS AND LOG BOOKS

Rules 3.1.1 to 3.1.3 are not relevant to SKAA Karts.

4.3 DUMMY GRID LINEUP

4.3.2 Any Driver whose Kart is not on the dummy grid and has notified the Pit Marshall, will be given two minutes to have their Kart ready at the pit gate. The two minute time commences when all Karts in the race are on the track and ready to be pushed off.

4.22 GETTING OUT OF CAR

4.22.1 Drivers are to assist push vehicles to prepare for restart, but must wait until quad bikes are in position. Not applicable for juniors. Failure to adhere to this rule will see penalties apply, as per Rule 4.22.2.

4.26 WORKING ON CARS

4.26 At National and State Championships and "Blue Ribbon Events" only, in a final, a Driver may change a fouled spark plug during the roll around before the baulk line is crossed and only prior to the start of the Race. This is to be done on the Infield and one mechanic only may assist. The Driver may re-join in

their original position with no penalty. Once the Race has commenced, no change is permitted.

4.29 SUBSTITUTE CARS

4.29.1 Chassis substitutions are permitted without penalty as a result of damage, providing it is re-scrutineered"

5.5 SCRUTINEERING

5.5.6 Rear of field does not apply.

7.8 PROTESTS

a) Any Driver who considers they have been aggrieved by the actions of another Driver during a race may lodge a protest at the completion of a race with the Chief Steward via the Clerk of the Course/Race Director, within 5 minutes of the completion of the race.
b) Protests must be presented to the Chief Steward in person, with the Drivers Representative present.
c) The Chief Steward will consider the case put by the Driver and may interview other Drivers or officials where necessary to reach a decision. That decision will be given to the Drivers involved.
d) A $50.00 fee is payable, but no form is required. The fee shall be refunded to the driver should the protest be upheld, but forfeit if the protest is lost.
e) The Chief Steward may serve an Infringement Notice as a result of the protest.

DEFINITIONS

Baulk Line
A specified point on the Race Track, set by the Chief Steward and/or the Promoter, and announced in the Drivers' Briefing, at which a Kart that has failed to start is to withdraw from the Event.

FORMULA 500 RULE VARIATIONS

2.1 NOMINATIONS

2.1.2 (a) Late Nominations as per conditions stated on Entry Form.

4.3 DUMMY GRID LINEUP

4.3.1 Cars should take up their correct position on the dummy grid ready to race before entering the track. The Pit Marshall will cross cars over rows to close up any spaces as a result of scratchings. However once pushed off and on track, if a car is missing from a row then cars in that same row will move up and fill the gap.

4.23.3 FINISH OF RACE

a) To be classified as a finisher of any race, the competitor must pass the finish line/chequered flag under the cars own power without the assistance of others, with the driver seated in their correct position in the race car.

4.26 WORKING ON CARS

4.26.7 Once a competitor has entered the track, if their seat belt is unbuckled without the Steward's prior consent, that driver is to be disqualified from that event (heat/race), unless the driver undoes their belts for safety reasons, (e.g. tipped on side, fuel leaking, possible fire risk) and the driver can be ready to re-enter the race by the time the rest of the field is ready to resume the race.

4.29 SUBSTITUTE CARS

4.29.1 Formula 500 does not allow any substitute cars.

7.8 PROTESTS

7.8.1 RIGHT TO PROTEST - Any driver licensed under these Regulations who may consider him/herself aggrieved by any act on the part of any other driver or any irregularity occurring during the course of a race in which he/she is or has been taking part shall be entitled to protest as set out in these rules.

7.8.2 Any driver wishing to protest to the Steward must approach the Drivers' Representative of the meeting with his/her Rule Book and indicating/showing the Drivers' Representative as to which Rule he/she wishes to use in regard to the protest.

7.8.3 LODGING OF PROTESTS - The intention to protest against any alleged irregularity at all occurring during the course of a race shall be signified **verbally** to an Official prior to leaving the race course.

7.8.4 The protest in writing shall be lodged with the steward within **30** minutes of the completion of the particular race, together with the requisite fee, $250.00.

7.8.5 Nothing in this regulation shall have effect or prejudice the right of any officer, acting in his/her official capacity to take such action as he/she may deem proper in the circumstances.

7.8.6 USE OF VIDEO EVIDENCE - Use of Video evidence is permitted in the Protest and Appeal procedures if more than one camera angle is used.

7.8.7 APPEALS - Appeals as per PART 8 of the Australian Speedway Racing Rules & Regulations

16 SAFETY APPAREL

16.9 ARM RESTRAINTS are compulsory and must comply to SFI or FIA Standards.

V8 DIRT MODIFIED RULE VARIATION

4.20 LAPPED CARS

a) In any restart, lapped cars are to take their positions as per the last recorded lap in order of placing behind those cars on the current lap.

LIGHTNING SPRINT RULE VARIATIONS

4.11 RACE INCIDENTS AND STOPPAGES

4.11.6 Any race car judged by the Chief Steward to be the absolute and sole cause of any stoppage will go to the very rear of field in the restart, regardless of whether the race car stopped and regardless of whether other race cars require a push start. All other race cars that come to a complete stop will also be sent to rear of field. They will line up in front of the race car/s deemed to have caused the incident in the order as directed by the Chief Steward.

4.13 SINGLE FILE RESTARTS

4.13.5 When the single file is correctly formed up and a start is imminent by instruction via the Chief Steward, the yellow lights will be switched off and flags withdrawn. The lead race car determines the speed of the start at a constant moderate pace. The lead race car then has the option of commencing the race from the middle of turns three and four but no sooner or to the cone marker at the start/finish but no later.

4.20 LAPPED CARS

4.20.1 When a race car receives the lapping flag the driver of that race car must expect to be lapped sometime within the next lap or soon after. The lapped race car must hold line, and, must not race or impede the lapping race car or cars. The lapping flag will continue to be shown to a driver on each lap that being lapped by another race car is likely.

APPENDIX 8: PENALTIES MATRIX

The information contained in the next pages summarises the penalties outlined in various sections of the rulebook. They are presented in order of appearance.

Rule	Warning Flags	Loss of Two Positions	Rear of Field	Black Flag	Infringement Notice	Fine / Suspension
2.2.2 No Appropriate Licence						$500 Fine, disqualification & 3 month suspension
3.4.3 Communication Equipment			**Non Compliance with requirement to use one-way in-car communicators**			
3.4.4 Communication Equipment					Unauthorised use of communication equipment	Minimum 12 month suspension
3.5.3 Noise Control	Noise warning flag			Continuing to exceed maximum noise level	Failure to comply with black flag	Fine between $300 and $2,000, and/or 3 month to 2 year suspension. Also $100 per lap and/or disqualified from race meeting
4.4.1 Push Starts			Second push start for Sprintcar or Speedcar			
4.4.2 Push Starts	Mechanical Defect Flag					
4.5.1 Race Starts			Delays Race start by more than 2 minutes			

Rule	Warning Flags	Loss of Two Positions	Rear of Field	Black Flag	Infringement Notice	Fine / Suspension
4.5.2 Race Starts					Passing pace car	Fine $100
4.5.6 Race Starts	First offence crossing T-Line		Second offence crossing T-Line			
4.5.9 Race Starts			Unable to time trial for heat starting position			
4.7.1 Break Formation / Jump Start	First offence for breaking formation or jumping start		Second offence for breaking formation or jumping start			
4.7.2 Break Formation / Jump Start	Break formation or jump start within field (but Chief Steward wishes race to continue)	Penalty for each race car unfairly passed, applied at next stoppage or race end				
4.8.3 Reckless or Dangerous Driving				Deliberate, reckless or negligent contact with other cars or travelling at speed on infield	Serious deliberate, reckless or negligent contact with another race car	Maximum fine $2,000 and/or maximum 2 year suspension

Rule	Warning Flags	Loss of Two Positions	Rear of Field	Black Flag	Infringement Notice	Fine / Suspension
4.9.3 and 4.9.5 Passing	Carless driving during overtaking	Penalty for each race car passed by careless driving, applied at next stoppage or race end	Persistent careless driving, penalty applied at next stoppage or race end	Chief Steward discretion where required for excessive careless driving		
4.9.4 and 4.9.5 Passing (using Infield)		Penalty for each race car passed by putting wheel on infield, applied at next stoppage or race end	Repeatedly passing on infield, penalty applied at next stoppage or race end			
4.10.2 Track Re-entry	Careless race track re-entry		Reckless race track re-entry, penalty applied at next stoppage or race end	Dangerous race track re-entry		
4.11.2 Race Stoppage		Penalty for each race car passed while rolling around race track under yellow lights at Chief Steward discretion				

Rule	Warning Flags	Loss of Two Positions	Rear of Field	Black Flag	Infringement Notice	Fine / Suspension
4.11.4 Race Stoppage			Failing to sop on red light	Option to disqualify from race meeting	Failing to stop on red light – option of fine	Minimum fine $100
4.11.6 and 4.11.7 Race Stoppage			Primary or contributing cause to Race stoppage			
4.11.8 Race Stoppage				Primary cause of two race stoppages		
4.11.11 Fail to Obey Chief Steward				Subject to disqualification		Fine up to $1000 and/or up to 12 month suspension
4.13.3 Single File Restarts	First refusal to accept restart position		Second refusal to accept restart position	Third refusal in any one race to accept restart position		
4.13.6 Single File Restarts			Jumps the start, hits cone or passes on the inside of cone, or passes another race car before cone, penalty applied at next stoppage or race end			

Rule	Warning Flags	Loss of Two Positions	Rear of Field	Black Flag	Infringement Notice	Fine / Suspension
4.13.9 Single File Restarts	Mechanical defect flag for flat outside tyre					
4.14.1 and 4.14.3 Warning Flag	Driving in overly aggressive or careless manner		Second warning for continuing to drive in careless or contrary manner	At Chief Steward discretion		
4.15.4 Rear of Field				Driver refusing to go rear of field when directed		
4.172 and 17.3 Black Flag					Failure to comply with black flag	Fine between $300 and $2,000, and/or 3 month to 2 year suspension. Also $100 per lap and/or disqualified from race meeting
4.19.1 Dropping of Debris			Car drops debris on race track which leads to race stoppage			

Rule	Warning Flags	Loss of Two Positions	Rear of Field	Black Flag	Infringement Notice	Fine / Suspension
4.19.3 Dropping of Debris				Part of engine cover lost or damaged & compromises driver safety		
4.20.2 Lapped Car				Lapped car impeding lapping traffic		
4.20.3 Lapped Race Cars	Slow moving damaged or disabled car shown mechanical defect flag – go to infield					
4.21 Purposely Stopping on Race Track				Driver purposely spun or stopped on race track to force a stoppage		
4.22.2 Getting out of Race Car				Driver (except Sprintcar) removes or undoes safety apparel while in confines of track		

Rule	Warning Flags	Loss of Two Positions	Rear of Field	Black Flag	Infringement Notice	Fine / Suspension
4..2.3, 4.22.4, and 4.22.5 Getting out of Race Car				Driver gets out of race car to remonstrate or make defamatory gestures	Getting out of race car to remonstrate with Officials	A minimum fine of $100 up to a max fine of $2,000, and/or up to maximum 12 month suspension
4.25.1 and 4.25.2 Mechanical Defect	Cannot safely continue & shown Mechanical Defect Flag, must pull infield			Driver ignoring Mechanical Defect Flag	Failure to comply with black flag	Fine between $300 and $2,000, and/or 3 month to 2 year suspension. Also $100 per lap and/or disqualified from race meeting
4.26.3 Working on Race Cars			When work not competed in time, race car may re-join at subsequent restart if no further laps of race completed			
4.26.4 Working on Race Cars			Changing a wheel during red light/flag on first lap of a state or National Title or other agreed major event			

Rule	Warning Flags	Loss of Two Positions	Rear of Field	Black Flag	Infringement Notice	Fine / Suspension
4.26.7 Working on Race Cars				Driver (except Sprintcar) undoes safety apparel and gets out of Race Car		
Annexure E, Part B – Speedcars, 4.26(b) Working on Race Cars			Speedcar removes wheel from any axle			
4.27.1 Unauthorised entry to Race Track					Entry to race track without Chief Steward authority	Person subject to $500 fine and driver fined $500 and/or disqualified from race meeting
4.27.2 Unauthorised entry to Track					Subsequent unauthorised entry to race track	Person subject to 12 month suspension and driver fined $1,000 and/or disqualified from race meeting

Rule	Warning Flags	Loss of Two Positions	Rear of Field	Black Flag	Infringement Notice	Fine / Suspension
5.3.4 Driver Briefing			Driver (or agreed representative) failing to attend drivers briefing – penalty applies to heat races only			
5.5.6 Scrutineering			Driver entering infield to check race car serviceability and requires a push start			
6.1.7 Drug and Alcohol Policy					Refusal to provide sample for drug	Excluded from event, 10 year suspension and $5,000 fine
6.2.4 Drug Testing Procedure					Positive result to drug test	Excluded from event and not allowed in any restricted areas and subject to penalties listed in 6.6
6.4.4 Possession of Alcohol					Possession or drinking of alcohol in restricted areas	Driver excluded from event and person not allowed in restricted areas

Rule	Warning Flags	Loss of Two Positions	Rear of Field	Black Flag	Infringement Notice	Fine / Suspension
7.2.5 Verbal and Physical Abuse					Verbal assault, abuse or attempt to strike	Minimum fine $100, maximum fine $2,000 and/or maximum 12 month suspension
7.2.6 Verbal and Physical Abuse					Striking or physical assault	Minimum fine $100, maximum fine $5,000 and/or maximum 2 year ban
7.9.2 Technical					Non-compliance with technical specifications	Maximum fine $2,000 and/or maximum 2 year suspension

NATIONAL INFORMATION

ORGANISATIONAL STRUCTURE

The Speedway Australia Board of Directors includes 4 Promoter Directors, 4 Competitor Directors and an Independent Director (nominated by the Board). This structure ensures the Speedway Australia Board acts in a manner that is beneficial to all Speedway participants.

As at April 2021 these are the current Speedway Australia Board and Staff Members:

COMPETITOR DIRECTORS

Mark Cooper (Speedcars Australia)
Greg Lynd (Speedway Sedans Australia)
Darren Cassidy (RSA)
Mark Richards (SCCA)

PROMOTER DIRECTORS

Guy Thompson (ASPA, Chairperson)
Gavin Migro (Perth Motorplex, WA)
John Kelly (Archerfield Speedway, QLD)
David Mills (Premier Speedway, VIC)

INDEPENDENT DIRECTOR

Damien McKern (McKern & Associates)

SPEEDWAY AUSTRALIA STAFF MEMBERS

Tim Savell (General Manager)
James Hadley (Youth Development Officer)
Liz Weaver (Track & Safety Development Officer)
Adam Brook (Sport Development Officer)
Ross Kirby (Sport Development Officer)
Kirsten Knox (Licensing & Operations Administrator)
Angela Warren (Office Administrator)
Mark Holmes (Risk Management Officer)

For the benefit of all Speedway Australia licence holders, Speedway Australia arranges through its insurance brokers Marsh Advantage, a comprehensive Group Personal Injury insurance policy underwritten by QBE Insurance Ltd.

By purchasing this policy on a group scheme basis, Speedway Australia is able to provide broad cover to its licence holders.

COVER SUMMARY*

Insurance Class	*Group Personal Injury*
Insured	Speedway Australia
Policy Period	30 June 2021 4.00pm Adelaide time to 30 June 2022 4.00pm Adelaide time
Insured Persons	All National & State Executives, committee members, Insured persons: employees and drivers, mechanics, officials, visitors and others who are licence holders of Speedway Australia
Scope of Cover	Whilst attending for the purpose of engaging in competition events (including practices), official functions organised by, recognised by or under the direct control of Speedway Australia and/or any of its affiliates. Cover extends to insured persons who hold annual licences for necessary and direct travel to and from such competition event of practice, official function including journey to and from such events.
Territorial Limits	Within Australia in respect of all insured persons, extended to worldwide cover in respect of licenced drivers only, subject to written approval from Speedway Australia

****Licensed drivers intending to compete in Speedway Events overseas must contact Speedway Australia prior to travel for written approval from Speedway Australia for cover to apply.**

*Extracted from 2021/22 Speedway Australia Personal Injury Schedule of Benefits. For the most recent cover information, please contact Marsh Ltd directly on 03 9603 2752.

A full schedule of benefits and Policy Product Disclosure Statement is available on the Speedway Australia website at speedwayaustralia.org.au.

We recommend you read and understand the cover provided and contact Marsh Ltd directly on 03 9603 2752 if you have any further queries.

CAPITAL BENEFITS TABLE

The Events	***The Compensations***	***(% of maximum Amount Payable)***
1	Death (of insured persons other than below)	100%
	Insured Persons under 17 years & 70+	30%
2-12	Permanent Total Disablement including permanent paraplegia & quadriplegia, permanent unsound mind to the extent of legal incapacity, permanent and incurable paralysis of all limbs, permanent total loss of entire sight in both eyes, permanent total loss of sight in one eye, permanent total loss of use of one or both hands, permanent total loss of the use of one or both feet, permanent total loss of the use of both legs, permanent total loss of the use of one hand and one foot, permanent total loss of one hand and one arm, permanent total loss of the lens of both eyes	100%
13	Permanent total loss of the lens of one eye	50%
14	Permanent total loss of the hearing in:	
	a) Both ears	10%
	b) One ear	50%

15-16	Third degree burns and/or resultant disfigurement received from fire or chemical reaction which extends to cover more than 40% of the entire external body, permanent total loss of one arm or one leg	50%
17	Permanent total loss of the use of four fingers and thumb either hand	75%
18	Permanent total loss of the use of four fingers on either hand	40%
19	Permanent total loss of the use of one thumb on either hand,	
	a) Both joints	30%
	b) One phalanx joint	15%
20	Permanent total loss of the use of fingers either hand	
	a) Three phalanges joints	10%
	b) Two phalanges joints	8%
	c) One phalanx joint	5%
21	Permanent total loss of the use of toes of either foot	
	1. All one foot	20%
	2. Great both joints	5%
	3. Great one joint	5%
	4. Other than great each toe	3%

This information is provided as a guide only. To view items 22-25 of the capital benefits table and for complete and current information, please refer to the Product Disclosure Statement and Schedule of Benefits, available in full at www.speedwayaustralia.org

PUBLIC LIABILITY INSURANCE

The Speedway Australia Public Liability Insurance Scheme is arranged by Marsh Advantage, the appointed Insurance Broker to Speedway Australia.

Marsh are the world's largest insurance brokers and risk consultants with offices in all Australian States and Territories. Marsh's expertise in Sport and in particular Motorsport, began in 1985 when they placed the policies firstly for the Formula 1 Grand Prix in Adelaide and subsequently Melbourne. Marsh have also arranged insurances for the Clipsal 500 event in Adelaide since 1999.

All tracks that choose to participate in the Speedway Australia scheme benefit with reduced premium costs. All participating tracks contribute to the policy according to their track rating and race categories permitted by Speedway Australia.

The main advantages of group buying over purchasing individual policies are;

- Group buying achieves costs savings.
- Cover is designed specifically for Speedway risks.

In addition to the cover provided, tracks are entitled to rain out or pre-event cancellation refund credits. Premiums are paid on a meeting to meeting basis without the need to pay a full annual premium in advance. In 2008, a Low Risk category was introduced to ease costs for smaller tracks who have low crowd attendances and less numbers of competitors.

WAIVERS

By signing waiver forms you do not sign away any rights, but agree not to take legal action against the promoter, track, officials or other drivers in the race. This does not limit anyone from making a claim under personal accident insurance that they held.

If you would like to know more about Speedway Australia Public Liability Insurance, please contact Marsh Pty Ltd directly on (08) 8385 3612

Speedway Australia encourages participation in speedway at all levels, including junior level events.
As a Speedway competitor, you'll experience the thrill of being in the driver's seat at high speeds in intense competition. The cost of competing varies depending on the type of Speedway racing you would like to participate in – from varying licence costs to the cost of a car, travel and spare parts. Here are a few pointers to get you started in Speedway!
Speedway events are run on almost every weekend of the year, depending on which state you're in, and range from grass roots events to major events such as World Series Sprintcars.
Attending different types of Speedway racing events will help you work out which discipline of the sport you would like to become involved in.
Once you're ready to get involved, many clubs and tracks hold participation or "Come 'n' Try" days. Speedway Australia also offers One-Day Licences to competitors, so you can get out on the track without paying for a full season of racing. One-Day Licences are available for both junior and senior drivers.

BEFORE YOU START COMPETING

To ensure that every Speedway competitor is fit and capable to compete, all competitors must be licensed. This means that they have applied to Speedway
Australia for a Speedway licence and have satisfied the licensing criteria by:

- Becoming a member of an association or club
- Applying for a Speedway Australia Licence
- Submitting a health statement
- Undertaking an approved medical examination
- Agreeing to abide by the Speedway Australia Drug & Alcohol Policy
- Agreeing to abide by the Speedway Australia Code of Conduct

For more information on upcoming events and getting involved in Speedway, contact your Speedway Australia State Branch (details at rear of this booklet) or Speedway Australia Head Office directly on (08) 8139 0777.

You can also find a Competitor Association or Track near you by visiting www.speedwayaustralia.org

Speedway Australia encourages good sportsmanship at all levels of competition.

Here is a guide to Codes of Conduct for your association, club, track, drivers, officials and parents. If you have any questions about the Code of Conduct, please contact Speedway Australia Head Office on (08) 8139 0777, or visit https://www.playbytherules.net.au/ for advice.

Speedway Australia Encourages Sportsmanlike Conduct:

- Always comply with the rules.
- Always compete to the best of your ability, with honour and integrity.
- Avoid arguing with stewards and officials – most stewards have volunteered their time and services to ensure your race runs smoothly and efficiently. Without their assistance the sport could not exist.
- Treat all competitors as you would like to be treated – do not interfere with, bully, intimidate or take advantage of any other participant. This includes using email or social media to bully or slander competitors.
- Avoid the use of intimidating, coarse or derogatory language.
- Place the safety and welfare of all participants above all else.
- Ensure the spirit of competition is maintained - An honest effort is as important as victory.
- Officials should be understanding and co-operative in the interpretation and application of rules and penalties.
- Officials should be impartial, consistent and objective at all times.
- Parents should encourage children to participate to the best of their ability -
  Focus upon the child's performance rather than the overall outcome of the event.
- If you see something you consider 'ugly parent syndrome' behaviour, visit www.playbytherules.net.au and help to solve the problem.

SPEEDWAY AUSTRALIA TRIBUNALS

Speedway Australia expects all Licence holders to uphold the Code of Conduct and as such, treats allegations of poor conduct and bringing the sport of Speedway into disrepute very seriously. These matters may be referred to a disciplinary tribunal.

SOCIAL MEDIA

Speedway Australia encourages participation in online social media in a positive manner. The accessible nature of the internet however, can lend itself to the posting of threatening and derogatory material in the heat of the moment.

Once your thoughts and comments are published to the internet they are visible to the world - and they are permanent.

Speedway Australia takes all cases of threatening and derogatory behaviour seriously and will treat online matters as it would 'real world' bullying.

Breaching the Code of Conduct or bringing the sport of Speedway into disrepute online can lead to serious consequences, including tribunals, suspensions and the cancellation of the offender's Speedway Australia licence.

If you have questions about what constitutes acceptable content and online behaviour, please contact Speedway Australia on (08) 8139 0777.

SPEEDWAY AUSTRALIA TRIBUNALS

Speedway Australia expects all Licence holders to uphold the Code of Conduct and as such, treats allegations of poor conduct and bringing the sport of Speedway into disrepute very seriously. These matters may be referred to a disciplinary tribunal.

To learn more about Speedway Australia's disciplinary process and tribunals, contact us on (08) 8139 0777.

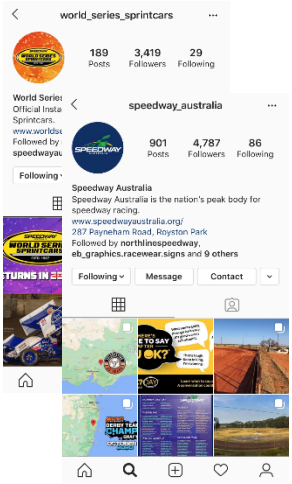
COMMUNICATIONS

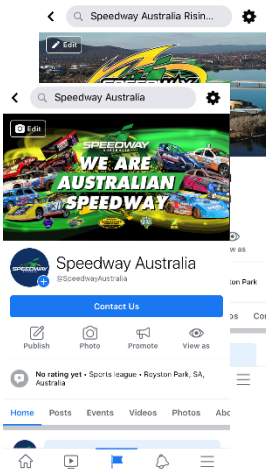
Speedway Australia is committed to communicating effectively with its licence holders, tracks, promoters, divisional bodies and stakeholders in order to improve Speedway for all participants.

Our primary communication outlets are the official Speedway Australia suite of websites, Facebook and Instagram pages, as they are the most efficient platforms to instantly update the entire speedway community.

We also send a weekly newsletter (Speed eNews) to track and club administrators.

Links to all of these sites can also be found on the Speedway Australia App.





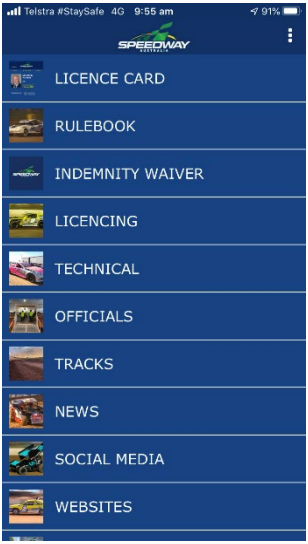
ONLINE LICENCING

In 2011/12, Speedway Australia successfully launched an online licensing system aimed at making Speedway licence applications simpler and faster than ever before.

In 2019, the Speedway Australia app was launched, bringing licence cards onto your smartphone and reducing wait times with licences no longer having to be posted around the country.

Clubs have access to their own portal on the Speedway Australia Online Licensing System, enabling the club to manage their own membership base. The infrastructure also tracks suspensions and expired licences.

Speedway Australia will continue to make hard copy paper application forms available in limited quantities for the 2020/21 season, with the aim to phase out paper forms all together



Day Licences – ONLY $60

A Speedway Australia Day Licence is only available for competition for SSA, B, E, V, A Class Sedans and Super Sedans and Late Model licenced Racing Divisions. They are available for all divisions for practices.

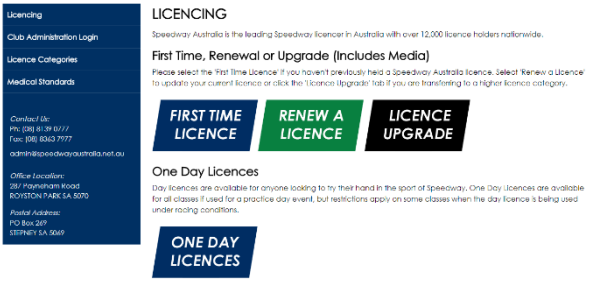
A maximum of 2 Day Licences may be issued to a competitor per year, after which the competitor must apply for a full Speedway Australia Licence.

All Speedway Australia Day Licences include Personal Accident Injury Insurance Cover for the duration of the licence.

LICENCE FEES

Licence Class	Licence Type	Price
AA	Driver	$310
A	Driver	$255
SSA	SSA Driver	$220
B	Driver	$215
JD	Junior Driver	$120
JDOWK	Junior F500/SKAA Driver	$120
JDJQMA	JQMA Driver	$120
C	Mechanic / Pit Entry	$140
D	Official – Steward & Scrutineer	$25
D	Official – All other	$25
E	Extraneous Events Competitor	$155
V	Vintage Events Competitor	$155
JM	Junior Mechanic	$95
JO	Junior Official	$25

Note: Applications lodged via paper forms in person, by fax or by email incur an additional $25 administration fee. A printed licence card is available for an additional $10.



www.speedwayaustralia.org

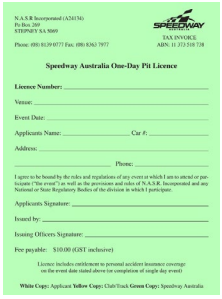
ONE DAY PIT LICENCES

WHAT ARE THEY?
A One Day Pit Licence can be purchased at the track's pit entry gate or via the Speedway Australia website/app, and is available for anyone who does not have a current annual speedway licence.

The recipient of a One Day Pit Licence is granted personal accident insurance. Without either an annual Speedway Australia Licence or a One Day Pit Licence, you will not be protected by personal insurance in the event of an accident at the track.

WHY DO I NEED IT?
All people in the pits, on the track, on the infield or in any other hot areas of a Speedway venue must have a licence and personal accident cover as per Speedway Australia policies. In the event of an incident or accident where you may be injured and/or incur medical costs, you will have personal accident insurance to cover you.
Mechanics and crew members that require pit entry at multiple events throughout the year can avoid completing a One Day Licence form every time by purchasing a Speedway Australia Mechanic/Pit Entry Licence for $140 (valid for 12 months).

WHAT HAPPENS IF I DON'T HAVE ONE?
You will not be covered by any personal accident insurance cover if you enter a pit area without any form of Licence (One Day or Annual). You may also be refused entry to the venue's pit area without a licence.


N.A.S.R Incorporated (A28134)
Po Box 209
STEPNEY SA 5069

Phone: (08) 8120 0777 Fax: (08) 8363 7977

TAX INVOICE
ABN: 11 272 518 728

Speedway Australia One-Day Pit Licence

Licence Number: .....

Venue: .....

Event Date: .....

Applicants Name: ..... Car #: .....

Address: .....

..... Phone: .....

I agree to be bound by the rules and regulations of any event at which I am to attend or participate ("the event") as well as the provisions and rules of N.A.S.R. Incorporated and any National or State Regulatory Bodies of the division in which I participate.

Applicants Signature: .....

Issued by: .....

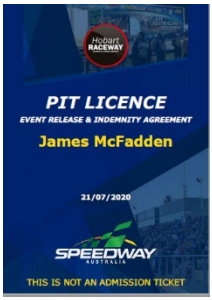
Issuing Officers Signature: .....

Fee payable: $10.00 (GST inclusive)

Licence includes entitlement to personal accident insurance coverage on the event date stated above (or completion of single day event)

White Copy: Applicant **Yellow Copy:** Club/Track **Green Copy:** Speedway Australia

OR



RISING STAR PROGRAM

Since 2007, Speedway Australia has given the nation's best young drivers the opportunity to participate in their Driver Development Program. In 2010, Speedway Australia identified the need to once again improve in the area of junior development. As such, the Speedway Australia Rising Star Program was launched. In 2011 the Rising Star Program has taken a big step forward to work closer with the best young speedway talent in the country.

The Speedway Australia Rising Star program gives the opportunity for young drivers to improve themselves in a range of areas including fitness training, psychology and marketing and media training, which will assist them in formulating a pathway to achieve their speedway dream.

As an integral part of the program, each year the Speedway Australia Rising Star Program sends a selected number of drivers to attend a sporting development camp at the Australian Institute of Sport.

To be considered for the Speedway Australia Rising Star Program, drivers between 16 and 23 years of age are required to submit a detailed application addressing stringent selection criteria. To be selected, competitors need to display a record of high achievement in Speedway and have a long-term goal in the sport.

The young drivers selected participated in an intensive 4 day camp at the AIS in Canberra as well as receiving marketing and press support from Speedway Australia, networking opportunities and much more to assist in developing their profile and racing career.

To find out more about the program, the current Speedway Australia Rising Stars or to register your interest, visit http://www.risingstars.org.au/nominate

Speedway Australia joined the SFI Foundation in 2006 for the benefit of all Speedway Stakeholders in order to provide all divisions with the benefit of an international safety standard.

The SFI Foundation is a non-profit organisation based in the USA and was established to issue and administer standards for specialty/performance automotive and racing equipment. The SFI Foundation operates a test laboratory dedicated to the evaluation of safety products and has an extensive list of tested and approved racing apparel and equipment.

You can find out more about the SFI Foundation at www.sfifoundation.com

SPEEDWAY SAFETY COMMITTEE

The Speedway Safety Committee was formed in 2006 to give advice and provide guidelines to the Speedway Australia Board on relevant aspects of safety and competition regulation in Australian Speedway.

It is designed to liaise closely with national and international technical associations and provide safety reports at the National Safety Conference.

Topics on their agenda include

- Personal safety equipment
- Seats and seatbelts
- Helmets and head restraints
- Track specifications
- Vehicle comparisons

The committee includes people from around Australia with a vast combined knowledge of the sport, who are also up to date with the latest safety trends and information.

For a list of current committee members, visit
www.speedwayaustralia.org

TRACK RATING SYSTEM

All Speedway Australia Insured Tracks undergo a safety inspection and assessment and are issued a rating from One Star (lowest) to Five Star (highest).

Star ratings are dependent on the types of safety facilities that the track has in place including track safety fence, construction material, catch fence posts and cables, dimensions and crowd control fence. Star Ratings are used to determine what level of Speedway Events may be held at the venue.

Track Inspections

As part of the Track Safety and Rating Scheme, track inspections are conducted at all venues every 2 years.

Speedway Australia in recent years has implemented a new discount rating scheme for tracks enabling them to apply for benefits in return for improving safety at their venue.

The data collected from tracks regarding safety will cover all aspects of the venue, from competitors and spectators to officials and volunteers, and will reward the venues with discounts and better ratings for complying with policies set out by Speedway Australia.

AUSTRALIAN CHAMPIONS

The Speedway Australia Silver Card was created in conjunction with affiliated venues to reward the champions of our national categories.

When a currently licensed driver wins an Australian Title in an officially sanctioned Speedway Australia National Division, they will be awarded with a Speedway Australia Silver Card.

The Silver Card entitles the holder to a complimentary 12 month Speedway Australia competitor licence in addition to one admission per event when competing at Speedway Australia tracks.

Current Australian Champions

Division	*Current Champion*
AMCA Nationals	Not held
SSA Junior Sedans	Mitchell Baker
SSA Modified Sedans	Kye Walters
SSA Prod Sedans	Joel Berkley
SSA Street Stocks	Anthony Beare
SSA Super Sedans	Darren Kane
Modlites	Sam Gollschewsky
Formula 500s	Jock Goodyer
Late Models	Kye Blight
SKAA Karts	Tahleesha Mayes
Speedcars	Carson Macedo
Sprintcars	Jamie Veal
360 Sprintcars	Brett Milburn
V8 Dirt Modifieds	Kevin Britten
Wingless Sprints	Kyle Mock

GRANT ASSISTANCE

Speedway Australia offers grant funding to tracks, associations, clubs and venues on a number of levels to assist in the growth of the sport.

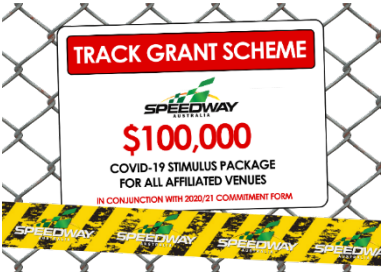
Track Grants

Track support has increased in recent years, with funding this season changing from a safety to a COVID-recovery focus.

2018 $50,000
Track Safety Grants

2019 $70,000
Track Safety Grants

2020 $100,000
COVID Stimulus Grant



National Division Support

In addition to specific divisional body financial assistance, Speedway Australia attends all National titles to assist the host venue and division with resourcing and support.

Grassroots Grants

Speedway Australia will consider other requests for assistance from tracks on a case-by-case basis.

World Series Sprintcars brings together the nation's most talented Sprintcar teams and drivers every year to compete for a rich pool of prize money and contingency awards.

Originally known as the Winfield Australian Sprintcar Championship, the WSS Company was created by a group of high profile Speedway identities in 1987 when it became clear that Australian Sprintcar competitors would benefit greatly from a national competition. Former promoter John Hughes was appointed manager of the series, a role he held until the end of the 2000/2001 championship.

The first World Series Sprintcars championship season was held over 10 rounds, the first being held at the now defunct Claremont Speedway in Western Australia on November 20 & 21, 1987. George Tatnell who would later be crowned the first ever WSS Champion.

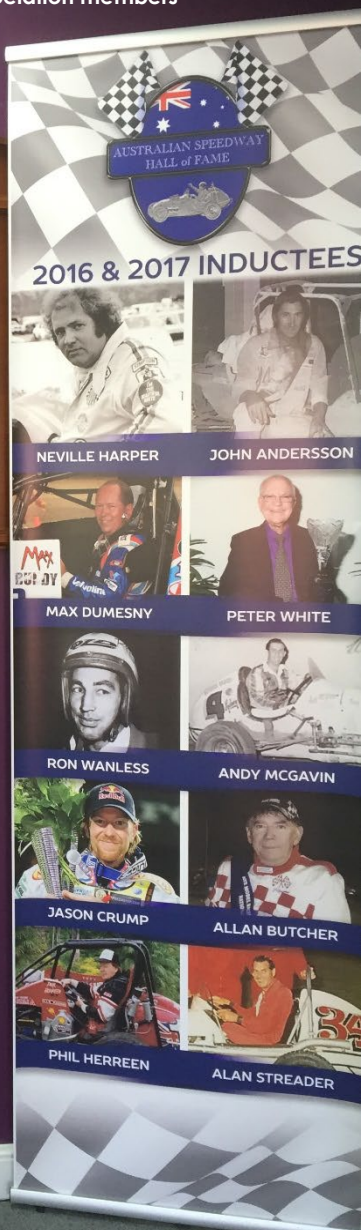
The WSS has become a showcase event for the sport of Speedway due the immense racing talent, the nightly drama and suspense, and a format that crowns a worthy champion who has excelled over a full season, not just a single race meeting.

Traditionally, the most competitive stretch of the World Series Sprintcars season occurs between Christmas and New Year, when "Speedweek" blazes a trail through South Australia and Victoria. Featuring 6 nights of racing in 7 days, the gruelling mini-series ups the ante by offering larger prize money pools, bigger fields and venues packed with vocal fans.

HALL OF FAME

In 2006 Speedway Australia formed the National Speedway Induction Committee consisting of competitors, promoters, media members, historians and vintage association members

from all mainland states of Australia to nominate and select eligible candidates for induction into the Hall of Fame.



In 2007, during a magical and emotional evening in the Bradman Room at the Adelaide Oval, the inaugural Hall Of Fame dinner saw 10 legendary drivers, promoters, car owners and constructors inducted into the Australian Speedway Hall of Fame.

10 years later there have now been seven induction ceremonies, with 56 speedway legends having received recognition.

To view a full list of all inductees to the Speedway Australia Hall of Fame visit our website www.speedwayaustralia.org or click here

AUSTRALIAN SPEEDWAY AWARDS

The Australian Speedway Awards are held annually, to celebrate the high achievers across the sport in each season.

A total of 12 Awards are presented in the following categories:

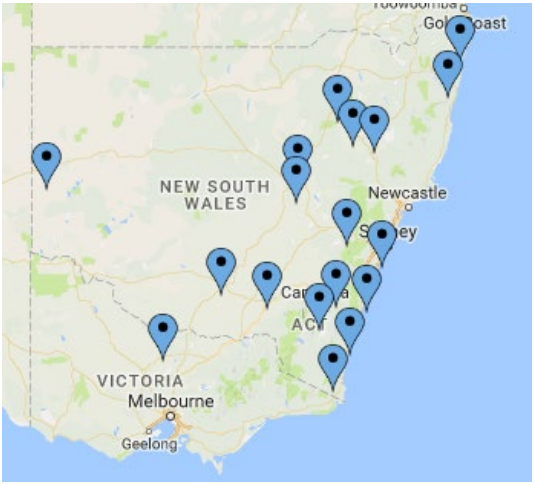
- Track of the Year
- Most Improved Track of the Year
- Official/Volunteer of the Year
- Photographer of the Year
- Promotional Item of the Year
- Innovation of the Year
- Competitor of the Year: Open Wheel
- Competitor of the Year: Sedan
- Competitor of the Year: Modified
- Competitor of the Year: Karting
- Competitor of the Year: Youth
- Overall Speedway Competitor of the Year

The winners of these awards are determined by a panel of judges.

To nominate a worthy individual or organisation for an award go to www.speedwayawards.org or click here to view the page.

STATE INFORMATION: TRACKS & CLASSES

NEW SOUTH WALES AND ACT

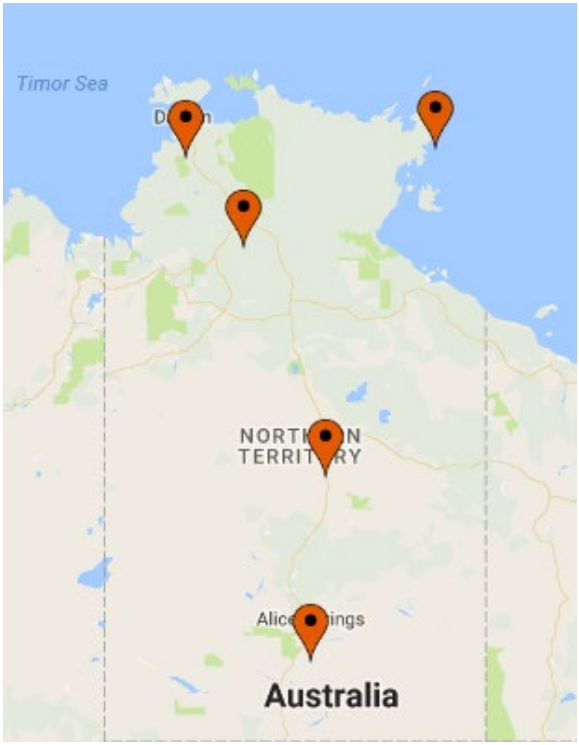


TRACKS

ACT Speedway, Canberra
Brobenah Raceway, Leeton
Broken Hill Speedway
Cullen Bullen Raceway
Eastern Creek Speedway
Gilgandra Speedway
Goulburn Speedway
Grafton Speedway
Gunnedah Speedway
Heartland Raceway, Moama
Illabo Motorsports Park
Lismore Speedway
Moruya Speedway
Morris Park Speedway, Dubbo
Northwest Speedway, Narrabri
Nowra Speedway
Oakburn Park, Tamworth
Sapphire Speedway, Bega

STATE DIVISIONS

RSA 4 Cylinder Sedans
Compact Speedcars
RSA Fender Benders
GP Midgets
Legend Cars
Lightning Sprints
RSA Limited Sedans
Microsprints
Outlaw Karts
Quarter Midgets
RSA Street Stockers
RSA Outlaw Sedans
Stockcars
RSA Junior Sedans



TRACKS

Arunga Park Speedway, Alice Springs
Katherine Speedway
Nhulunbuy Speedway
Northline Speedway, Darwin
Tennant Creek Speedway

STATE DIVISIONS

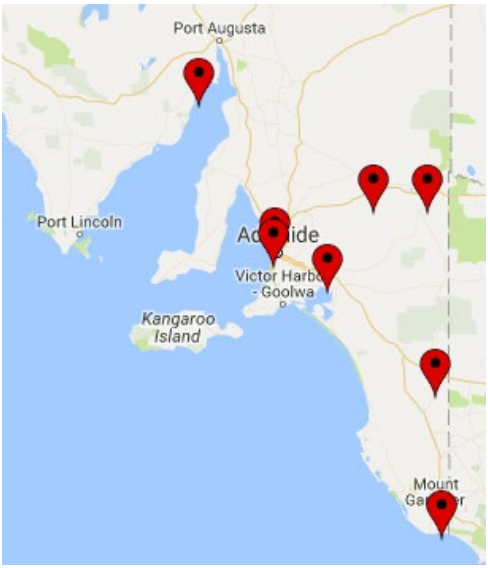
NT Sedans
NT Bombers

TRACKS

Archerfield Speedway, Brisbane
Bowen Speedway, Bowen
Cairns International Speedway
Coal Capital Speedway, Blackwater
Echo Park Speedway, Collinsville
Lockyer Valley Speedway, Gatton
Gladstone Speedway
Hi-Tec Oils Speedway, Toowoomba
Mareeba Speedway
Kingaroy Speedway
Mac's Speedway, Mackay
Maryborough Speedway
Mothar Mountain Speedway, Gympie
Moranbah Speedway
North Qld Speedway Kart Club
Pioneer Park Speedway, Ayr
Rockhampton Speedway
Roma Speedway
Sun State Speedway Karts, North Brisbane

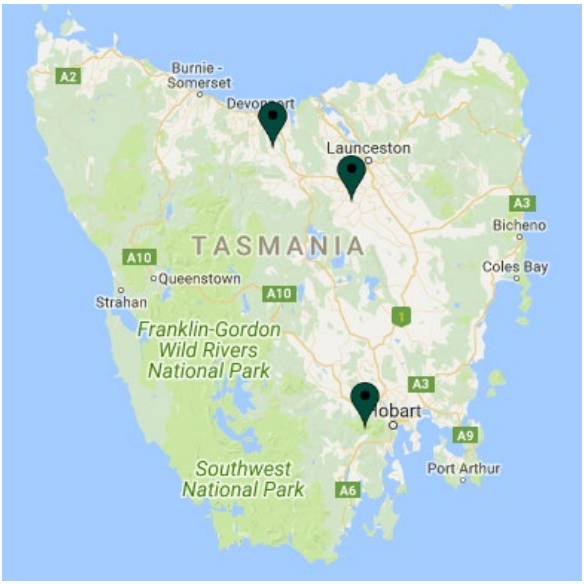
STATE DIVISIONS

Compact Speedcars
Ford V Holden V Sigmas
Formula 250
Formula 400
SSA Nostalgia Sedans
Open Sedans (V8)
Outlaw Sedans
Stock Cars
Super Stockers
SSA Super Street Sedans
Lightning Sprints



TRACKS
Borderline Speedway, Mt Gambier
Murray Machinery & Sheds Speedway, Murray Bridge
Riverland Speedway, Renmark
South Australian Vintage Speedcar Assn, Gillman
Sunline Speedway, Waikerie
Tolmer Speedway, Bordertown
Whyalla Speedway Club Inc, Whyalla

STATE DIVISIONS
Limited Sportsmen
Outlaw Karts incl Juniors
V6 Sprints



TRACKS
Cranes Combined Carrick Speedway, Carrick
Solo Hobart Speedway, Hobart
Gulf Western & Independent Oils Raceway, Latrobe

STATE DIVISIONS
SSA Tassie Bombers
SSA Tassie Sixes

TRACKS

Alexandra Speedway
Avalon Raceway, Geelong
Blue Ribbon Raceway, Kalkee
Daylesford Speedway
Drouin Speedway, Drouin West
Laang Speedway
Mid-Western Speedway, Darlington
Nagambie Speedway
Nyora Raceway
Redline Raceway, Ballarat
Premier Speedway, Warrnambool
Rushworth Speedway, Rushworth
Simpson Speedway
Southern 500 Speedway, Portland
Sunraysia Dirt Karters Inc, Mildura
Swan Hill Speedway, Swan Hill
Timmis Speedway, Mildura
Wahgunyah Speedway
Wangaratta City Speedway
Western Speedway, Hamilton

STATE DIVISIONS

SSA 3 Litre Sedans
Crash & Bash
Compact Speedcars
Division 2 Hot Rods
GOS Sedans
GP Midgets
GV Sedans incl Jr
Limited Sportsmen
A Mod/B Mod
Outlaw Karts incl Juniors
SDAV Hot Rods
Super Rods
Unlimited Sedans
VSC V8 Super Modifieds
VSC Sports Sedans
V8 Trucks
VSC Minisprints
VSC Formula 500

SPEEDWAY AUSTRALIA
WESTERN AUSTRALIA

TRACKS

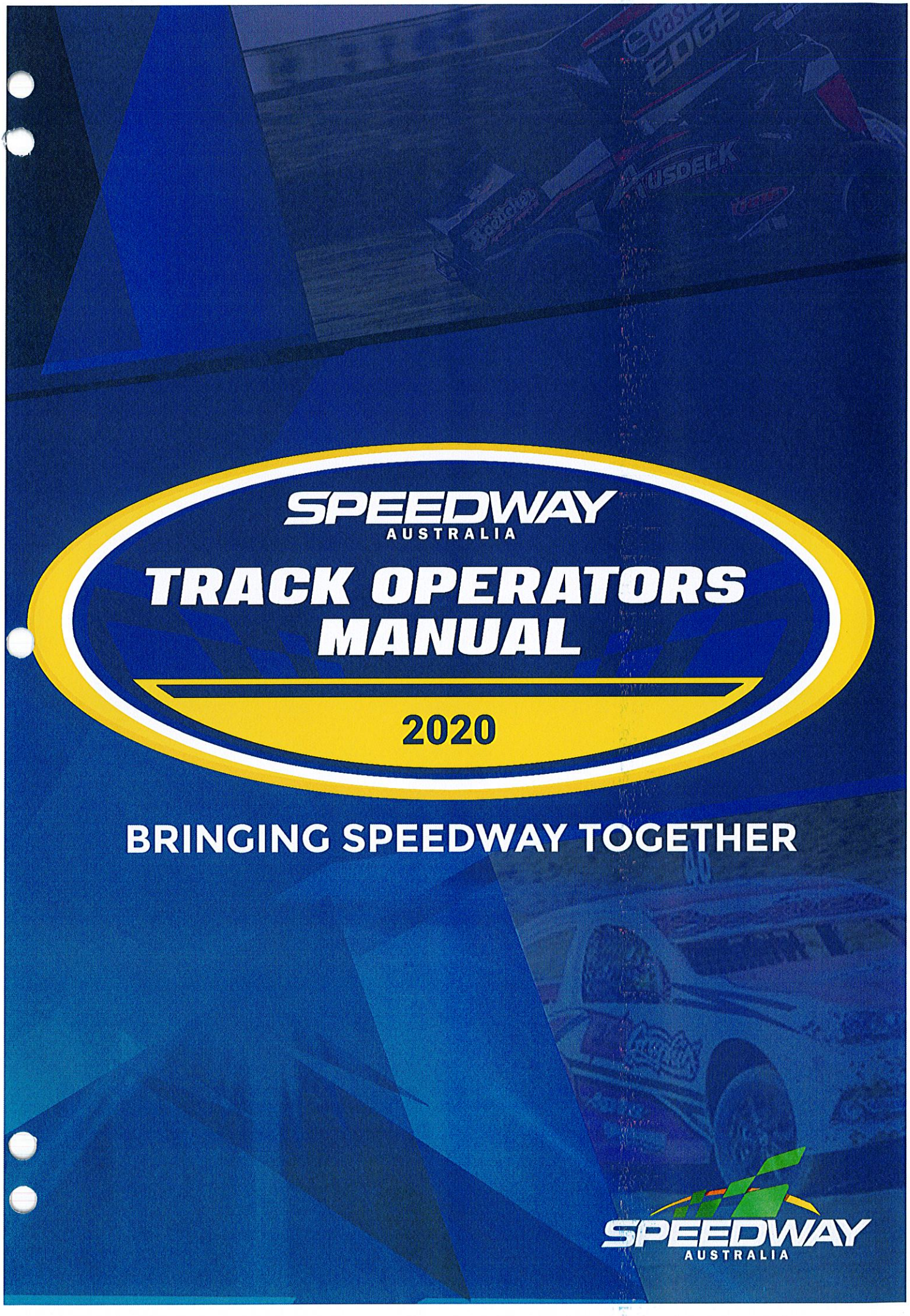
Albany Speedway
Broome Speedway
Quit Bunbury Speedway
Carnarvon Speedway
Derby Speedway
Quit Collie Speedway
Ellenbrook Speedway
Esperance Speedway
Geraldton City Speedway
Hillview Speedway, Newman
Kalgoorlie International Speedway
Kununnurra Speedway
Manjimup Speedway
Margaret River Speedway
Moora Speedway
Mt Barker Speedway
Narrogin Speedway
Nickol Bay Speedway, Karratha
Perth Motorplex
Pithara Speedway
Port Hedland Speedway
Tom Price Speedway

STATE DIVISIONS

320 Sprintcars
Derby Sliders
Limited Sprintcars
Outlaw Karts incl Juniors
Super Mods
Super Six
WA Quarter Midgets

Appendix N

Speedway Australia Track Operations Manual



SPEEDWAY
AUSTRALIA

TRACK OPERATORS MANUAL

2020

BRINGING SPEEDWAY TOGETHER

SPEEDWAY
AUSTRALIA

CONTACT DETAILS

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Fax: 08 8363 7977
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Website: www.speedwayaustralia.org
Opening Hours: Monday – Friday 9am – 5pm South Aust. time

TRACK OPERATORS MANUAL

The Official Speedway Australia Track Reference Guide
for Speedway Meeting Management

The Speedway Australia Track Operators Manual is provided for the confidential use by Speedway Australia insured tracks and affiliated associations.

It does not constitute formal legal advice.

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Premier Speedway, Warrnambool (VIC)

FOREWORD

Speedway Australia has completely revised this 2020 edition of the Track Operators Manual.

It aims to provide a reference point for Track Operators and their staff in the overall conduct of both the venue and all on-track activities.

- **It draws on the collective experience of almost 100 years of speedway racing in Australia.**
- **The manual aims to provide continuity for venues and a framework for operations.**
- **It aims to provide useful information, so tracks don't need to reinvent the wheel.**
- **There is an emphasis on best practice and safety, not just what is required from a public liability perspective.**
- **The manual does not replace or override state or federal legislation, instead it works in with it.**
- **Its intended as a working document, so we need your feedback to ensure the manual stays relevant into the future.**

The highest priority for the industry in the twenty-first century are all facets of safety and public liability. Speedway Australia cannot stress enough the importance of risk management in this area. Together we need to minimise the exposure to potential risk if Speedway Australia is to continue to be able to negotiate quality insurance at competitive rates on behalf of the sport.

The ever-changing entertainment and sporting landscape have meant that facilities need to be maintained and operated at higher levels than in the past. This trend will only continue into the future and Speedway Australia aims to assist you in meeting these challenges. By adapting to these realities, the payback is that your facility will become more attractive to the public, further improving your ability to attract and retain spectators.

We encourage you to contact us at any time so we can assist you in making your speedway a safer and more spectator-friendly venue.

Yours in speedway,

Tim Savell
General Manager

From left: Ross Kirby, Adam Brook, Angela Warren, Kirsten Knox, James Hadley & Liz Weaver

DISCLAIMER

The information contained within this manual is intended only as a general guide to assist Track Operators with managing track facilities and events and to facilitate easy access to Speedway Australia paperwork, general information, and suggested practices. It does not constitute professional, expert, or other advice.

This manual is not intended to provide a comprehensive and exhaustive analysis of all of the issues relevant to Track Operators. It is strongly recommended that Track Operators, employees, volunteers and any others who read this manual conduct their own independent investigations to acquaint themselves with the specific implications and obligations relating to any policies, procedures or minimum standards contained within.

There may be individual acts, codes, regulations, or standards that are applicable in certain states to the roles and duties of a Track Operator or associated volunteer that are not included in this manual.

Individuals should take appropriate steps to familiarise themselves with any additional such requirements that may be imposed. It is not the intention of Speedway Australia to provide, imply or contradict any such requirements, but to provide Track Operators with general 'track' management information.

The information contained within this manual is current as at the date of this manual and Speedway Australia takes no responsibility for ensuring the accuracy of the information subsequent to this date. No representation, warranty or undertaking is given or made as to the accuracy or reliability of any opinions, conclusions, recommendations or other information contained within this manual and no person should act or fail to act on the basis of the material contained herein alone without prior assessment and verification of the accuracy of the information.

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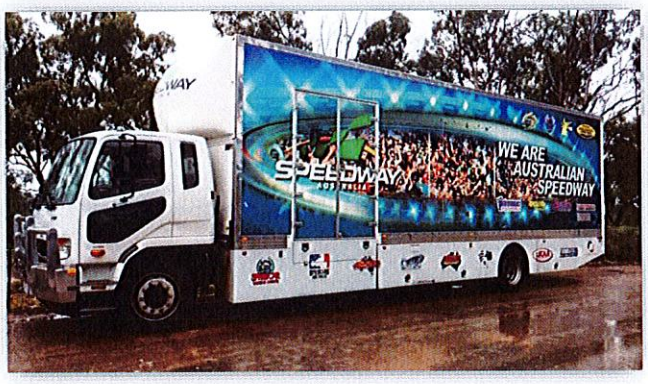
Keep up to date at www.speedwayaustralia.org



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1. WHO WE ARE & WHAT WE DO

SPEEDWAY AUSTRALIA'S MISSION STATEMENT

To provide unity, leadership, direction and growth as the recognised peak body of speedway racing in Australia by:

- Developing standards in safety, training, presentation and performance;
- Improving the profile and establishing a promotional image for the industry; and
- Coordinating, standardising, and developing management skills at all levels.

SPEEDWAY AUSTRALIA'S CORE TASKS

- Licencing of competitors and tracks
- Complimentary insurance for competitors
- Public liability insurance for tracks
- Racing rules + personal safety equipment
- Track inspections and minimum operating standards
- Night of Champions: Australian Speedway Awards + Hall of Fame
- World Series Sprintcars
- Rising Star Program

SPEEDWAY AUSTRALIA'S SCOPE OF OPERATIONS

- Adelaide based with offices in Sydney and Perth
- Total of 8 staff
- Not for profit with a Board of 9
- Licence over 90 venues out of 101 around Australia
- Over 15,000 licence holders
- Recognise 76 divisions

AFFILIATED ORGANISATIONS

- Nine National Divisional Bodies (e.g. SSA, SCCA, Speedcars Australia)
- State Divisional Bodies
- Australasian Speedway Promoters Association
- NSW Department of Sport and Recreation

2. WHY WE ASSESS VENUES

Speedway Australia wants to ensure venues are continuously improving their facilities so they can provide further safety for all stakeholders and promote better race meetings for competitors and fans.

We provide track safety standards, which determine what vehicles are eligible to race at the venue, and in what quantity.

We also need to ensure current standards are being adhered to in terms of venue management and ongoing upkeep of the facility.

It is extremely important that your venue is inspected every two years, or sooner if required under state law.

Please contact the Speedway Australia office if your venue has not been formally inspected in the last two years, so we can arrange for an assessment to take place.

An assessment comprises two parts -

1 Determining the star rating of the venue (Section 3 of this manual)

2 Establishing the relevant management capabilities at the track, which influences the public liability premium payable (Section 4 of this manual)

Northline Speedway, Darwin (NT)

3. TRACK SAFETY STANDARDS

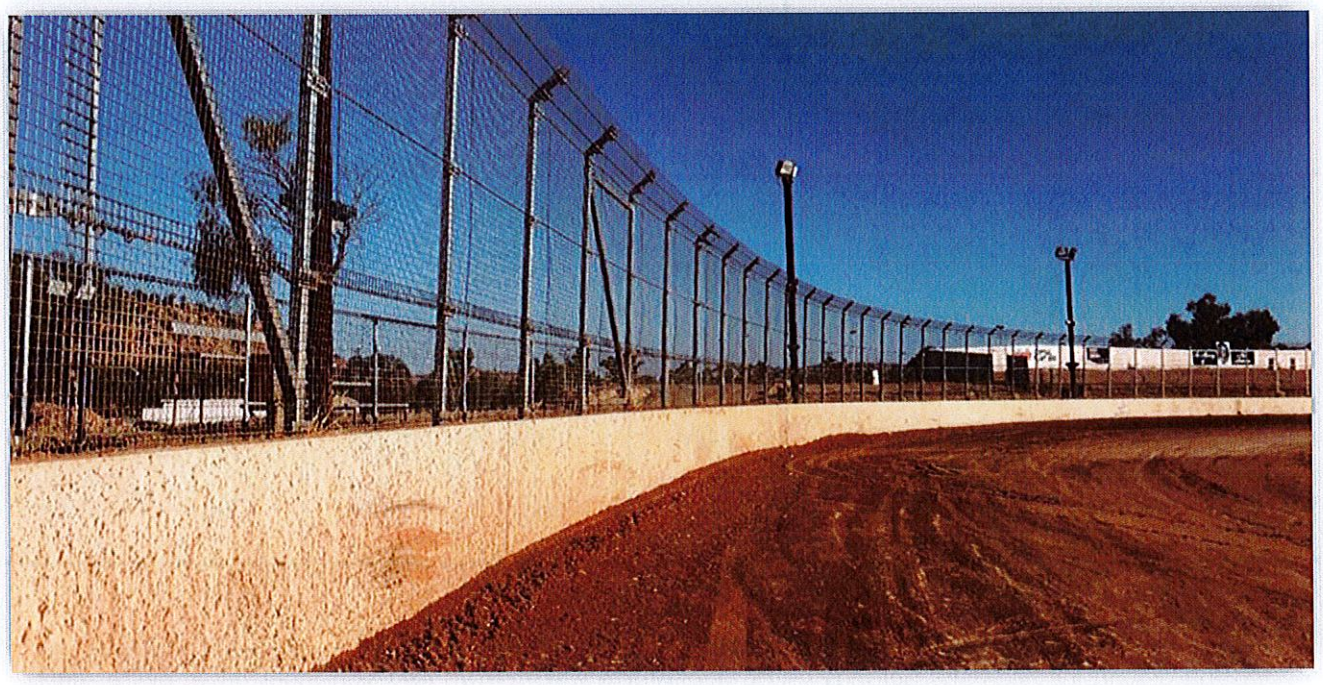
This section provides a description of the minimum standards required to obtain a track rating in our "5 Star System".

The variables taken into consideration when determining a track rating are the track safety fence, construction material, catch fence (posts and cables) dimensions and crowd control fence. There is also a list of permitted classes and event types that can be run on tracks rated from 1 Star through to 5 Star.

A description of a track safety fence, guide to new fence construction, and correct procedures for the fitting of wire rope grips is also provided.

OVERVIEW OF THE STAR RATINGS

5 Star Rating	A world leader in speedway venues, meeting the highest standards
4 Star Rating	Venue exceeds many of the minimum standards for all forms of speedway vehicles
3 Star Rating	Track meets the minimum standards to run all forms of speedway vehicles
2 Star Rating	Track meets the minimum standards for all classes excluding Sprintcars
1 Star Rating	Track meets the minimum standards for Sedan racing, Karting, Vintage demonstrations & Junior Quarter Midgets



Arunga Park, Alice Springs NT

3.1 MINIMUM TRACK STANDARDS

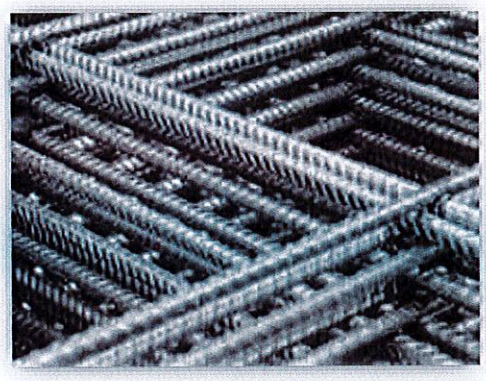
	5 Star	4 Star	3 Star	2 Star	1 Star
Track Safety Fence Minimum acceptable working height after track grading. (See explanatory note)	1.3 m	1.0 m	1.0 m	1.0 m	No fence, but no public access possible
Construction Material	Concrete			Concrete / Wood / Metal / Rubber Tyre	
Catch Fence Minimum height above track. 30° top cabling overhang at top	6.0m	4.5 m	3.5 m	2.5 m	1.5 m
Mesh – maximum opening.	50x50x3	50x50x3	50x50x3	50x50x3	50x50x3
Cables All to be equally spaced.					
Minimum Number	6	5	4	2	-
Minimum Diameter	13mm	13mm	13mm	13mm	-
Posts Construction	Minimum 50mm nominal bore pipe/50mm RHS with 3mm wall thickness or Railway Iron				
Spacing between posts	3m for minimum spec pipe or 5m for Railway Iron				
Pots set minimum into ground	All 1m (depth may be reduced if posts are anchored or concreted into ground). Bracing is recommended for every third pole on the straights & every second throughout the corners. Concrete recommended with 300mm diameter, 750mm deep holes.				
Crowd Control Fence **Scenario 1** Minimum Height	1.0m	1.0m	0.8m	0.8m	0.8m
Distance behind Catch Fence	5.0m	3.0m	2.0m	1.6m	1.5m
Scenario 2 Minimum Height	2.0m	1.5m	1.0m	0.8m	0.8m
Distance behind Catch Fence	4.0m	2.5m	1.6m	1.6m	1.5m

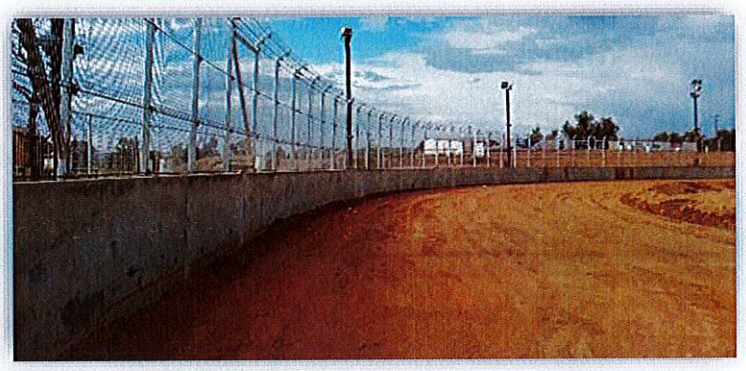
Explanatory note:
Various types of existing fences are accepted at this time (subject to approval). Some tracks may have no fencing around the perimeter but may still be acceptable when crowd exclusion zones are in place. Strict security is to be maintained and no public access possible in unfenced areas

3.2 GUIDE TO NEW FENCE CONSTRUCTION

WALL CONSTRUCTION

- Recommended fence construction is a concrete lower wall, a minimum working height after track grading of 1000mm.
- All concrete fences should be 150mm minimum wall thickness





- The concrete fence can be continuous construction, or in panel format for ease of replacing sections if damaged.

  Note: If the fence is made from panels, construction should utilise SL92 support mesh, with 12mm bar around the outer edges, cast into the panel 75mm from the edge.

- If utilising panels, an approved edged lifting device made by Ramset/Reid or similar should be cast into the panel. These devices aid in lifting the panel in and out safely, due to their excessive weight.

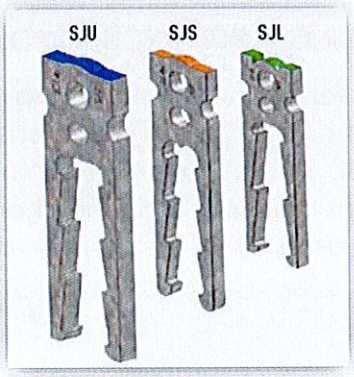
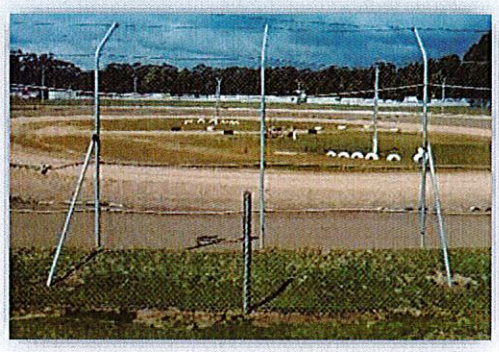


Image source : http://www.reid.com.au/

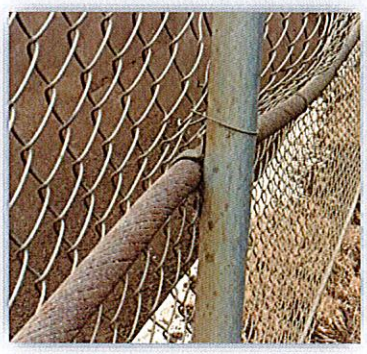
3.2 GUIDE TO NEW FENCE CONSTRUCTION (cont.)

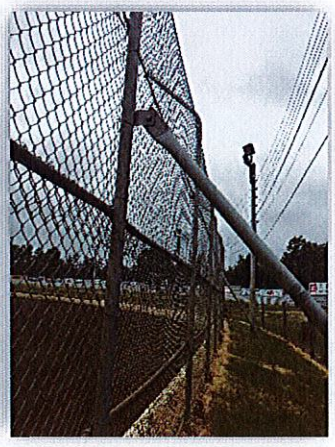
CATCH FENCE CONSTRUCTION

- Fence posts should be 50mm internal diameter pipe as a minimum, with 3mm wall thickness.
- Spacing between posts to be maximum of 3m for minimum spec pipe, or 5m spacings for Railway Iron
- Posts should be set a minimum of 1m into the ground (depth may be reduced if posts are anchored or concreted into ground)
- A minimum of 4 wire cables should be used, equally spaced, with the lowest cable to be no more than 200mm above the concrete wall.



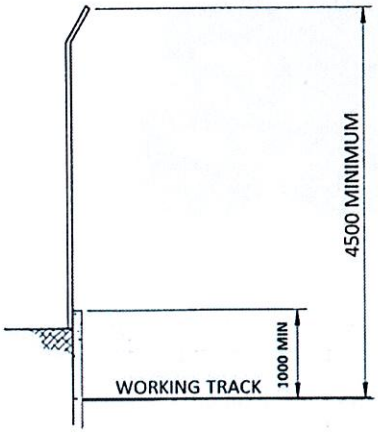
- Wire cables to be a minimum of 13mm diameter, preferably galvanised.
- Wire cables should be mounted on the TRACK SIDE of the upright posts, fixed firmly by saddle clamps either welded or screwed on to the post. NO DRILLING AND THREADING WIRES THROUGH POSTS.
- Catch fence must include chain mesh that is fixed using 2mm tie wire. The chain mesh should extend from the base, to the full height of the catch fence including the kick out. Maximum size 50x50mm, and 3mm diameter. If any joins are required in the chain mesh, 2mm tie-wire should be used for this purpose also.





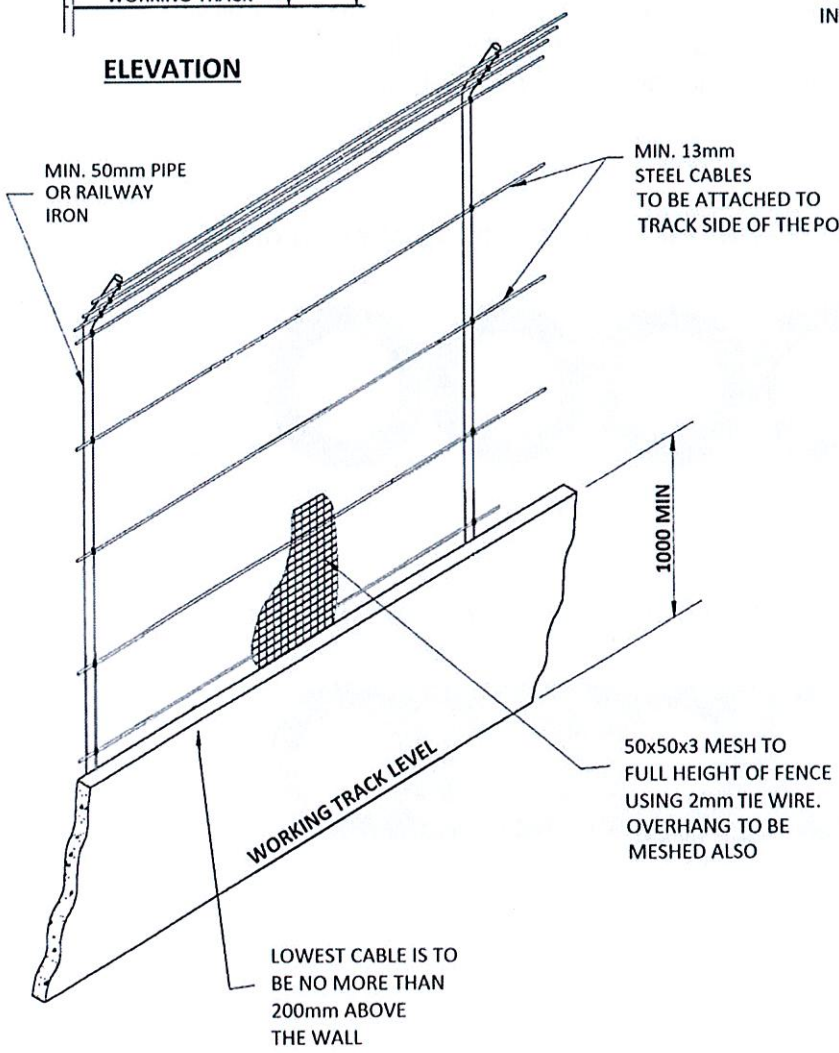
3.3 PREFERRED SAFETY FENCE

BASED ON 4 STAR TRACK STANDARD MEASUREMENTS



ELEVATION

NOTE
POST DEPTH CAN BE REDUCED IF ANCHORED OR CONCRETED INTO GROUND

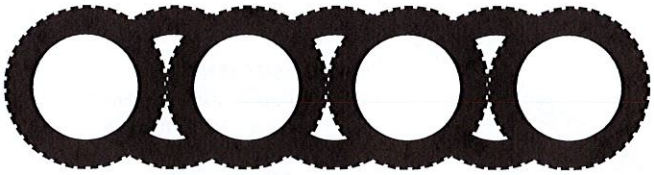


3.4 TYPICAL TYRE WALL

- Minimum 1 metre high.
- Each tyre filled with dirt.
- All require constant maintenance to keep dirt filled.
- Earth backed if possible.
- The larger the tyre the better.

Above View – Tyres laid directly on top of each other.

Preferred Style – Above view of tyres overlapped.



CORRECT FITTING OF WIRE ROPE GRIPS

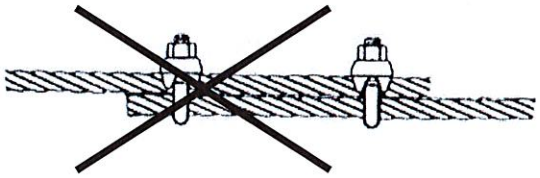
The grips in a connection should be spaced along the wire rope at distances between adjacent grips of approximately six rope diameters, with the position of the grip nearest the end connection as shown.

Correct method of fitting wire rope grips.

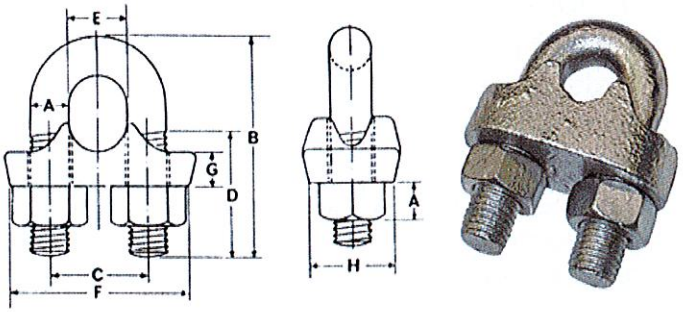
Incorrect method of fitting wire rope grips

The sequence of tightening an assembly of wire rope grips on a wire rope connection after they have been correctly positioned is from the thimble outwards. The tightening torque shall be achieved on greased bearing surfaces of the nuts. With improperly tightened nuts or with fewer grips than the number recommended, the end of the rope might draw through the grips even at light loading. The grips furthest from the eye of the thimble should not be over tightened, as that is the most vulnerable part of such an assembly.

DANGEROUS CATCH FENCE CABLE



WIRE ROPE GRIPS



3.6 INFIELD BARRIERS

The use of infield barriers is now law within the state of South Australia. These are rules regarding track safety and official's safety that have been implemented and enforced by Safework SA.

Over time, the Speedway Australia Safety Committee will be working towards national recommendations regarding infield structures.

SOUTH AUSTRALIAN VENUE REQUIREMENTS

Speedway Australia requires its venues to have a written infield management plan available for all individuals who will be accessing the infield during the race meeting. This infield plan of management must outline key information such as:

- All access and exit points to the racing arena
- Placement of infield safety zones that must be adhered to
- Notification of all access and exit points from race track to safety zones which must be clear of all individuals at all times
- Process undertaken for any individuals who fail to adhere to the Infield Safety Standards
- Identification of Infield Warden responsible for management of this policy on a practice or race meeting

This plan of management is to be supported and followed by all infield personnel at all times, otherwise venue management is required to cease competition and remove anyone who fails to comply with these minimum standards.

SOUTH AUSTRALIAN MINIMUM STANDARDS REQUIRED

At all times, all individuals on the infield of the race track must be behind structured protection that is a minimum of 10 metres from the pole line of the race track in all areas. The structured protection must meet the following requirements:

- Minimum height of 800mm from the ground
- Infield protection structure can be constructed of;
    - Concrete Barriers
    - Steel Guardrail (must be curved or protected ends)
    - Plastic Water filled Roadside Barriers
    - Industrial Machinery Tyres
- All infield safety zones must have side and entry protection so that no race car can enter this protected zone under race capacity at any time. (no exposed entry points from the racetrack)
- Any access points on and off the race track into the Infield Safety Area for cars must be no wider than 5 metres

3.6 INFIELD BARRIERS

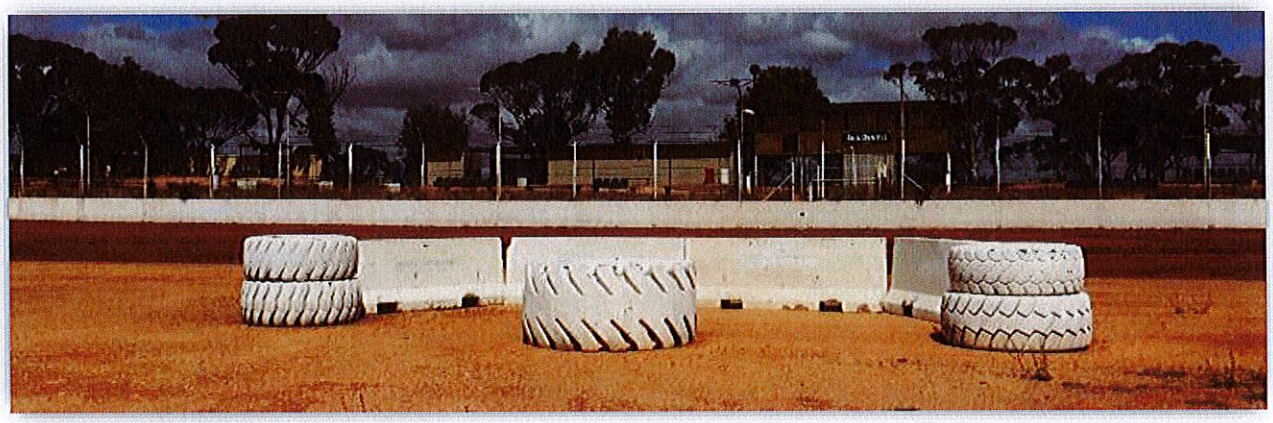
DEFINITIONS

Break traction	Vehicle begins to move under acceleration
Hazard Area	Area between the race track and the required barriers forming the Infield Safety Zone
Infield Safety Zone	The protected area in which infield personnel can stand behind barriers for breaking of traction to take place.
Pole Line	The identifiable line of the inside of the race track. Pole line must be a minimum of 10 metres from the Infield Safety Zone barriers
Infield Warden	A person (Race Director/Clerk of Course/Safety Warden) appointed to manage the infield of the racing arena and who is responsible for advising venue management or stewards of any breaches of this policy.

Due to the varying infield layouts within speedway tracks around Australia, we strongly recommend each venue complete their own Infield Risk Assessment.

Speedway Australia is happy to assist if required.

Borderline Speedway, Mount Gambier (SA)



Sunline Speedway, Waikerie (SA)

PUBLIC LIABILITY PREMIUM ALLOCATION MODEL

Speedway divisions are allocated to an "Event Category". The "Event Categories" are in line with Speedway Australia's Public Liability Premium Allocation Model as shown below.

A track's "Star Rating" determines what maximum Event Category is allowed and therefore the divisions of speedway that are permitted to race at that venue.

Please note - some permit types have maximum limits on the number of cars <u>in total event, not per race</u>.

"JQMA" JQMA ONLY PERMIT – PERMITTED DIVISIONS

NATIONAL DIVISIONS
Junior Quarter Midgets

"K" KARTS ONLY PERMIT – PERMITTED DIVISIONS

NATIONAL DIVISIONS	QLD ONLY	WA ONLY	NSW ONLY	VIC ONLY	SA ONLY
SKAA Karts	Formula 250	Outlaw Karts	Outlaw Karts	Outlaw Karts	Outlaw Karts
Junior SKAA Karts	Derby Sliders				

"LR" LOW RISK EVENT PERMIT – PERMITTED DIVISIONS
(1 Star rated track & above)
(Plus Additional Conditions Below)

Maximum of 40 competing cars in total event
Maximum of 10 cars on track at once
Maximum of 350 paying spectators

NATIONAL DIVISIONS
AMCA Nationals
Formula 500
Modlites
SKAA Karts
SSA Modified Sedans
SSA National 4's
SSA Production Sedans
SSA Street Stocks
SSA Junior Sedans
SSA Super Sedans
Junior Formula 500
Junior Quarter Midgets
Junior SKAA Karts
Late Models
Vintage
Burnouts
Demolition Derby
Caravan Race
Ramp Race
Figure 8

NSW ONLY
Compact Speedcars
GP Midgets
Legend Cars
Light Trucks
Lightning Sprints
Microsprints
Quarter Midgets
RSA 4 Cylinder Sedans
RSA Outlaw Sedans
RSA Fender Benders
RSA Limited Sedans
RSA Street Stockers
RSA Junior Sedans
Speedway Utes
Stockcars
Outlaw Karts

WESTERN AUSTRALIA ONLY
Legend Cars
Super Mods
Super Six
WA Open Sedans
WA Quarter Midgets
WA Junior Q/Midgets
Outlaw Karts
Derby Sliders

VICTORIA ONLY
3 Litre Sedans
Compact Speedcars
Crash n Bash
Division 2 Hot Rods
GOS Sedans
GP Midgets
GV Open/Prod'n Sedans
GV Juniors
Humpy Holdens
Legend Cars
Lightning Sprints
Limited Sportsmen
Marsh Mods/A Mods/B Mods
Nagambie Dirt Karts
SDAV Hot Rods
Super Rods
Unlimited Sedans
VSC Sports Sedans
VSC V8 Super Modifieds
V8 Trucks
VSC F500
VSC Mini Sprints
VSC Standard Saloons
VSC Thunder Sedans
Outlaw Karts

NORTHERN TERRITORY ONLY
Bombers
NT Sedans

QUEENSLAND ONLY
4 & 6 Cylinder Sedans
Compact Speedcars
Ford v Holden v Sigma
Formula 250
Formula 400
Legend Cars
Lightning Sprints
Microsprints
Nostalgia Sedans
Open Sedans (V8)
Outlaw Sprint Sedans
RSA 4 Cylinder Sedans
RSA Outlaw Sedans
RSA Fender Benders
RSA Limited Sedans
RSA Street Stockers
RSA Junior Sedans
Stock Cars
Street Sedans
Super Stocker
Super Street Sedans

TASMANIA ONLY
Bombers
Tassie Six

SOUTH AUSTRALIA ONLY
Limited Sportsmen
Legend Cars
V6 Sprints
Outlaw Karts

3.7 PERMIT TYPES AND PERMITTED CLASSES (cont.)

"RS" RESTRICTED SEDAN CLUB EVENT PERMIT – PERMITTED DIVISIONS
(1 Star rated track & above)

NATIONAL DIVISIONS

Nationals
SKAA Karts
SSA Modified Sedans
SSA National 4's
SSA Production Sedans
SSA Street Stocks
SSA Junior Sedans
Junior Quarter Midgets
Junior SKAA Karts
Vintage
Burnouts
Demolition Derby
Caravan Race
Ramp Race
Figure 8

NSW ONLY
RSA 4 Cylinder Sedans
RSA Outlaw Sedans
RSA Fender Benders
RSA Limited Sedans
RSA Street Stockers
RSA Junior Sedans
Quarter Midgets
Speedway Utes
Outlaw Karts

WESTERN AUSTRALIA ONLY
Super Mods
Super Six
WA Open Sedans
WA Quarter Midgets
WA Junior Q/Midgets
Outlaw Karts
Derby Sliders

VICTORIA ONLY
3 Litre Sedans
Crash n Bash
GOS Sedans
GV Open/Production Sedans
GV Juniors
Humpy Holdens
Marsh Mods/A Mods/B Mods
Unlimited Sedans
VSC Sports Sedans
VSC Standard Saloons
VSC Thunder Sedans
Outlaw Karts

SOUTH AUSTRALIA ONLY
Outlaw Karts

NORTHERN TERRITORY ONLY
Bombers
NT Sedans

QUEENSLAND ONLY
4 & 6 Cylinder Sedans
Ford v Holden v Sigma
Formula 250
Nostalgia Sedans
Open Sedans (V8)
Outlaw Sprint Sedans
RSA 4 Cylinder Sedans
RSA Outlaw Sedans
RSA Fender Benders
RSA Limited Sedans
RSA Street Stockers
RSA Junior Sedans
Street Sedans
Super Stocker
Super Street Sedans

"OS" OPEN SEDAN CLUB EVENT PERMIT – PERMITTED DIVISIONS
(1 star rated track & above)

NATIONAL DIVISIONS
AMCA Nationals
Formula 500 **(max 10)**
Late Models
Modlites
SKAA Karts
SSA Modified Sedans
SSA National 4's
SSA Production Sedans
SSA Street Stocks
SSA Junior Sedans
SSA Super Sedans
Junior Formula 500
Junior Quarter Midgets
Junior SKAA Karts
Vintage
Burnouts
Demolition Derby
Caravan Race
Ramp Race
Figure 8

NSW ONLY
Compact Speedcars **(max 10)**
GP Midgets **(max 10)**
Legend Cars
Light Trucks
Lightning Sprints **(max 10)**
Microsprints **(max 10)**
RSA 4 Cylinder Sedans
RSA Outlaw Sedans
RSA Fender Benders
RSA Limited Sedans
RSA Street Stockers
RSA Junior Sedans
Quarter Midgets
Speedway Utes
Stockcars
Outlaw Karts

WESTERN AUSTRALIA ONLY
Legend Cars
Super Mods
Super Six
WA Open Sedans
WA Quarter Midgets
WA Junior Q Midgets
Outlaw Karts
Derby Sliders

VICTORIA ONLY
3 Litre Sedans
Compact Speedcars **(max 10)**
Crash n Bash
Division 2 Hot Rods
GOS Sedans
GP Midgets **(max 10)**
GV Open/Production Sedans
GV Juniors
Humpy Holdens
Legend Cars
Lightning Sprints **(max 10)**
Limited Sportsmen
Marsh Mods/A Mods/B Mods
Nagambie Dirt Karts **(max 10)**
Unlimited Sedans
VSC Sports Sedans
VSC F500 **(max 10)**
VSC Mini Sprints **(max 10)**
VSC Standard Saloons
VSC Thunder Sedans
Outlaw Karts

SOUTH AUSTRALIA ONLY
V6 Sprints **(max 10)**
Legend Cars
Limited Sportsmen
Outlaw Karts

NORTHERN TERRITORY ONLY
Bombers
NT Sedans

QUEENSLAND ONLY
4 & 6 Cylinder Sedans
Compact Speedcars **(max 10)**
Ford v Holden v Sigma
Formula 250
Formula 400 **(max 10)**
Legend Cars
Lightning Sprints **(max 10)**
Microsprints **(max 10)**
Nostalgia Sedans
Open Sedans (V8)
Outlaw Sprint Sedans
RSA 4 Cylinder Sedans
RSA Outlaw Sedans
RSA Fender Benders
RSA Limited Sedans
RSA Street Stockers
RSA Junior Sedans
Stockcars
Street Sedans
Super Stocker
Super Street Sedans

TASMANIA ONLY
Bombers
Tassie Six

3.7 PERMIT TYPES AND PERMITTED CLASSES (cont.)

"C" CLUB EVENT PERMIT – PERMITTED DIVISIONS
(1.5 Star rated track & above)

NATIONAL DIVISIONS
AMCA Nationals
Formula 500
Late Models
Modlites
SKAA Karts
SSA Modified Sedans
SSA National 4's
SSA Production Sedans
SSA Street Stocks
SSA Junior Sedans
SSA Super Sedans
Junior Formula 500
Junior Quarter Midgets
Junior SKAA Karts
V8 Dirt Modifieds
Wingless Sprints
Vintage
Burnouts
Demolition Derby
Caravan Race
Ramp Race
Figure 8

NSW ONLY
Compact Speedcars
GP Midgets
Legend Cars
Light Trucks
Lightning Sprints
Microsprints
RSA 4 Cylinder Sedans
RSA Outlaw Sedans
RSA Fender Benders
RSA Limited Sedans
RSA Street Stockers
RSA Junior Sedans
Quarter Midgets
Speedway Utes
Stockcars
Outlaw Karts

WESTERN AUSTRALIA ONLY
Legend Cars
Super Mods
Super Six
WA Open Sedans
WA Quarter Midgets
WA Junior Q Midgets
Outlaw Karts
Derby Sliders

VICTORIA ONLY
3 Litre Sedans
Compact Speedcars
Crash n Bash
Division 2 Hot Rods
GOS Sedans
GP Midgets
GV Open/Production Sedans
GV Juniors
Humpy Holdens
Lightning Sprints
Limited Sportsmen
Marsh Mods/A Mods/B Mods
Nagambie Dirt Karts
SDAV Hot Rods
Super Rods
Unlimited Sedans
VSC Sports Sedans
VSC V8 Super Modifieds
V8 Trucks
VSC F500
VSC Mini Sprints
VSC Standard Saloons
VSC Thunder Sedans
Outlaw Karts

SOUTH AUSTRALIA ONLY
V6 Sprints
Legend Cars
Limited Sportsmen
Outlaw Karts

QUEENSLAND ONLY
4 & 6 Cylinder Sedans
Compact Speedcars
Ford v Holden v Sigma
Formula 250
Formula 400
Legend Cars
Lightning Sprints
Limited Sprinters
Microsprints
Nostalgia Sedans
Open Sedans (V8)
Outlaw Sprint Sedans
RSA 4 Cylinder Sedans
RSA Outlaw Sedans
RSA Fender Benders
RSA Limited Sedans
RSA Street Stockers
RSA Junior Sedans
Stockcars
Street Sedans
Super Stocker
Super Street Sedans

TASMANIA ONLY
Bombers
Tassie Six

NORTHERN TERRITORY ONLY
Bombers
NT Sedans

"B" OPEN WHEEL RESTRICTED EVENT PERMIT – PERMITTED DIVISIONS
(1.5 Star rated track & above)

NATIONAL DIVISIONS
AMCA Nationals
Formula 500
Modlites
SKAA Karts
SSA Modified Sedans
SSA National 4's
SSA Production Sedans
SSA Street Stocks
SSA Junior Sedans
SSA Super Sedans
Junior Formula 500
Junior Quarter Midgets
Junior SKAA Karts
Late Models
Microsprints
V8 Dirt Modifieds
Wingless Sprints
360 Sprintcars **(max 6)**
410 Sprintcars **(max 6)**
Speedcars **(max 12)**
Vintage
Burnouts
Demolition Derby
Caravan Race
Ramp Race
Figure 8

NSW ONLY
Compact Speedcars
GP Midgets
Legend Cars
Light Trucks
Lightning Sprints
Limited Sprintcars **(max 6)**
Microsprints
RSA 4 Cylinder Sedans
RSA Outlaw Sedans
RSA Fender Benders
RSA Limited Sedans
RSA Street Stockers
RSA Junior Sedans
Quarter Midgets
Speedway Utes
Stockcars
Outlaw Karts

WESTERN AUSTRALIA ONLY
320 Sprintcars **(max 6)**
Limited Sprintcars **(max 6)**
Legend Cars
Super Mods
Super Six
WA Open Sedans
WA Quarter Midgets
WA Junior Q Midgets
Outlaw Karts
Derby Sliders

VICTORIA ONLY
3 Litre Sedans
Compact Speedcars
Crash n Bash
Division 2 Hot Rods
GOS Sedans
GP Midgets
GV Open/Production Sedans
GV Juniors
Humpy Holdens
Legend Cars
Lightning Sprints
Limited Sportsmen
Marsh Mods/A Mods/B Mods
Nagambie Dirt Karts
SDAV Hot Rods
Super Rods
Unlimited Sedans
VSC Sports Sedans
VSC V8 Super Modifieds
V8 Trucks
VSC F500
VSC Mini Sprints
VSC Standard Saloons
VSC Thunder Sedans
Outlaw Karts

SOUTH AUSTRALIA ONLY
V6 Sprints
Legend Cars
Limited Sportsmen
Outlaw Karts

QUEENSLAND ONLY
4 & 6 Cylinder Sedans
Compact Speedcars
Ford v Holden v Sigma
Formula 250
Formula 400
Legend Cars
Lightning Sprints
Limited Sprinters
Microsprints
Nostalgia Sedans
Open Sedans (V8)
Outlaw Sedans
Outlaw Sprint Sedans
RSA 4 Cylinder Sedans
RSA Outlaw Sedans
RSA Fender Benders
RSA Limited Sedans
RSA Street Stockers
RSA Junior Sedans
Stockcars
Street Sedans
Super Stocker
Super Street Sedans

NORTHERN TERRITORY ONLY
Bombers
NT Sedan

TASMANIA ONLY
Bombers
Tassie Six

3.7 PERMIT TYPES AND PERMITTED CLASSES (cont.)

"A" OPEN WHEEL RESTRICTED EVENT PERMIT - PERMITTED DIVISIONS (2 Star rated track & above)

NATIONAL DIVISIONS
AMCA Nationals
Formula 500
Modlites
SKAA Karts
Junior SKAA Karts
SSA Modified Sedans
SSA National 4's
SSA Production Sedans
SSA Street Stocks
SSA Junior Sedans
SSA Super Sedans
Junior Formula 500
Junior Quarter Midgets
Late Models
V8 Dirt Modifieds
Wingless Sprints
360 Sprintcars **(max 8)**
410 Sprintcars **(max 8)**
Speedcars
Vintage
Burnouts
Demolition Derby
Caravan Race
Ramp Race
Figure 8

NSW ONLY
Compact Speedcars
GP Midgets
Legend Cars
Light Trucks
Lightning Sprints
Limited Sprintcars **(max 8)**
Microsprints
RSA 4 Cylinder Sedans
RSA Outlaw Sedans
RSA Fender Benders
RSA Limited Sedans
RSA Street Stockers
RSA Junior Sedans
Quarter Midgets
Speedway Utes
Stockcars
Outlaw Karts

WESTERN AUSTRALIA ONLY
320 Sprintcars **(max 8)**
Limited Sprintcars **(max 8)**
Legend Cars
Super Mods
Super Six
WA Open Sedans
WA Quarter Midgets
WA Junior Q Midgets
Outlaw Karts
Derby Sliders

VICTORIA ONLY
3 Litre Sedans
Compact Speedcars
Crash n Bash
Division 2 Hot Rods
GOS Sedans
GP Midgets
GV Open/Production Sedans
GV Juniors
Humpy Holdens
Legend Cars
Lightning Sprints
Limited Sportsmen
Marsh Mods/A Mods/B Mods
Nagambie Dirt Karts
SDAV Hot Rods
Super Rods
Unlimited Sedans
VSC Sports Sedans
VSC V8 Super Modifieds
V8 Trucks
VSC F500
VSC Mini Sprints
VSC Standard Saloons
VSC Thunder Sedans
Outlaw Karts

NORTHERN TERRITORY ONLY
Bombers
NT Sedans

QUEENSLAND ONLY
4 & 6 Cylinder Sedans
Compact Speedcars
Ford v Holden v Sigma
Formula 250
Formula 400
Legend Cars
Lightning Sprints
Limited Sprinters
Microsprints
Nostalgia Sedans
Open Sedans (V8)
Outlaw Sedans
Outlaw Sprint Sedans
RSA 4 Cylinder Sedans
RSA Outlaw Sedans
RSA Fender Benders
RSA Limited Sedans
RSA Street Stockers
RSA Junior Sedans
Stockcars
Street Sedans
Super Stocker
Super Street Sedans

TASMANIA ONLY
Bombers
Tassie Six

SOUTH AUST. ONLY
V6 Sprints
Legend Cars
Limited Sportsmen
Outlaw Karts

"AA" RESTRICTED SPRINTCAR EVENT PERMIT – PERMITTED DIVISIONS (2.5 Star rated track & above)

NATIONAL DIVISIONS
AMCA Nationals
Formula 500
Modlites
SKAA Karts
Junior SKAA Karts
SSA Modified Sedans
SSA National 4's
SSA Production Sedans
SSA Street Stocks
SSA Junior Sedans
SSA Super Sedans
Junior Formula 500
Junior Quarter Midgets
Late Models
V8 Dirt Modifieds
Wingless Sprints
360 Sprintcars **(max 14)**
410 Sprintcars **(max 14)**
Speedcars
Vintage
Burnouts
Demolition Derby
Caravan Race
Ramp Race
Figure 8

NSW ONLY
Compact Speedcars
GP Midgets
Legend Cars
Light Trucks
Lightning Sprints
Limited Sprintcars **(max 14)**
Microsprints
RSA 4 Cylinder Sedans
RSA Outlaw Sedans
RSA Fender Benders
RSA Limited Sedans
RSA Street Stockers
RSA Junior Sedans
Quarter Midgets
Speedway Utes
Stockcars
Outlaw Karts

WESTERN AUSTRALIA ONLY
320 Sprintcars **(max 14)**
Limited Sprintcars **(max 14)**
Legend Cars
Super Mods
Super Six
WA Open Sedans
WA Quarter Midgets
WA Junior Q Midgets
Outlaw Karts
Derby Sliders

VICTORIA ONLY
3 Litre Sedans
Compact Speedcars
Crash n Bash
Division 2 Hot Rods
GOS Sedans
GP Midgets
GV Open/Production Sedans
GV Juniors
Humpy Holdens
Legend Cars
Lightning Sprints
Limited Sportsmen
Marsh Mods/A Mods/B Mods
Nagambie Dirt Karts
SDAV Hot Rods
Super Rods
Unlimited Sedans
VSC Sports Sedans
VSC V8 Super Modifieds
V8 Trucks
VSC F500
VSC Mini Sprints
VSC Standard Saloons
VSC Thunder Sedans
Outlaw Karts

NORTHERN TERRITORY ONLY
Bombers
NT Sedans

QUEENSLAND ONLY
4 & 6 Cylinder Sedans
Compact Speedcars
Ford v Holden v Sigma
Formula 250
Formula 400
Legend Cars
Lightning Sprints
Limited Sprinters
Microsprints
Nostalgia Sedans
Open Sedans (V8)
Outlaw Sedans
Outlaw Sprint Sedans
RSA 4 Cylinder Sedans
RSA Outlaw Sedans
RSA Fender Benders
RSA Limited Sedans
RSA Street Stockers
RSA Junior Sedans
Stockcars
Street Sedans
Super Stocker
Super Street Sedans

TASMANIA ONLY
Bombers
Tassie Six

SOUTH AUST. ONLY
V6 Sprints
Legend Cars
Limited Sportsmen
Outlaw Karts

3.7 PERMIT TYPES AND PERMITTED CLASSES (cont.)

"AAA" OPEN EVENT PERMIT - PERMITTED DIVISIONS
(3, 4 & 5 Star rated tracks only)
Includes Monster Truck Shows & other non-Speedway Events
with prior permission from Speedway Australia

NATIONAL DIVISIONS
AMCA Nationals
Formula 500
Modlites
SKAA Karts
SSA Modified Sedans
SSA National 4's
SSA Production Sedans
SSA Street Stocks
SSA Junior Sedans
SSA Super Sedans
Junior Formula 500
Junior Quarter Midgets
Junior SKAA Karts
Late Models
V8 Dirt Modifieds
Wingless Sprints
360 Sprintcars
410 Sprintcars
Speedcars
Vintage
Burnouts
Demolition Derby
Caravan Race
Ramp Race
Figure 8

NSW ONLY
Compact Speedcars
GP Midgets
Legend Cars
Light Trucks
Lightning Sprints
Limited Sprintcars
Microsprints
RSA 4 Cylinder Sedans
RSA Outlaw Sedans
RSA Fender Benders
RSA Limited Sedans
RSA Street Stockers
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GV Juniors
Humpy Holdens
Legend Cars
Lightning Sprints
Limited Sportsmen
Marsh Mods/A Mods/B Mods
Nagambie Dirt Karts
SDAV Hot Rods
Super Rods
Unlimited Sedans
VSC Sports Sedans
VSC V8 Super Modifieds
V8 Trucks
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VSC Standard Saloons
VSC Thunder Sedans
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Outlaw Sedans
Outlaw Sprint Sedans
RSA 4 Cylinder Sedans
RSA Outlaw Sedans
RSA Fender Benders
RSA Limited Sedans
RSA Street Stockers
RSA Junior Sedans
Stockcars
Street Sedans
Super Stocker
Super Street Sedans

TASMANIA ONLY
Bombers
Tassie Six

SOUTH AUST. ONLY
V6 Sprints
Legend Cars
Limited Sportsmen
Outlaw Karts

3.8 MINIMUM FIRE SAFETY STANDARDS

The following fire safety standards are the minimum requirements for speedway venues at race meetings as per Speedway Australia rule 3.6

Manned Quick Response Vehicle

1 x quick response vehicle manned with 2 fire marshals & parked on the infield with the following:

- 6 x ABE 9kg Powder Fire Extinguishers
- 4 x ATC Foam/Cold Fire (or equivalent) 9 Litre Extinguishers
- 1 x 9 Litre Water Fire Extinguisher
- 1 x Jaws of Life Combination Tool (if possible)

Infield Fire Marshals

2 x fire marshals (1 at either end of the infield) each with:

- 1 x ABE Powder Fire Extinguisher
- 1 x ATC Foam/Cold Fire (or equivalent) 9 Litre Extinguisher

Pit Fire Marshal

1 x fire marshal in the pits (manning the pit return road) with:

- 1 x ABE Powder Fire Extinguisher
- 1 x ATC Foam/Cold Fire (or equivalent) 9 Litre Extinguisher

Protective Clothing

It is recommended all fire marshals should be in full protective clothing i.e. ISO Fire Suits or FIA/SFI-rated race Overalls/gloves/balaclavas, lace up leather footwear with an AS/NZS safety rating, along with protective eye and ear protection.

Safety crews at Premier Speedway, Warrnambool (VIC)

3.9 FIRE EXTINGUISHER GUIDE

FPA AUSTRALIA
Fire Protection Association Australia

You should know the PASS-word for using portable fire extinguisher

P ull the pin or release any other locking device

A im low, pointing the extinguisher nozzle at the base of the fire

S queeze the handle to release the extinguishing agent

S weep from side to side at the base of the fire until the fire is extinguished

Remember, fire extinguishers are for small fires only - don't endanger yourself when using them.

If you have used an extinguisher you should arrange to have it recharged immediately.

PFEG — JAN-2010

Portable Fire Extinguisher Guide

PO Box 1049 Box Hill
VIC Australia 3128
T +61 3 9890 1544
F +61 3 9890 1577
E shop@fpaa.com.au
E technical@fpaa.com.au
W www.fpaa.com.au

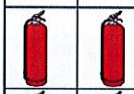
Printed in the interest of protecting life and property from fire

FPA AUSTRALIA
Fire Protection Association Australia

Portable Fire Extinguisher Guide

T +61 3 9890 1544
F +61 3 9890 1577
E shop@fpaa.com.au
E technical@fpaa.com.au
W www.fpaa.com.au

Type of Fire, Class and Suitability

Pre 1997	Current	Extinguishing Agent		A Wood Paper Plastic	B Flammable & Combustible Liquids	C Flammable Gases	E Electrically Energised Equipment	F Cooking Oils and Fats	Comments	D Metal Fires
		Water		✓	✗	✗	✗	✗	Dangerous if used on flammable liquid, energised electrical equipment and cooking oil/fat fires	Use only special purpose extinguishers and seek expert advice.
		Wet Chemical		✓	✗	✗	✗	✓	Dangerous if used on energised electrical equipment	
		Foam*		✓	✓	✗	✗	LIMITED	Dangerous if used on energised electrical equipment	
		Powder	(ABE)	✓	✓	✓	✓	✗	Look carefully at the extinguisher to determine if it is a BE or ABE unit as the capability is different	
			(BE)	✗	✓	✓	✓	✓		
		Carbon Dioxide		LIMITED	LIMITED	✗	✓	✗	Not suitable for outdoor use or smouldering deep seated A Class Fires	
		Vaporising Liquid		✓	LIMITED	LIMITED	✓	✗	Check the characteristics of the specific extinguishing agent. 5 Yearly servicing must be done by ODS &SGG licenced persons.	
		Fire Blanket		LIMITED*	LIMITED	✗	✗	✓	* Fire Blankets may be used as a thermal barrier against radiated heat and to control a fire in clothes being worn by a person.	

LEGEND ✓ = the class or classes in which agent is most effective ✗ = not recommend for these class of fires LIMITED = indicates that the Extinguishant is not the agent of choice for the class of fire, but it may have a limited extinguishing capability

For more information go to: www.fpaa.com.au

* Solvents such as alcohol or acetone mix with water and therefore require special foam

© FPA Australia ABN 30 006 368 576

3.10 MINIMUM MEETING AND PRACTICE STANDARDS

SEE SECTION 3.11 FOR EVENTS INCORPORATING SPRINTCARS

At any Race Meeting or Event, the minimum requirements are

(a) Regular Race Meeting standard quantity of fire extinguishers and fire crew (see Section 3.8)

(b) Race meetings and official practice sessions require:

- a minimum of two first aid personnel (paramedics, ambulance service, doctor or qualified first aid personnel);
- a station wagon capable of transporting minor injury cases; and
- an appointed person equipped with an operative mobile phone and supplied with the phone number of the nearest road transport ambulance service.

(c) The local ambulance service must be notified of the holding of a Race Meeting or Practice on that day.

(d) A designated person (e.g. Chief Steward) is to be clearly in control of all activities on that day.

(e) All participants, including Officials and Pit Crew Members are to sign a "Release and Waiver of Liability / Assumption of Risks and Indemnity Agreement" form prior to entering the pits.

(f) Must understand that in accordance with their duty of care, the choice is clearly theirs if they decide to participate under the conditions that exist at the time.

(g) If Sprintcars (including Wingless Sprints) are included in the program of events then this section does not apply. Refer to Section 3.11 overleaf.

3.11 MINIMUM SPRINTCAR EVENT STANDARDS

THIS INCLUDES MEETINGS AND PRACTICES INVOLVING 360 AND 410 SPRINTCARS, AND WINGLESS SPRINTS

Drivers are not permitted to participate in any race, official practice, or time trial or warm up event unless one of the following are in attendance.

RACE MEETINGS

1. A State recognised fully operational ambulance that is fully licenced and certified to treat persons on and off the race track and to transport injured persons to hospital is in attendance, with appropriately skilled personnel:

   OR

2. An alternative provider that can provide medical services at events with a minimum of:

   (a) Two event staff that have as a minimum: training & qualifications equivalent to that of a recognised state service; and
   (b) At least one vehicle equipped to the standard of an ambulance with equipment that is adequate to deal with the range of injuries likely to be encountered and be commensurate with the skills of, and be familiar to, the medical or paramedical personnel using it.

If a State recognised fully operational ambulance that is fully licenced and certified with skilled personnel is not being used, then the State Member Club must obtain a letter of confirmation prior to the commencement of the event that the alternative supplier meets the above rule requirements. This document must be obtained as a part of the SMC's event record.

PRACTICE

3. (a) Normal approved quantity of fire extinguishers and fire crew.
   (b) Minimum of two first aiders. i.e. Paramedics, St John or qualified first aid personnel.
   (c) Station wagon capable of transporting minor injury cases.
   (d) Appointed person equipped with an operative mobile phone and supplied with the phone number to the nearest road transport ambulance station.
   (e) Local Ambulance service notified that you are holding a practice on that day
   (f) A designated person, e.g. A steward to be clearly in control of all activities on the day.
   (g) It is recommended that one Sprintcar is on the track at any one time unless the requirements of SCCA rule 5.19(i) are met.
   (h) All drivers and crews to sign an Insurers Sprintcar Practice Waiver/Indemnity form and to be clearly informed the emergency provisions may not be to the standards of race meetings.
   (i) ALL participants must understand that the choice is clearly theirs if they decide to participate under the conditions that exist at the time.

4. TRACK ASSESSMENTS

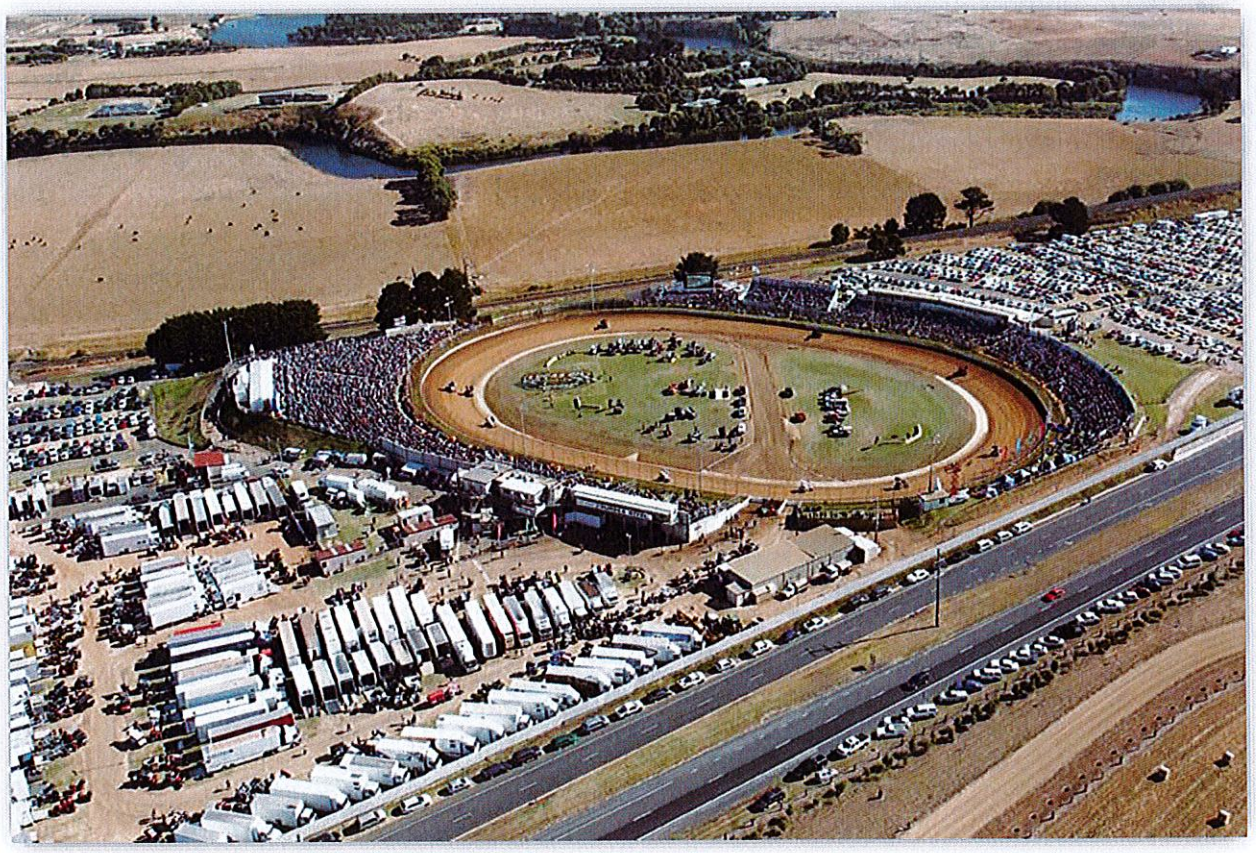
The purpose of this section is to give track operators a greater understanding of the regular track audit process.

The process commences with a physical examination of facilities contained at the track. These facilities are broken up into 11 sections referred to as 'Key Elements', and within each 'Key Element' contain certain 'Indicators' which are allocated a score/rating.

The scores rank each indicator from 1 being "poor", to 4 being "Best Practice".

For example, one facility is 'Exterior Areas' but within this section there are numerous items to consider such as drains, ground cover, seating, fencing etc. The track is allocated a score or 'percentage' depending on how well they perform in the track audit.

This rating is then used (in conjunction with other considerations) to determine the public liability payable by the track. A list of the elements and indicators are provided as a form of reference for track operators. This list is useful for tracks about to undergo a track inspection, providing a tool to identify problem areas.



Premier Speedway, Warrnambool (VIC)

4. TRACK ASSESSMENTS (cont.)

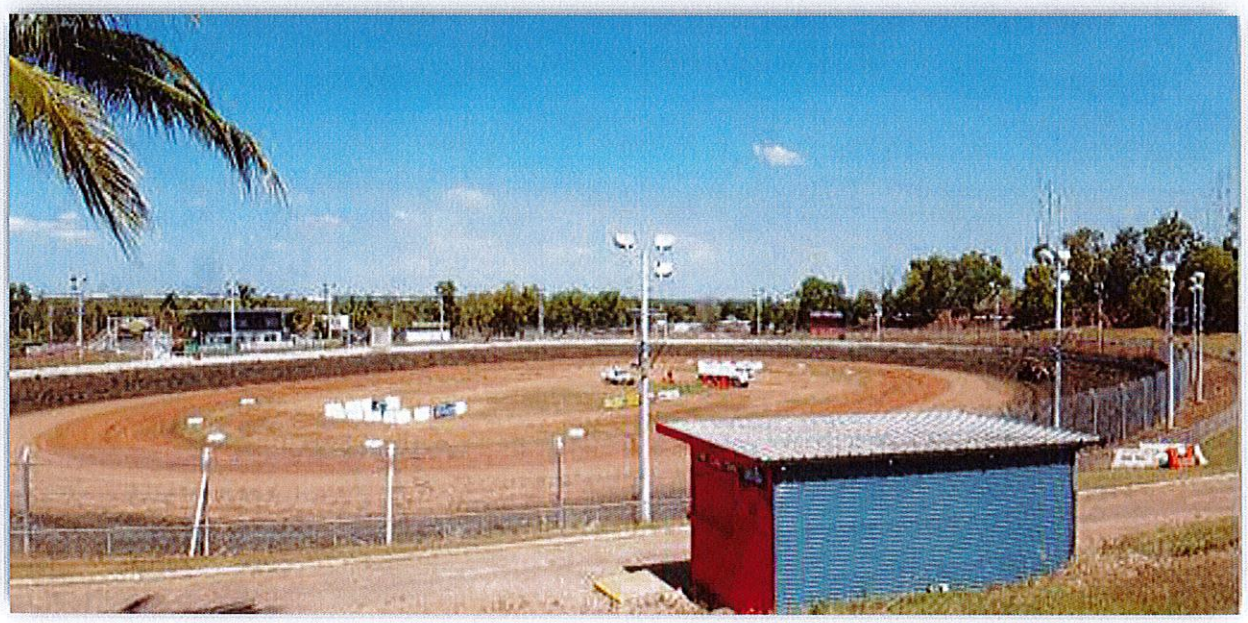
Speedway Australia has developed a comprehensive Risk Management review in conjunction with our insurance broker. Speedway Australia is keen to ensure that risk issues are adequately managed at tracks. The purpose of the review is to work with promoters and track operators to identify potential risks at speedway tracks and then to work together in those identified risks.

It is the intention of Speedway Australia to work in partnership with tracks to improve safety standards as we actively work towards reducing the number of public liability claims. The incentive for tracks is that as a result of these reviews Speedway Australia will be in a stronger position to negotiate lower public liability insurance premiums on your behalf.

The risk management review is based around the following 11 key elements:

- 4.1 Management Systems
- 4.2 Emergency Procedures & Training
- 4.3 Exterior areas – General
- 4.4 Food Vendors
- 4.5 Electrical Safety
- 4.6 Security
- 4.7 Contractor Management
- 4.8 Car Parks and Public Entrances
- 4.9 Track & Pit Inspections
- 4.10 Housekeeping
- 4.11 Interior Areas

The review process involves examination of each of the 11 key elements above with reference to specific indicators under each element (see next pages). A rating that best describes the level of implementation or compliance with the indicator is given at the time of the audit.



Northline Speedway, Darwin (NT)

4. TRACK ASSESSMENTS (cont.)

4.1 MANAGEMENT SYSTEMS

The following areas are subject to assessment as part of the regular track inspection program. All items are listed in the same order as the assessment form.

Induction of new personnel: All new employees and volunteers should be inducted, with records of the training retained. It is important that workplace safety requirements for your state are adhered to in this regard.

Training: Can include things such as evacuation drills and procedures, spillage response, first aid, handling of hazardous goods, and fire training (see Section 5: Induction). All training should be documented.

Incidents: All incidents that occur on site should be recorded, investigated and reported in accordance with the track permit (Refer Section 6 for the Accident/Incident Report).

Infield Personnel: All in-field track personnel (e.g. flag marshals, officials, fire/rescue, photographers etc.) should remain in a designated safety zone which should be clearly identified and behind barriers where appropriate

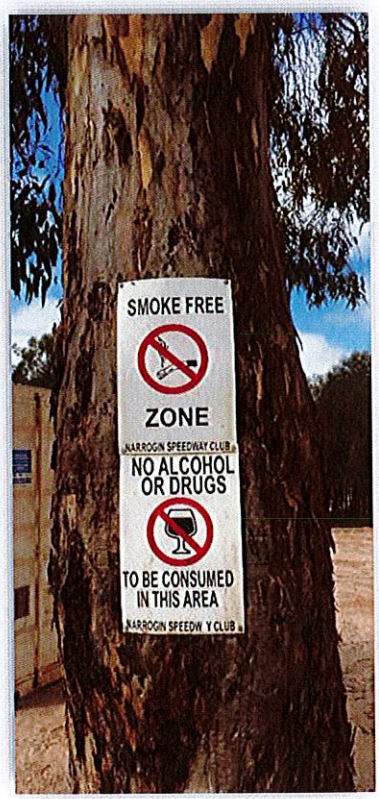
First Aid Kits: Should be readily available and well maintained (Refer Section 5. First Aid Kit Checklist).

Sharps: A sharps handling procedure should be in place (Refer Section 24. Speedway Australia Procedure 10/2012 – Syringe Management, for example)

Working at Height: There should be a clear procedure in place for work above 2 metres (Refer Section 23. Speedway Australia Policy 10/2012 – Working at Heights)

Smoking Policy: An appropriate smoking policy should exist, which is supported by signage and notification to employees, competitors and contractors.

Alcohol & Drugs: There should be an Alcohol and Illegal Drugs Policy supported by notification to employees, competitors and contractors.



Narrogin's Smokefree tree (WA)

4.2 EMERGENCY PROCEDURES & TRAINING

- All staff and volunteers should be trained to follow emergency procedures, take first response action, operate any fire protection systems and initiate salvage operations.
- Documented procedures should be in place and include dangerous goods release (e.g. flammable liquids, bomb threat, fire evacuation, theft/robbery etc.).
- Crisis communication response procedures should be in place with operator/owner.
- There should be a fully trained fire rescue team on site at all meetings.
- Appropriate fire extinguisher / hose reels will be available on site (Refer to 3.7 Portable Fire Extinguisher Guide).
- Regular testing of extinguishers / hose reels should take place.
- Staff and volunteers should receive ongoing briefings on firefighting equipment.
- Fire Alarms and Emergency Exit lighting to be tested regularly (where fitted).
- Ensure all fire exits are clear from obstructions.
- Minimum medical standards must be maintained at all meetings. (Refer to 3.8 Minimum Meeting and Practice Standards).

4.3 EXTERIOR AREAS – GENERAL

- Controls should be developed to proactively manage all exterior areas (refer to event checklist).
- An effective system should be in place to fix defects.
- Drain covers to be secured and flush fitting.
- There are to be no potholes or ridges / raised paving or other trip hazards.
- Adequate and legible safety signs are to be in place.
- Access to roof is to be secure from unauthorised entry.
- Entrance paths to buildings are to be safe (clean, non-slippery and in good repair).
- Stairs should not present a trip / slip hazard.
- Hand rails are to be installed on steps.
- Public are to be kept from restricted areas.
- Ground cover is to be trimmed back from paths.
- There are to be no informal paths that present trip hazards.
- Ensure informal exterior lighting & spectator lighting is adequate and inspected regularly.
- Seating is to be in good repair.
- Perimeter fencing in place and to be well maintained.

4.4 FOOD VENDORS

- All food vendors to have a current licence to prepare and sell food (including clubs).
- Food vendors to be provided with, and sign for safe food handling manuals.
- Food complaints are to be reported via the incident reporting procedure.
- All food outlet facilities (including awning support system) are to be of sound construction.
- LPG bottles should be appropriately located and physically protected.

4.5 ELECTRICAL SAFETY

- A procedure is to be in place for maintenance of electrical equipment
- There are to be regular hazard inspections of electrical equipment including condition of wiring, switchboards & power points.
- RCDs are to be installed and tested in high risk areas.
- Inspection and testing of hand held tools, portable equipment and power boards are to be done regularly.

4.6 SECURITY

- An adequate number of security personnel to be hired during events.
- Security personnel are to be licenced.
- Security personnel to conduct patrols of all areas including car parks.
- Security personnel are to be instructed: to identify and report hazards, suspicious activities and incidents and how to deal with assault incidents.
- There should be a close association with police.

4.7 CONTRACTOR MANAGEMENT

- Contractor site inductions to be performed. (Refer Speedway Australia Policy 06/2017 Induction, for Site Check List).
- Examples of contractors include, but are not limited to, monster truck operator, fireworks companies, electricians, plumbers and security providers.
- Insurance details of contractors to be provided ($10,000,000 minimum & filed).
- There is to be an evaluation done of contractors OHS program.

4.8 CAR PARKS AND PUBLIC ENTRANCES

- All car parks and public entrances should be adequately managed during meetings including marshalling.
- All drain covers to be secured and flush fitting.
- A pedestrian safety control system in place.
- There should be no steep inclines used by pedestrians.
- There are to be no slippery areas.
- Speed restrictions to be in place (max 20kph).
- Road directional signage provided and in good repair.
- Adequate car park lighting provided.
- There should be a procedure for children and pets locked in cars.

4.9 TRACK & PIT INSPECTIONS

- A pit inspection is to take place prior to meetings.
- An action plan should be in place for corrective measures to be taken after inspection.
- Fuels must be adequately stored during meeting and containers meet AS 2906 (relevant information available from Speedway Australia if required).
- Specialised fire extinguishers will be provided and accessible during meeting.
- Smoking signs should be installed and appropriately located.
- All issues from the last Speedway Australia Track Inspection Report should be resolved.
- A track inspection should be undertaken prior to meetings.
- The catch fence should be inspected prior to each meeting.
- Checks should be conducted on track lighting and emergency evacuation lighting prior to meeting.

4.10 HOUSEKEEPING

- There should be excellent standards of housekeeping:
  - throughout grandstands.
  - throughout pits.
  - throughout track infield.
  - throughout car parks and entrances.
- Emergency equipment should be accessible with neat storage, no storage to be in electrical rooms or in front of electrical switchboards.
- No excess paper accumulations.

4.11 INTERIOR AREAS

- Floors to be clean and tidy with slip resistant surfaces.
- No slip or tripping hazards.
- Stairs/steps should be well maintained and unobstructed.
- Balustrades should be in accordance with standards.
- There are to be no long and steep ramps without handrails and non-slip surfaces.
- Seating should be in good repair.
- Children's play items should be safe and stable.
- Water temperature regulated in toilets.

5. FIRST AID CHECKLIST

The purpose of this checklist is to assess the appropriateness of first aid kits. Indicate by ticking the relevant box. Where the answer is "no", further action may be necessary.

LOCATION & POSITION

Is the first aid kit located in a prominent and accessible position?	☐ YES	☐ NO
Are employees informed and aware of the location of first aid kits?	☐ YES	☐ NO
Do all employees have access to first aid kits?	☐ YES	☐ NO

CLEARLY IDENTIFIABLE

Can the first aid kit be clearly identified as a first aid kit?	☐ YES	☐ NO
Is the first aid kit clearly marked with a white cross on a green background in accordance with Australian Standard AS 1319: Safety Signs for the Occupational Environment?	☐ YES	☐ NO

CONTENTS

Are the contents appropriate to the injuries and illnesses at your track?	☐ YES	☐ NO
Does the first aid kit contain enough of each item?	☐ YES	☐ NO
Is an employee trained in first aid responsible for maintaining the first aid kit?	☐ YES	☐ NO
Are the contents appropriately labelled?	☐ YES	☐ NO
Are the contents within their "use by" date?	☐ YES	☐ NO
Are the contents adequately stored?	☐ YES	☐ NO

RELEVANT INFORMATION

Is there a list of contents provided in the kit?	☐ YES	☐ NO
Are emergency telephone numbers clearly displayed?	☐ YES	☐ NO
Are the extension numbers, name and location of the nearest first aid personnel clearly indicated?	☐ YES	☐ NO

TRAINING

Have selected employees received training in the use and maintenance of first aid kits?	☐ YES	☐ NO

Comments:

6. GRANT OPPORTUNITIES

As the governing body for Speedway racing in Australia, Speedway Australia is committed to supporting competition at all levels of the sport. As a sign of its commitment, Speedway Australia offers grant funding to associations, clubs and venues at a number of levels to assist in the growth of the sport.

Speedway Australia offers grant funding to tracks, associations, clubs and venues on a number of levels to assist in the growth of the sport, in conjunction with grant writing assistance from our Sport Development Officers.

Track Grants

Track support has increased in recent years, with funding this season changing from a safety to a COVID-recovery focus.

2018 **$50,000** Track Safety Grants

2019 **$70,000** Track Safety Grants

2020 **$100,000** COVID Stimulus Grant

Grant Application Assistance

Speedway Australia offers grant application assistance to clubs and venues seeking funding from government, and other external sources.

Applications obtained with our assistance have resulted in Speedway venues building or replacing concrete walls, catch fences, lighting upgrades and improvements to club room facilities in recent times.

We actively encourage venues to seek funding to assist future-proofing venues. Tracks and clubs looking for assistance in applying for grants should contact their relevant Sport Development Officer.

National Division Support

In addition to specific divisional body financial assistance, Speedway Australia attends all National titles to assist the host venue and division with resourcing and support.

Grassroots Grants

Speedway Australia will consider other requests for assistance from tracks on a case-by-case basis.

7. OVERVIEW OF INSURANCE SCHEMES

Marsh Pty Ltd are the world's largest insurance brokers and risk consultants with offices in all Australian States and Territories. Their expertise in Sport and in particular Motorsport began in 1985 when they placed the policies for the first Formula One Grand Prix in Adelaide. They have in fact, placed the Formula One policies for all Formula One events in Adelaide and Melbourne since 1985.

Since 1985 Marsh Advantage have built relationships in Motorsport acting for Motorsport Australia, Moto GP, the Le Mans event in Adelaide, Summernats and of course, Speedway.

PUBLIC LIABILITY INSURANCE

Marsh Advantage Insurance Pty Ltd (Marsh Advantage) on behalf of Speedway Australia is pleased to provide the Speedway Public Liability Insurance Program. The program is open to all Speedway Australia approved tracks in Australia and insures over 90 tracks and associations.

This section provides information on when and how applications should be made for a Speedway Australia track permit, and discusses the benefits involved. It outlines the documentation that should be completed and sent to the Speedway Australia National Office following an event, as well as providing a copy of the Incident/Accident Form. There is a list of points to consider when an event occurs that may have the potential for liability or costs.

PERSONAL ACCIDENT INSURANCE

For the benefit of all Speedway Australia licence holders, Speedway Australia has arranged through its appointed insurance brokers, Marsh Ltd, a Group Personal Injury insurance policy underwritten by QBE Insurance (Australia) Limited.

By purchasing this policy on a group scheme basis, Speedway Australia is able to provide broad cover to its licence holders.

This section discusses the requirement for all drivers, pit crew members and officials participating in a Speedway Australia sanctioned race to be in possession of personal accident insurance cover.

It talks about the purpose of the one day Licences which can be purchased from Speedway Australia, which can be used for non-regular drivers such as celebrity events, demolition derby drivers, or for new drivers to test cars. It further discusses how many licences one person may have and the cost involved in upgrading to a full racing licence.

WAIVERS

This section discusses the use of waiver forms, release and indemnity forms and licence applications. It highlights that by signing waiver forms you do not sign away any rights but agree not to take legal action against the promoter, track, officials or other drivers in the race. This does not limit anyone from making a claim under any personal accident insurance that they hold. An example of a general waiver is provided, however original forms need to be sourced from the Speedway Australia National Office.

8. PUBLIC LIABILITY INSURANCE AND PERMITS

8.1 RECOGNISED RACING DIVISIONS ONLY

At all times, all Speedway Australia insured venues **MUST** only run divisions accepted and recognised by Speedway Australia. The scheme is priced to remain as affordable as possible, and therefore riskier activities like motorcycle speedway, lawnmower racing, V8 Wingless Sprints and other unapproved divisions are not covered under the scheme.

The latest list of divisions can be found on the Speedway Australia website. If in doubt, please check with us.

8.2 TRACK PERMIT INFORMATION

For all events including practices and race meetings, venues must obtain a track permit from the Speedway Australia Office. Practice permits are issued at no cost, and there is a sliding scale of charges for a race meeting permit.

a) Compliance with a Speedway Australia Permit

Tracks must comply with all policies and procedures and any conditions set out on the track permit. Failure to comply with any of Speedway Australia's policies may result in your insurance cover being suspended/cancelled.

Under a Speedway Australia track permit, Speedway Australia is able to provide the following:

- Independent Stewards
- Accredited Racing Officials
- Race Control Tribunals
- Speedway Appeals Tribunals
- Drug & Alcohol Policy
- Licencing System
- Australian Racing Rules and Regulations

Public Risk Insurance
Speedway Australia has arranged comprehensive public liability insurance, providing coverage of $50 million for any one occurrence, available to all speedway tracks in Australia.

b) Practice Permit Application Process

The permit application process consists of five primary steps:

1. You must have completed the Insurance Commitment form and forward to Marsh along with payment of a $1000 deposit, with the upcoming season's race calendar, at start of insurance period (usually September of each year). This ensures your commitment to the Speedway Public Liability Insurance Program.
2. Must notify Speedway Australia 7 days prior to the practice event, via written notification, to obtain a practice permit.

3. Speedway Australia distributes Track Permit for the practice meeting to the track.
4. Track Permit must be displayed at venue during event.
5. Agree to supply Post Event Documentation requirements (Refer Section 8.3 below)

c) Race Permit Application Process

The permit application process consists of five primary steps:

1. Completed Insurance Commitment form forwarded to Marsh along with payment of a $1000 deposit, with the upcoming season's race calendar, at start of insurance period (usually September of each year).
2. Marsh invoices track each month for upcoming race meetings.
3. Track pays invoice to Marsh and Marsh notifies Speedway Australia of meeting payment.
4. Speedway Australia distributes Track Permit for the paid meeting to the track.
5. Agree to supply Post Event Documentation requirements (Refer Section 8.3 below)

d) Application for Track Meeting Permit - When should you pay for a meeting?

Payment for a meeting must be lodged to Marsh at least two weeks prior to the event. This allows enough time to process the payment and issue the Track Permit to the track.

e) Issue of the Track Meeting Permit

Once the insurers notify Speedway Australia that the track has paid for a meeting, the Track Permit will be issued no later than one week prior to the event. The Permit should be displayed prominently at the track to indicate to all competitors and officials that the meeting is a Speedway Australia endorsed event and the appropriate insurance coverage is in place.

8.3 POST-EVENT DOCUMENTATION REQUIREMENTS

Following each meeting you will be asked to provide post-event documentation for the meeting. The following documentation must be sent to the Speedway Australia National Office within seven days of the event:

- Stewards Reports (can be completed online)
- One-day Pit Licences
- Accident/Incident Report Form (can be completed online)
- Bulk Officials Record Sheet
- Burnout Indemnity

8.4 SAMPLE MEETING PERMIT

MEETING PERMIT: 19-405

EXAMPLE SPEEDWAY

DATE: 4/01/2020

VENUE STAR RATING:

★★★★

DECLARED MEETING CATEGORY:

AAA

This track meeting permit provides for public liability insurance coverage under the Speedway Australia insurance scheme up to $50 million for the above race meeting.

DIVISIONS PERMITTED

NATIONAL DIVISIONS	Formula 500	SKAA Karts	V8 Dirt Modifieds
360 Sprintcars	Junior Formula 500	Speedcars	Vintage
410 Sprintcars	Junior Quarter Midgets	SSA Junior Sedans	Wingless Sprints
AMCA Nationals	Junior SKAA Karts	SSA Modified Sedans	STATE DIVISIONS
Burnouts	Late Models	SSA National 4s	..mited Sportsmen
Caravan Race	Microsprints	SSA Production Sedans	V6 Sprints
Demolition Derby	Modlites	SSA Street Stocks	
Figure 8	Ramp Race	SSA Super..dan	

The issue of this permit is conditional in all respects upon the track owner/operator ensuring that:

1. The best interests of the tracks insurer are considered at all times.
2. The terms of the insurance policy arranged by Speedway Australia for the track are adhered to at all times.
3. The track abides by any directive given by Speedway Australia at any time and at all times, including but not limited to:
   a. All senior category drivers are a minimum of ..years.
   b. All of the track's Pit Rules and Track Operator Manual are enforced.
   c. The current Speedway Australia Racing Rules and Regulations are to be strictly adhered to and enforced for all Speedway racing at the Track unless otherwise agreed by Speedway Australia except for all Sprintcar racing which is conducted under SCCA Racing Rules Regulations and Specifications.
   d. The Speedway Australia Drug and Alcohol Policy is to be upheld and enforced for all except for SCCA conducted Sprintcar racing, where either the Speedway Australia Drug and Alcohol Policy, or the SCCA Drug and Alcohol Policy will apply.

The Track acknowledges that the above conditions are for the safety of all persons involved in Speedway and any breach of these conditions will be liable to penalties at Speedway Australia's discretion.

Radio Frequencies

In accordance with the third party authorisation requirements of the Australia Communications and Media authority, Speedway Australia has given permission for the venue to use the following frequencies for radio communication:

1982107 frequency 462.1125 MHz *OR* 1982108 frequency 462.125 MHz

More Info contact: Speedway Australia 08 8139 0777 | Marsh Advantage 08 8385 3612 | POLICY NUMBER: B0509 BOWCI1900535

www.speedwayaustralia.org

EXAMPLE ONLY

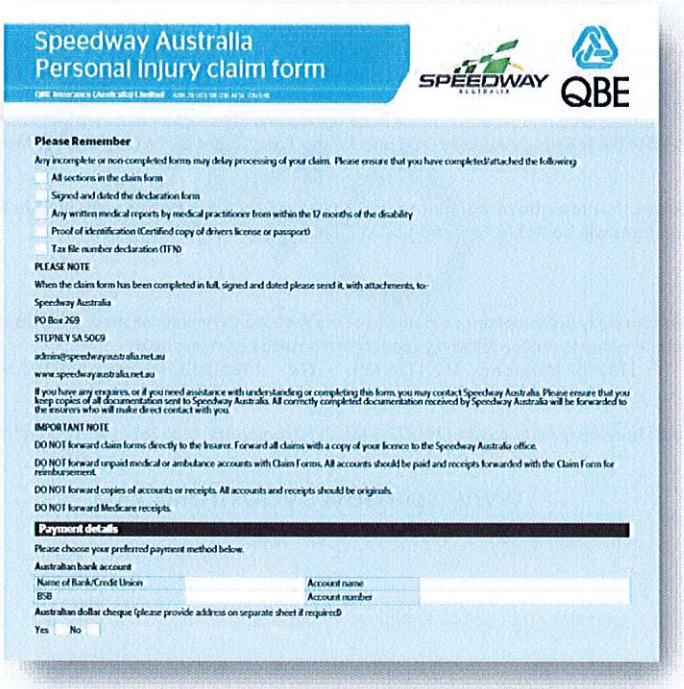
9. PUBLIC LIABILITY CLAIMS PROCEDURES

STEPS TO TAKE IF A CLAIM ARISES

All incidents where potential for liability or costs exist are to be promptly investigated.

- The club is to notify Speedway Australia of the contact details of a nominated person or people.
- All requests for further information will be directed to the nominated person(s) at the applicable speedway club.
- Additional information requested by Marsh should be provided as soon as reasonably possible.
- Please do not reply to any communication from a third party but forward same to Marsh upon receipt thereof.
- Any contact made by the injured party or their representative must be recorded in a file note and sent to Speedway Australia as soon as possible.
- Should any legal documentation (such as Statement of Claim) be received by the applicable speedway club, it should be faxed/emailed to Speedway Australia immediately and the original forwarded in the mail.
- **Do not admit liability, accept responsibility or promise/offer compensation under any circumstances.**

In the event of a formal investigation being undertaken, the applicable speedway club/promoter would be informed by Marsh and then contacted by the appointed investigators.



Speedway Australia
Personal Injury claim form

SPEEDWAY AUSTRALIA QBE

Please Remember

Any incomplete or non-completed forms may delay processing of your claim. Please ensure that you have completed/attached the following

- All sections in the claim form
- Signed and dated the declaration form
- Any written medical reports by medical practitioner from within the 12 months of the disability
- Proof of identification (Certified copy of drivers license or passport)
- Tax file number declaration (TFN)

PLEASE NOTE

When the claim form has been completed in full, signed and dated please send it, with attachments, to:

Speedway Australia
PO Box 269
STEPNEY SA 5069
admin@speedwayaustralia.net.au
www.speedwayaustralia.net.au

If you have any enquiries, or if you need assistance with understanding or completing this form, you may contact Speedway Australia. Please ensure that you keep copies of all documentation sent to Speedway Australia. All correctly completed documentation received by Speedway Australia will be forwarded to the insurers who will make direct contact with you.

IMPORTANT NOTE

DO NOT forward claim forms directly to the Insurer. Forward all claims with a copy of your licence to the Speedway Australia office.

DO NOT forward unpaid medical or ambulance accounts with Claim Forms. All accounts should be paid and receipts forwarded with the Claim Form for reimbursement.

DO NOT forward copies of accounts or receipts. All accounts and receipts should be originals.

DO NOT forward Medicare receipts.

Payment details

Please choose your preferred payment method below.

Australian bank account

Name of Bank/Credit Union		Account name	
BSB		Account number	

Australian dollar cheque (please provide address on separate sheet if required)

Yes No