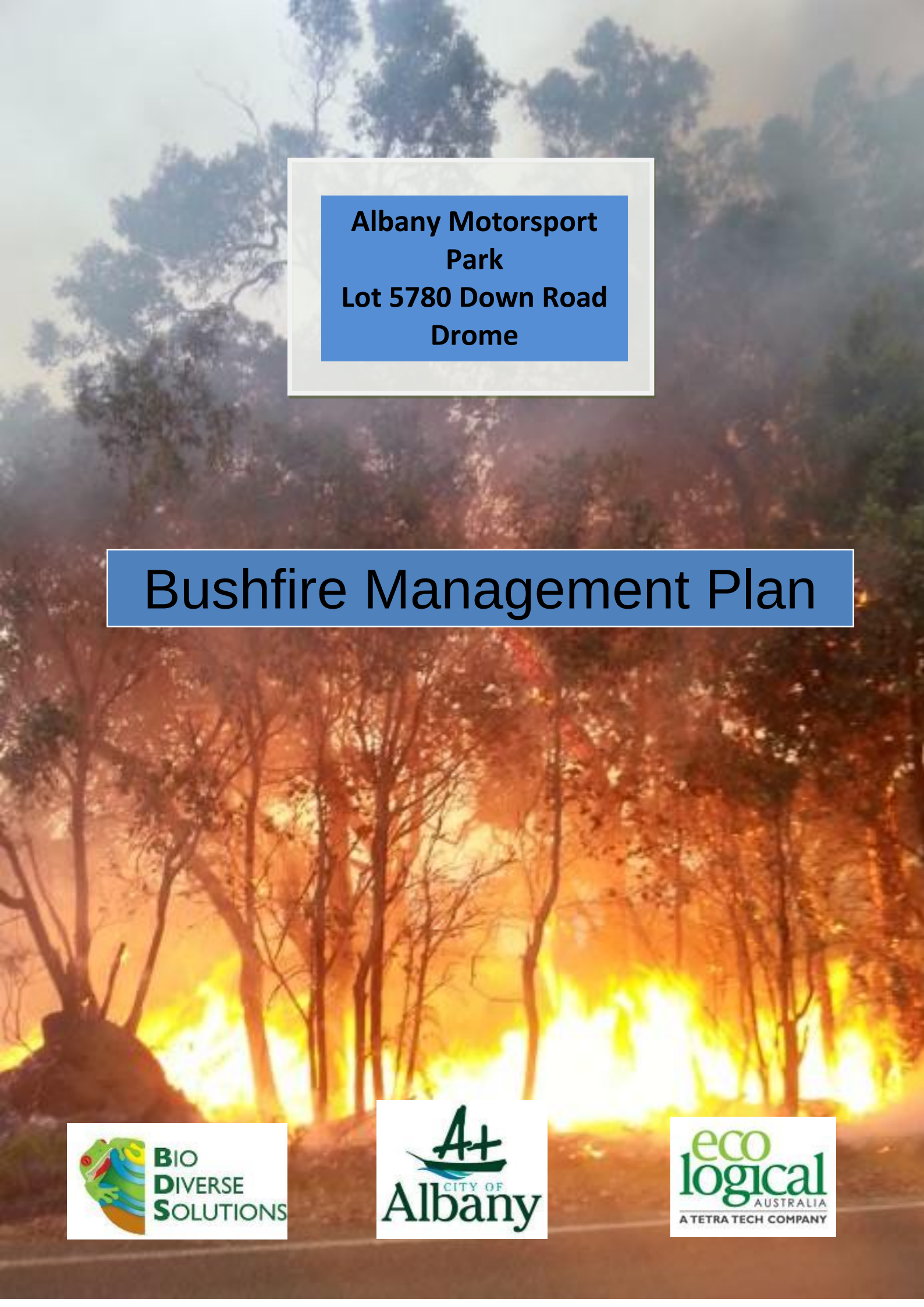

Albany Motorsport Park
Lot 5780 Down Road
Drome

Bushfire Management Plan

BIO DIVERSE SOLUTIONS

CITY OF Albany

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DOCUMENT CONTROL

TITLE

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Author (s): Kathryn Kinnear, Daniel Panickar & Bruce Horkings
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APPENDICES

1. Executive Summary

The City of Albany commissioned Bio Diverse Solutions and Eco Logical Australia to prepare a Bushfire Management Plan (BMP) for the proposed Albany Motorsport Park (AMP) at Lot 5780 Down Road, Drome WA 6330. The City of Albany Local Planning Scheme (LPS) No.1 outlines the area zoned as 'Priority Agriculture' and is located within the Drome Industrial Buffer Area. It is proposed through the Scheme Amendment Process to rezone the area to 'Special use' under LPS1.

This BMP has been prepared to assess the subject site against the current and endorsed Guidelines for Planning in Bushfire Prone Areas Vers 1.3 (WAPC, 2017) and State Planning Policy 3.7 (SPP 3.7; WAPC, 2015). Such planning takes into consideration standards and requirements specified in various documents such as Australian Standard (AS) 3959-2009, Western Australian Planning Commission (WAPC) Guidelines for Planning in Bushfire Prone Areas Vers 1.3 (WAPC, 2017) and SPP 3.7 (WAPC, 2015). These policies, plans and guidelines have been developed by WAPC to ensure uniformity to planning in designated "Bushfire Prone Areas" and consideration of the relevant bushfire hazards when identifying or investigating land for future development.

The concept plan outlines a multi-use development, the details of this plan will be finalised as part of the future Development Application, the plan includes:

- Motocross track and clubrooms;
- A multi-use 3.5km bitumen race track for race events such as for motor car racing, motorcycle racing, drifting, driver training and cycling;
- A 1000 foot drag strip for drag racing;
- A 1300m^2 burnout area;
- A function building and club rooms;
- Spectator viewing areas;
- Pit marshalling areas and storage sheds;
- Site parking; and
- An off-road four-wheel drive and all-terrain vehicle training area.

The staging of the development of the AMP includes a 2 staged process:

Stage 1: Development of the motocross track in the north of the site, development of the multiuse track for state motor car, motorcycle and cycling events; and enabling works such as feasibility, planning, design works and access roads.

Stage 2: Contemplate the further development of the AMP site as patronage increases and the range of uses in broadened (e.g. lighted evening events, international events) and is dependent on further funding. (GHD, 2018)

The proposed Motorsport Park is located in a Bushfire Prone Area (SLIP, 2018) and as such triggers compliance with requirements of State Planning Policy 3.7 – Planning in Bushfire Prone Areas (SPP 3.7). The proposed scheme amendment is considered a 'Strategic Planning Proposal' under SPP 3.7 and must be accompanied by a Bushfire Hazard Level (BHL) Assessment and demonstrate compliance with bushfire protection criteria in the form of a BMP. The BMP is to provide sufficient evidence that the rezoning proposal has, or can be made to have a low to moderate Bushfire Hazard Level.

The external bushfire risks to the site are the continuous remnant vegetation and plantations located to the west and north west, east, north and south east. The creek central to the subject site drains to the south west and risks of bushfire in this direction is also evident. Remnant vegetation located internal to the subject site in the west was burnt in the recent May 2018 bushfires. The external remnant forest areas (including plantations) present Extreme Bushfire Hazard levels (as defined by WAPC) to the AMP development. To the south and east of the site is predominantly farmland areas grazed by cattle which present moderate BHL risks.

The subject site was assessed as having internal areas of Forest Type A, Woodland Type B, Grassland Type G, Shrubland Type C and Scrub Type D. Bushfire Hazard Level (BHL) Mapping has allocated extreme,

moderate and low hazard level across the site with the post development BHL moderate or low in development areas of the AMP.

BAL contouring across the subject site has allocated BAL ratings of BAL-29 or less applies to buildings within the proposed concept plan. All internal woodland and grassland areas (previously grazed paddocks) will be managed and maintained in low fuel state (slashed/mowed to <100mm for grasses and trees to WAPC APZ standards) and documented through the Operational Management Plan (OMP) prior to the AMP operating.

To mitigate bushfire risks to the site the following parameters are to be employed:

- Fuel hazard reduction burning in the internal western remnant bushland (rotation 8-10 years and governed by CoA Emergency services priorities and resources). Refer to Section 9.2 of this report.
- Excluding bushfire from the central creek area to reduce the risk of peat fires on the subject site (no planned burning, mineral earth firebreaks, low fuel buffers).
- Reducing risks of ignition from the motorsport events (internal) as outlined in Section 7 of this report.
- Reducing risk of ignition from external sources through liaison with neighbours and consultation with the Local Bushfire Brigade (Highway Brigade located 5km away near Albany Airport).
- Modifying and maintaining the existing internal areas of Grassland Type G and Woodland Type B to a low fuel state at all times (as per WAPC Standards).
- Traffic control during events to ensure safe and timely evacuation of personnel from the site in event of bushfire.
- Consideration of purchase of fast attack light unit for the AMP site and to be placed adjacent to any practise areas (non-event days).
- Event days will have full fire safety crews, ambulance and safety personnel strategically located around the track.
- Documentation of control measures in the OMP as outlined in this BMP report for the site.
- Lease arrangements from the CoA to the AMP controlling body to define management controls of the development site as defined in the implementation table Section 10 of this report.

Consultation with Department of Fire and Emergency Services (DFES) and Department of Planning, Lands and Heritage (DPLH) confirmed that they deemed the AMP to be a “High risk” land use. SPP 3.7 outlines that certain land uses may potentially ignite a bushfire, prolong its duration or increase its intensity. Such land uses are defined as ‘High Risk’. The proposed Albany Motorsport Park (AMP) is defined a high-risk industry due to:

- Motorsport activities giving rise to risk of ignition and bushfire; and
- Exposure of the community, fire fighters and environment to dangerous substances from vehicles igniting.

A summary of recommendations from the brief risk assessment process includes:

- A detailed Operational Management Plan (OMP) to be developed by AMP which includes risk assessments (refer to example Appendix 5) as per Confederation of Australian Motor Sport (CAMS) policy and regulations to ensure there are actions to minimize risks of ignition from internal sources of the park.
- The OMP will be reviewed and endorsed by the CAMS prior to operation of the Albany Motorsport Park.
- Restricting public access through the site to spectator viewing areas and competitor areas, access around the whole of the site is restricted to emergency and safety services.
- Practice days and non-events are to be controlled and regulated by AMP and documented in the OMP for the site.
- Hazard reduction burning only occurs in the western remnant vegetation block, restrictions of fire in central creek area (peat fire risk) through 8m firebreak at edge of fencing of remnant vegetation (restrict grass fires passing into remnant vegetation).
- Controlled re-fueling of vehicles in designated areas, documented in OMP.

- Observing and complying with “Total fire ban days” and “Vehicle movement restrictions/bans” as set by LGA.
- No events held during Catastrophic Fire Danger Rating (FDR) days.

It is noted that although designated as a High-risk industry through the definition of SPP 3.7, the controls and management procedures implemented through the risk management process will reduce the risks of the AMP. The proposed uses associated with the AMP will be controlled and governed through:

- Designed to comply with CAMS’ Track Operator’s Safety Guide (CAMS 2012) and Motorcycling Australia (MA) Track Guidelines (MA 2011).
- To be licensed by CAMS for Fédération Internationalé de l’Automobile (FIA) Grade 2 and Fédération Internationalé Motocyclisme (FIM) Grade B (i.e. up to second-tier international motor racing).
- Motocross track designed and constructed in association with Motocross Australia guidelines.
- Drag strip designed and constructed in accordance with FIA specifications for drag strips and in association with Australian National Drag Racing Association (ANDRA).

Consideration of the High-risk nature of the AMP site is an ongoing process to be refined in future stages of the development approval process and to be addressed under a Bushfire Risk Management Plan (BRMP) if required or requested from the approving agency.

The proposal is defined as ‘Vulnerable Land Use’ (as per SPP 3.7) due to:

- Large numbers of people attending the AMP events (400-500 people club events, 10,000 people state events);
- Elderly demographic, children and mobility impaired people attending the AMP events;
- Presence of a function centre and clubrooms; and
- Site evacuation challenges associated with visitors and spectators on site.

Access internal the site will be provided in alternative directions to separate destinations to Down Road to the north and Down Road South to the weast. Multiple gates will also facilitate access/egress from the site on the north and eastern boundaries. Down Road is essentially a long cul-de-sac (dead end road terminating to the north west of the subject site), as is Down South Road (terminating to the south of the subject site). The surrounding public road network is a legacy to previous precinct planning and development approvals. During the preparation of this BMP report four access options were investigated to the north, west, and south. The City of Albany will be providing secondary emergency access to Albany Highway via securing tenure and implementing the construction as per Option 4 outlined in Appendix 7 of this report.

Access Option 4 is the construction of and Emergency Access Way (EAW) to link Down Road South and Albany Highway to enable a secondary access/egress for the AMP site. Consultation undertaken by CoA during the preparation of this BMP has sought verbal in-principle agreement for the linking EAW by Main Roads Western Australia (MRWA), Water Corporation Western Australia (WCWA) (landowner), and Lindsay Black (landowner). This will be gazetted as an easement in gross to allow for emergency access/egress in a bushfire event. This will give the AMP an alternative access route, which presently does not exist. The EAW will be an easement in gross to a minimum of 12m wide and measures 4.38km which does not meet the Acceptable Solutions (WAPC, 2017) and therefore has been assessed as non-compliant to the acceptable solutions (assessed under a performance based assessment as per the WAPC guidelines).

A Bushfire Emergency Evacuation Plan (BEEP) has been prepared to support this development and provides contingency actions in accordance with the requirements of the DPLH current and endorsed *Position Statement: Tourism land uses within bushfire prone areas* (WAPC, 2019). These contingencies include early closure of the site, off-site evacuation and as a last resort, refuge on site in a suitable building / open space.

The aim of the BEEP is early, safe and timely evacuation of the site prior to bushfire events and no events held on site during Catastrophic Fire Danger Rating (FDR) days (i.e. consider evening events, “Total Fire Ban” days and “Restricted vehicle movement days” (harvest bans). Contingency planning for evacuation is via an on-site open-air refuge (located in an area subject to a radiant heat flux of ≤2 kW/m^2) for large events and clubroom buildings built to the ABCB handbook (ABCB, 2014) and BAL-29 (located in an area subject to a

radiant heat flux of ≤10 kW/m^2). This is compliant with the current and endorsed DPLH *Position Statement: Tourism land uses within bushfire prone areas* (WAPC, 2019). The BEEP will form part of the Emergency Management Plan for the site which will be developed by AMP and updated prior to operations of the site.

An assessment to the WAPC Guidelines for Planning in Bushfire Prone Areas Vers 1.3, (WAPC,2017) bushfire protection criteria is summarised in Table 1 over the page.

Table 1: Bushfire protection criteria applicable to the site

Element	Acceptable Solution	Applicable or not Yes/No	Meets Acceptable Solution
Element 1 – Location	A1.1 Development Location	Yes	Compliant. BAL 29 or less applied to development footprint, Low to Moderate BHL post development.
Element 2 – Siting and Design	A2.1 Asset Protection Zone	Yes	Compliant. APZ applies to whole of development area to WAPC guidelines and contained within the subject site.
Element 3 – Vehicular Access	A3.1 Two Access Routes	Yes	Internal compliant, external non-compliant. Two access to 2 destinations addressed using BEEP as per WAPC *Draft Position Statement: Tourism land uses within bushfire prone areas* (WAPC, 2018).
	A3.2 Public Road	No	Not assessed existing public road network to be used.
	A3.3 Cul-de-sacs	No	N/A
	A3.4 Battle axes	No	N/A
	A3.5 Private driveways	Yes	Compliant, all internal access to 6m pavement with 12m horizontal clearance.
	A3.6 Emergency Access Ways	Yes	Non-compliant external alternative emergency access via easement in gross 4.38km from site to Albany Highway, via a performance-based assessment.
	A3.7 Fire Service Access Ways	Yes	All internal FSAs to 8m width and linking around the subject site.
	A3.8 Firebreaks	Yes	All firebreaks to CoA FMN or to 8m as defined in report.
Element 4 – Water	A4.1 Reticulated areas	No	N/A
	A4.2 Non-reticulated areas	Yes	Compliant, Bore and Tank supply internal to the site.
	A4.3 Individual lots in non-reticulated areas	No	N/A

The City of Albany is presently pursuing the purchase of Lot 5780 Down Road Drome. Once purchased, the property, tracks and all permanent facilities and infrastructure constructed on the property will be owned by the City of Albany. The Albany Motorsport Park (AMP) will then be leased to an operator-manager by the City of Albany, with all operational and maintenance activities to be conducted by the operator-manager. Responsibilities for implementation are documented in Section 10 of this report and outlines responsibilities for the AMP Developer (occupiers of the development area) and the City of Albany as land managers. Measures outlined in this report are to be implemented in subsequent stages of planning and development.

2. Introduction

The City of Albany commissioned Bio Diverse Solutions in consultation with Eco Logical Australia to prepare a Bushfire Management Plan (BMP) for the proposed Albany Motorsport Park at Lot 5780 Down Road, Drome WA 6330. This BMP has been prepared to assess the subject site against the current and endorsed Guidelines for Planning in Bushfire Prone Areas Vers 1.3 (WAPC, 2017) and State Planning Policy 3.7 (SPP 3.7; WAPC, 2015). Such planning takes into consideration standards and requirements specified in various documents such as Australian Standard (AS) 3959-2009, Western Australian Planning Commission (WAPC) Guidelines for Planning in Bushfire Prone Areas Vers 1.3 (WAPC, 2017) and SPP 3.7 (WAPC, 2015). These policies, plans and guidelines have been developed by WAPC to ensure uniformity to planning in designated "Bushfire Prone Areas" and consideration of the relevant bushfire hazards when identifying or investigating land for future development.

Consultation with Department of Fire and Emergency Services (DFES) and Department of Planning, Lands and Heritage (DPLH) confirmed that they deemed the AMP to be a "High risk". SPP 3.7 outlines that certain land uses may potentially ignite a bushfire, prolong its duration or increase its intensity. Such land uses are defined as 'High Risk'.

The proposed Albany Motorsport Park (AMP) is defined a high-risk industry as per SPP 3.7 due to:

- Motorsport activities giving rise to risk of ignition and bushfire; and
- Exposure of the community, fire fighters and environment to dangerous substances from vehicles igniting.

Consideration of the High-risk nature of the AMP site is an ongoing process to be refined in future stages of the development approval process and to be addressed under a Bushfire Risk Management Plan (BRMP) if required

The proposal is defined as 'Vulnerable Land Use' (as per SPP 3.7) due to:

- Large numbers of people attending the AMP events (400-500 people club events, 10,000 people state events);
- Elderly demographic, children and mobility impaired people attending the AMP events;
- Presence of a function centre and clubrooms; and
- Site evacuation challenges associated with visitors and spectators on site.

The BEEP prepared to support this development provides contingency actions in accordance with the requirements of the DPLH current and endorsed *Position Statement: Tourism land uses within bushfire prone areas* (WAPC, 201). These contingencies include early closure of the site, off-site evacuation and as a last resort, refuge on site in a suitable building / open space. Eco Logical Australia has been engaged to provide Level 3 BPAD practitioners input into the BMP and prepare the Bushfire Emergency Evacuation Plan (BEEP) for the site.

2.1. Location

The "Subject Site" is defined as Lot 5780 Down Road, in the locality of Drome, refer to Figure 1. The development location of the proposed Albany Motorsport Park is the open paddock areas of Lot 5780, refer to current "Concept Plan' Figure 2. The subject site is located 31 km from the Albany CBD in the Drome Industrial zone and is approximately 192.20ha in size. The site is currently used for agricultural pursuits (grazing of cattle).

Figure 1: Location Plan

2.2. Development Proposal

Lot 5780 Down Road, Drome is the proposed Albany Motorsport Park site. The concept plan covers approximately 142.8ha of the site as shown in Figure 2 and outlines a multi-use development. The details of this plan will be finalised as part of the future Development Application, the plan includes:

- Motocross track and clubrooms;
- A multi-use 3.5km bitumen race track for race events such as for motor car racing, motorcycle racing, drifting, driver training and cycling;
- A 1000 foot drag strip for drag racing;
- A 1300m^2 burnout area;
- A function building and club rooms;
- Spectator viewing areas;
- Pit marshalling areas and storage sheds;
- Site parking; and
- An off-road four wheel drive and all-terrain vehicle training area.

The staging of the development of the AMP includes a 2 staged process:

Stage 1: Development of the motocross track development in the north of the site, development of the multiuse track for state motor car, motorcycle and cycling events; and enabling works such as feasibility, planning, design works and access roads.

Stage 2: Contemplate the further development of the AMP site as patronage increases and the range of uses in broadened (e.g. lighted evening events, international events) and is dependent on further funding. (GHD, 2018).

The City of Albany Local Planning Scheme (LPS) No.1 outlines the area zoned as 'Priority Agriculture' and is located within the Drome Industrial Buffer Area. It is proposed through the Scheme Amendment Process to rezone the area to 'Special use' under LPS1. The proposed Motorsport Park is located in a Bushfire Prone Area (SLIP, 2018) and as such is required to comply with requirements of State Planning Policy 3.7 – Planning in Bushfire Prone Areas (SPP 3.7). The proposed scheme amendment is considered a 'Strategic Planning Proposal' under SPP 3.7 and must be accompanied by a Bushfire Hazard Level (BHL) Assessment, demonstrate compliance with bushfire protection criteria in the form of a BMP. The BMP is to provide sufficient evidence that the rezoning proposal has, or can be made to have a low to moderate Bushfire Hazard Level.

The proposed Motorsport Park is also classified according to SPP 3.7 as ‘High Risk’ and ‘Vulnerable Land Use’ and therefore in accordance with SPP 3.7 requires the consultation of a Level 3 BPAD Accredited Bushfire Practitioner. Eco Logical Australia has been engaged to provide Level 3 BPAD practitioner input into the BMP and prepare a Bushfire Emergency Evacuation Plan (BEEP).

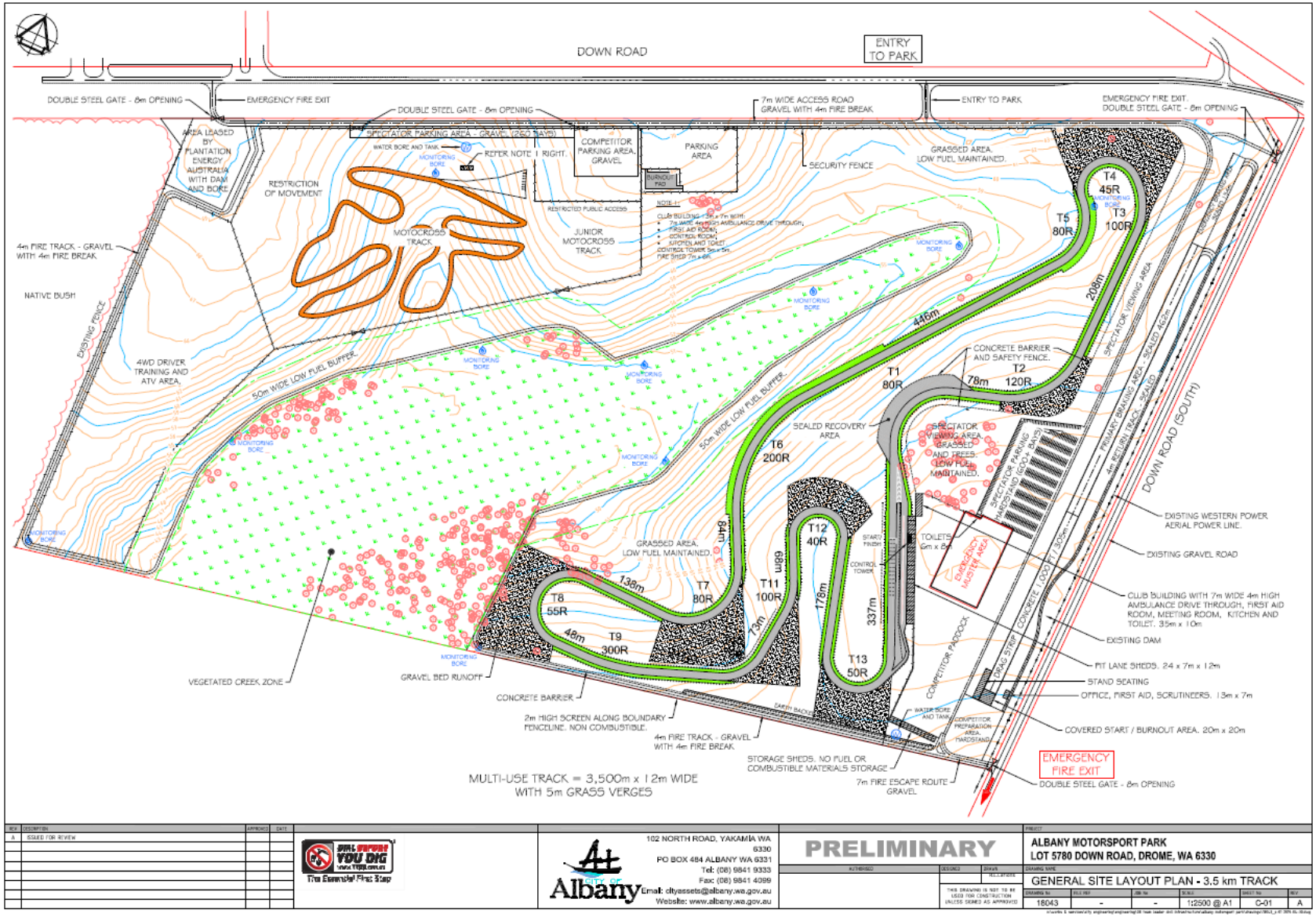

Figure 2: AMP General Site Layout Plan (Concept Plan)

2.3. Statutory Framework

This document and the recommendations contained within are aligned to the following policy and guidelines:

- *Planning and Development Act 2005*;
- *Planning and Development Regulations 2009;*
- *Planning and Development (Local Planning Scheme) Regulations 2015;*
- State Planning Policy 3.7 Planning in Bushfire Prone Areas;
- Guidelines for Planning in Bushfire Prone Areas;
- *Fire and Emergency Services Act 1998*.
- AS 3959-2009 "Construction of Buildings in Bushfire Prone Areas" current and endorsed standards;
- *Bushfires Act 1954*;
- *Position Statement: Tourism land uses within bushfire prone areas* (DPLH, 2019); and
- City of Albany Annual Fire Management Notice.

The publicly released Bushfire Prone Area Mapping (SLIP, 2018) shows that the Subject Site is located within a Bushfire Prone Area (situated within 100m of >1 ha of bushfire prone vegetation). The WA Bushfire Prone Area Mapping is shown on Figure 3.

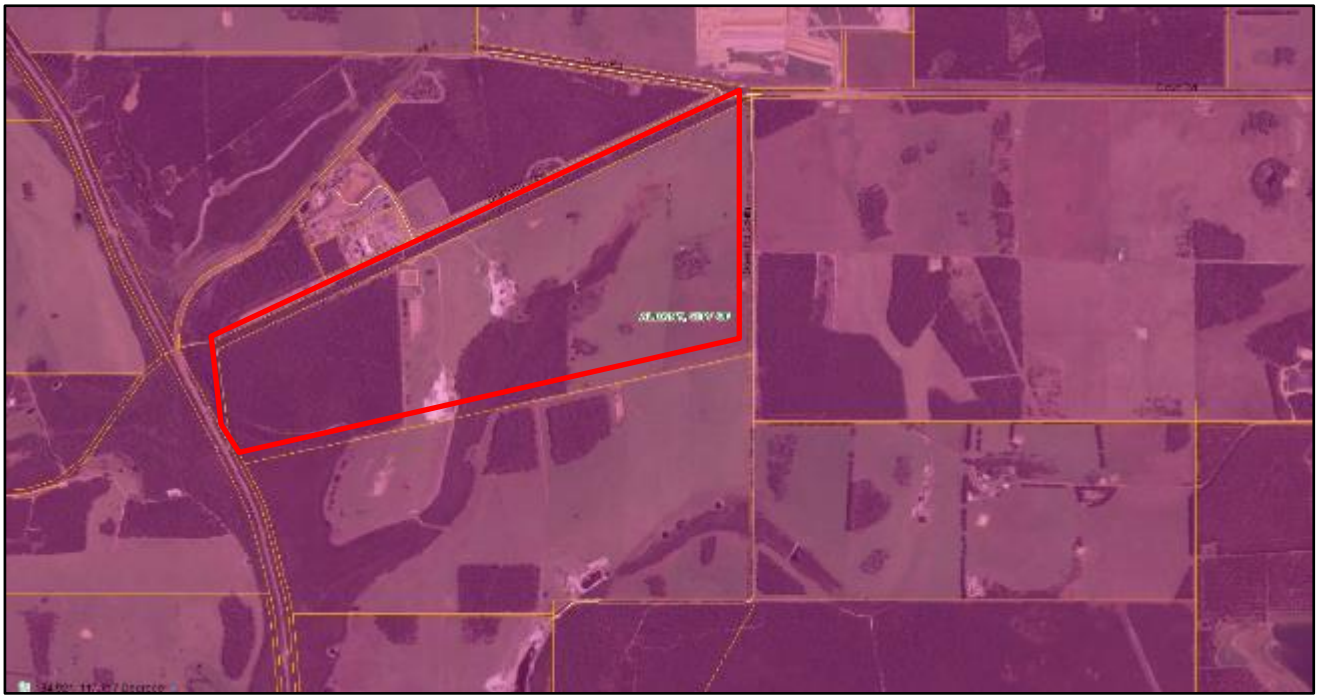

Figure 3: Bushfire Prone Area Mapping (SLIP, 2018)

2.4. Suitably Qualified Bushfire Consultant

This BMP has been prepared by Kathryn Kinnear (nee White), who has 10 years operational fire experience with the (formerly) DEC (1995-2005) and has the following accreditation in bushfire management:

- Incident Control Systems;
- Operations Officer;
- Prescribed Burning Operations;
- Fire and Incident Operations;
- Wildfire Suppression 1, 2 & 3;
- Structural Modules – Hydrants and hoses, Introduction to Structural Fires, and Fire extinguishers; and
- Ground Controller.

Kathryn Kinnear currently has the following tertiary Qualifications:

- BAS Technology Studies & Environmental Management;
- Diploma Business Studies; and
- Graduate Diploma in Environmental Management.

Kathryn Kinnear is an accredited Level 2 Bushfire Practitioner (Accreditation No: BPAD30794). Bio Diverse Solutions are Bronze Corporate Members of the Fire Protection Australia Association and Kathryn is a suitably qualified Bushfire Practitioner to prepare this Bushfire Management Plan.

Level 3 Bushfire Practitioner Bruce Horkings (Eco Logical Australia, FPAA BPAD 29962-L3) and Daniel Panickar (Eco Logical Australia, FPAA BPAD 37802-L2) were commissioned to assist in the preparation of this report specifically in relation to the “High Risk Industry” (as defined by SPP3.7) nature of the proposal, prepare the performance based assessment for “Vulnerable Land use”, to prepare the Bushfire Emergency Evacuation Plan (BEEP), and undertake a technical peer review of the BMP report.

3. Objectives

The objectives of this BMP are to assess the bushfire risks associated with the proposed Concept Plan to reduce the occurrence of, and minimise the impact of bushfires, thereby reducing the threat to life, property and the environment. It also aims to guide the design by assessing the proposed Concept Plan against the Bushfire Protection Criteria as outlined in the Guidelines.

The BMP aims to:

- Achieve consistency with objectives and policy measures of SPP 3.7 (WAPC, 2015);
- Assess any building requirements to AS3959 (current and endorsed standards) and BAL Construction;
- Assess the proposal as a “High Risk Industry” and Vulnerable Land use” as outlined in the Guidelines for Planning in Bushfire Prone Areas (WAPC, 2017);
- Assess the proposal against the Bushfire Protection Criteria Acceptable Solutions as outlined in the Guidelines for Planning in Bushfire Prone Areas (WAPC, 2017);
- Understand and document the extent of the bushfire risk to the subject site;
- Prepare bushfire risk management measures for bushfire management of all land within the subject site with due regard to people, property, infrastructure and the environment;
- Nominate individuals and organisations responsible for implementation of fire management and associated works within the subject site; and
- Ensure alignment to the recommended assessment procedure which evaluates the effectiveness and impact of proposed, as well as existing, bushfire risk management measures and strategies.

4. Spatial consideration of bushfire threat

4.1. Climate

The Albany area is characterised by a Mediterranean climate with mild wet winters and mild to hot dry summers. The average annual temperature in Albany ranges from 11.8 – 19.5°C. The average summer temperature range between 14-22.9°C, whilst average winter temperatures range between 8.2-15.8°C. The annual mean rainfall for Albany is 927.1mm (BOM, 2019).

4.2. Topography

The subject site has an undulating topography within the existing agricultural areas, sloping from a high point of 75m AHD along the eastern boundary to 40m AHD within the creek line (east - west). It then ascends to 70m AHD in a north westerly direction towards Down Road. The remnant vegetation block to the west slopes in a north-south / north-south westerly direction from 70m AHD from the northern boundary to 30m AHD to the southern boundary. Topographic contours (5 metre contours) are shown on Figure 4.

The effective slopes (measured as per AS3959) for the subject site are generally low in the central (creek line), eastern and some northern (grassland) areas ranging from 0.4 to 4.6 degrees downslope. The effective slope in the western grassland areas ranges from 5.1 to 6.5 degrees downslope. The effective slopes in the remnant vegetation in the west range from upslope in the south eastern and north eastern corners to downslope from 2 degrees to 14.3 degrees downslope. The effective slopes for the Subject Site and surrounding areas are shown on Figure 4.

4.3. Environmental consideration

A reconnaissance flora, vegetation and Level 1 fauna survey was undertaken in spring 2018 by Bio Diverse Solutions (Bio Diverse Solutions, 2018) and identified six vegetation types across the subject site; Jarrah/Marri/Sheoak Laterite Forest, Jarrah/Sheoak/*Eucalyptus staeri* Sandy Woodland, *Homalospermum firmum/Callistemon glaucus* Peat Thicket, *Melaleuca preissiana* Low Woodland, Miscellaneous Drainage Woodland/Shrubland and Open paddock / agricultural land including bare and sand extraction areas. Of the 141 flora species recorded within the survey area, 19 (12.7%) are introduced (weeds).

The vegetation types described above align with vegetation units described in the Albany Regional Vegetation Survey (ARVS) report by Sandiford and Barret (2010). The vegetation types / wildlife habitat present within the survey area are well represented locally and in nearby reserves. The Jarrah / Marri dominated woodland and forest present are one of the most abundant habitat types present within the ARVS survey area, providing a significant proportion of wildlife habitat. The *Homalospermum* and *Callistemon* dominated thickets present within the survey area are not as common at a regional level based on ARVS mapping. However, these habitat types are well represented in surrounding remnant vegetation and nearby reserves such as the Down Road Nature Reserve. A copy of the vegetation complex mapping and vegetation condition mapping is provided in Appendix 2.

Potential habitat for threatened species within the survey area includes all remnant vegetation within the site, the creek system and the larger stands of paddock trees throughout the paddock areas. There is a high level of fauna activity in vegetation surrounding the creek line from both threatened and non-threatened fauna species as well as the highest occurrence of significant trees that contain hollows. This indicates that the area contains highly attractive habitat for fauna.

The southern pocket of Jarrah / Marri remnant vegetation had the highest occurrences of *Calyptorhynchus banksii subsp. naso* (Red Tailed Black Cockatoo) and *Calyptorhynchus baudinii* (Baudin's Black Cockatoo), feeding signs. The majority of feeding evidence consisted of *Corymbia calophylla* nuts. As the number of significant Black Cockatoo feeding sites across the survey area was relatively low this indicates that although the site contains potential high value foraging habitat for the three species it is currently not a favoured feeding area. The presence of significant feeding signs in the remnant vegetation in the south appears to indicate this area is anecdotally more attractive for food than the other vegetated areas.

Assessment of the proposal by governing environmental agencies will occur through the Scheme Amendment process with referral under the WA *Environmental Protection Act* (*EPA Act)*.

4.4. Bushfire fuels – Vegetation

Site assessment occurred on the 14th February 2019 by Kathryn Kinnear (BPAD 30794). All vegetation within 150m of the site / proposed development was classified in accordance with Clause 2.2.3 of AS 3959-2009. Each distinguishable vegetation plot with the potential to determine the Bushfire Attack Level is identified in Appendix 3 and shown on the Vegetation Classes Map Figure 4. A summary of the vegetation classifications and plot data is provided in Table 2.

Table 2: Classified Vegetation to AS3959

Plot Number	Vegetation Classification Table 2.3 AS3959	Effective Slope AS3959	Location on Vegetation Classes Mapping
1	Low fuel or non-vegetated areas exclusion 2.2.3.2 (e)	N/A	North of subject site in APEC and Plantation Energy site, roads and buildings
2	Low fuel or non-vegetated areas Exc 2.2.3.2 (f)	N/A	Firebreaks internal t the site, adjacent private property areas maintained in a low fuel state.
3	Forest Type A (04)	Upslope	Internal to the site in north west, external to the north, east and south
4	Forest Type A (04)	Downslope >0-5 degrees	Internal to the site to the west and central creek area. External to the south and south east.
5	Forest Type A (04)	Downslope >10-15 degrees	External to the site to the west and north west. Internal along western ridgeline.
6	Grassland Type G (26)	Downslope >5-10 degrees	Internal to the site in the west.
7	Grassland Type G (26)	Downslope >0-5 degrees	Internal to the site in the north, east and north east. External to the south east.
8	Grassland Type G (26)	Upslope	Internal to the site in the north and south east. External to the north, north east and
9	Woodland Type B (06)	Upslope	Internal to the site in the east in grazed paddock areas, external to the north.
10	Woodland Type B (06)	Downslope >0 to 5 degrees	Internal to the site adjacent in the east in grazed paddock areas.
11	Woodland Type B (06)	Downslope >5 to 10 degrees	Internal adjacent to central creek area (central to the site). External to the south east.
12	Shrubland Type C (12)	Downslope >0 to 5 degrees	Central creek areas in the north east.
13	Scrub Type D (13)	Downslope >0 to 5 degrees	Central creek areas in the subject site and in the south west internal and external to the site in wet areas.
14	Scrub Type D (13)	Upslope	External to the site near Down Road and Down South Road, east in property.

Plot 1 and 2 is allocated exclusion Clauses 2.2.3.2 of AS3959 and therefore does not have an effective slope allocation.

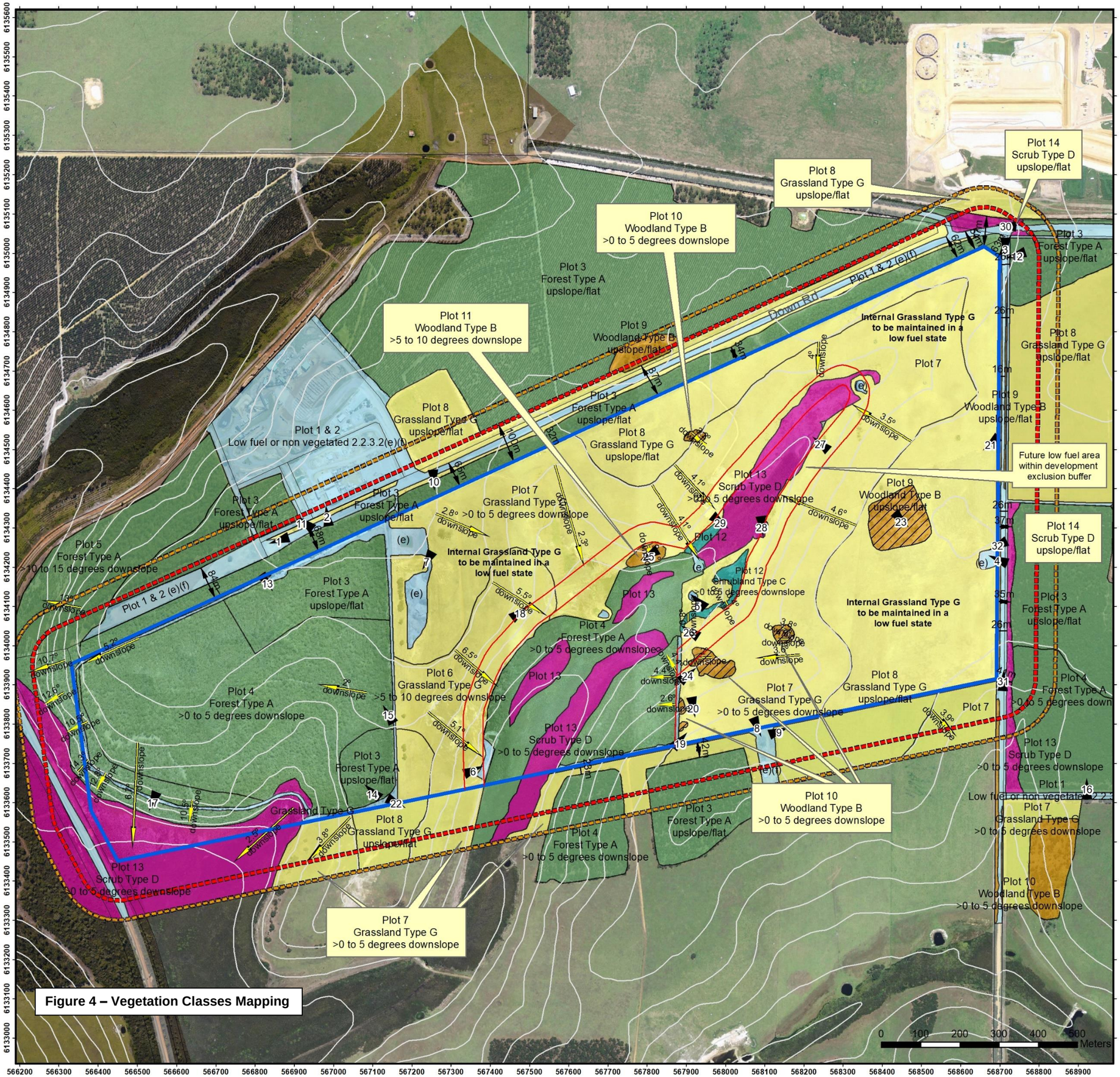

Figure 4 – Vegetation Classes Mapping

This BAL Plan was prepared by:
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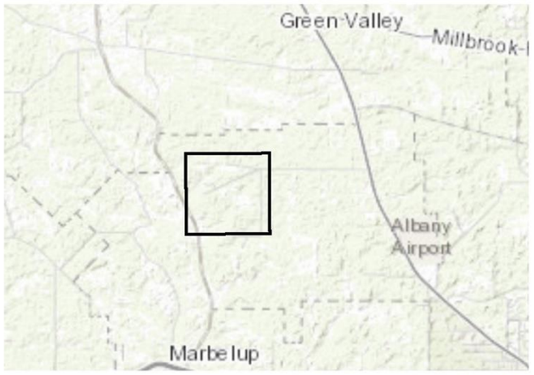

Overview Map Scale 1:100,000

Legend

- Subject Site
- 100m Assessment Boundary
- 150m Assessment Boundary
- Cadastre
- 5m Contours
- Low Fuel Buffer
- Future Low Fuel
- Separation Distance
- Slope Degrees

Vegetation

- Forest Type A
- Woodland Type B
- Shrubland Type C
- Scrub Type D
- Grassland Type G
- Low fuel or non vegetated 2.2.3.2

Scale
1:9,500 @ A3
GDA MGA 94 Zone 50

Data Sources
Aerial Imagery: WA Now, Landgate Subscription Imagery
Cadastre, Relief Contours and Roads: Landgate 2017
IRIS Road Network: Main Roads Western Australia 2017
Overview Map: World Topographic map service, ESRI 2012

CLIENT
City of Albany
Lot 5780 Down Road
Drome, WA 6330

Vegetation Classes

BAL Assessor	*QA Check*	*Drawn by*
KK	**KK**	**BT**
STATUS	*FILE*	*DATE*
FINAL	**COA0020**	**10/05/2019**

5. Bushfire Assessment Outputs

5.1. Bushfire Hazard Level Mapping

The BHL process provides an indication of the likely impact of a bushfire event as it interacts with the bushfire hazards within and adjacent to the site. The BHL is a measure of the likely intensity of a bushfire and the likely level of bushfire attack on a site by categorizing the hazard (WAPC, 2017). The allocation of category of the bushfire hazard is determined as per Table 3 of the Guidelines for Planning in Bushfire Prone Areas (WAPC, 2017). Refer to Figure 5 below.

Table 3: BHL and classified vegetation (as per AS-3959)

HAZARD LEVEL	CHARACTERISTICS
Extreme	• Class A: Forest • Class B: Woodland (05) • Class D: Scrub • Any classified vegetation with a greater than 10 degree slope
Moderate	• Class B: Open woodland (06), Low woodland (07), Low open woodland (08), Open shrubland (09)* • Class C: Shrubland • Class E: Mallee/Mulga • Class G: Grassland, including sown pasture and crops • Vegetation that has a low hazard level but is within 100 metres of vegetation classified as a moderate or extreme hazard, is to adopt a moderate hazard level.
Low	• Low threat vegetation may include areas of maintained lawns, golf courses, public recreation reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks. • Managed grassland in a minimal fuel condition (insufficient fuel is available to significantly increase the severity of the bushfire attack). For example, short-cropped grass to a nominal height of 100 millimetres. • Non-vegetated areas including waterways, roads, footpaths, buildings and rock outcrops.

Figure 5: BHL Assessment allocation of category (WAPC, 2017).

5.2. Potential Bushfire Impacts

The potential bushfire impact to the site / proposed development from each of the identified vegetation plots are identified below and shown on the Bushfire Hazard Assessment Mapping Figure 6 Pre-Development BHL, and Figure 7 Post Development BHL.

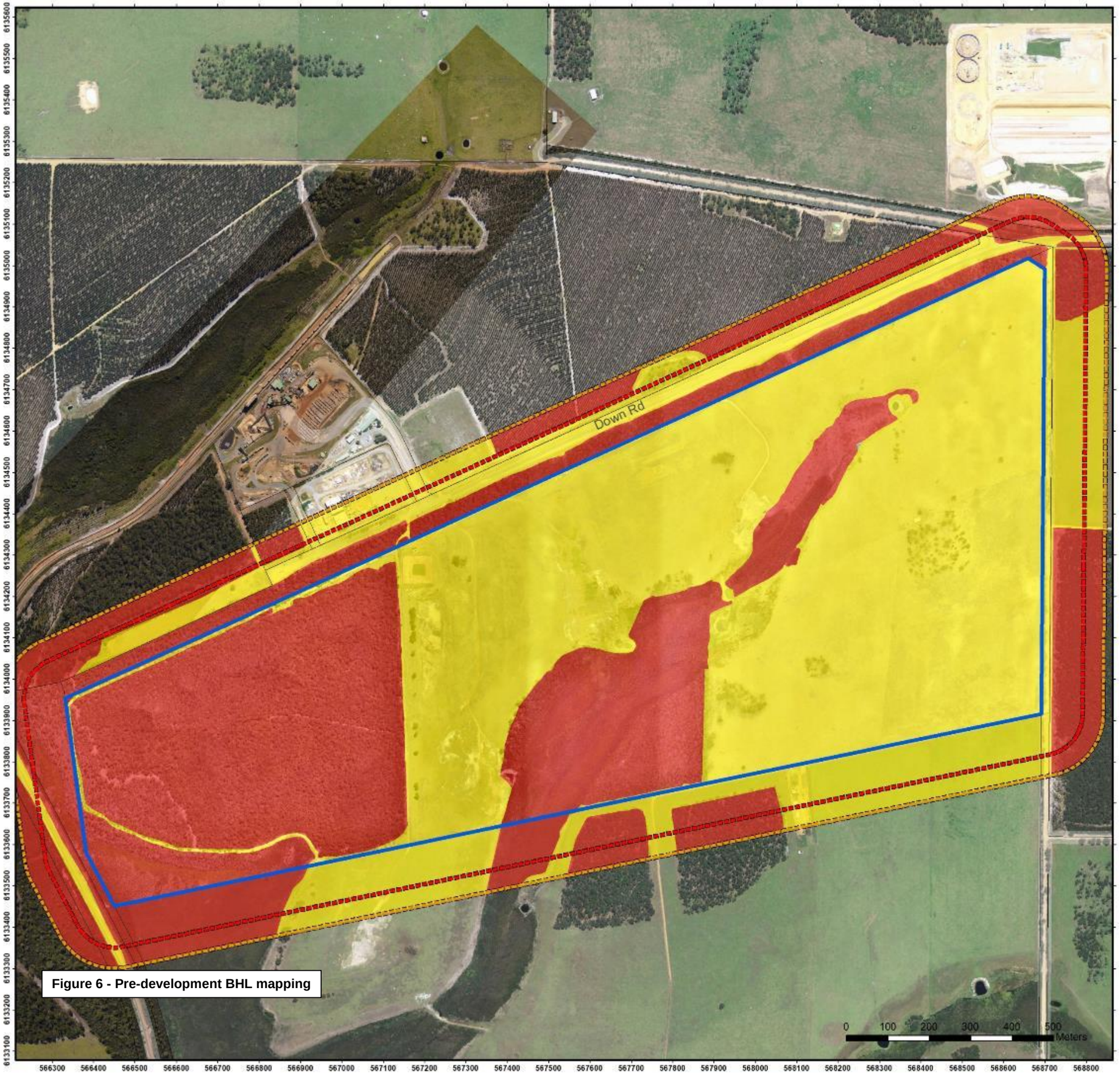

Figure 6 - Pre-development BHL mapping

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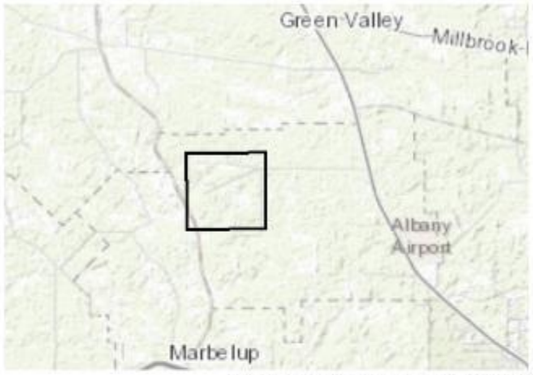

Overview Map Scale 1:250,000

Legend

- Subject Site
- 100m Assessment Boundary
- 150m Assessment Boundary
- Cadastre

Bushfire Hazard Level

- Extreme
- Moderate
- Low

Scale
1:9,000 @ A3
GDA MGA 94 Zone 50

Data Sources
Aerial Imagery: WA Now, Landgate Subscription Imagery
Cadastre, Relief Contours and Roads: Landgate 2017
IRIS Road Network: Main Roads Western Australia 2017
Overview Map: World Topographic map service, ESRI 2012

CLIENT
City of Albany
Lot 5780 Down Road
Drome, WA 6330

BHL - Pre Development

BAL Assessor	QA Check	Drawn by
KK	KK	BT
STATUS	**FILE**	**DATE**
FINAL	COA0020	10/05/2019

Figure 7 - Post development BHL mapping

This BAL Plan was prepared by:
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Overview Map Scale 1:250,000

Legend

- Subject Site
- 100m Assessment Boundary
- 150m Assessment Boundary
- Cadastre
- Low Fuel Buffer

Bushfire Hazard Level

- Extreme
- Moderate
- Low

Scale
1:9,000 @ A3
GDA MGA 94 Zone 50

Data Sources
Aerial Imagery: WA Now, Landgate Subscription Imagery
Cadastre, Relief Contours and Roads: Landgate 2017
IRIS Road Network: Main Roads Western Australia 2017
Overview Map: World Topographic map service, ESRI 2012

CLIENT
City of Albany
Lot 5780 Down Road
Drome, WA 6330

BHL - Post Development

BAL Assessor	*QA Check*	*Drawn by*
KK	KK	BT
STATUS	*FILE*	*DATE*
FINAL	COA0020	10/05/2019

Table 3: Potential bushfire impacts (BHL)

Plot number	Vegetation Type (Table 2.3)	Effective Slope (Table 2.4.3)	BHL Pre Development	BHL Post Development
1	Low fuel or non-vegetated areas exclusion 2.2.3.2 (e)	N/A	Moderate	Moderate
2	Low fuel or non-vegetated areas exclusion 2.2.3.2 (f)	N/A	Moderate	Moderate
3	Forest Type A	Upslope	Extreme	Extreme
4	Forest Type A	Downslope >0 to 5 degrees	Extreme	Extreme
5	Forest Type A	Downslope >15 to 20 degrees	Extreme	Extreme
6	Grassland Type G	Downslope >5 to 10 degrees	Moderate	Moderate / Low
7	Grassland Type G	Downslope >0 to 5 degrees	Moderate	Moderate / Low
8	Grassland Type G	Upslope	Moderate	Moderate / Low
9	Woodland Type B (06)	Upslope	Moderate	Moderate / Low
10	Woodland Type B (06)	Downslope >0 to 5 degrees	Moderate	Moderate / Low
11	Woodland Type B (06)	Downslope >5 to 10 degrees	Moderate	Moderate
12	Shrubland Type C	Downslope >0 to 5 degrees	Moderate	Moderate
13	Scrub Type D	Downslope >0 to 5 degrees	Extreme	Extreme
14	Scrub Type D	Upslope	Extreme	Extreme

Notes on BHL Assessment:

- The BHL assessment was prepared by an Accredited Level 2 Bushfire Planning Practitioner (BPAD30794);
- The BHL Assessment and BHL Map has been prepared in accordance with Department of Planning (WAPC) Guidelines for Planning in Bushfire Prone Areas Version 1.3 (WAPC, 2017) Appendix 2; and
- Subject Site is located in a Bushfire Prone Area (SLIP, 2018).

5.3. Method 1 BAL Calculation

A Method 1 BAL calculation (in the form of BAL contours) has been completed for the proposed development in accordance with AS 3959-2009 methodology. The BAL rating gives an indication of the level of bushfire attack (i.e. the radiant heat flux) that may be received by proposed buildings and subsequently informs the standard of building construction required to increase building tolerance to potentially withstand such impacts in line with the assessed BAL. The Bushfire Attack Level (BAL) has been calculated using the Method 1 procedure as outlined in AS3959. This incorporates the following factors:

- WA adopted Fire Danger Index (FDI);
- Vegetation Classes;
- Slope under classified vegetation; and
- Distance between proposed development site and classified vegetation.

The outcomes of the above inputs then allocate a specified BAL construction/setback for proposed buildings.

5.4. Fire Danger Index

The Western Australian adopted FDI is 80 as outlined in AS3959 and endorsed by Australasian Fire and Emergency Services Authorities Council. The FDI input for this project is also therefore 80.

5.5. Slope under Classified Vegetation

Slope under classifiable vegetation (Effective Slope) was assessed in accordance with Section 2.2.5 of AS3959. Table 2 summarises the slopes assigned to each plot of classifiable vegetation for the BAL calculation.

5.6. AS 3959 BAL Allocation

The assessed BAL ratings for the development are depicted as BAL contours, BAL ratings for the subject site are presented in Table 3 with BAL Contours shown on Figures 8 and 9. All proposed buildings will be located in areas subject to a BAL rating of BAL-29 or lower.

Table 4: BAL ratings

Plot number	Vegetation Type	Effective Slope	Applicable BAL Rating to AMP Concept Plan
1	Low fuel or non-vegetated areas exclusion 2.2.3.2 (e)	N/A	BAL-LOW
2	Low fuel or non-vegetated areas exclusion 2.2.3.2 (f)	N/A	BAL-LOW
3	Forest Type A	Upslope	BAL-29 or less can apply.
4	Forest Type A	Downslope >0 to 5 degrees	BAL-29 or less can apply.
5	Forest Type A	Downslope >15 to 20 degrees	BAL-29 or less can apply.
6	Grassland Type G	Downslope >5 to 10 degrees	N/A all internal grasslands will be maintained in a low fuel condition at all times.
7	Grassland Type G	Downslope >0 to 5 degrees	N/A all internal grasslands will be maintained in a low fuel condition at all times.
8	Grassland Type G	Upslope	N/A all internal grasslands will be maintained in a low fuel condition at all times.
9	Woodland Type B (06)	Upslope	All internal woodland areas to be modified and maintained in a low fuel condition at all times. External Woodland areas BAL-29 or less can apply.
10	Woodland Type B (06)	Downslope >0 to 5 degrees	All internal woodland areas to be modified and maintained in a low fuel condition at all times. External Woodland areas BAL-29 or less can apply.
11	Woodland Type B (06)	Downslope >5 to 10 degrees	BAL-29 or less can apply.
12	Shrubland Type C	Downslope >0 to 5 degrees	BAL-29 or less can apply.
13	Scrub Type D	Downslope >0 to 5 degrees	BAL-29 or less can apply.
14	Scrub Type D	Upslope	BAL 29 or less can apply.

Assumptions made in BAL Contour Mapping:

- The subject site will be developed according to the guiding principles in the Concept Plan; and
- The Albany Motorsport Park will modify and maintain grasslands and woodland areas (east) internal to the site in a low fuel state at all times (i.e. slashed to <100mm).

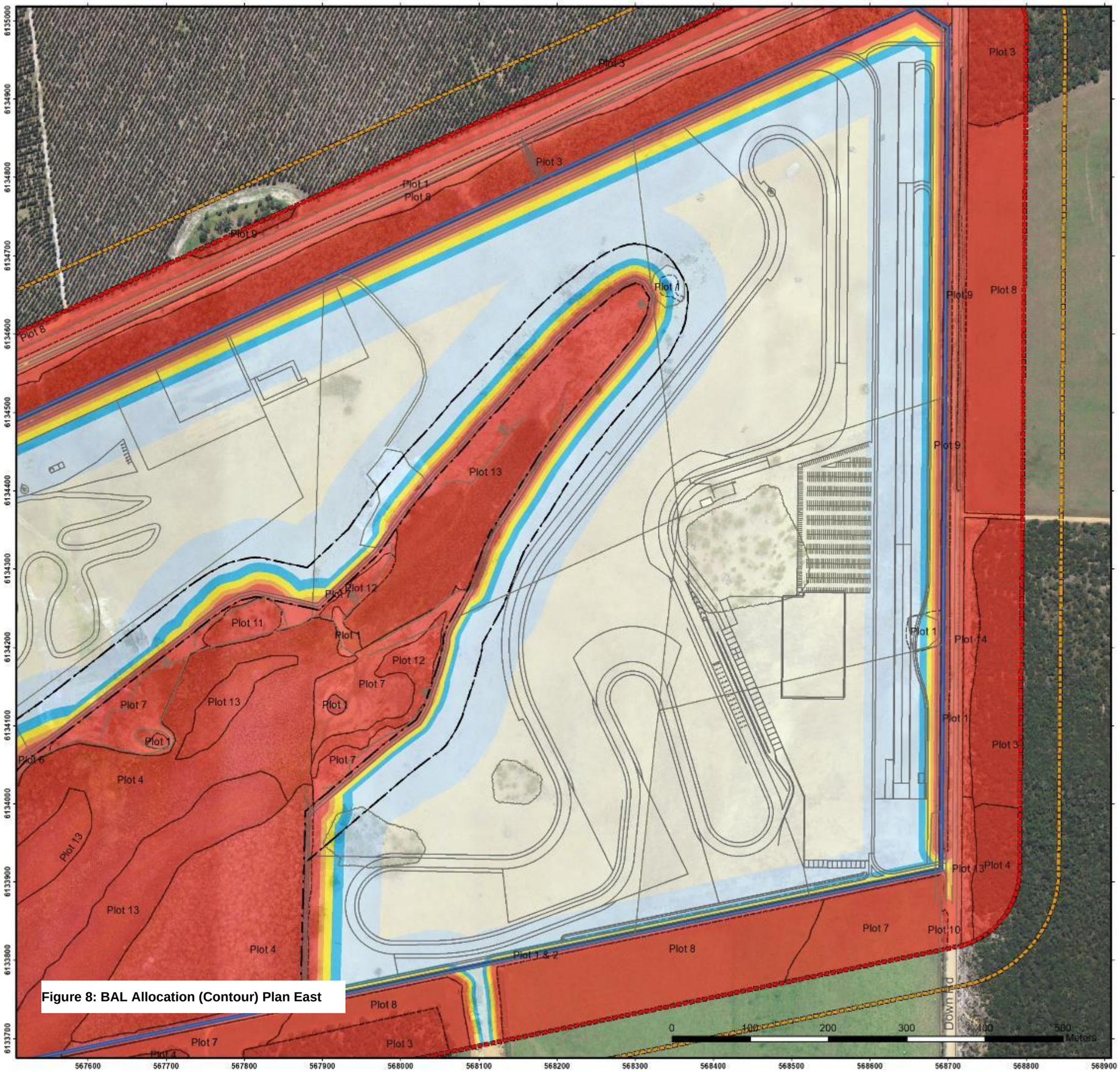

Figure 8: BAL Allocation (Contour) Plan East

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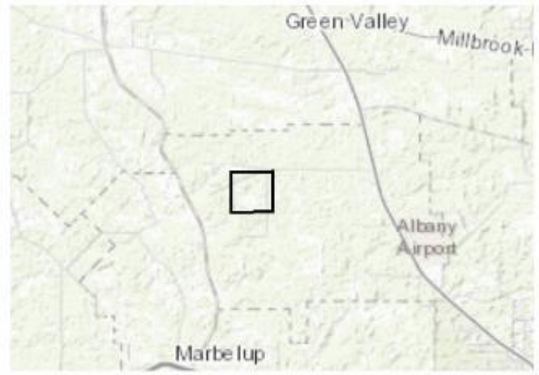

Overview Map Scale 1:100,000

Legend

- Subject Site
- 100m Assessment Boundary
- 150m Assessment Boundary
- Cadastre
- Low Fuel Buffer

BAL Contours

- BAL-FZ
- BAL-40
- BAL-29
- BAL-19
- BAL-12.5
- BAL-LOW

Scale
1:4,750 @ A3
GDA MGA 94 Zone 50

Data Sources
Aerial Imagery: WA Now, Landgate Subscription Imagery
Cadastre, Relief Contours and Roads: Landgate 2017
IRIS Road Network: Main Roads Western Australia 2017
Overview Map: World Topographic map service, ESRI 2012

CLIENT
City of Albany
Lot 5780 Down Road
Drome, WA 6330

BAL Contour - East

BAL Assessor	*QA Check*	*Drawn by*
KK	KK	BT
STATUS	*FILE*	*DATE*
FINAL	COA0020	10/05/2019

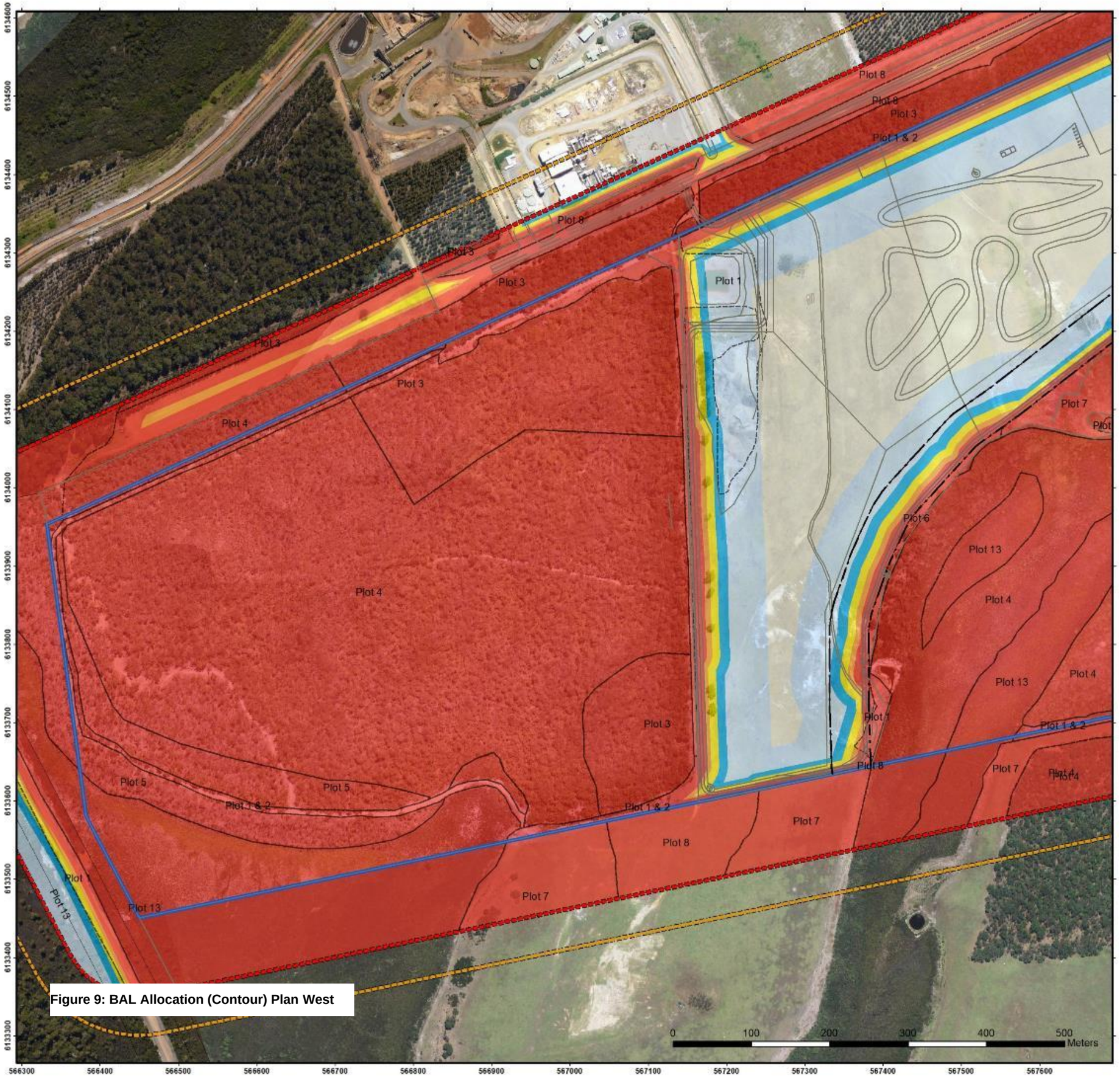

Figure 9: BAL Allocation (Contour) Plan West

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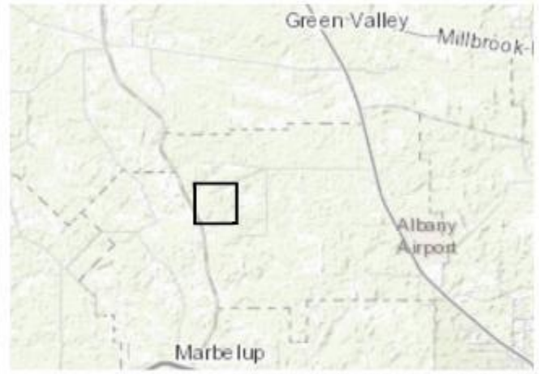

Overview Map Scale 1:100,000

Legend

- Subject Site
- 100m Assessment Boundary
- 150m Assessment Boundary
- Cadastre
- Low Fuel Buffer

BAL Contours

- BAL-FZ
- BAL-40
- BAL-29
- BAL-19
- BAL-12.5
- BAL-LOW

Scale
1:4,750 @ A3
GDA MGA 94 Zone 50

Data Sources
Aerial Imagery: WA Now, Landgate Subscription Imagery
Cadastre, Relief Contours and Roads: Landgate 2017
IRIS Road Network: Main Roads Western Australia 2017
Overview Map: World Topographic map service, ESRI 2012

CLIENT
City of Albany
Lot 5780 Down Road
Drome, WA 6330

BAL Contour - West

BAL Assessor	*QA Check*	*Drawn by*
KK	KK	BT
STATUS	*FILE*	*DATE*
FINAL	COA0020	10/05/2019

6. Identification of bushfire issues pertinent to the AMP site

6.1. Bushfire risks

The external bushfire risks to the site are the continuous remnant vegetation and plantations located to the west and north west, east, north and south east. The creek central to the subject site drains to the south west and risks of bushfire this direction are also evident. Remnant vegetation located internal to the subject site in the west was burnt in the recent May 2018 fires (refer to Redmond fire scar as Figure 10 below, courtesy of CoA, Emergency Services).

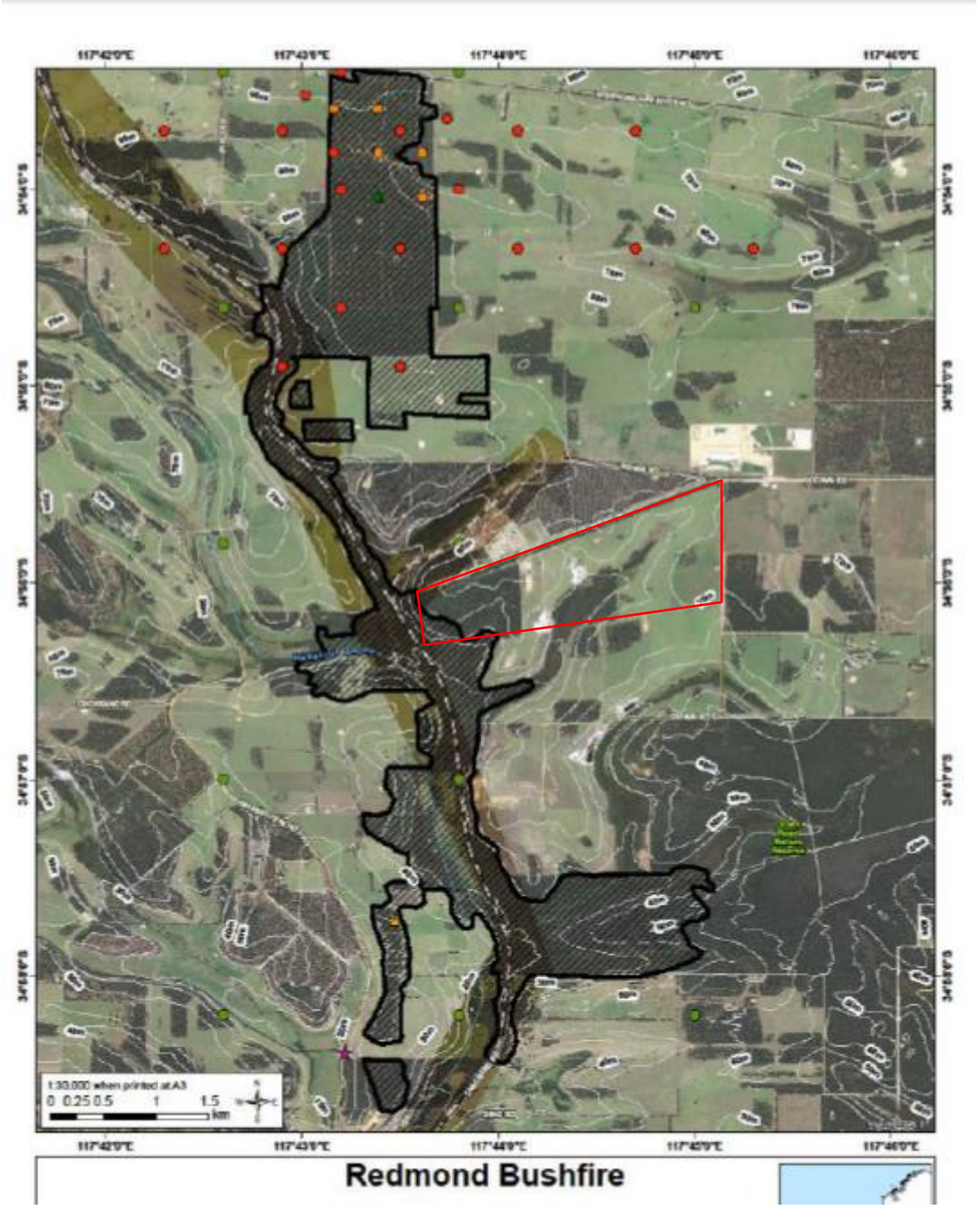

Figure 10 – May 2018 Redmond Fire Scar and the subject site (CoA, 2019)

The external remnant forest areas (including plantations) present Extreme Bushfire Hazard Levels (as per the definition of bushfire hazards in the Guidelines) to the AMP development. To the south and east

of the site is predominantly farmland areas grazed by cattle which present Low BHL risks. Under hot, dry and unstable conditions (Severe to Catastrophic bushfire weather) the subject site is most at risk from bushfire from the north, north east, north west and west. Risk of ignition of bushfire events is detailed in Section 7 of this report.

To mitigate bushfire risks to the site the following parameters are to be employed:

- Fuel hazard reduction burning in the internal western remnant bushland (rotation 8-10 years and governed by CoA Emergency services priorities and resources). Refer to Section 9.1.2 of this report.
- Excluding bushfire from the central creek area to reduce the risk of peat fires on the subject site (no planned burning, mineral earth firebreaks, low fuel buffers).
- Reducing risks of ignition from the motorsport events (internal) as outlined in Section 7 of this report.
- Reducing risk of ignition from external sources of through liaison with neighbours and consultation with the Local Bushfire Brigade (Highway Brigade located 5km away near Albany Airport).
- Modifying and maintaining the existing internal areas of Grassland Type G and Woodland Type B to a low fuel state at all times (as per WAPC Standards).
- Traffic control during events to ensure safe and timely evacuation of personnel from the site in event of bushfire. This will ensure all gates are accessible for emergency access/egress.
- Consideration of purchase of fast attack light unit for the AMP site and to be placed adjacent to any practise areas (non-event days).
- Event days will have full fire safety crews, ambulance and safety personnel strategically located around the track.
- Documentation of control measures in the OMP as outlined in this BMP report for the site.
- Lease arrangements from the CoA to the AMP controlling body to define management controls of the development site as defined in the implementation table Section 10 of this report.

6.2. Water Sources for bushfire

Water supply will be through on-site resources via bore extraction. A copy of a monitoring bore testing for water sources in the northern area of the precinct is provided in Appendix 4. Storage of water for fire fighting will be located in the north and the eastern precincts and tanks are to be a minimum of 110,000L (DFES to confirm). Water tanks are shown conceptually at the northern motocross precinct and at the southern boundary. A test water supply bore was drilled in April 2019, refer to bore test log in Appendix 4. This indicates that water is available for supply at a suitable depth and rate of supply. A suitably qualified Fire Engineer will need to be engaged by the AMP prior to DA to ensure hydrants and supply pressure are to the required standards, to be approved by the CoA at Development Approval Stages.

6.3. Internal fire service access and firebreak network

A network of Fire Service Access (FSA) and Firebreaks are to be developed during construction phases and prior to operations of the AMP. Details of management of the maintenance of the internal FSA, Firebreak networks and internal service roads is to be documented in the OMP in the AMP lease area. FSA's outside of the lease area are to be maintained by CoA and documented in their reserve's management plan for the area.

To facilitate in access and evacuation of the site there are additional gates along northern and eastern boundaries. Refer to the Internal Access Plan Figure 11.

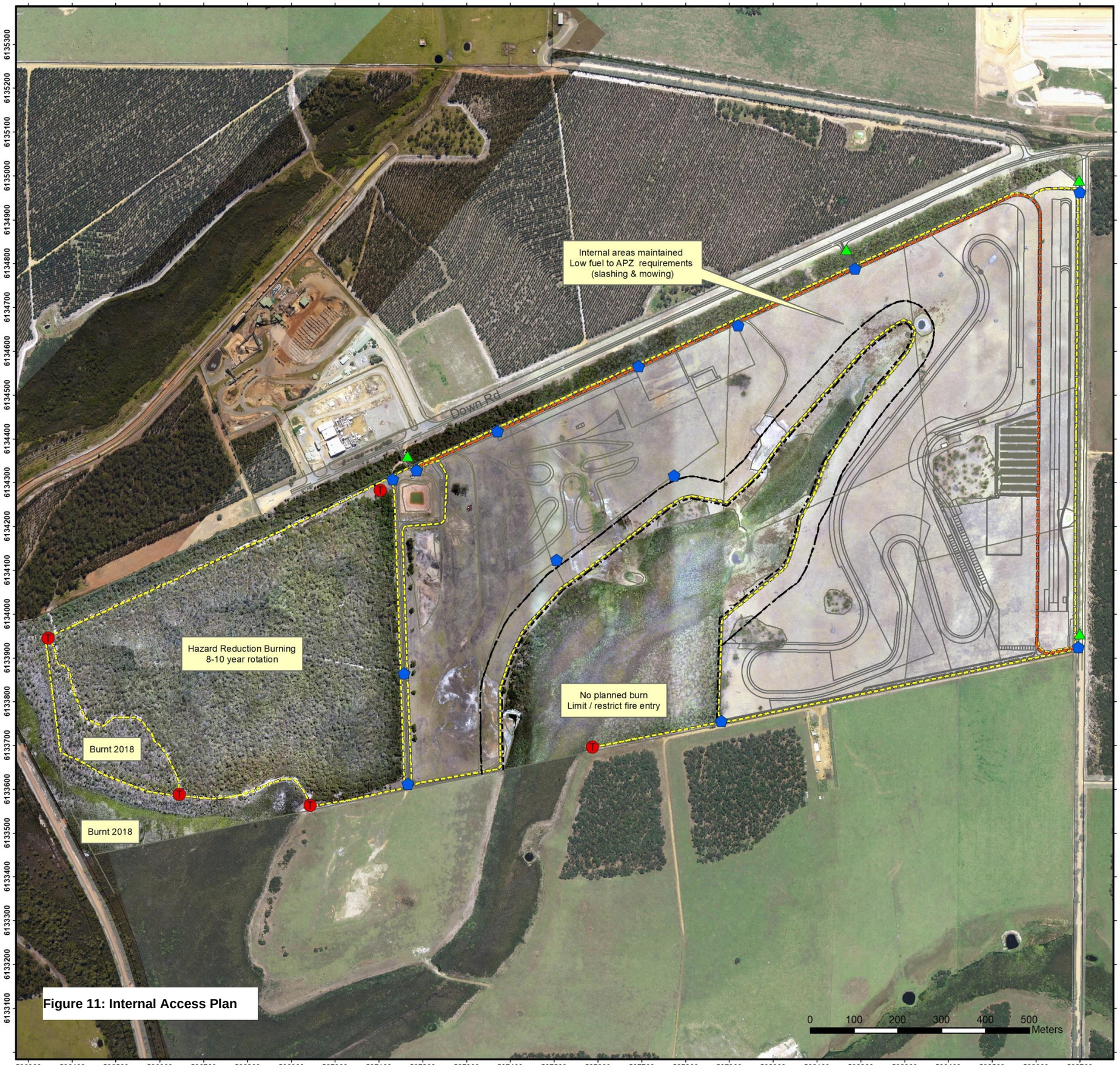

Figure 11: Internal Access Plan

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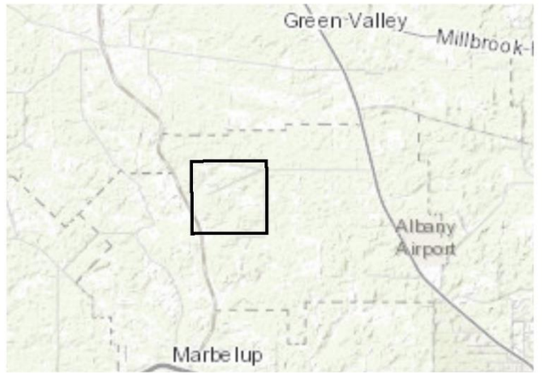

Overview Map Scale 1:250,000

Legend

- Cadastre
- Turnaround Point
- Access Points
- Gate
- Low Fuel Buffer
- Internal Access Road
- Fire Service Access & 4m wide firebreaks

Scale
1:8,500 @ A3
GDA MGA 94 Zone 50

Data Sources
Aerial Imagery: WA Now, Landgate Subscription Imagery
Cadastre, Relief Contours and Roads: Landgate 2017
IRIS Road Network: Main Roads Western Australia 2017
Overview Map: World Topographic map service, ESRI 2012

CLIENT
City of Albany
Lot 5780 Down Road
Drome, WA 6330

Internal Access & Fuel Management Plan

BAL Assessor	*QA Check*	*Drawn by*
KK	**KK**	**BT**
STATUS	*FILE*	*DATE*
FINAL	**COA0020**	**10/05/2019**

7. Bushfire risk assessment – high risk land use

Consultation with Department of Fire and Emergency Services (DFES) and Department of Planning, Lands and Heritage (DPLH) confirmed that they deemed the AMP to be a "High risk". SPP 3.7 outlines that certain land uses may potentially ignite a bushfire, prolong its duration or increase its intensity. Such land uses are defined as 'High Risk'. The proposed Albany Motorsport Park (AMP) is defined a high-risk industry due to:

- Motorsport activities giving rise to risk of ignition and bushfire; and
- Exposure of the community, fire fighters and environment to dangerous substances from vehicles igniting.

A risk assessment has been prepared by Bio Diverse Solutions and is detailed in Appendix 5 of this report. A summary of the risk assessment is provided below in Table 5.

Data has been gathered from following sources for the risk assessment:

- 20km radius of the subject site on originating fire causes (sources CoA Emergency Services, Parks and Wildlife & DFES);
- Consultation with CoA Emergency Services, DFES land use planning unit, DFES Regional Services Albany and Parks and Wildlife Albany office;
- CAMS risk register; and
- Great Southern Motorsport Group Inc (cross section of sporting codes).

Table 5: Summary of Risk Assessment AMP

Risk No.	Hazard -Bushfire originating/causing fire	Risk rating
1	Ignition Vehicles/Bikes combusting on track due to crashes including fuel or oil line leaks on track	Substantial/high risk
2	Grinding sparks in pits or near fuel sources (hot works)	Low risk
3	Smoking public viewing areas or in pits near fuels	Low risk
4	Vehicles (exhausts) near dry vegetation or slashing/mowing rocky ground (maintenance)	Low risk
5	Electrical faults building faults	Moderate risk
6	Electrical faults from extension cords/cables (pits/trailers)	Moderate risk
7	Re-fueling area (designated and controlled)	Very high risk
8	Substandard race vehicles using the facility	Low risk
9	Re-ignition of previously controlled fires (peat Central creek area)	Substantial risk
10	Water pump failure causing spark/ignition	Substantial risk
11	Gas Barbecues and camp fires causing ignition (unattended, faulty)	High risk
12	Tyre barriers igniting from crash from vehicle	High risk
13	Re-ignition of previously controlled fires (May and November non-prohibited periods)	Moderate risk
14	External: Ignition from trains under heavy loads sparks associated with braking	Low risk
15	External: Aircraft Crash	Low risk
16	External: Western powerlines transmission	High risk
17	External: Ignition from stockpiled woodchips north of site at Plantation Energy site.	High risk
18	External: Ignition from Blue gum slash burning (cause of May 2018 fire)	High risk
19	External and Internal: Lightning strikes	High risk
20	Illegally lit fires (deliberate)	Moderate risk

A summary of recommendations from the risk assessment process includes:

- A detailed Operational Management Plan (OMP) is to be developed by AMP which includes risk assessments (refer to example from Confederation of Australian Motor Sport (CAMS) prior Appendix 6) as per CAMS policy and regulations to ensure there are actions to minimize risks of ignition from internal sources of the park.
- The operational plan will be reviewed and endorsed by the CAMS prior to operation of the Albany Motorsport Park.
- Restricting public access through the site to spectator viewing areas and competitor areas, access around the whole of the site is restricted to emergency and safety services.
- Practice days and non-events are to be controlled and regulated by AMP and documented in the Operational Management Plan for the site.
- Hazard reduction burning only occurs in the western remnant vegetation block, restrictions of fire in central creek area (peat fire risk) through 8m Fire Service Access (4m pavement and 4m mineral earth firebreak) at edge of fencing of remnant vegetation (restrict grass fires into remnant vegetation).
- Controlled re-fueling in designated areas, documented in Operational Procedures Manual.
- No fuel storage on site, only fuel will be in vehicles during race events.
- Observing and complying with “Total fire ban days” and “vehicle movement bans” as set by LGA.
- No events held during catastrophic Fire Danger Rating (FDR) days.

The proposed uses associated with the AMP will be controlled and governed through:

- Designed to comply with CAMS’ Track Operator’s Safety Guide (CAMS 2012) and Motorcycling Australia (MA) Track Guidelines (MA 2011).
- To be licensed by CAMS for Fédération Internationalé de l’Automobile (FIA) Grade 2 and Fédération Internationalé Motocyclisme (FIM) Grade B (i.e. up to second-tier international motor racing).
- Motocross track designed and constructed in association with Motocross Australia guidelines.
- Drag strip designed and constructed in accordance with FIA specifications for drag strips and in association with Australian National Drag Racing Association (ANDRA).

Consideration of the High-risk nature of the AMP site is an ongoing process to be refined in future stages of the development approval process and to be addressed under a Bushfire Risk Management Plan (BRMP) if required.

8. Vulnerable Land Use and Access

8.1. Access

Access internal the site will be provided in alternative directions to separate destinations to Down Road to the north and Down Road South. Multiple gates will also facilitate access/egress from the site on the north and eastern boundaries. Down Road is essentially a long cul-de-sac (dead end road terminating to the north west of the subject site), as is Down South Road (terminating to the south of the subject site). The surrounding public road network is a legacy to previous precinct planning and development approvals. During the preparation of this BMP report four access options were investigated to the north, west, and south. The City of Albany will be providing secondary emergency access to Albany Highway via securing tenure and implementing the construction as per Option 4 outlined in Appendix 7 of this report.

Access Option 4 is the construction of and Emergency Access Way (EAW) to link Down Road South and Albany Highway to enable a secondary access/egress for the AMP site. Consultation undertaken by CoA during the preparation of this BMP has sought verbal in-principal agreement for the linking EAW by Main Roads Western Australia (MRWA), Water Corporation Western Australia (WCWA) (landowner), and Lindsay Black (landowner). This will give the AMP an alternative access route, which presently does not exist. The EAW will be a 20m wide road reserve excised from Lot 1 Down Road, and a 10m wide easement in gross through Lot 10 Down Road and measures 4.38km which does not meet the Acceptable Solutions (WAPC, 2017) and therefore has been assessed as non-compliant to the acceptable solutions (assessed under a performance-based assessment as per the WAPC guidelines).

The BEEP prepared to support this development provides contingency actions in accordance with the requirements of the *Position Statement: Tourism land uses within bushfire prone areas* (WAPC, 2018). These contingencies include early closure of the site, off-site evacuation and as a last resort, refuge on site in a suitable building / open space.

It is noted the following will apply for the proposed EAW:

- Traffic control for evacuation, contracted and documented in Operational Management Plan.
- Consultation during the preparation of this plan occurred with Main Roads Western Australia (MRWA), Water Corporation Western Australia (WCWA), & Lindsay Black (landowner) in principle agreement for the EAW is currently being sought by the CoA as stated in email from J Van Der Mescht Appendix 7. Legal agreements/ documentation will be sought in following stages (i.e. Development approval stages).
- The conditions of Scheme Amendment to document land owner agreements in subsequent DA documentation.
- It is 5km to Highway Volunteer Bushfire Brigade (located near Albany Airport).
- Water bombers and air attack facilities are located at Albany Airport.
- A public road is presently deemed not viable by CoA, it may be investigated in the future for wider precinct in the future through a Structure Planning process.
- Regular inspections along EAW (condition, gates etc) by AMP representatives prior to events occurring, documented in the OMP.

The BEEP and the alignment to the DPLH position statement have been utilised as a performance-based assessment to meet the intent for Access as per the WAPC guideline allow.

8.2. Bushfire Emergency Evacuation Plan

The aim of the BEEP is early, safe and timely evacuation of the site prior to bushfire events and no events are to be held on site during Catastrophic Fire Danger Rating (FDR) days. The BEEP has been prepared to support the proposed development will address on-site and off-site refuges, triggers for evacuation and roles and responsibilities for staff and stakeholders. Refer to Appendix 8. As the proposed development progresses beyond the rezoning phase, the BEEP will be updated for each stage including further specific details.

As previously identified. the design of the site does not allow for alternative access and is a legacy issue. As a result of legacy issues of the surrounding public road network, these constraints are addressed by the BEEP providing contingency measures to address identified risks including:

- Clear triggers for off and onsite evacuation (to be updated to support future planning applications);
- Clear triggers & guidelines for scheduling events or cancelling based on such factors as Fire Danger Rating (FDR), evening events during certain times of the year, 'Total Fire Ban' days and "Restricted vehicle movement days" (harvest bans);
- An on-site refuge for use in an emergency (i.e. a building constructed to the requirements of a 'community refuge' as per the Australian Building Codes Board 'Design and Construction of Community Bushfire Refuges' that can accommodate the number of people using that part of the facility (i.e. 200-500 for a club event);
- The proposed building located within the site and position to limit radiant heat exposure to <10 kW/m^2 and constructed to BAL-29; and
- Open air refuge with the capacity for a large event (upto 10,000 approx.) located in area where radiant heat exposure is limited to <2 kW/m^2.and preferably shaded with non-combustible material.

This is compliant with the WAPC *Position Statement: Tourism land uses within bushfire prone areas* (WAPC 2019). The BEEP will form part of the Emergency Management Plan for the site which will be developed by AMP prior to operations of the site.
The current locations of the proposed building and open-air refuge locations are indicative only and may change as development design progresses.

8.3. Bushfire Emergency Evacuation Plan inputs

The BEEP will be updated to support future planning applications and could consider the following inputs underpinning the drivers for evacuation:

- Offsite / On site evacuation time for different event sizes and locations within overall site;
- Potential fire scenarios under different Fire Danger Ratings (FDR);
- Bushfire modelling to determine the 10 kW/m^2 and 2 kW/m^2 line used an FFDI value of 80 and a flame temperature of 1200K;
- In determining the required capacity for any refuge building and open space dimensions an area of 0.75 m^2 to 1m^2 per person has been used; and
- Address potential numbers for people onsite ranging from 200-500 for club events up to 10,000 for state events.

ELA has identified suitable on-site refuge locations (see Figure 12) in the event of a bushfire. Early evacuation is always preferable however, in the event that this cannot occur, a building located within the 10 kW/m^2 zone (and constructed to specified standards) will provide a 'safer-place' option for onsite users. For larger events, open space areas that provide radiant heat exposure limited to <2 kW/m^2.is also identified. These areas (10kW/m^2 and 2 kW/m^2) have been determined using a Method 2 BAL

assessment (refer to Appendix 9). A designated outdoor emergency assembly area and refuge building have been incorporated into the master plan design as indicated in Figure 12.

Triggers for evacuation will be identified in the BEEP and will be updated to support future planning applications in accordance with SPP 3.7. This will include: potential closures of the site under certain Fire Danger Ratings (FDR), triggers for off-site evacuation and procedures for staff and visitors in the event of an emergency etc.

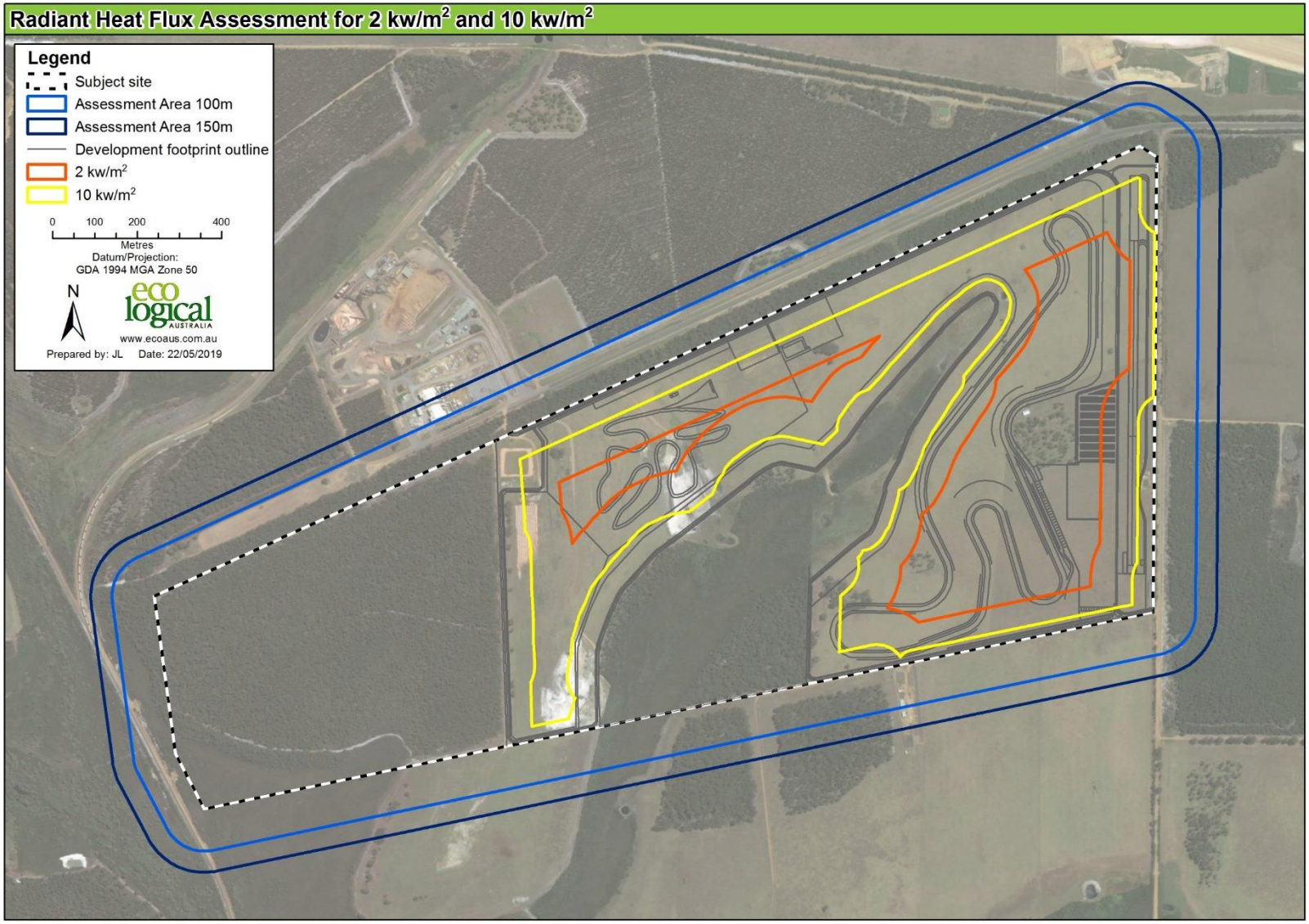

Figure 12: 10 kW/m^2 and 2 kW/m^2 locations

It is to be noted by the AMP governing body:

- Emergency Management Plan for the site which will be developed by AMP prior to operations of the site and will include the BEEP which will be finalised in consultation with CoA Emergency Management Services, DFES Albany Region and LEMC at Development Approval Stages; and
- CoA Emergency Management Services to ensure the BEEP and Emergency Management Plan for the AMP site is referred and registered through the Local Emergency Management Committee (LEMC).

9. Assessment to the bushfire protection criteria

The Guidelines for Planning in Bushfire Prone Areas (WAPC, 2017) outlines bushfire protection criteria which subdivision and development proposals are assessed for compliance. The bushfire protection criteria (Appendix 4, WAPC, 2017) are a performance-based criteria utilised to assess bushfire risk management measures and they outline four elements, being:

- Element 1: Location
- Element 2: Siting and Design of Development;
- Element 3: Vehicle Access; and
- Element 4: Water.

(WAPC, 2017)

The development is required to meet the "Acceptable Solutions" of each Element of the bushfire protection criteria (WAPC, 2017). The proposal has been assessed against the bushfire protection criteria Acceptable Solutions for Elements A1, A2, A3 and A4. As stated in Section 7 of this report the subject site has one way in and one-way out due to the legacy of the surrounding road network. A performance-based assessment has been detailed in Section 9.2 and a summary of the Performance Principle and Acceptable Solutions assessment is provided in Table 6.

Table 6: Bushfire protection criteria applicable to the site

Element	Acceptable Solution	Applicable or not Yes/No	Meets Acceptable Solution
Element 1 – Location	A1.1 Development Location	Yes	Compliant. The proposed AMP concept plan is located in an area (post development) which all infrastructure will be in either Moderate or Low BHL. BAL Contour mapping indicates that all infrastructure and development can be located in BAL 29 or less with no BAL 40 prevailing over the development. Refer to Figure 8 and 9. Proposal meets acceptable solution A1.1.
Element 2 – Siting and Design	A2.1 Asset Protection Zone	Yes	Compliant. APZ standards will apply to the development footprint and the buffer (50m) areas. Low fuel standards are to be to WAPC APZ standards (refer to Appendix 10) at all times. Maintenance and management of the site is to be documented in the Operational Management Plan for the site. Proposal meets acceptable solution A2.1.
Element 3 – Vehicular Access	A3.1 Two Access Routes	Yes	Non-compliant. Access internal the site will be provided in alternative directions to separate destinations to Down Road to the north and Down Road South (south east). Multiple gates will also facilitate access/egress from the site in the north and eastern boundaries. Refer to internal Access Plan Figure 11. Down Road is essentially a long cul-de-sac (dead end road terminating to the north west of the subject site), as is Down South Road (terminating to the south of the subject site). The surrounding public road network is a legacy to previous precinct planning and development approvals. The City of Albany will be providing secondary emergency access to Albany Highway via securing tenure and implementing the construction of the Emergency Access Way as per Option 4 outlined in Appendix 7 of this report. Access Option 4 is the construction of and Emergency Access Way (EAW) to link Down Road South and Albany Highway to enable a secondary access/egress for the AMP site. This will give the AMP an alternative access route, which presently does not exist. The EAW will be a 20m wide road reserve excised from Lot 1 Down Road, and a 10m wide easement in gross through Lot 10 Down Road and measures 4.38km which does not meet the Acceptable Solutions (WAPC, 2017) and therefore has been assessed as non-compliant to the acceptable solutions (assessed under a performance-based assessment as per the WAPC guidelines). The BEEP prepared to support this development provides contingency actions in accordance with the requirements of the *DPLH Position Statement: Tourism land uses within bushfire prone areas* (WAPC, 2019). These contingencies include early closure of the site, off-site evacuation and as a last resort, refuge on site in a suitable building / open space.

Table 6 cont.

Element	Acceptable Solution	Applicable or not Yes/No	Meets Acceptable Solution
Element 3 – Vehicular Access cont.	A3.2 Public Road	No	No public roads are proposed. Not assessed to A3.2.
	A3.3 Cul-de-sacs	No	No cul-de-sacs are proposed. Not assessed to A3.3.
	A3.4 Battle axes	No	No cul-de-sacs are proposed. Not assessed to A3.4.
	A3.5 Private driveways	Yes	Compliant. Internal driveways and access ways in and around the site are to confirm to public road standards and will be a minimum of 12m wide horizontal clearance with a 6m trafficable surface. Standards for the internal driveways/public access roads meet the minimum requirements as set by the guidelines as shown in Table 7 Vehicle Access Technical Requirements. Detail on the internal access driveways will be documented in the detailed civil engineering drawings to be approved by CoA at Development Approval Stages. Proposal is deemed compliant to A3.5.
	A3.6 Emergency Access Ways	Yes	Non-compliant. Performance based assessment An Emergency Access Way is to be constructed to enable a secondary access/egress to Albany Highway. This will be gazetted as an easement in gross to allow for emergency access/egress in a bushfire event. This will give the AMP an alternative access route, which presently does not exist. The EAW to Albany Highway from Down Road South (Option 4) will be an easement in gross to a minimum of 12m wide and measures 4.38km in length (from the site to Albany Highway) which does not meet the Acceptable Solutions (WAPC, 2017) and therefore has been assessed as non-compliant. Standards for the EAW are to meet Table 7 Vehicle Access Technical Requirements and documented in the detailed civil engineering drawings to be approved by CoA at Development Approval Stages. The BEEP prepared to support this development provides contingency actions in accordance with the requirements of the *DPLH Position Statement: Tourism land uses within bushfire prone areas* (WAPC, 2018). These contingencies include early closure of the site, off-site evacuation and as a last resort, refuge on site in a suitable building / open space. The BEEP and the alignment to the DPLH position statement have been utilised as a performance based assessment to meet the intent for Access as per the WAPC guideline allow.

Table 6 cont.

Element	Acceptable Solution	Applicable or not Yes/No	Meets Acceptable Solution
Element 3 – Vehicular Access cont.	A3.7 Fire Service Access Ways	Yes	Compliant Fire Service Access Ways (FSA's) will be located internal to the site to enable fire appliances to easily access the site during motorsport events and non-event days. Refer to the Access Plan Figure 11. FSA's are to be 8m wide horizontal clearance with a 4m wide trafficable surface (noting 1m wide stabilised shoulders can apply as per Table 7). Standards for the internal FSA's are to meet table 7 Vehicle Access Technical Requirements and documented in the detailed civil engineering drawings to be approved by CoA at Development Approval Stages. Proposal is deemed compliant to A3.7.
	A3.8 Firebreaks	Yes	Compliant. A network of strategic fire breaks and FSA access to 8m is proposed for the site and has been prepared in consultation with CoA Emergency Management Services and AMP representatives. Refer to the Access Plan Figure 11. Existing firebreaks are evident across the site and are to be maintained by the leasees until AMP and CoA are managers of Lot 5780 Down Road. CoA to ensure this is documented in any temporary lease agreements once in ownership of the land. Proposal is deemed compliant to A3.8.
Element 4 – Water	A4.1 Reticulated areas	No	N/A not assessed to A 4.1.
	A4.2 Non-reticulated areas	Yes	Compliant Water supply will be through on-site resources via bore extraction to tank storage and pumped to facilities around the site. Bore water supply is known to the area, a copy of a monitoring bore testing for water sources in the northern area of the precinct is provided in Appendix 4. Storage of water dedicated for fire fighting will be located in the north and the eastern precincts and tanks are to be a minimum of 110,000L. A suitably qualified Fire Engineer will be engaged by the AMP prior to DA to ensure hydrants and supply pressure are to the required standards, to be approved by the CoA at Development Approval Stages. Proposal is deemed compliant to A4.2.
	A4.3 Individual lots in non-reticulated areas	No	N/A not assessed to A4.3.

Table 7: Vehicular Access Technical Requirements (WAPC, 2017)

Technical requirements	Private Driveways	Emergency Access Ways (EAW)	Fire Service Access Ways (FSA)
Minimum trafficable surface (m)	4	*6	*6
Horizontal clearance (m)	6	6	6
Vertical clearance (m)	4.5	4.5	4.5
Maximum grades	1 in 10	1 in 10	1 in 10
Minimum weight capacity (t)	15	15	15
Maximum crossfall	1 in 33	1 in 33	1 in 33
Curves minimum inner radius (m)	8.5	8.5	8.5

*Denotes the width can include a 4m wide paving with one metre wide constructed road shoulders

9.1. Barrier Fencing

In November 2010 the Australian Bushfire CRC issued a “Fire Note” (Bushfire CRC, 2010) which outlined the potential for residential fencing systems to act as a barrier against radiant heat, burning debris and flame impingement during bushfire. The research aimed to observe, record, measure and compare the performance of commercial fencing of Colourbond steel and timber (treated softwood and hardwood).

The findings of the research found that:

“.. *Colourbond steel fencing panels do not ignite and contribute significant heat release during cone calorimeter exposure”* (exposure to heat)

..”Colourbond steel (fencing) had the best performance as a non-combustible material. It maintained structural; integrity as a heat barrier under all experimental exposure conditions, and it did not spread flame laterally and contribute to fire intensity during exposure”

It is also noted that non-combustible fences are recommended by WAPC (APZ standards: Fences and sheds within the APZ are constructed using non-combustible materials e.g. colourbond iron, brick, limestone, metal post and wire). The AMP will be required to build non-combustible fences through-out the site and will be documented through the OMP.

9.2. Fuel Reduction Strategy

The following parameters/strategies are recommended for the property. Sampling and fuel calculation should be as per the recommended methodology as outlined by DFES:

- Forest fuels are maintained to maximum of 15 t/ha in Forest (Type A) vegetation types;
- Woodland fuels are maintained to maximum of 8 t/ha in Woodland (Type B) vegetation types;
- Fuel reduction can be achieved through slashing or hazard reduction burning;
- Hazard reduction burning in the western remnant native vegetation area should be carried out in consultation with DFES and the CoA in accordance with the *Bushfires Act 1954*. This will be the responsibility of the landowner (CoA) and documented through their reserve’s management plan;
- Hazard reduction burning in the western remnant native vegetation (Jarrah/Marri vegetation) is generally recommended to be a rotation 8-10 years over a series of cells;
- Slashing/mowing all internal grassland and woodland areas to maintain in a low fuel status;
- Observing no vehicle movement bans and total fire bans during slashing operations; and
- Hazard reduction burning only occurs in the western remnant vegetation block, restrictions of fire in central creek area (to reduce risk of peat fires) through an 8m firebreak/FSA at edge of fencing of remnant vegetation (restrict grass fires into remnant vegetation).

10. Implementation of the BMP

Implementation of this BMP will be the responsibility of the AMP and City of Albany. A draft governance document is provided in Appendix 1, which will be further refined through the development process. Table 8 and 9 outline responsibilities for implementation of this BMP report, noting there are further standards requirements documented throughout this BMP report.

10.1. Developer Responsibility

It is recommended the AMP governing body be responsible for the following:

Table 8: Implementation actions AMP

Developer – Prior to issue of titles			
No	**Implementation Action**	**Prior to D/A**	**Prior to operations**
1	A detailed Operational Management Plan (OMP) to be developed by AMP which includes risk assessments (refer to example Appendix 5) as per Confederation of Australian Motor Sport (CAMS) OSH policy and governing regulations to ensure there are actions to minimize risks of ignition and potential bushfire from internal sources of the park.	✓	
2	OMP to outline maintenance requirements across the lease area especially in regards to management and maintenance of Fire Service Access, fire breaks, low fuel areas, inspections of the secondary Emergency Access Ways from Down Road South to Albany Highway	✓	
3	OMP to outline arrangement in place for communication to local brigades and neighbours in relation to external bushfire risks.	✓	
4	The OMP will be reviewed and endorsed by the CAMS prior to operation of the AMP.	✓	
5	AMP governing body to ensure that events are not held on Catastrophic FDR days, Total fire ban days and vehicle movement restrictions as regulated by CoA or DFES.	✓	
6	Consideration of purchase of fast attack light unit for the AMP site and to be placed adjacent to any practise areas (non-event days).		✓
7	Practice days and non-events are to be controlled and regulated by AMP and documented in the OMP for the site.	✓	
8	Event days will have full fire safety crews, ambulance and safety personnel strategically located around the track and documented through the OMP.	✓	
9	Restricting public access through the site to spectator viewing areas and competitor areas, access around the whole of the site is restricted to emergency and safety services.		✓
10	Controlled re-fueling in designated areas for all motorsport park precincts and documented in OMP.	✓	
11	Traffic control for evacuation, contracted and documented in Operational Management Plan.	✓	✓
12	Site construction activities are to confirm to the BMP report and detailed in contractual arrangements with any contractors.		✓
13	Refuge buildings for (club days) 200-500 people built to AS 3959 BAL-29 and conform to the ABCB handbook.		✓
14	Emergency Management Plan for the site which will be developed by AMP prior to operations of the site and will include the BEEP which will be finalised in consultation with CoA Emergency Management Services, DFES Albany region and LEMC at Development Approval Stages.		✓

Table 8 cont.

No	Implementation Action	Prior to D/A	Prior to operations
15	Standards for the internal driveways/public access roads, EAW and FSA's are to meet Table 7 Vehicle Access Technical Requirements and documented in the detailed civil engineering drawings to be approved by CoA at Development Approval Stages.	✓	
16	Existing firebreaks are evident across the site and are to be maintained to the CoA FMN standards by the AMP and maintenance documented in the OMP. Once operational the firebreaks are to confirm to the standards as outlined in the Access mapping Figure 11.	✓	✓
17	Fire Engineer will be engaged by the AMP prior to DA to ensure hydrants and supply pressure are to the required standards.	✓	✓
18	Update and review the BMP and BEEP as any changes occur, prior to Development Approval or every 5 years.	✓	✓

10.2. Local Government Responsibility

It is recommended the City of Albany shall be responsible for the following:

Table 9: Implementation actions City of Albany

LGA– Clearance of conditions			
No	**Implementation Action**	**Lease arrangements**	**Land manager**
1	Restricting public access through the site to spectator viewing areas and competitor areas, access around the whole of the site is restricted to emergency and safety services.	✓	
2	A Management Plan be developed for the remnant vegetation (future CoA managed land) outside of AMP lease area, particularly in relation to maintenance of Fire Service Access (outside of the AMP lease area), fire control and hazard reduction protocols as outlined in this document.		✓
3	Ensure the secondary access for the AMP is secured as a 20m wide road reserve excised from Lot 1 Down Road, and a 10m wide easement in gross through Lot 10 Down Road (min 6m trafficable surface) prior to any operations or construction of the AMP site.	✓	
4	CoA Emergency Management Services to ensure the BEEP and Emergency management Plan for the AMP site is referred and registered through the Local Emergency Management Committee (LEMC).		
5	Existing firebreaks are evident across the site and are to be maintained to the CoA FMN by the leasees until AMP and CoA are managers of Lot 5780 Down Road. CoA to ensure this is documented in any temporary lease agreements once in ownership of the land.		
6	Developing and maintaining District Fire Fighting Facilities and related infrastructure.	N/A, ongoing	
7	Provide advice on standards and methods to achieve community fire protection to owners/occupiers of land through issue and enforcement of the current Fire Management Notice (yearly advice brochure updated annually).	N/A, ongoing	
8	CoA, through their Bush Fire Brigade Organisation is the Controlling Authority for fire suppression and prescribed burning operations on the area.	N/A, ongoing	

11. Disclaimer

The recommendations and measures contained in this assessment report are based on the requirements of the Australian Standards 3959 – Building in Bushfire Prone Areas, WAPC State Planning Policy 3.7 (WAPC, 2015), WAPC Guidelines for Planning in Bushfire Prone Areas (WAPC, 2017), and CSIRO's research into Bushfire behaviour. These are considered the minimum standards required to balance the protection of the proposed dwelling and occupants with the aesthetic and environmental conditions required by local, state and federal government authorities. They DO NOT guarantee that a building will not be destroyed or damaged by a bushfire. All surveys and forecasts, projections and recommendations made in this assessment report and associated with this proposed dwelling are made in good faith on the basis of the information available to the fire protection consultant at the time of assessment. The achievement of the level of implementation of fire precautions will depend amongst other things on actions of the landowner or occupiers of the land, over which the fire protection consultant has no control. Notwithstanding anything contained within, the fire consultant/s or local government authority will not, except as the law may require, be liable for any loss or other consequences (whether or not due to negligence of the fire consultant/s and the local government authority, their servants or agents) arising out of the services rendered by the fire consultant/s or local government authority.

AS3959 disclaimer: It should be borne in mind that the measures contained within this Standard (AS3959) cannot guarantee that a building will survive a bushfire event on every occasion. This is substantially due to the unpredictable nature and behaviour of fire and extreme weather conditions.

Building to AS3959 is a standard primarily concerned with improving the ability of buildings in designated bushfire prone areas to better withstand attack from bushfire thus giving a measure of protection to the building occupants (until the fire front passes) as well as to the building itself.

(AS3959)

12. Certification

I hereby certify that I have undertaken the assessment of the above site and determined the Bushfire Attack Level stated above in accordance with the requirements of AS 3959 (Incorporating Amendment Nos 1, 2 and 3) and the Guidelines for Planning in Bushfire Prone Areas Ver 1.3 (WAPC, 2017).

SIGNED, ASSESSOR: ..... DATE: 01/07/2021

Kathryn Kinnear, Bio Diverse Solutions
Accredited Level 2 Bushfire Practitioner (Accreditation No: BPAD30794)

Please refer to Appendix 11 for the certification of this BMP report from Level 3 BPAD practitioners, Eco Logical Australia.

13. References

AS 3959 Australian Standard, Construction of buildings in bushfire-prone areas, Building Code of Australia, Primary Referenced Standard, Australian Building Codes Board and Standards Australia.

Australian Building Codes Board (ABCB) (2014) Design and Construction of Community Bushfire Refuges. Australian Government and States and Territories of Australia. ABCB, GPO 9839, Canberra ACT 2601

Bio Diverse Solutions (2018) Reconnaissance Flora and Level 1 Fauna Survey, Lot 5780 Down Road, Drome. Unpublished report prepared for the City of Albany

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Confederation of Australian Motor Sport (CAMS) Occupational Health and Safety Policy, accessed March 2019 retrieved from: www.cams.com.au

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Department of Planning, Lands and Heritage (DPLH) (2019) *Position Statement: Tourism land uses within bushfire prone areas*. Government of Western Australia.

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Sandiford, E.M. and Barrett, S. (2010) *Albany Regional Vegetation Survey, Extent Type and Status, A project funded by the Western Australian Planning Commission (EnviroPlanning "Integrating NRM into Land Use Planning" and State NRM Program), South Coast Natural Resource Management Inc. and City of Albany for the Department of Environment and Conservation.* Unpublished report. Department of Environment and Conservation, Western Australia.

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Western Australian Planning Commission (WAPC, 2015) State Planning Policy 3.2 Planning in Bushfire Prone Areas. Department of Planning WA and Western Australian Planning Commission.

State Land Information Portal (SLIP) (2018) Map of Bushfire Prone Areas. Office of Bushfire Risk Management (OBRM) data retrieved from:
https://maps.slip.wa.gov.au/landgate/bushfireprone/

Appendices

Appendix 1: Governance Model for AMP

Appendix 2: Flora survey vegetation complex mapping and vegetation condition mapping (BDS, 2018)

Appendix 3: Vegetation classifications to AS3959

Appendix 4: Bore Test Certificate

Appendix 5: BDS Risk Assessment AMP

Appendix 6: CAMS OSH policy and risk assessment template

Appendix 7: Access options

Appendix 8: Bushfire Emergency Evacuation Plan

Appendix 9: ELA Method 2 BAL Calculations ELA

Appendix 10: WAPC APZ standards

Appendix 11: ELA peer review

Appendix 1

Draft governance model AMP

ALBANY MOTORSPORT PARK

DRAFT GOVERNANCE MODEL

1. **VENUE**
   Albany Motorsport Park

2. **LOCATION**
   Lot 5780 Down Road, DROME, Western Australia

3. **LAND OWNER**
   City of Albany
   owns the land (LOCATION)
   approving Authority for any modifications

4. **VENUE OWNER**
   Albany Motorsport Venue Incorporated (AMV Inc.)
   leases land from the LAND OWNER
   owns and maintains the facilities and infrastructure

5. **THE BOARD**
   VENUE OWNER's board of 7 Directors
   responsible for management and operation of the VENUE

6. **OCCUPIER**
   The VENUE OWNER

7. **AFFILIATIONS**
   Confederation of Australian Motor Sport Limited, trading as Motorsport Australia
   Motorcycling Australia Ltd

8. **VENUE MAP**
   Albany Motorsport Park Masterplan

9. **OWNERSHIP & OPERATION**
   - Ownership of the land (The Land) is and will remain owned by the City of Albany.
   - Post construction by the City of Albany, ownership of all facilities and infrastructure (will be transferred to the Albany Motorsport Venue Incorporated (AMV Inc.) by written agreement.
   - The Land (not the Venue) will be leased by the City of Albany to the AMV Inc.
   - The AMV Inc. will be responsible for the operation, maintenance and repair of the Venue.

10. **AMV INC. BOARD GOVERNANCE**
    - AMV Inc. is to be established as a not for profit association incorporated in accordance with the Associations Incorporation Act 2015.
    - Noting it is acceptable for an association to trade with the public so long as the profits from those transactions are used to promote the objects and purposes of the association and members do not profit from the activities.
    - AMV Inc. will consist of a Board of Directors (the **Board**).
    - The Directors will be paid a remuneration agreed annually.

11. **THE BOARD**

11.1 The Board may have up to seven (7) Directors, who shall comprise:

- Two (2) community representatives recommended by the City of Albany for the Board's consideration.

- One (1) representing Motorsport Australia;
- One (1) representing Motorcycling Western Australia (MWA);
- One (1) representing 4-wheel racing clubs;
- One (1) representing 2-wheel racing (motorcycle road racing) clubs;
- One (1) representing motocross clubs;

11.2 The Chairman of the Board will be elected by the Directors.

11.3 Appointments are to be up to a two-year term, with skills determined by the Board.

11.4 The Directors shall meet monthly or on more occasions if the need dictates.

11.5 The Board to employ an Operations Manager and any other staff deemed necessary to ensure the safe and compliant Venue.

11.6 The Board shall lease the Land from the City of Albany.

11.7 A Lease Agreement shall be prepared by the City of Albany and approved by the City of Albany Council.

11.8 The Board shall be responsible for the insurance of the tracks, roads and any other permanent buildings and fixtures on the Venue.

11.9 The Board is responsible for the development of an Albany Motorsport Park Strategic Development Plan and overseeing the implementation of the strategies and supporting policies.

11.10 The Board is responsible for the development and implementation of systems to enable it to comply with its legal and policy obligations, adhering to accounting standards and ensuring the Venue assets are protected through appropriate risk management.

11.11 The Board is responsible for the marketing, management, programming and the safe use of the Venue.

12. VENUE OWNER

12.1 The Venue Owner shall carry out:

- marketing the Venue;
- hiring of facilities to various users and user groups;
- programme the hiring and events held at the Venue;
- ensure the hirer has the appropriate permit for the event being conducted;
- ensure the hirer has the appropriate event insurance in place;
- adherence to the Motorsport Australia "Track Operations Safety Guide";
- adherence to the Motorcycling Australia "Track Standards" and current "Manual of Motorcycle Sport";
- management and maintenance of the infrastructure;
- establish and maintain an ongoing maintenance (sinking) fund;
- ensure the Venue is cost-effective, that is, income is equal to or greater than expenses;
- adherence to the Bushfire Management Plan;

Appendix 2

Flora Vegetation Complexes and Vegetation Condition Mapping

BIO DIVERSE SOLUTIONS
29 Hercules Crescent
Albany, WA 6330
Australia
Tel: 08 9842 1575
Fax: 08 9842 1575

Overview Map Scale 1:100,000

Legend

- Subject Site
- Cadastre
- 5m Contours
- Vegetation Releves

Vegetation Complexes

- Jarrah/Sheoak/Eucalyptus staeri Sandy Woodland
- Jarrah/Marri/Sheoak Laterite Forest
- Homalospermum firmum/Callistemon glaucus Peat Thicket
- Melaleuca preissiena Low Woodland
- Open paddock / agricultural land
- Miscellaneous Drainage Woodland/Shrubland

Scale
1:8,500 @ A3
GDA MGA 94 Zone 50

Data Sources
Aerial Imagery: WA Now, Landgate Subscription Imagery
Cadastre, Relief Contours and Roads: Landgate 2017
IRIS Road Network: Main Roads Western Australia 2017
Overview Map: World Topographic map service, ESRI 2012

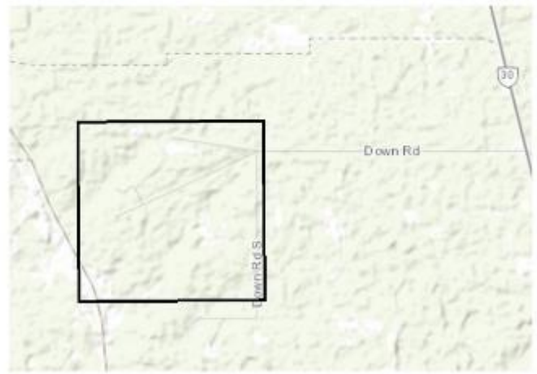
CLIENT

City of Albany
PO Box 484
Albany, WA 6331

Vegetation Complexes Mapping

Assessor	*QA Check*	*Drawn by*
EH	KK	BT
STATUS	*FILE*	*DATE*
FINAL	MSC0137-002	06/02/2019

BIO DIVERSE SOLUTIONS
29 Hercules Crescent
Albany, WA 6330
Australia
Tel: 08 9842 1575
Fax: 08 9842 1575



Overview Map Scale 1:100,000

Legend

- Subject Site
- Cadastre
- 5m Contours

Vegetation Condition

- Completely Degraded
- Very Good
- Excellent
- Pristine

Scale
1:8,500 @ A3
GDA MGA 94 Zone 50

Data Sources
Aerial Imagery: WA Now, Landgate Subscription Imagery
Cadastre, Relief Contours and Roads: Landgate 2017
IRIS Road Network: Main Roads Western Australia 2017
Overview Map: World Topographic map service, ESRI 2012

CLIENT

City of Albany
PO Box 484
Albany, WA 6331

Vegetation Condition Mapping

Assessor	*QA Check*	*Drawn by*
EH	**KK**	**BT**
STATUS	*FILE*	*DATE*
FINAL	**MSC0137-002**	**13/12/2018**

Appendix 3

Vegetation Classifications to AS3959

Vegetation classification to AS3959

Site Details			
Address:	Lot 5780 Down Road		
Suburb:	Drome	**State:**	W.A.
Local Government Area:	City of Albany		
Stage of WAPC Planning	Scheme Amendment and Rezoning		
Report use:	Preparation of the BMP for AMP		

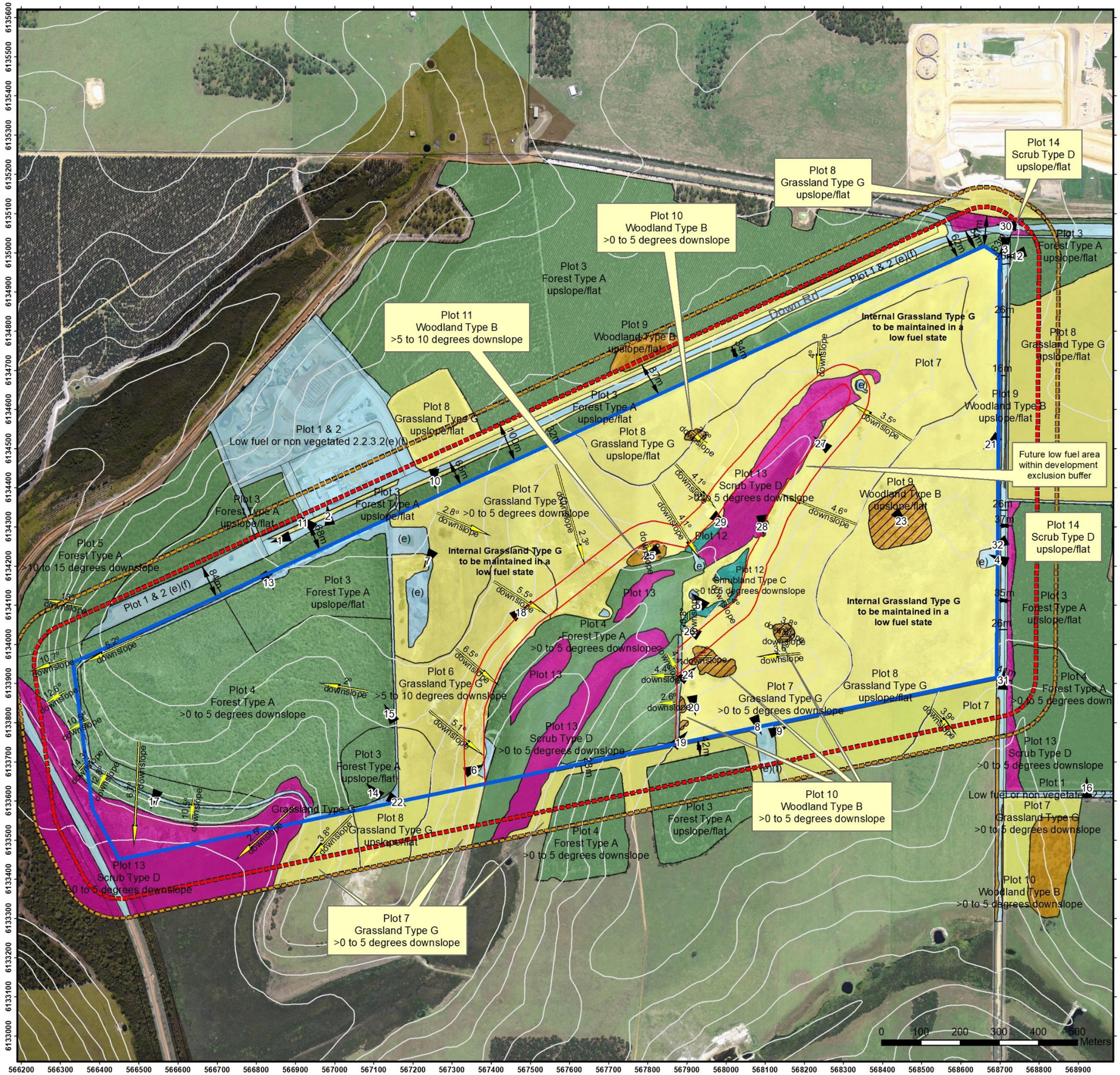
BMP Plan Details			
Report / Job Number:	COA0020	**Report Version:**	FINAL
Assessment Date:	14/02/2019	**Report Date:**	10/05/2019
BPAD Practitioner	Kathryn Kinnear	**Accreditation No.**	BPAD 30794

BIO DIVERSE SOLUTIONS

BPAD Bushfire Planning & Design Accredited Practitioner Level 2

Vegetation Classification

Site assessment occurred on the 14th February 2019 by Kathryn Kinnear (BPAD 30794). All vegetation within 150m of the site / proposed development was classified in accordance with Clause 2.2.3 of AS 3959. Each distinguishable vegetation plot with the potential to determine the Bushfire Attack Level is identified in the following pages and shown on the Vegetation Classes Map Page 2.



This BAL Plan was prepared by:
Kathryn Kinnear, Bio Diverse Solutions
Accreditation No: BPAD30794
Jurisdiction: Level 2 - WA

BPAD Bushfire Planning & Design Accredited Practitioner Level 2

BIO DIVERSE SOLUTIONS

29 Hercules Crescent
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Tel: 08 9842 1575
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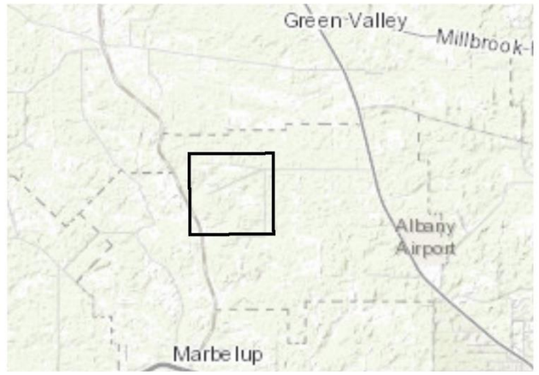


Overview Map Scale 1:100,000

Legend

- Subject Site
- 100m Assessment Boundary
- 150m Assessment Boundary
- Cadastre
- 5m Contours
- Low Fuel Buffer
- Future Low Fuel
- Separation Distance
- Slope Degrees

Vegetation

- Forest Type A
- Woodland Type B
- Shrubland Type C
- Scrub Type D
- Grassland Type G
- Low fuel or non vegetated 2.2.3.2

Scale
1:9,500 @ A3
GDA MGA 94 Zone 50

Data Sources
Aerial Imagery: WA Now, Landgate Subscription Imagery
Cadastre, Relief Contours and Roads: Landgate 2017
IRIS Road Network: Main Roads Western Australia 2017
Overview Map: World Topographic map service, ESRI 2012

CLIENT
City of Albany
Lot 5780 Down Road
Drome, WA 6330

Vegetation Classes

BAL Assessor	*QA Check*	*Drawn by*
KK	**KK**	**BT**
STATUS	*FILE*	*DATE*
FINAL	**COA0020**	**10/05/2019**

Plot	1	Classification or Exclusion Clause	Low fuel or non-vegetated areas exclusion 2.2.3.2 (e)
			**Location:** Internal and external to the site. **Description:** Hardstand areas, roads, driveways, dams, and buildings. Excluded as per AS3959 exclusion clause 2.2.3.2 (e).

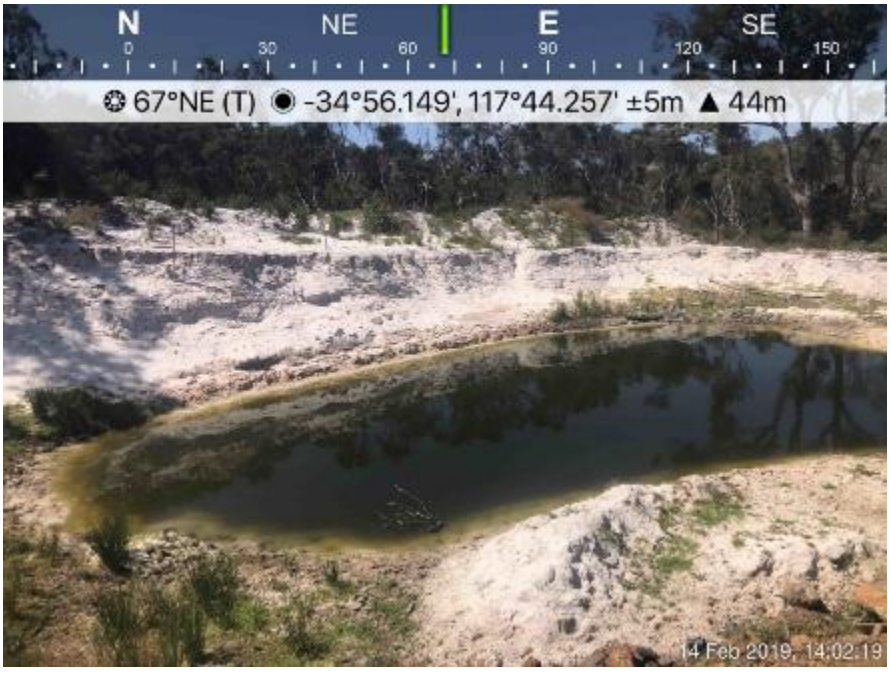
Photo Id 1: View of Down Road to the west where it terminates west of Plantation Energy site.

Plot	1 cont.	Classification or Exclusion Clause	Low fuel or non-vegetated areas exclusion 2.2.3.2 (e)
			**Additional Photo of Plot 1.**

Photo Id 2: View to the north of the Plantation Energy site.

Plot	1 cont.	Classification or Exclusion Clause	Low fuel or non-vegetated areas exclusion 2.2.3.2 (e)
			**Additional Photo of Plot 1.**
Photo Id 3: View to the south along Down Road South.			
Plot	**1 cont.**	**Classification or Exclusion Clause**	**Low fuel or non-vegetated areas exclusion 2.2.3.2 (e)**
			**Additional Photo of Plot 1.**
Photo Id 4: View of existing internal dam located along eastern boundary.			

Plot	1 cont.	Classification or Exclusion Clause	Low fuel or non-vegetated areas exclusion 2.2.3.2 (e)
			**Additional Photo of Plot 1.**
Photo Id 5: View of existing internal dam/soak located in the central creek area.			

Plot	1 cont.	Classification or Exclusion Clause	Low fuel or non-vegetated areas exclusion 2.2.3.2 (e)
			**Additional Photo of Plot 1.**
Photo Id 6: View of existing internal dam/soak located along the southern boundary.			

Plot	1 cont.	Classification or Exclusion Clause	Low fuel or non-vegetated areas exclusion 2.2.3.2 (e)
			**Additional Photo of Plot 1.**

Photo Id 7: View of hardstand area in the north west of the site.

Plot	2	Classification or Exclusion Clause	Low fuel or non-vegetated areas exclusion 2.2.3.2 (f)
			**Location:** Located around existing buildings to the south and north of the subject site. Along established firebreaks. **Description:** Maintained vegetation & low fuel areas associated with existing surrounding farms and development sites. Includes low fuel firebreaks. As per exclusion clause 2.2.3.2 (f) of AS3959. Excluded as per AS3959 exclusion clause 2.2.3.2 (f).

Photo Id 8: View to the south/south east of adjacent farm/shed area.

Plot	2 cont.	Classification or Exclusion Clause	Low fuel or non-vegetated areas exclusion 2.2.3.2 (f)

Additional Photo of Plot 2.

Photo Id 9: View along the southern boundary showing low fuel fire break and adjacent driveways access maintained in a low fuel condition.

Plot	3	Classification or Exclusion Clause	Forest Type A

Location: Located internal to the subject site in the north and south east corners of the western remnant vegetation block. External to the site in the north, and north east.

Separation Distance: Nil internal,

Description: Jarrah, Marri and Sheoak low forest. Midstorey dominated by *Banksia, Agonis, Hakea* and *Leucopogon*. Understorey of native shrubs, sedges and grasses. Multilayered. Includes Blue gum plantations external to the site.

Average vegetation height: 8 -13m.

Vegetation Coverage: 30-70%.

Available fuel loading: 25-35t/ha.

Effective slope: Upslope.

Photo Id 10: View to the south of fringing vegetation along Down Road.

Plot	3 cont.	Classification or Exclusion Clause	Forest Type A
			**Additional Photo of Plot 3.**

Photo Id 11: View to the north west of Blue Gum Plantations located north of Down Road.

Plot	3 cont.	Classification or Exclusion Clause	Forest Type A
			**Additional Photo of Plot 3.**

Photo Id 12: View to the west of Forest Type A along Down Road South.

Plot	3 cont.	Classification or Exclusion Clause	Forest Type A
			**Additional Photo of Plot 3.**

Photo Id 13: View to the south east of internal Forest located in the north west of the site.

Plot	3 cont.	Classification or Exclusion Clause	Forest Type A
			**Additional Photo of Plot 3.**

Photo Id 14: View to the north west of Forest Type A located in the south west (internal) of the site.

Plot	4	Classification or Exclusion Clause	Forest Type A

Location: Internal in remnant vegetation along creekline and in the remnant to the west. External to the east and south east.

Separation distance: Nil internal and 35-41m to the east.

Dominant species & description: Jarrah, Marri and Sheoak low forest. Midstorey dominated by *Banksia, Agonis, Hakea* and *Leucopogon*. Understorey of native shrubs, sedges and grasses. Multilayered. In creekline dominated by *Taxandria linearfolia* and Native Willow

Average vegetation height: 8-13m.

Vegetation Coverage: 30-70%.

Available fuel loading: 25-35t/ha.

Effective slope: Downslope >0 to 5 degrees.

Photo Id 15: View to the north west of Forest Type A.

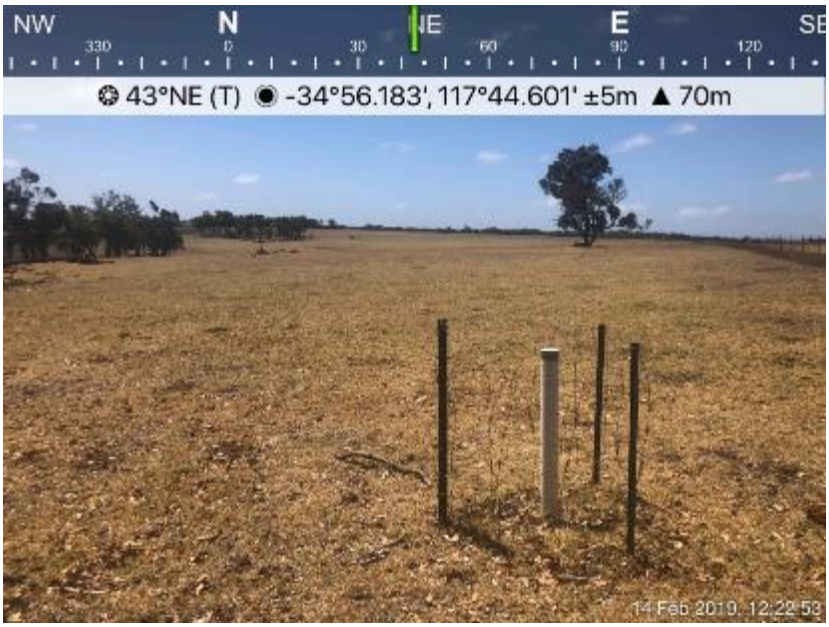
Plot	4 cont.	Classification or Exclusion Clause	Forest Type A

Additional Photo of Plot 4.

Photo Id 16: View to the north of Forest Type A located to the east/south east of the site in private property.

Plot	5	Classification or Exclusion Clause	Forest Type A
			**Location:** Internal to the subject site along a ridge in the western remnant vegetation block. Extends to the north of the subject site. Recently burnt (May 2018 bushfires). **Separation distance:** Nil. **Dominant species & description:** Jarrah, Marri and Sheoak low forest. Midstorey dominated by *Banksia, Agonis, Hakea* and *Leucopogon*. Understorey of native shrubs, sedges and grasses. Multilayered. **Average vegetation height:** 8-13m. **Vegetation Coverage:** 30-70%. **Available fuel loading:** 28-35t/ha. **Effective slope:** Downslope > 10 to 15 degrees.
Photo Id 17: View to the south of Forest Type A recently burnt (May 2018).			
Plot	**6**	**Classification or Exclusion Clause**	**Grassland Type G**
			**Location:** Internal to the west of the creekline area. **Separation distance:** Nil. **Dominant species & description:** Kikuyu, Cape Weed, Clovers, *Hypochaeris sp.,* and patches of Fiddle Dock, Inkweed and Burr (mainly in rehabilitated areas. **Average vegetation height:** 50-500mm. **Vegetation Coverage:** <10% trees. **Available fuel loading:** 4.5t/ha. **Effective slope:** Downslope >5 to 10 degrees.
Photo Id 18: View to the north east of internal paddock areas in the west of the subject site.			

Plot	7	Classification or Exclusion Clause	Grassland Type G



Location: Internal to the site in the east, north and west, also located to the south in adjacent property.

Separation distance: Nil internal, 0-6m to the south.

Dominant species & description: Kikuyu, Cape Weed, Clovers, *Hypochaeris sp.,* and patches of Fiddle Dock, Inkweed and Burr (mainly in rehabilitated areas.

Average vegetation height: 50-500mm.

Vegetation Coverage: <10% trees.

Available fuel loading: 4.5t/ha.

Effective slope: Downslope >0 to 5 degrees.

Photo Id 19: View to the north east of internal paddock areas from the southern boundary.

Plot	7	Classification or Exclusion Clause	Grassland Type G

Additional Photo of Plot 7.

Photo Id 20: View of Plot 7 on the eastern side of the remnant vegetation (Plot 4), note rocky ground.

Plot	8	Classification or Exclusion Clause	Grassland Type G

Location: Internal to the site to the east. To the north, south and east of the subject site in adjacent properties and road reserves.

Separation distance: Nil internal, 26m to the east, 0-6m to the south and 32-71m to the north.

Dominant species & description: Kikuyu, Cape Weed, Clovers, *Hypochaeris sp.,* and patches of Fiddle Dock, Inkweed and Burr (mainly in rehabilitated areas.

Average vegetation height: 50-500mm.

Vegetation Coverage: <10% trees.

Available fuel loading: 4.5t/ha.

Effective slope: Upslope.

Photo Id 21: View along internal fenceline in the east (central) area of internal paddocks.

Plot	8	Classification or Exclusion Clause	Grassland Type G

Additional Photo of Plot 8.

Photo Id 22: View to the south east along ridgeline located south/south west of the subject site.

Plot	9	Classification or Exclusion Clause	Woodland Type B (06)

Location: Internal to the site in small isolated patches. North in adjacent property and east along Down Road South.

Separation distance: Nil internal and Down Road South, 87m to the north.

Dominant species & description: Stands of Marri and Jarrah trees in open paddock areas. Grazed and disturbed understorey. Not multilayered.

Average vegetation height: 12-15m.

Vegetation Coverage: 10-30%.

Available fuel loading: 15-25t/ha.

Effective slope: Upslope.

Note: Central paddock areas will be maintained as low fuel near track and facilities.

Photo Id 23: View to the south east through open woodland areas (central paddock areas in the east).

Plot	9 cont.	Classification or Exclusion Clause	Woodland Type B (06)

Additional Photo of Plot 9.

Photo Id 32: View along Down Road South.

Plot	10	Classification or Exclusion Clause	Woodland Type B (06)

Location: Internal to the site in small isolated patches.

Separation distance: Nil.

Dominant species & description: Stands of Marri and Jarrah trees in open paddock areas. Grazed and disturbed understorey. Not multilayered. Noted as future low fuel.

Average vegetation height: 12-15m.

Vegetation Coverage: 10-30%.

Available fuel loading: 15-25t/ha.

Effective slope: Downslope >0 to 5 degrees.

Photo Id 24: View to the north east through Plot 10.

Plot	11	Classification or Exclusion Clause	Woodland Type B (06)

Location: Internal to the subject site situated the north of the creek.

Separation distance: Nil.

Dominant species & description: Stands of Marri and Jarrah trees in open paddock areas. Grazed and disturbed understorey. Not multilayered. Noted as future low fuel.

Average vegetation height: 12-15m.

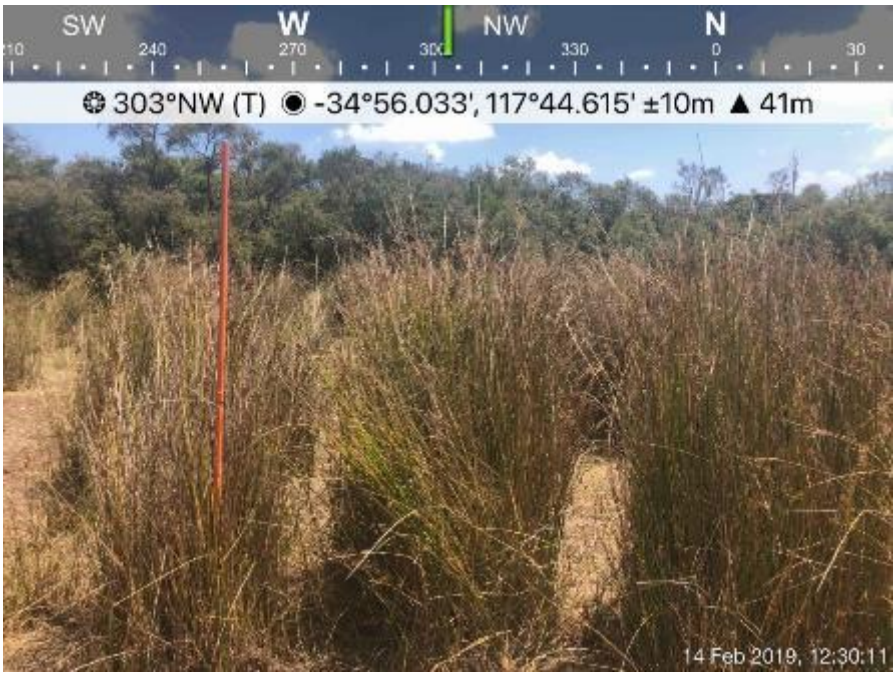
Vegetation Coverage: 10-30%.

Available fuel loading: 15-25t/ha.

Effective slope: Downslope >5 to 10 degrees.

Photo Id 25: View to the south west through Plot 11 located on the north of the central creek area.

Plot	12	Classification or Exclusion Clause	Shrubland Type C



Location: Internal to the site situated along creek line area.

Separation distance: Nil.

Dominant species & description: Taxandria, Homalospermum, Callistemon, native sedges and introduced grasses.

Average vegetation height: 1-1.5m.

Vegetation Coverage: 30% foliage cover.

Available fuel loading: 15t/ha.

Effective slope: Downslope >0 to 5 degrees.

Photo Id 26: View through Shrubland Type C located around central creek area (southern edge).

Plot	13	Classification or Exclusion Clause	Scrub Type D

Location: Internal in creek area.

Separation distance: Nil.

Dominant species & description: *Melaleuca, Callistemon, Homalospermum*, *Banksia*, *Taxandria, Acacia* and native sedges.

Average vegetation height: 3-4m.

Vegetation Coverage: >30% foliage cover.

Available fuel loading: 25t/ha.

Effective slope: Downslope >0 to 5 degrees.

Note: Although this currently presents as Shrubland Type C, future revegetation within the creek area is expected to result in Scrub Type D vegetation type.

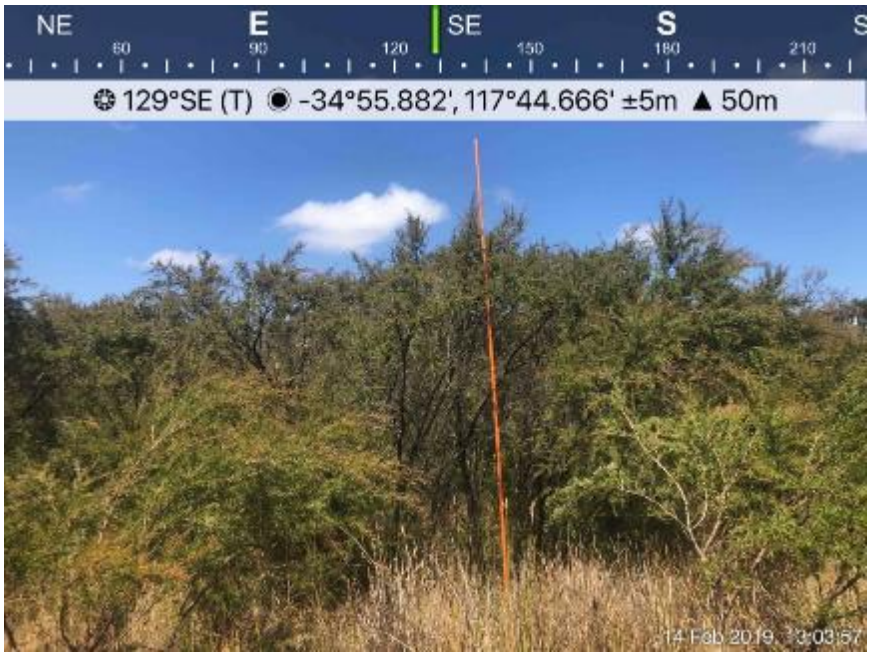
Photo Id 27: View through future Scrub Type D located around central creek area (eastern edge).

Plot	13 cont.	Classification or Exclusion Clause	Scrub Type D

Additional Photo of Plot 13.

Photo Id 28: View of Scrub Type D located along central creek area (southern edge). Note 4m height staff.

Plot	13 cont.	Classification or Exclusion Clause	Scrub Type D



Additional Photo of Plot 13.

Photo Id 29: View through Plot 13 on the northern side of the central creek area. Note 4m height staff.

Plot	14	Classification or Exclusion Clause	Scrub Type D

Location: External to the east along Down South Road and to the North at the Down Road and Down Road South intersection.

Separation distance: 26m to the east 54-63m to the north.

Dominant species & description: Predominately Taxandria (Tea tree) and Taylorina, some native sedges and introduced grasses.

Average vegetation height: 2-4m.

Vegetation Coverage: >30% foliage cover.

Available fuel loading: 25t/ha.

Effective slope: Upslope.

Photo Id 30: View along Down Road at the intersection of Down Road South (note 1.5m high sign).

Plot	14 cont.	Classification or Exclusion Clause	Scrub Type D

Additional Photo of Plot 14..

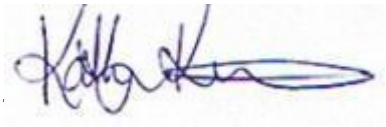
Photo Id 31: View along Down Road of adjacent property, low fuel firebreak in foreground, regrowth Tea Tree Scrub in background.

Comments on Vegetation Classifications:

- Distances from vegetation were made based on surface fuels to edge of lot (subject site) boundary;
- Effective slopes were measured in the field using a Nikon Forestry Pro and represented on the respective plots;
- Method 1 (AS3959) Simplified procedure was used for vegetation classification Assessment process;
- All vegetation was classified within the subject site and within 150m of the lot boundaries to AS3959 Table 2.3; and
- The perimeter of the vegetation was measured using field GPS and notations on field GIS maps.

CERTIFICATION

I hereby certify that I have undertaken the assessment of the above site and determined the Bushfire Attack Level stated above in accordance with the requirements of AS 3959 (Incorporating Amendment Nos 1, 2 and 3).

SIGNED, ASSESSOR: .....  ... DATE: 10/05/2019

Kathryn Kinnear, Bio Diverse Solutions
Accredited Level 2 Bushfire Practitioner (Accreditation No: BPAD30794)

Appendix 4

Bore water supply test certificate

WA DRILLING SERVICES

Details of Person carrying out the works

Driller	Phil Putland		
Driller License	48	Driller Classification	Class 2
Address	PO Box 5150 ALBANY WA 6331		
Telephone	0427 882 561		
Email	danic@omninet.net.au		

Location of Well

Client	City of Albany
Address	Po Box 484 Albany WA 6330
Location	Proposed motor race track Downe Rd

S3493037
E11773965+.7

Construction Details (all measurements taken from ground level)

Production casing detail

Material	Nominal bore	Diameter O.D. (mm)	Wall thickness (mm)	Depth From (m)	Depth To (m)
PVC	100mm	114mm	7mm	0	17
				23.78	35.78

Screen/slots

Screens/slot (type)	Diameter O.D. (mm)	Aperture (mm)	Top of screen (m)	Bottom of screen (m)
PVC	114mm	.5mm	17.78	23.78
Open Hole				

Gravel pack details

Gravel size	From (m)	To (m)
.85-2mm	20	35.78

Annular Fill

Material Type	From (m)	To (m)
Drill cuttings		
Bentinite Pellets	19	20

Cementing detail		
Casing diameter (mm O.D.)	Depth	
	From (m)	To (m)
5%Cement Bentinite Grout	19	0
Head works Concrete Block	.500mm x .500mm	

From (m)	To (m)	Strata description
0	2	Sandy clay with gravel
3	5	sandy clay
6	9	clayey sand
10	12	silty sandy clay
13	28	siltstone sandstone
29	32	clay dark grey, Werillup Formation
32	40	clay and shale siltstone
40	EoH	basement granite

Particulars of well

Drilling start: 09-05-19 Drilling completion: 10-05-19

Drilling method used:
- [ ] Rotary air
- [x] Rotary mud
- [ ] Other

Well Development

Duration of development	3hrs
Conductivity	110m/s
Recommended Supply	2ltrs sec
SWL TOC	7.720mtrs
Drawdown	20mtrs
Recommended Pumping	100ltrs min
Set Pump	21mtrs

Appendix 5

Risk Assessment AMP

Albany Motorsport Park Risk Assessment

Risk No.	Hazard -Bushfire originating/causing fire	Probability of event occurring	Exposure of Visitors	Possible consequences if event occurs	Risk rating	Control measure
Internal to the site						
1	Ignition Vehicles/Bikes combusting on track due to crashes Inc fuel or oil line leaks on track	Almost Certain	Occasional	Very serious	Substantial/high	• Low fuel grass areas • Buffer areas low fuel to vegetation • Requirements outlined in Operators safety manual (CAMS) • Fire extinguishers located around the track and pit areas. • Safety crews on site every meeting and fire unit for unsupervised non track days during summer. • Spark arrestors on Motocross bikes. • No events on Total fire ban periods and Catastrophic & Extreme FDI. Consider twilight events. • Restrict public access and vehicle movement near the central creek area (safety and fire crews only).
2	Grinding sparks in pits or near fuel sources (hot works)	Very unlikley (designated re-fuelling areas)	Rare	Disaster	Low risk	• Operators safety manual (CAMS). • No storage of fuels on site. • Designated re-fueling areas (controlled zone). • Fire extinguishers strategically located. • Fire extinguishers each event participant. • Requirements outlined in Operators safety manual (CAMS). • Ensure control measures instigated during unsupervised non track days during summer.
3	Smoking public viewing areas or in pits near fuels	Unlikely (smoke free site)	Rare	Disaster	Low risk	• No smoking on site • Fire extinguishers strategically located. • Security enforcement to general public.
4	Vehicles (exhausts) near dry vegetation or slashing/mowing rocky ground (maintenance)	Likely	Rare	Very serious	Low risk	• Operations manual to define slashing procedures • Fast attack unit on site. • No slashing on high winds and hot days, Total fire ban periods and Catastrophic & Extreme FDI. • Observe no vehicle movement bans and total fire bans in Operators safety manual (CAMS).

Risk No.	Hazard -Bushfire originating/causing fire	Probability of event occurring	Exposure of Visitors	Possible consequences if event occurs	Risk rating	Control measure
Internal cont.						
5	Electrical faults building faults	Possible	Occasional	Very serious	Moderate	• New buildings to be constructed, less risk of faults. • Regular building inspections. • Compliance in new building, safety certification on electrical elements. (regulated) • All buildings built to BAL 29 on site.
6	Electrical faults from extension cords/cables (pits/trailers)	Possible	Occasional	Very serious	Moderate	• Worksafe procedures in place - Tagged and tested extension cords only from all event participants. • Fire extinguishers strategically located in pit area and with each event participant. • RCD protection on all power supply on site. (regulated). • Pit inspections & participant gear inspections for compliance during events.
7	Re-fuelling area (designated and controlled)	Likely	Occasional	Very serious	Very high risk	• Designated area for each site. • Low fuel non-combustible area. • Requirements outlined in Operators safety manual (CAMS) • Safety crews on site every meeting. • Fire unit for unsupervised non-track days during summer. • No events on Total fire ban periods and Catastrophic & Extreme FDI. • Restrict public access and vehicle movement near refuelling area.
8	Substandard race vehicles using the facility	Remotely possible	Very rare	Serious	Low risk	• Race scrutineering controls • Designated practice area • Requirements outlined in Operators safety manual (CAMS) •

Risk No.	Hazard -Bushfire originating/causing fire	Probability of event occurring	Exposure of Visitors	Possible consequences if event occurs	Risk rating	Control measure
Internal cont.						
9	Re-ignition of previously controlled fires (peat Central creek area)	Possible	Infrequent	Very serious/Disaster	Substantial	• No controlled burning in creek area. • Restrict public access and vehicle movement near the central creek area (safety and fire crews only). • Barriers non combustible material to central creek area. • Access (FSA) to creek/remnant vegetation area from fire crews, turnarounds and 6-8m wide horizontal clearance, 4m trafficable surface. • Gates for fire access. • Low fuel buffer areas (50m) from vegetated areas. • No hazard reduction burning in central creek/remnant vegetation area. • 8m firebreak around central remnant vegetation area to restrict grass fires from entering the area.
10	Water pump failure causing spark/ignition	Possible	Infrequent	Very serious/Disaster	Substantial	• Ensure pumps adjacent bores are regularly maintained and inspected. • Located in low fuel area, non-combustible materials • No fuel storage near. • Not located near buildings.
11	Gas Barbecues and camp fires causing ignition (unattended, faulty)	Very likely	Occasional	Very serious/Disaster	High risk	• No camping on site • No barbeques, unless in organized near kitchen (register) facility. • Condition on lease • No informal BBQ's from participants • Inspections in pit areas. • Requirements outlined in Operators safety manual (CAMS) • CoA licensed vendors for food catering
12	Tire barriers igniting from crash from vehicle	Very likely	Occasional	Very serious/Disaster	High risk	• Tires to be placed in accordance with DFES practice note • Use concrete barriers and sand traps instead of tire barriers • No storage of tyres on site. • Refer to DFES guideline of storage of tires.

Risk No.	Hazard -Bushfire originating/causing fire	Probability of event occurring	Exposure of Visitors	Possible consequences if event occurs	Risk rating	Control measure
External						
13	Re-ignition of previously controlled fires (May and November non-prohibited periods)	Very likely	Occasional	Serious injury	Moderate	• Monitor and liaison with brigade fire control officer. • Restrictions of burning within 20m of site? • Monitor weather conditions prior to event, documented in operations manual and fire warden for site. • Liaison with neighbours during summer periods. • Scheduling of events - No events on Total fire ban periods and Catastrophic & Extreme FDI. Consider twilight events.
14	External: Ignition from trains under heavy loads sparks associated with braking	Conceivable but very unlikely	Rare	Serious	Low risk	• Train movements low • Low fuel areas adjacent to railway • Monitor weather conditions prior to event, documented in operations manual and fire warden for site. • Liaison with neighbours during summer periods.
15	External: Aircraft Crash	Conceivable but very unlikely	Rare	Serious	Low risk	• Flight path 1km west • Plane movements mostly through weekdays • Monitor weather conditions prior to event, documented in operations manual and fire warden for site.
16	External: Western powerlines transmission	Very likely	Occasional	Very serious	High risk	• Underground power supply to site? • Major transmission lines to the east • Monitor weather conditions and fires in area • Liaison with Chief Fire Control Officer • Radio for Warden?
						•

Risk No.	Hazard -Bushfire originating/causing fire	Probability of event occurring	Exposure of Visitors	Possible consequences if event occurs	Risk rating	Control measure
External						
17	External: Ignition from stockpiled woodchips north of site	Very likely	Occasional	Very serious	High risk	• Plantation energy stockpiles of woodchips • Safety measures and fire control procedures in place. • Low fuel environment north f subject site. • Water supply in lease area of subject site for sprinkler system • Storage controls for woodchips, monitors and wardens in place. • No woodchips stored on Motorsport park site. • Copy of emergency response procedure to Albany motorsport park • Liaison with APEC and plantation energy.
18	External: Ignition from Blue gum slash burning (cause of May 2018 fire)	Very likely	Occasional	Very serious	High risk	• Monitor and liaison with brigade fire control officer. • Restrictions of burning within 20m of site? • Monitor weather conditions prior to event, documented in operations manual and fire warden for site. • Liaison with neighbours during summer periods. • Scheduling of events - No events on Total fire ban periods and Catastrophic & Extreme FDI. Consider twilight events.
19	External and Internal: Lightning strikes	Very likely	Occasional	Very serious	High risk	• Monitor and liaison with brigade fire control officer. • Monitor weather conditions prior to event, documented in operations manual and fire warden for site. • Liaison with neighbours during summer periods. • Scheduling of events - No events on Total fire ban periods and Catastrophic & Extreme FDI. Consider twilight events.

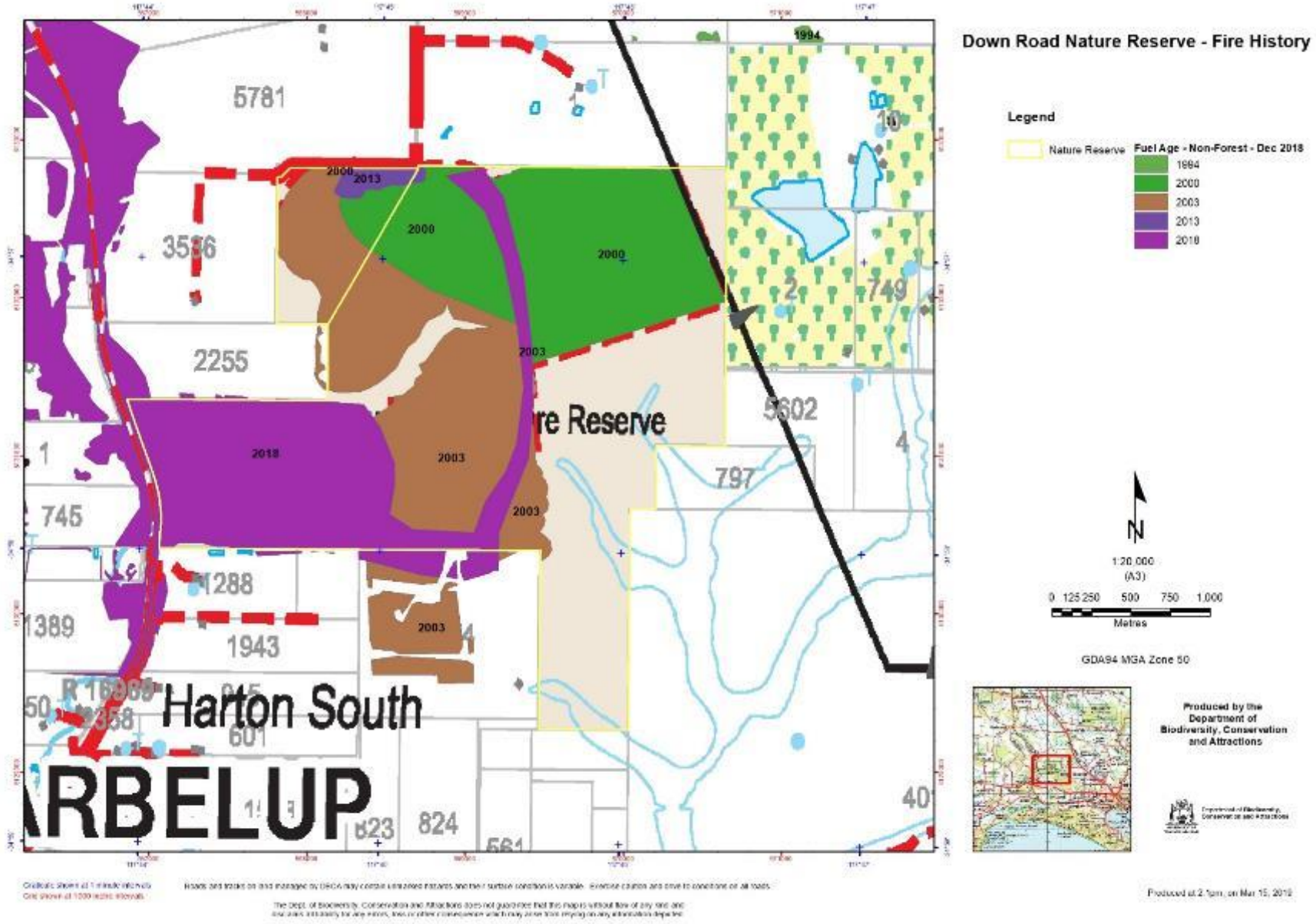
Risk No.	Hazard -Bushfire originating/causing fire	Probability of event occurring	Exposure of Visitors	Possible consequences if event occurs	Risk rating	• Control measure
20	Illegally lit fires (deliberate)	Unusual but possible	Occasional	Very serious	Moderate risk	• Monitor and liaison with brigade fire control officer. • Monitor weather conditions prior to event, documented in operations manual and fire warden for site. • Liaison with neighbours during summer periods. • Scheduling of events - No events on Total fire ban periods and Catastrophic & Extreme FDI. Consider twilight events.

Probability – Almost Certain, Likely, Possible Unlikely
Exposure – Very rare, infrequent, occasional, frequent, continuous
Consequence- Catastrophe, Disaster, Very Serious, Serious, Important, Noticeable
Risk – Very High, High, Substantial, Moderate and Low

Data has been gathered from following sources:

- 20km radius of the subject site on originating fire causes (DBCA, CoA & DFES)
- CAMS risk register
- Great Southern Motorsport Group Inc (cross section of sporting codes)

Kindly provided by Department of Biodiversity Conservation and Attractions (2019)



Appendix 6

CAMS Occupational health and safety policy

Example of CAMS risk assessment forms

Occupational Health & Safety Policy

Scope

This policy applies to all CAMS Staff and Volunteers working for CAMS.

Policy Objective

This Policy shows CAMS' commitment to ensuring the health and safety of staff, contractors and volunteers who work for CAMS, and for minimising the risk to competitors, participants, officials, contractors, and visitors at CAMS Events, to the extent reasonably practicable.

Policy Statement

1. The Working Environment

CAMS will use its best endeavours to achieve a working environment that, to the extent reasonably practicable, eliminates or reduces risks to health and safety by:

- conducting risk assessments on hazards and risks relating to the work of Staff and Volunteers;
- monitoring the health and safety of Staff and Volunteers;
- seeking advice on safety matters when required;
- promoting safety and welfare to Staff and Volunteers;
- working with Staff who are returning to work after illness or injury to assist their rehabilitation;
- providing training to Staff on work health and safety on induction and then as required;
- providing training and instruction to Volunteers as to the safe performance of their work as required;
- ensuring contractors comply with their health and safety obligations by requiring them in CAMS contracts to address risks and have in place control measures to eliminate or reduce risks arising from their work;
- ensuring those conducting Permitted Events adopt any work health and safety policies required by CAMS and address risks and have in place control measures to eliminate or reduce risks arising from their Permitted Event/s;
- consulting with Staff and Volunteers on work health and safety matters;
- reporting to the Board Members on work health and safety.

2. The Motor Sport Environment

CAMS recognises that motor sport may present risks to the health and safety of competitors, officials, contractors, and visitors at CAMS Events. CAMS seeks to reduce those potential risks by:

- having a health and safety program ('the program'), which will protect and enhance the health and safety of all relevant CAMS stakeholders;
- having CAMS Board Members, Staff, Volunteers and CAMS-associated and affiliated organisations working together to develop and implement the program;
- providing training to Volunteers as required;
- applying the program at all CAMS Events and, to the extent possible, Permitted Events;
- reviewing the program annually or more frequently if required;
- reporting on compliance and implementation to the Board Members.

3. Procedures

3.1 Best Practice

CAMS aims to be recognised as the motor sport leader in safety as it relates to its Staff and Volunteers.

3.2 Leadership

All CAMS managers and those in leadership positions, including senior volunteers, will provide the leadership needed to reach these goals.

3.3 Managers and Senior Volunteers

CAMS Managers and Senior Volunteers are committed to the provision and maintenance of a healthy and safe workplace, and to the extent reasonably practicable and as appropriate, will:

- consult and participate with CAMS Staff, Volunteers and associated stakeholders in the health and safety program;
- use risk identification, assessment and control principles to reach CAMS health and safety objectives;
- inform and train CAMS Staff and Volunteers and associated stakeholders in relevant policies, procedures and health and safety obligations;
- participate in CAMS induction and implement all safety procedures;
- allocate appropriate resources for the program.

3.4 Staff and Volunteers

CAMS Staff and Volunteers will:

- participate and support CAMS in its efforts to reach its health, safety and where relevant, rehabilitation objectives;
- follow reasonable health and safety instructions from managers, supervisors or senior volunteers;
- report any serious incidents, accidents, injuries or hazards in the workplace to supervisors or designated representatives;
- aim to work in a way that does not endanger the safety of themselves and/or others;
- properly use and maintain safety equipment;
- make sure other CAMS Staff and Volunteers and visitors follow safety rules in the workplace;
- participate in all CAMS induction programs when required, and follow all safety procedures.

3.5 CAMS Staff and CAMS Appointed Officials at Permitted Events

- CAMS Staff and CAMS Appointed Officials will conduct themselves in a safe manner and in line with local safety policies and procedures when attending Permitted Events on behalf of CAMS. In the absence of these, CAMS' organisational procedures will apply;
- CAMS Staff and CAMS Appointed Officials have the right to cease work at any Permitted Event if the staff member or CAMS Appointed Official has concerns that risks to health and safety have not been appropriately eliminated or reduced.

3.6 Consultation

CAMS consults on work health and safety with its Staff, Volunteers and stakeholders in a number of different ways and in accordance with any Consultation Policy.

3.7 Dispute Resolution

Any disputes as to work health and safety matters that are not addressed by other CAMS policies or procedures will be at the first instance addressed through informal mediation between the parties. If this is unsuccessful the CAMS CEO will refer the matter to formal mediation, and may then arbitrate the dispute if required.

Definitions

The following definitions apply to this policy:

Staff

A paid employee of CAMS who conducts work for CAMS including at CAMS Events and Permitted Events.

CAMS Appointed Officials

Officials appointed by CAMS to work at a CAMS Event or a Permitted Event, namely Stewards of Meetings, Race Directors, Technical Commissioners and any other official expressly appointed by CAMS.

Contractor

A contractor or subcontractor engaged by CAMS.

Senior Volunteers

A volunteer who is a Board Member of CAMS, or a Chair of any CAMS Commission, Committee, State Executive, Working Group, Panel or is otherwise appointed by CAMS to a senior voluntary position.

Volunteers

Unpaid/Honorary representatives working for CAMS on authorised and approved CAMS business, including senior volunteers, Commission and Committee members and CAMS Appointed Officials.

Board Members (The Board)

Directors of the CAMS Board, which also includes the President and FIA delegate.

CAMS Events

Motor sport events conducted by CAMS excluding Permitted Events.

Permitted Events

Motor sport events that are not conducted by CAMS but are conducted pursuant to a licence, permit or authority issued by CAMS.

Note: OH&S Policies on specific issues

Policies, procedures, operational safety requirements and safe work methods on specific occupational health and safety issues, consistent with the principles in this policy, will be issued as appropriate.

Sanctioned Event – Targeted Risk Assessment

Form TRA-01

Event / Venue		Type of Work being performed *e.g. refuelling, waving flag, walking to work area*
Area / Location		
Date		

RISK MATRIX	Consequence			
Likelihood	1 Insignificant	2 Minor	3 Moderate	4 Major
A - Almost Certain	High	High	*Extreme*	*Extreme*
B - Likely	Medium	High	High	*Extreme*
C - Possible	Low	Medium	High	*Extreme*
D – Unlikely	Low	Low	Medium	High

ACTIONS REQUIRED FOLLOWING ASSESSMENT OF RISK:

Extreme risk	Immediate actions required
High risk	Senior Management (Senior Event Official) attention needed
Medium risk	Management (Organiser) responsibility must be specified
Low risk	Manage by current procedures / continue current process

Note: "Management" and "Official" are considered to be like terms

See reverse for descriptions of Likelihood and Consequence outcomes

IDENTIFIED RISKS:

Description of identified Risks	Likelihood (A-D)	Consequence (1-4)	Resultant Risk	Controls / Treatment performed What has been done about it ?	Who will Implement?	Who will Check?	Who confirmed actions were completed (sign)
Example: spectator could be hit by debris from car	*C*	*3*	*HIGH*	*Debris fence, move spectators further back, additional crowd control officials*	*Organiser Marshals*	*Race Sec*	
1.							
2.							
3.							
4.							

LIKELIHOOD/CONSEQUENCE DESCRIPTIONS:

Likelihood		Consequence	Personal Injury	Administrative
A - Almost certain	Action will probably occur numerous times or in many circumstances	4 – Major Consequence	Death, permanent or extensive injury requiring hospitalisation to one or more people.	Significant hardship to Organisation
B - Likely	Action may occur occasionally or in some circumstances	3 – Moderate Consequence	Serious injury requiring hospitalisation; broken limbs or stand down for duration of event	Significant rejigging of organisational plans required
C - Possible	Action may occur in exceptional circumstances and has been known to occur elsewhere	2 – Minor Consequence	Medical attention on-site or ongoing attention to injury may be required	Minor rearrangement of plans required to address the situation
D - Unlikely	Whist theoretically possible is not known to have occurred	1 – Insignificant Consequence	Minor first aid, if at all. No ongoing medical attention	Localised assessment of affected issue to be considered

POINTS TO REMEMBER:

What can cause injury or death?
▪ slips/trips ▪ Collapse of structures ▪ Dangerous or flammable Materials ▪ Electrical cables ▪ Heavy equipment ▪ Public access / egress / behaviour ▪ Weather (e.g. Rain / Hail / Wind / Thunderstorms) ▪ Projectiles

Four Risk Treatments
▪ Avoid: Don't do the activity ▪ Treat: Reduce by use of controls ▪ Accept: If low or if consequences can be tolerated. ▪ Transfer: (Caution – not possible to transfer duty of care.)

Levels of Control Methods
▪ Avoid ← Try to start here ▪ Substitute ▪ Isolate ▪ Reduce by physical controls ▪ Reduce by admin warning and rules ▪ Use Personal Protection Equipment ← Last resort

WHO DID YOU TALK TO IN ASSESSING AND IDENTIFYING THIS RISK?

Date	Name	Position	Signature

Completed by:_____ Signed:_____ Date:_____

Appendix 7

Access options AMP

Albany Motorsport Park Access Options

Option No.	Location/direction	Comments	Bushfire risks and features	Outcome/feasibility
Option 1	North to Redmond Road then east to Albany Highway PL 05775 PL 5774 PL5778	Originally desired by DFES and destination is Redmond VBFB Fire shed.	• Moderate BHL through the paddocks some small isolated patches of remnant vegetation extreme BHL. • Redmond VBFB Fire shed not a safe destination, shed is not attended. • Shed surrounded by Extreme BHL risks and no parking or facilities. • Redmond Road is narrow carriageway with Extreme BHL along the length (both sides Forest Type A). • 3.55km to construct to link Redmond Road to Down Road.	Land owner not willing to entertain idea of access on their land. Refer to letter from XXX. (? JVM) Not feasible.
Option 2	West from Down Road west to Marbelup Road P054723 RRnth-A Railway RRsth-PL02358 PL4117 PL4118	Undeveloped road reserve	• High slopes in excess of 15° west of down road prior to crossing railway line. • Railway to cross, not easily approved and costly to construct. • Low lying native vegetation (wetland) west of railway line. • Extensive native vegetation clearing in road reserve required to link public roads. • Extreme BHL with Extreme slopes to pass through. • 2.28km to construct from Down Road to Marbelup Rd.	Not deemed feasible due to large environmental constraints to overcome. Extreme Bushfire risks to overcome.
Option 3	South then linking east to Gun Road. D04385 PL00749 D0438451 D084694 Down Rd E NR 20948 PL01248 815	Formed CoA road then Class A Nature Reserve Down Road Nature Reserve 20948	• Extreme BHL to pass through in NR Reserve area. • Clearing native vegetation would be required in Class A Nature Reserve • Wetland/low lying areas to negotiate • Western powerline alignment? • 4.64 km to construct from Down Road South to Gunn Road	Not deemed feasible due to extensive environmental constraints in Class A nature Reserve to overcome. Extreme Bushfire risks to overcome.
Option 4	South along Down Road then east to Albany Highway PL 2026 D043845 PL04638 D084694	Formed CoA road then Private property and Water Corp land.	• Two areas of remnant vegetation at west end of PP on north of alignment (6m firebreak present) are extreme BHL • Paddock areas along majority of central area of route Mod BHL. • BG Plantations recently harvested on east end. • BG Plantation present Extreme BHL, however a 25m corridor can be achieved from plantations. • Sightlines at entry/exit point are good. • Eastern passing lane terminating. Traffic control would be required. • 4.07 km from Down Road South to Albany Hwy. • 1.8km Constructed all weather in W/C land. 2.27 Km to construct.	Water corporation and MRWA supports this arrangement in principle. See attached correspondence. Private Property owner in principle support. Most likely feasible option. 12m Easement in Gross refer to attached email from Jan Van Der Mescht.

This BAL Plan was prepared by:
Kathryn Kinnear, Bio Diverse Solutions
Accreditation No: BPAD30794
Jurisdiction: Level 2 - WA

BPAD Bushfire Planning & Design Accredited Practitioner Level 2

BIO DIVERSE SOLUTIONS

28 Hercules Crescent
Albany, WA 6330
Australia
Tel: 08 9842 1575
Fax: 08 9842 1575

Overview Map Scale 1:100,000

Legend

- Subject Site
- Cadastre

Access Options

- Option 1
- Option 2
- Option 3
- Option 4

Scale
1:15,000@ A1
GDA MGA 94 Zone 50

Data Sources
Aerial Imagery: SLIP Virtual Mosaic WMS Service, Landgate 2017
Cadastre, Relief Contours and Roads: Landgate 2017
IRIS Road Network: Main Roads Western Australia 2017
Overview Map: World Topographic map service, ESRI 2012

CLIENT
City of Albany
Lot 5780 Down Road
Drome, WA 6330

Access Options

BAL Assessor	*QA Check*	*Drawn by*
KK	KK	BT
STATUS	*FILE*	*DATE*
FINAL	COA0020	21/02/2019

0 500 1,000 1,500 2,000 Meters

Hi Kath,

I can confirm that the secondary access for the AMP will be in the form of a 12m easement in Gross to Albany Highway from Down South Road as per Option 4 of the attached mapping.

We will now commence work on getting an "in principle agreement" from Lyndsay Black, Water Corporation and MRWA in place.

Regards

Jan Van Der Mescht / Manager Planning and Land Information Services

janv@albany.wa.gov.au
(08) 6820 3047
(08) 9841 4099
PO BOX 484, Albany, WA, 6331
102 North Road,Yakamia
www.albany.wa.gov.au

From: Kathryn Kinnear <kath@biodiversesolutions.com.au>
Sent: Monday, 11 March 2019 11:10 AM
To: Jan Van Der Mescht <janv@albany.wa.gov.au>
Cc: Theo Newhouse <theo.newhouse@bigpond.com>; Michael Cole <michael.cole@albany.wa.gov.au>
Subject: AMP Secondary Access easement
Importance: High

Hi Jan
Can you please confirm via return written advice that the secondary access for the AMP will be in the form of a 12m easement to Albany Highway from Down South Road as per Option 4 of the attached mapping? AMP have indicated this emergency access will only operate with traffic control during events.

As per our stakeholder pre-application meeting with DFES and DPLH the other day, if you can provide some "in principle agreement" from Lyndsay Black, Water Corporation and MRWA that will greatly assist in the approvals process of the BMP report for AMP.

Kind regards,

Kathryn Kinnear
Director/Bushfire & Env Consultant
29 Hercules Cres

MODIFICATIONS ATTACHMENT B

Department of **Planning, Lands and Heritage**

GOVERNMENT OF WESTERN AUSTRALIA

Lot 5780 Down Road South - Proposed Regional Motorsports Facility

Emergency access - excise as road reserve from Lot 1

Emergency access - secure as easement from Lot 10

Highway Fire Brigade

Lot 1 Down Road South - Lindsay and Joy Black

Lot 10 Albany Highway - Water Corporation

5772
5
16
500
15
14
6
12
5880
6026
100
8075
R 1948
4919
1
1
10
R 20948
7388
R 20948
R 20948
2
749
815
4822

Legend

- Cadastre (View 1)
- MRWA Road Hierarchy
  - Primary Distributor
  - Access Road

InQuiry Map

DPLH BUSINESS USE ONLY

Internal Spatial Viewer

N

0 0.39 0.78 Kilometres

1: 18,056

at A3

Projection: WGS_1984_Web_Mercator_Auxiliary_Sphere

Notes:

* The data that appears on the map may be out of date, not intended to be used at the scale displayed, or subject to license agreements. The map should only be used in matters related to Department of Planning, Lands and Heritage business.

* This map is not intended to be used for measurement purposes.

Map was produced using DPLH's InQuiry.

Date produced: 12-May-2021

Appendix 8

ELA Bushfire Emergency Evacuation Plan

1. Location details

Facility type:

- Motorsport Park in land zoned as "Priority Agriculture" area

Location:

- Lot 5780 Down Road, Drome, Western Australia

Infrastructure:

- A motorsport Park including a motorcycle track and raceway track plus associated buildings.

Occupation (number of people):

- Maximum occupants:
  - 200-500 people (club event)
  - 10,000 people (full event)

Access:

- Four different internal driveways accessing four separate points along Down Road West and Down Road South; and
- An Emergency Access Way is to be constructed to enable access/ egress to Albany Hwy. The EAW is to the south of Down Road South.

Fire Weather Forecast Area:

- South West Land Division Fire District
- Stirling Coast Region

2. Communications

Mobile:

- Mobile reception is available – however, mobile communications can become unreliable during bushfire/emergency events due to the volume of usage

Landline / NBN:

- Landline: to be confirmed
- Satellite phone: to be confirmed

Radio:

- ABC: 630 AM

Internet Sites:

- Preparing your Property – DFES Link
- Emergency WA – www.emergency.wa.gov.au
- DFES on Facebook - www.facebook.com/dfeswa
- DFES on Twitter - www.twitter.com/dfes_wa
- National Bushfires app - www.bushfireblankets.com/bushfire-app.html

3. Contacts

Fire reporting	000	
Warden	to be confirmed	to be confirmed
DFES (Emergency Information)	13 33 37	
SES (Emergency Assistance)	132 500	
SES (Local)	9841 2400	
WA Police	000	
Police Station (Local – Albany)	9892 9300	
WA Ambulance	000	
Ambulance (Local)	9841 4212	
Albany Hospital	9892 2222	
Bureau of Meteorology (BoM) Recorded Information	1300 659 213	

4. Evacuation preparedness

- All staff must be briefed during the Bushfire Danger Period (November-April) on the bushfire evacuation procedures with updated advice provided when the fire danger exceeds Very High or a fire warning is issued by Emergency Services (currently DFES) for the locality.
- This Evacuation Plan is to be displayed in all buildings around the Motorsport Park.

BUSHFIRE PREPAREDNESS MATRIX

ACTION	LOW/ MOD	HIGH	VERY HIGH	SEVERE	EXTREME	CATASTROPHIC
Warden to perform daily check (after 4pm) on the DFES and BoM websites to determine the Fire Danger Rating (FDR) for the following day and weekly prediction. Update staff and parents if there is a likelihood of the site being closed to due to Catastrophic Fire Danger Rating.						
Warden to monitor Emergency WA / or DFES website or ABC Radio or 'National Bushfires' app for fire incidents		Min. 1pm	Min. 1pm, 3pm	Min. 9am, 11am, 1pm, 3pm (or more frequently if fire event in locality)	Facility to be closed	Facility to be closed
Complete building preparedness checks			By 10am	By 8am		

5. Evacuation triggers

A decision to evacuate off-site is to be determined by:

- Instructions from Police, DFES, other Emergency Services, the Warden or the manager of the Motorsport Park.
- the Bushfire Evacuation Matrix (overleaf) or public bushfire warnings in conjunction with confirmation from DFES / Emergency Services.

Minimum time for evacuation is to be confirmed. To travel from the Motorsport Park to Albany, will take approximately 25 minutes.

SEE EVACUATION DECISION MATRIX (OVERLEAF)

6. Evacuation Procedures

Every bushfire attack is different. The response to each must therefore be specific and be in response to bushfire warnings

Bushfire Warning Notification

- Emergency WA website, SMS or the 'National Bushfires' App (for smartphones) will provide initial notification of a fire and evacuation instructions.
- DFES, Police (or other incident personnel) may also attempt to notify the Motorsport Park.
- The Motorsport Park is also responsible to ensure any visitors are aware of a fire warning has been issued

Off-site refuge

- Off-site evacuation is always safer, provided adequate time is available to complete it safely. Confirm with Lead Agency (DFES or other Emergency Service) prior to evacuating and follow all directions.
- Off-site evacuation is to occur by buses to the nominated off-site refuge at to be confirmed.
- Evacuation well in advance of a fire's predicted arrival time is safer than remaining on-site.

On-site safer Location

- Evacuating to the nominated Safer Location may be required where it is not possible to evacuate to the off-site refuge.
- The on-site safer location are the club rooms adjacent to the motorbike track or to the open space adjacent to the main race track.
- A building (site location to be determined later) ensuring that the building is subject to a radiant heat flux of <10 kW/m^2, is accessible by emergency service vehicles and has an approximate floor space of 375 m^2 for 500 people (assuming a minimum of 0.75m^2 per person).
- The open space on-site safer location is within an area that is subject to a radiant heat flux of <2 kW/m^2. This area is 10,634 m^2 which is sufficient to accommodate up to 10,000 people (maximum amount of people for a full event, assuming a minimum of 1m^2 per person).

7. Staff welfare during shelter in offsite refuge and on-site safer location

- The Facility Manager/Warden and Accredited First Aid Officers nominated will be in charge of spectator/ users welfare. Serious medical needs will require emergency response via 000.

8. Building Preparedness Checks

- Include such tasks as ensuring reduced fuel loads around buildings, routine maintenance is up to date including cleaning of gutters, fire breaks are in place, and static water supply is available.
- Checklists on tasks for completion before the fire season is provided within the schools College Bushfire Plan
- Detailed information and checklists are available on the DFES website including the '*The Homeowner's Bushfire Survival Manual*' and the '*Prepare Act Survive Booklet*' published by DFES:
  https://www.dfes.wa.gov.au/safetyinformation/fire/bushfire/BushfireManualsandGuides/DFES_Bushfire-Homeowners_Survival_Manual.pdf

  https://www.dfes.wa.gov.au/safetyinformation/fire/bushfire/BushfireManualsandGuides/DFES-Fire-Chat-Bushfire-Preparedness-Toolkit.pdf

9. Notes on Fire Danger Rating and Total Fire Ban Declaration

- The Fire Danger Rating (FDR) gives an indication of the potential consequences of a fire, if a fire was to start.
- The rating is based on predicted conditions such as the forecast temperature, humidity, wind and dryness of the landscape.
- The higher the fire danger rating, the more dangerous the conditions.
- During the Bushfire Danger Period (1st November – 30th April) the forecast FDR for the following day is typically released around 4pm but can be changed as weather conditions unfold.
- Both predicted and current FDR are available from the DFES and BoM websites.

A 'Total Fire Ban' (known as TFB) is a separate declaration (i.e. a particular day or part thereof may have both 'Severe' FDR and a TFB.

10. What to do if caught in a bushfire

The following provide current guidelines* on what to do if caught in a bushfire in a building or on foot. Each requires a different response involving critical decisions for your survival.

What to do if caught in a bushfire IN A BUILDING

Outside your building

- Ensure you drink plenty of water so you do not dehydrate
- Block your downpipes, (a sock full of sand/soil will help) and fill your gutters with water
- Move flammable items such as outdoor furniture, doormats,
- Gas cylinders should have the valve facing away from the building
- Do not stand on the roof with a hose. In bush fires, often more people are injured by falling from roofs than suffering burns
- Patrol the outside of the building, putting out any embers and spot fires that may start. An ember or spark can reach your home hours before the fire front arrives
- Just before the fire arrives, wet down timber decks and gardens close to the building
- Move any firefighting equipment to a place where it will not get burnt.

Inside your building

- Continue to drink water so you do not dehydrate
- Close doors, windows, vents, blinds and curtains to prevent flames, smoke and embers from entering
- Put tape across the inside of the windows so they stay in place if they break
- Shut off gas at the meter or bottle
- Move furniture away from the windows to prevent any embers that enter the building from igniting
- Fill sinks, bath and buckets with water for putting out any fires that may start inside
- Place wet towels around window and door edges to stop smoke and embers from entering
- Put a ladder next to the access hole to the roof space so you can check for spot fires.

During the fire

- When the fire arrives, go inside to protect you from the radiant heat
- Ensure you have torches ready as it is likely to become completely dark and you will not be able to see
- Patrol the inside of the building, including the roof space for sparks and embers
- Remember – if your life is at risk, call Triple Zero (000) immediately.

After the fire

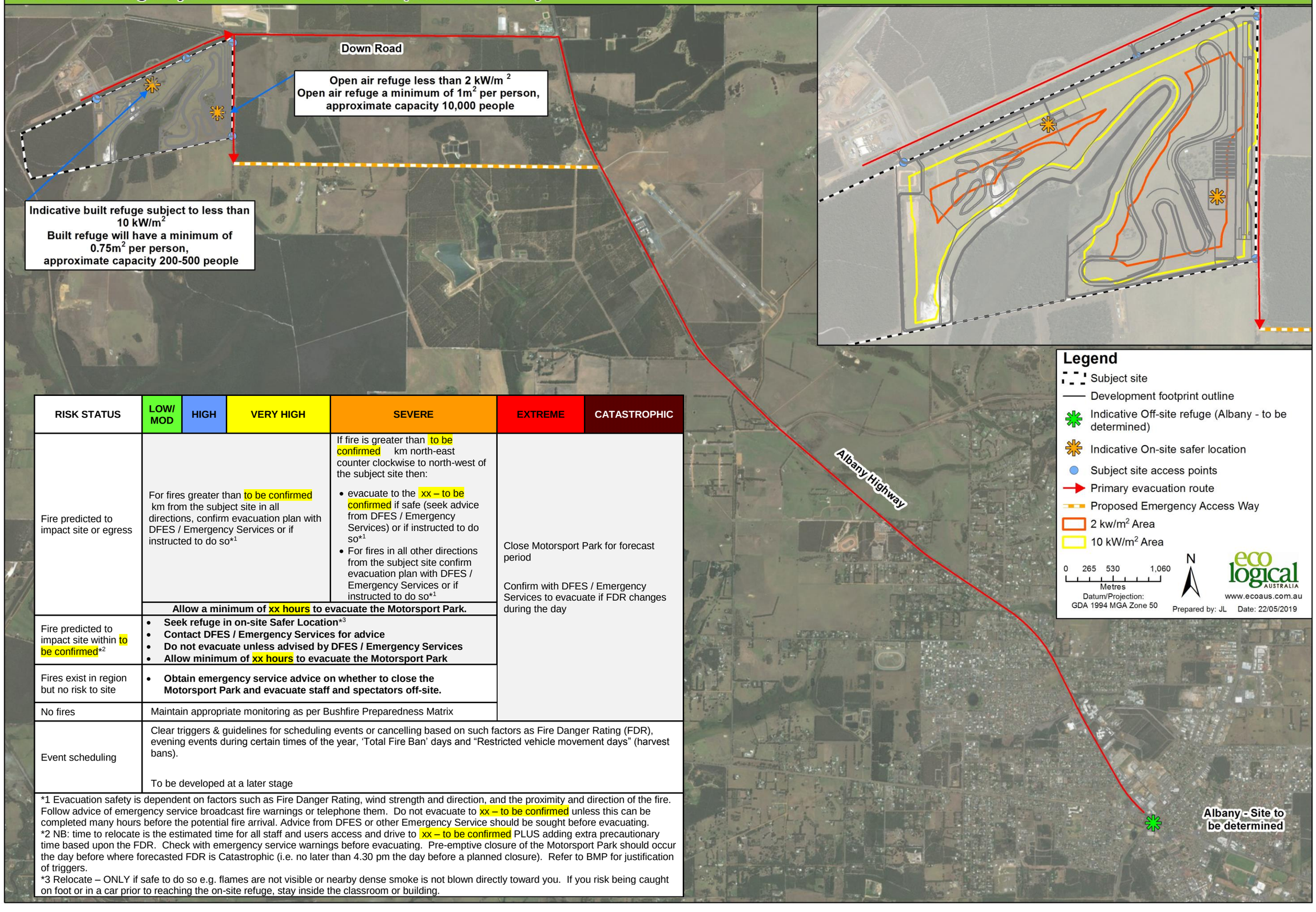
- Once the fire has passed, you may need to patrol the property for hours. Go outside and put out any part of the building which is alight.
- An ember or spark from a fire can impact on a house many hours after the main fire front has passed and small spot fires can quickly get out of control.

What to do if caught in a bushfire ON FOOT/ IN VEHICLE

- Try to move on to bare or burnt ground at least 100 m from where fire is likely to burn, if this is not feasible find the largest bare or burnt ground possible
- Do not run uphill or away from the fire unless you know a safe refuge is able to be reached before the fire arrives. Try and position yourself downhill of the on-coming fire.
- Move across the slope out of the path of the fire front and work your way downslope towards the back of the fire or onto burnt ground.
- Do not attempt to run through flames unless you can see clearly behind them. This generally means that the flames are less than 1 metre high and less than 1 to 2 metres deep at the back or on the flanks of the fire.
- Lulls in the fire often result in the flames in these parts being low enough to step or run through to the burnt ground beyond.
- When conditions become severe use every possible means to protect yourself from radiation. On bare ground cover yourself, use wheel ruts, depressions, large rocks or logs to give protection.
- Take refuge in ponds, running streams or culverts, but behind solid objects such a rock
- Remain calm and do not run blindly from the fire. If you become exhausted you are much more prone to heat stroke and you may easily overlook a safe refuge. Consider an alternative course of action.

* adapted from NSW RFS bushfire training modules.

Bushfire Emergency Evacuation Plan - Motorsport Park Albany



RISK STATUS	LOW/ MOD	HIGH	VERY HIGH	SEVERE	EXTREME	CATASTROPHIC
Fire predicted to impact site or egress	For fires greater than to be confirmed km from the subject site in all directions, confirm evacuation plan with DFES / Emergency Services or if instructed to do so*1			If fire is greater than to be confirmed km north-east counter clockwise to north-west of the subject site then: • evacuate to the xx – to be confirmed if safe (seek advice from DFES / Emergency Services) or if instructed to do so*1 • For fires in all other directions from the subject site confirm evacuation plan with DFES / Emergency Services or if instructed to do so*1	Close Motorsport Park for forecast period Confirm with DFES / Emergency Services to evacuate if FDR changes during the day
	Allow a minimum of xx hours to evacuate the Motorsport Park.					
Fire predicted to impact site within to be confirmed*2	• **Seek refuge in on-site Safer Location***3 • **Contact DFES / Emergency Services for advice** • **Do not evacuate unless advised by DFES / Emergency Services** • **Allow minimum of xx hours to evacuate the Motorsport Park**					
Fires exist in region but no risk to site	• **Obtain emergency service advice on whether to close the Motorsport Park and evacuate staff and spectators off-site.**					
No fires	Maintain appropriate monitoring as per Bushfire Preparedness Matrix					
Event scheduling	Clear triggers & guidelines for scheduling events or cancelling based on such factors as Fire Danger Rating (FDR), evening events during certain times of the year, 'Total Fire Ban' days and "Restricted vehicle movement days" (harvest bans). To be developed at a later stage					

*1 Evacuation safety is dependent on factors such as Fire Danger Rating, wind strength and direction, and the proximity and direction of the fire. Follow advice of emergency service broadcast fire warnings or telephone them. Do not evacuate to xx – to be confirmed unless this can be completed many hours before the potential fire arrival. Advice from DFES or other Emergency Service should be sought before evacuating.
*2 NB: time to relocate is the estimated time for all staff and users access and drive to xx – to be confirmed PLUS adding extra precautionary time based upon the FDR. Check with emergency service warnings before evacuating. Pre-emptive closure of the Motorsport Park should occur the day before where forecasted FDR is Catastrophic (i.e. no later than 4.30 pm the day before a planned closure). Refer to BMP for justification of triggers.
*3 Relocate – ONLY if safe to do so e.g. flames are not visible or nearby dense smoke is not blown directly toward you. If you risk being caught on foot or in a car prior to reaching the on-site refuge, stay inside the classroom or building.

Appendix 9

ELA Method 2 BAL Assessment

NBC Bushfire Attack Assessment Report V2.1

AS3959 (2009) Appendix B - Detailed Method 2

Printed: 11/04/2019 **Assessment Date:** 27/02/2019

BPAD Bushfire Planning & Design Accredited Practitioner Level 3

Site Street Address: Albany Motorsport Complex, Albany

Assessor: Bruce Horkings; Ecological Australia

Local Government Area: WA **Alpine Area:** No

Equations Used

Transmissivity: Fuss and Hammins, 2002
Flame Length: RFS PBP, 2001
Rate of Fire Spread: Noble et al., 1980
Radiant Heat: Drysdale, 1985; Sullivan et al., 2003; Tan et al., 2005
Peak Elevation of Receiver: Tan et al., 2005
Peak Flame Angle: Tan et al., 2005

Run Description: Plot 10 - 10 kW/m2

Vegetation Information

Vegetation Type:	Woodland	**Vegetation Group:**	Forest and Woodland
Vegetation Slope:	5 Degrees	**Vegetation Slope Type:**	Downslope
Surface Fuel Load(t/ha):	15	**Overall Fuel Load(t/ha):**	25

Site Information

Site Slope:	0 Degrees	**Site Slope Type:**	Level
Elevation of Receiver(m):	Default	**APZ/Separation(m):**	56

Fire Inputs

Veg./Flame Width(m):	100	**Flame Temp(K)**	1200

Calculation Parameters

Flame Emissivity:	95	**Relative Humidity(%):**	25
Heat of Combustion(kJ/kg)	18600	**Ambient Temp(K):**	308
Moisture Factor:	5	**FDI:**	80

Program Outputs

Category of Attack:	LOW	**Peak Elevation of Receiver(m):**	7.93
Level of Construction:	BAL 12.5	**Fire Intensity(kW/m):**	26263
Radiant Heat(kW/m2):	9.85	**Flame Angle (degrees):**	78
Flame Length(m):	16.22	**Maximum View Factor:**	0.114
Rate Of Spread (km/h):	2.03	**Inner Protection Area(m):**	56
Transmissivity:	0.773	**Outer Protection Area(m):**	0

Run Description:	Plot 10 - 2 kW/m2		
Vegetation Information			
Vegetation Type:	Woodland	**Vegetation Group:**	Forest and Woodland
Vegetation Slope:	5 Degrees	**Vegetation Slope Type:**	Downslope
Surface Fuel Load(t/ha):	15	**Overall Fuel Load(t/ha):**	25
Site Information			
Site Slope:	0 Degrees	**Site Slope Type:**	Level
Elevation of Receiver(m):	Default	**APZ/Separation(m):**	138
Fire Inputs			
Veg./Flame Width(m):	100	**Flame Temp(K)**	1200
Calculation Parameters			
Flame Emissivity:	95	**Relative Humidity(%):**	25
Heat of Combustion(kJ/kg)	18600	**Ambient Temp(K):**	308
Moisture Factor:	5	**FDI:**	80
Program Outputs			
Category of Attack:	VERY LOW	**Peak Elevation of Receiver(m):**	8.06
Level of Construction:	BAL LOW	**Fire Intensity(kW/m):**	26263
Radiant Heat(kW/m2):	1.99	**Flame Angle (degrees):**	84
Flame Length(m):	16.22	**Maximum View Factor:**	0.025
Rate Of Spread (km/h):	2.03	**Inner Protection Area(m):**	138
Transmissivity:	0.711	**Outer Protection Area(m):**	0

Run Description:	Plot 11 - 10 kW/m2		
Vegetation Information			
Vegetation Type:	Woodland	**Vegetation Group:**	Forest and Woodland
Vegetation Slope:	10 Degrees	**Vegetation Slope Type:**	Downslope
Surface Fuel Load(t/ha):	15	**Overall Fuel Load(t/ha):**	25
Site Information			
Site Slope:	0 Degrees	**Site Slope Type:**	Level
Elevation of Receiver(m):	Default	**APZ/Separation(m):**	67
Fire Inputs			
Veg./Flame Width(m):	100	**Flame Temp(K)**	1200
Calculation Parameters			
Flame Emissivity:	95	**Relative Humidity(%):**	25
Heat of Combustion(kJ/kg)	18600	**Ambient Temp(K):**	308
Moisture Factor:	5	**FDI:**	80
Program Outputs			
Category of Attack:	LOW	**Peak Elevation of Receiver(m):**	10.51
Level of Construction:	BAL 12.5	**Fire Intensity(kW/m):**	37083
Radiant Heat(kW/m2):	9.96	**Flame Angle (degrees):**	76
Flame Length(m):	21.66	**Maximum View Factor:**	0.117
Rate Of Spread (km/h):	2.87	**Inner Protection Area(m):**	67
Transmissivity:	0.761	**Outer Protection Area(m):**	0

Run Description:	Plot 11 - 2 kW/m2		
Vegetation Information			
Vegetation Type:	Woodland	**Vegetation Group:**	Forest and Woodland
Vegetation Slope:	10 Degrees	**Vegetation Slope Type:**	Downslope
Surface Fuel Load(t/ha):	15	**Overall Fuel Load(t/ha):**	25
Site Information			
Site Slope:	0 Degrees	**Site Slope Type:**	Level
Elevation of Receiver(m):	Default	**APZ/Separation(m):**	160
Fire Inputs			
Veg./Flame Width(m):	100	**Flame Temp(K)**	1200
Calculation Parameters			
Flame Emissivity:	95	**Relative Humidity(%):**	25
Heat of Combustion(kJ/kg)	18600	**Ambient Temp(K):**	308
Moisture Factor:	5	**FDI:**	80
Program Outputs			
Category of Attack:	VERY LOW	**Peak Elevation of Receiver(m):**	10.75
Level of Construction:	BAL LOW	**Fire Intensity(kW/m):**	37083
Radiant Heat(kW/m2):	1.98	**Flame Angle (degrees):**	83
Flame Length(m):	21.66	**Maximum View Factor:**	0.025
Rate Of Spread (km/h):	2.87	**Inner Protection Area(m):**	160
Transmissivity:	0.697	**Outer Protection Area(m):**	0

Run Description:	Plot 12 - 10 kW/m2		
Vegetation Information			
Vegetation Type:	Shrubland/Short Heath	**Vegetation Group:**	Shrub & Heath
Vegetation Slope:	5 Degrees	**Vegetation Slope Type:**	Downslope
Surface Fuel Load(t/ha):	15	**Overall Fuel Load(t/ha):**	15
Site Information			
Site Slope:	0 Degrees	**Site Slope Type:**	Level
Elevation of Receiver(m):	Default	**APZ/Separation(m):**	37
Fire Inputs			
Veg./Flame Width(m):	100	**Flame Temp(K)**	1200
Calculation Parameters			
Flame Emissivity:	95	**Relative Humidity(%):**	25
Heat of Combustion(kJ/kg)	18600	**Ambient Temp(K):**	308
Moisture Factor:	5	**FDI:**	80
Program Outputs			
Category of Attack:	LOW	**Peak Elevation of Receiver(m):**	4.48
Level of Construction:	BAL 12.5	**Fire Intensity(kW/m):**	31357
Radiant Heat(kW/m2):	9.89	**Flame Angle (degrees):**	81
Flame Length(m):	9.07	**Maximum View Factor:**	0.111
Rate Of Spread (km/h):	4.05	**Inner Protection Area(m):**	37
Transmissivity:	0.801	**Outer Protection Area(m):**	0

Run Description:	Plot 12 - 2 kW/m2		
Vegetation Information			
Vegetation Type:	Shrubland/Short Heath	**Vegetation Group:**	Shrub & Heath
Vegetation Slope:	5 Degrees	**Vegetation Slope Type:**	Downslope
Surface Fuel Load(t/ha):	15	**Overall Fuel Load(t/ha):**	15
Site Information			
Site Slope:	0 Degrees	**Site Slope Type:**	Level
Elevation of Receiver(m):	Default	**APZ/Separation(m):**	102
Fire Inputs			
Veg./Flame Width(m):	100	**Flame Temp(K)**	1200
Calculation Parameters			
Flame Emissivity:	95	**Relative Humidity(%):**	25
Heat of Combustion(kJ/kg)	18600	**Ambient Temp(K):**	308
Moisture Factor:	5	**FDI:**	80
Program Outputs			
Category of Attack:	VERY LOW	**Peak Elevation of Receiver(m):**	4.52
Level of Construction:	BAL LOW	**Fire Intensity(kW/m):**	31357
Radiant Heat(kW/m2):	1.98	**Flame Angle (degrees):**	86
Flame Length(m):	9.07	**Maximum View Factor:**	0.024
Rate Of Spread (km/h):	4.05	**Inner Protection Area(m):**	102
Transmissivity:	0.733	**Outer Protection Area(m):**	0

Run Description:	Plot 13 - 10 kW/m2		
Vegetation Information			
Vegetation Type:	Scrub/Tall Heath	**Vegetation Group:**	Shrub & Heath
Vegetation Slope:	5 Degrees	**Vegetation Slope Type:**	Downslope
Surface Fuel Load(t/ha):	25	**Overall Fuel Load(t/ha):**	25
Site Information			
Site Slope:	0 Degrees	**Site Slope Type:**	Level
Elevation of Receiver(m):	Default	**APZ/Separation(m):**	50
Fire Inputs			
Veg./Flame Width(m):	100	**Flame Temp(K)**	1200
Calculation Parameters			
Flame Emissivity:	95	**Relative Humidity(%):**	25
Heat of Combustion(kJ/kg)	18600	**Ambient Temp(K):**	308
Moisture Factor:	5	**FDI:**	80
Program Outputs			
Category of Attack:	LOW	**Peak Elevation of Receiver(m):**	6.69
Level of Construction:	BAL 12.5	**Fire Intensity(kW/m):**	75988
Radiant Heat(kW/m2):	9.79	**Flame Angle (degrees):**	79
Flame Length(m):	13.63	**Maximum View Factor:**	0.112
Rate Of Spread (km/h):	5.88	**Inner Protection Area(m):**	50
Transmissivity:	0.78	**Outer Protection Area(m):**	0

Run Description:	Plot 13 - 10 kW/m2		
Vegetation Information			
Vegetation Type:	Scrub/Tall Heath	**Vegetation Group:**	Shrub & Heath
Vegetation Slope:	5 Degrees	**Vegetation Slope Type:**	Downslope
Surface Fuel Load(t/ha):	25	**Overall Fuel Load(t/ha):**	25
Site Information			
Site Slope:	0 Degrees	**Site Slope Type:**	Level
Elevation of Receiver(m):	Default	**APZ/Separation(m):**	126
Fire Inputs			
Veg./Flame Width(m):	100	**Flame Temp(K)**	1200
Calculation Parameters			
Flame Emissivity:	95	**Relative Humidity(%):**	25
Heat of Combustion(kJ/kg)	18600	**Ambient Temp(K):**	308
Moisture Factor:	5	**FDI:**	80
Program Outputs			
Category of Attack:	VERY LOW	**Peak Elevation of Receiver(m):**	6.78
Level of Construction:	BAL LOW	**Fire Intensity(kW/m):**	75988
Radiant Heat(kW/m2):	2	**Flame Angle (degrees):**	84
Flame Length(m):	13.63	**Maximum View Factor:**	0.025
Rate Of Spread (km/h):	5.88	**Inner Protection Area(m):**	126
Transmissivity:	0.718	**Outer Protection Area(m):**	0

Run Description:	Plot 14 - 10 kW/m2		
Vegetation Information			
Vegetation Type:	Scrub/Tall Heath	**Vegetation Group:**	Shrub & Heath
Vegetation Slope:	0 Degrees	**Vegetation Slope Type:**	Level
Surface Fuel Load(t/ha):	25	**Overall Fuel Load(t/ha):**	25
Site Information			
Site Slope:	0 Degrees	**Site Slope Type:**	Level
Elevation of Receiver(m):	Default	**APZ/Separation(m):**	45
Fire Inputs			
Veg./Flame Width(m):	100	**Flame Temp(K)**	1200
Calculation Parameters			
Flame Emissivity:	95	**Relative Humidity(%):**	25
Heat of Combustion(kJ/kg)	18600	**Ambient Temp(K):**	308
Moisture Factor:	5	**FDI:**	80
Program Outputs			
Category of Attack:	LOW	**Peak Elevation of Receiver(m):**	5.73
Level of Construction:	BAL 12.5	**Fire Intensity(kW/m):**	53816
Radiant Heat(kW/m2):	9.71	**Flame Angle (degrees):**	80
Flame Length(m):	11.63	**Maximum View Factor:**	0.11
Rate Of Spread (km/h):	4.17	**Inner Protection Area(m):**	45
Transmissivity:	0.787	**Outer Protection Area(m):**	0

Run Description:	Plot 14 - 2 kW/m2		
Vegetation Information			
Vegetation Type:	Scrub/Tall Heath	**Vegetation Group:**	Shrub & Heath
Vegetation Slope:	0 Degrees	**Vegetation Slope Type:**	Level
Surface Fuel Load(t/ha):	25	**Overall Fuel Load(t/ha):**	25
Site Information			
Site Slope:	0 Degrees	**Site Slope Type:**	Level
Elevation of Receiver(m):	Default	**APZ/Separation(m):**	116
Fire Inputs			
Veg./Flame Width(m):	100	**Flame Temp(K)**	1200
Calculation Parameters			
Flame Emissivity:	95	**Relative Humidity(%):**	25
Heat of Combustion(kJ/kg)	18600	**Ambient Temp(K):**	308
Moisture Factor:	5	**FDI:**	80
Program Outputs			
Category of Attack:	VERY LOW	**Peak Elevation of Receiver(m):**	5.79
Level of Construction:	BAL LOW	**Fire Intensity(kW/m):**	53816
Radiant Heat(kW/m2):	1.99	**Flame Angle (degrees):**	85
Flame Length(m):	11.63	**Maximum View Factor:**	0.025
Rate Of Spread (km/h):	4.17	**Inner Protection Area(m):**	116
Transmissivity:	0.724	**Outer Protection Area(m):**	0

Run Description:	Plot 3 - 10 kW/m2		
Vegetation Information			
Vegetation Type:	Forest	**Vegetation Group:**	Forest and Woodland
Vegetation Slope:	0 Degrees	**Vegetation Slope Type:**	Level
Surface Fuel Load(t/ha):	25	**Overall Fuel Load(t/ha):**	35
Site Information			
Site Slope:	0 Degrees	**Site Slope Type:**	Level
Elevation of Receiver(m):	Default	**APZ/Separation(m):**	64
Fire Inputs			
Veg./Flame Width(m):	100	**Flame Temp(K)**	1200
Calculation Parameters			
Flame Emissivity:	95	**Relative Humidity(%):**	25
Heat of Combustion(kJ/kg)	18600	**Ambient Temp(K):**	308
Moisture Factor:	5	**FDI:**	80
Program Outputs			
Category of Attack:	LOW	**Peak Elevation of Receiver(m):**	9.65
Level of Construction:	BAL 12.5	**Fire Intensity(kW/m):**	43400
Radiant Heat(kW/m2):	9.78	**Flame Angle (degrees):**	77
Flame Length(m):	19.8	**Maximum View Factor:**	0.115
Rate Of Spread (km/h):	2.4	**Inner Protection Area(m):**	47
Transmissivity:	0.764	**Outer Protection Area(m):**	17

Run Description:	Plot 3 - 2 kW/m2		
Vegetation Information			
Vegetation Type:	Forest	**Vegetation Group:**	Forest and Woodland
Vegetation Slope:	0 Degrees	**Vegetation Slope Type:**	Level
Surface Fuel Load(t/ha):	25	**Overall Fuel Load(t/ha):**	35
Site Information			
Site Slope:	0 Degrees	**Site Slope Type:**	Level
Elevation of Receiver(m):	Default	**APZ/Separation(m):**	153
Fire Inputs			
Veg./Flame Width(m):	100	**Flame Temp(K)**	1200
Calculation Parameters			
Flame Emissivity:	95	**Relative Humidity(%):**	25
Heat of Combustion(kJ/kg)	18600	**Ambient Temp(K):**	308
Moisture Factor:	5	**FDI:**	80
Program Outputs			
Category of Attack:	VERY LOW	**Peak Elevation of Receiver(m):**	9.83
Level of Construction:	BAL LOW	**Fire Intensity(kW/m):**	43400
Radiant Heat(kW/m2):	1.98	**Flame Angle (degrees):**	83
Flame Length(m):	19.8	**Maximum View Factor:**	0.025
Rate Of Spread (km/h):	2.4	**Inner Protection Area(m):**	120
Transmissivity:	0.702	**Outer Protection Area(m):**	33

Run Description:	Plot 4 - 10 kW/m2		
Vegetation Information			
Vegetation Type:	Forest	**Vegetation Group:**	Forest and Woodland
Vegetation Slope:	5 Degrees	**Vegetation Slope Type:**	Downslope
Surface Fuel Load(t/ha):	25	**Overall Fuel Load(t/ha):**	35
Site Information			
Site Slope:	0 Degrees	**Site Slope Type:**	Level
Elevation of Receiver(m):	Default	**APZ/Separation(m):**	76
Fire Inputs			
Veg./Flame Width(m):	100	**Flame Temp(K)**	1200
Calculation Parameters			
Flame Emissivity:	95	**Relative Humidity(%):**	25
Heat of Combustion(kJ/kg)	18600	**Ambient Temp(K):**	308
Moisture Factor:	5	**FDI:**	80
Program Outputs			
Category of Attack:	LOW	**Peak Elevation of Receiver(m):**	12.61
Level of Construction:	BAL 12.5	**Fire Intensity(kW/m):**	61280
Radiant Heat(kW/m2):	9.83	**Flame Angle (degrees):**	74
Flame Length(m):	26.23	**Maximum View Factor:**	0.117
Rate Of Spread (km/h):	3.39	**Inner Protection Area(m):**	56
Transmissivity:	0.754	**Outer Protection Area(m):**	20

Run Description:	Plot 4 - 2 kW/m2		
Vegetation Information			
Vegetation Type:	Forest	**Vegetation Group:**	Forest and Woodland
Vegetation Slope:	5 Degrees	**Vegetation Slope Type:**	Downslope
Surface Fuel Load(t/ha):	25	**Overall Fuel Load(t/ha):**	35
Site Information			
Site Slope:	0 Degrees	**Site Slope Type:**	Level
Elevation of Receiver(m):	Default	**APZ/Separation(m):**	175
Fire Inputs			
Veg./Flame Width(m):	100	**Flame Temp(K)**	1200
Calculation Parameters			
Flame Emissivity:	95	**Relative Humidity(%):**	25
Heat of Combustion(kJ/kg)	18600	**Ambient Temp(K):**	308
Moisture Factor:	5	**FDI:**	80
Program Outputs			
Category of Attack:	VERY LOW	**Peak Elevation of Receiver(m):**	12.99
Level of Construction:	BAL LOW	**Fire Intensity(kW/m):**	61280
Radiant Heat(kW/m2):	2	**Flame Angle (degrees):**	82
Flame Length(m):	26.23	**Maximum View Factor:**	0.026
Rate Of Spread (km/h):	3.39	**Inner Protection Area(m):**	138
Transmissivity:	0.689	**Outer Protection Area(m):**	37

Run Description:	Plot 5 - 10 kW/m2		
Vegetation Information			
Vegetation Type:	Forest	**Vegetation Group:**	Forest and Woodland
Vegetation Slope:	15 Degrees	**Vegetation Slope Type:**	Downslope
Surface Fuel Load(t/ha):	25	**Overall Fuel Load(t/ha):**	35
Site Information			
Site Slope:	0 Degrees	**Site Slope Type:**	Level
Elevation of Receiver(m):	Default	**APZ/Separation(m):**	108
Fire Inputs			
Veg./Flame Width(m):	100	**Flame Temp(K)**	1200
Calculation Parameters			
Flame Emissivity:	95	**Relative Humidity(%):**	25
Heat of Combustion(kJ/kg)	18600	**Ambient Temp(K):**	308
Moisture Factor:	5	**FDI:**	80
Program Outputs			
Category of Attack:	VERY LOW	**Peak Elevation of Receiver(m):**	22.31
Level of Construction:	BAL LOW	**Fire Intensity(kW/m):**	122176
Radiant Heat(kW/m2):	9.93	**Flame Angle (degrees):**	68
Flame Length(m):	48.12	**Maximum View Factor:**	0.121
Rate Of Spread (km/h):	6.76	**Inner Protection Area(m):**	81
Transmissivity:	0.735	**Outer Protection Area(m):**	27

Run Description:	Plot 5 - 2 kW/m2		
Vegetation Information			
Vegetation Type:	Forest	**Vegetation Group:**	Forest and Woodland
Vegetation Slope:	15 Degrees	**Vegetation Slope Type:**	Downslope
Surface Fuel Load(t/ha):	25	**Overall Fuel Load(t/ha):**	35
Site Information			
Site Slope:	0 Degrees	**Site Slope Type:**	Level
Elevation of Receiver(m):	Default	**APZ/Separation(m):**	240
Fire Inputs			
Veg./Flame Width(m):	100	**Flame Temp(K)**	1200
Calculation Parameters			
Flame Emissivity:	95	**Relative Humidity(%):**	25
Heat of Combustion(kJ/kg)	18600	**Ambient Temp(K):**	308
Moisture Factor:	5	**FDI:**	80
Program Outputs			
Category of Attack:	VERY LOW	**Peak Elevation of Receiver(m):**	23.62
Level of Construction:	BAL LOW	**Fire Intensity(kW/m):**	122176
Radiant Heat(kW/m2):	1.99	**Flame Angle (degrees):**	79
Flame Length(m):	48.12	**Maximum View Factor:**	0.026
Rate Of Spread (km/h):	6.76	**Inner Protection Area(m):**	186
Transmissivity:	0.681	**Outer Protection Area(m):**	54

Run Description:	Plot 6 - 10 kW/m2		
Vegetation Information			
Vegetation Type:	Grassland	**Vegetation Group:**	Grassland
Vegetation Slope:	10 Degrees	**Vegetation Slope Type:**	Downslope
Surface Fuel Load(t/ha):	4.5	**Overall Fuel Load(t/ha):**	4.5
Site Information			
Site Slope:	0 Degrees	**Site Slope Type:**	Level
Elevation of Receiver(m):	Default	**APZ/Separation(m):**	39
Fire Inputs			
Veg./Flame Width(m):	100	**Flame Temp(K)**	1200
Calculation Parameters			
Flame Emissivity:	95	**Relative Humidity(%):**	25
Heat of Combustion(kJ/kg)	18600	**Ambient Temp(K):**	308
Moisture Factor:	5	**FDI:**	110
Program Outputs			
Category of Attack:	LOW	**Peak Elevation of Receiver(m):**	4.79
Level of Construction:	BAL 12.5	**Fire Intensity(kW/m):**	66286
Radiant Heat(kW/m2):	9.86	**Flame Angle (degrees):**	81
Flame Length(m):	9.7	**Maximum View Factor:**	0.111
Rate Of Spread (km/h):	28.51	**Inner Protection Area(m):**	39
Transmissivity:	0.797	**Outer Protection Area(m):**	0

Run Description:	Plot 6 - 2 kW/m2		
Vegetation Information			
Vegetation Type:	Grassland	**Vegetation Group:**	Grassland
Vegetation Slope:	10 Degrees	**Vegetation Slope Type:**	Downslope
Surface Fuel Load(t/ha):	4.5	**Overall Fuel Load(t/ha):**	4.5
Site Information			
Site Slope:	0 Degrees	**Site Slope Type:**	Level
Elevation of Receiver(m):	Default	**APZ/Separation(m):**	105
Fire Inputs			
Veg./Flame Width(m):	100	**Flame Temp(K)**	1200
Calculation Parameters			
Flame Emissivity:	95	**Relative Humidity(%):**	25
Heat of Combustion(kJ/kg)	18600	**Ambient Temp(K):**	308
Moisture Factor:	5	**FDI:**	110
Program Outputs			
Category of Attack:	VERY LOW	**Peak Elevation of Receiver(m):**	4.83
Level of Construction:	BAL LOW	**Fire Intensity(kW/m):**	66286
Radiant Heat(kW/m2):	2	**Flame Angle (degrees):**	85
Flame Length(m):	9.7	**Maximum View Factor:**	0.025
Rate Of Spread (km/h):	28.51	**Inner Protection Area(m):**	105
Transmissivity:	0.731	**Outer Protection Area(m):**	0

Run Description:	Plot 7 - 10 kW/m2		
Vegetation Information			
Vegetation Type:	Grassland	**Vegetation Group:**	Grassland
Vegetation Slope:	5 Degrees	**Vegetation Slope Type:**	Downslope
Surface Fuel Load(t/ha):	4.5	**Overall Fuel Load(t/ha):**	4.5
Site Information			
Site Slope:	0 Degrees	**Site Slope Type:**	Level
Elevation of Receiver(m):	Default	**APZ/Separation(m):**	34
Fire Inputs			
Veg./Flame Width(m):	100	**Flame Temp(K)**	1200
Calculation Parameters			
Flame Emissivity:	95	**Relative Humidity(%):**	25
Heat of Combustion(kJ/kg)	18600	**Ambient Temp(K):**	308
Moisture Factor:	5	**FDI:**	110
Program Outputs			
Category of Attack:	LOW	**Peak Elevation of Receiver(m):**	4.04
Level of Construction:	BAL 12.5	**Fire Intensity(kW/m):**	46945
Radiant Heat(kW/m2):	9.94	**Flame Angle (degrees):**	82
Flame Length(m):	8.17	**Maximum View Factor:**	0.11
Rate Of Spread (km/h):	20.19	**Inner Protection Area(m):**	34
Transmissivity:	0.806	**Outer Protection Area(m):**	0

Run Description:	Plot 7 - 2 kW/m2		
Vegetation Information			
Vegetation Type:	Grassland	**Vegetation Group:**	Grassland
Vegetation Slope:	5 Degrees	**Vegetation Slope Type:**	Downslope
Surface Fuel Load(t/ha):	4.5	**Overall Fuel Load(t/ha):**	4.5
Site Information			
Site Slope:	0 Degrees	**Site Slope Type:**	Level
Elevation of Receiver(m):	Default	**APZ/Separation(m):**	96
Fire Inputs			
Veg./Flame Width(m):	100	**Flame Temp(K)**	1200
Calculation Parameters			
Flame Emissivity:	95	**Relative Humidity(%):**	25
Heat of Combustion(kJ/kg)	18600	**Ambient Temp(K):**	308
Moisture Factor:	5	**FDI:**	110
Program Outputs			
Category of Attack:	LOW	**Peak Elevation of Receiver(m):**	4.07
Level of Construction:	BAL 12.5	**Fire Intensity(kW/m):**	46945
Radiant Heat(kW/m2):	1.99	**Flame Angle (degrees):**	86
Flame Length(m):	8.17	**Maximum View Factor:**	0.024
Rate Of Spread (km/h):	20.19	**Inner Protection Area(m):**	96
Transmissivity:	0.737	**Outer Protection Area(m):**	0

Run Description:	Plot 8 - 10 kW/m2		
Vegetation Information			
Vegetation Type:	Grassland	**Vegetation Group:**	Grassland
Vegetation Slope:	0 Degrees	**Vegetation Slope Type:**	Level
Surface Fuel Load(t/ha):	4.5	**Overall Fuel Load(t/ha):**	4.5
Site Information			
Site Slope:	0 Degrees	**Site Slope Type:**	Level
Elevation of Receiver(m):	Default	**APZ/Separation(m):**	30
Fire Inputs			
Veg./Flame Width(m):	100	**Flame Temp(K)**	1200
Calculation Parameters			
Flame Emissivity:	95	**Relative Humidity(%):**	25
Heat of Combustion(kJ/kg)	18600	**Ambient Temp(K):**	308
Moisture Factor:	5	**FDI:**	110
Program Outputs			
Category of Attack:	LOW	**Peak Elevation of Receiver(m):**	3.4
Level of Construction:	BAL 12.5	**Fire Intensity(kW/m):**	33248
Radiant Heat(kW/m2):	9.79	**Flame Angle (degrees):**	82
Flame Length(m):	6.87	**Maximum View Factor:**	0.108
Rate Of Spread (km/h):	14.3	**Inner Protection Area(m):**	30
Transmissivity:	0.815	**Outer Protection Area(m):**	0

Run Description:	Plot 8 - 2 kW/m2		
Vegetation Information			
Vegetation Type:	Grassland	**Vegetation Group:**	Grassland
Vegetation Slope:	0 Degrees	**Vegetation Slope Type:**	Level
Surface Fuel Load(t/ha):	4.5	**Overall Fuel Load(t/ha):**	4.5
Site Information			
Site Slope:	0 Degrees	**Site Slope Type:**	Level
Elevation of Receiver(m):	Default	**APZ/Separation(m):**	87
Fire Inputs			
Veg./Flame Width(m):	100	**Flame Temp(K)**	1200
Calculation Parameters			
Flame Emissivity:	95	**Relative Humidity(%):**	25
Heat of Combustion(kJ/kg)	18600	**Ambient Temp(K):**	308
Moisture Factor:	5	**FDI:**	110
Program Outputs			
Category of Attack:	LOW	**Peak Elevation of Receiver(m):**	3.43
Level of Construction:	BAL 12.5	**Fire Intensity(kW/m):**	33248
Radiant Heat(kW/m2):	1.99	**Flame Angle (degrees):**	86
Flame Length(m):	6.87	**Maximum View Factor:**	0.024
Rate Of Spread (km/h):	14.3	**Inner Protection Area(m):**	87
Transmissivity:	0.743	**Outer Protection Area(m):**	0

Run Description:	Plot 9 - 10 kW/m2		
Vegetation Information			
Vegetation Type:	Woodland	**Vegetation Group:**	Forest and Woodland
Vegetation Slope:	0 Degrees	**Vegetation Slope Type:**	Level
Surface Fuel Load(t/ha):	15	**Overall Fuel Load(t/ha):**	25
Site Information			
Site Slope:	0 Degrees	**Site Slope Type:**	Level
Elevation of Receiver(m):	Default	**APZ/Separation(m):**	47
Fire Inputs			
Veg./Flame Width(m):	100	**Flame Temp(K)**	1200
Calculation Parameters			
Flame Emissivity:	95	**Relative Humidity(%):**	25
Heat of Combustion(kJ/kg)	18600	**Ambient Temp(K):**	308
Moisture Factor:	5	**FDI:**	80
Program Outputs			
Category of Attack:	LOW	**Peak Elevation of Receiver(m):**	6.09
Level of Construction:	BAL 12.5	**Fire Intensity(kW/m):**	18600
Radiant Heat(kW/m2):	9.7	**Flame Angle (degrees):**	80
Flame Length(m):	12.36	**Maximum View Factor:**	0.111
Rate Of Spread (km/h):	1.44	**Inner Protection Area(m):**	47
Transmissivity:	0.784	**Outer Protection Area(m):**	0

Run Description:	Plot 9 - 2 kW/m2		
Vegetation Information			
Vegetation Type:	Woodland	**Vegetation Group:**	Forest and Woodland
Vegetation Slope:	0 Degrees	**Vegetation Slope Type:**	Level
Surface Fuel Load(t/ha):	15	**Overall Fuel Load(t/ha):**	25
Site Information			
Site Slope:	0 Degrees	**Site Slope Type:**	Level
Elevation of Receiver(m):	Default	**APZ/Separation(m):**	120
Fire Inputs			
Veg./Flame Width(m):	100	**Flame Temp(K)**	1200
Calculation Parameters			
Flame Emissivity:	95	**Relative Humidity(%):**	25
Heat of Combustion(kJ/kg)	18600	**Ambient Temp(K):**	308
Moisture Factor:	5	**FDI:**	80
Program Outputs			
Category of Attack:	VERY LOW	**Peak Elevation of Receiver(m):**	6.16
Level of Construction:	BAL LOW	**Fire Intensity(kW/m):**	18600
Radiant Heat(kW/m2):	1.99	**Flame Angle (degrees):**	85
Flame Length(m):	12.36	**Maximum View Factor:**	0.025
Rate Of Spread (km/h):	1.44	**Inner Protection Area(m):**	120
Transmissivity:	0.722	**Outer Protection Area(m):**	0

Appendix 10

WAPC APZ standards to apply

Standards for an Asset Protection Zone (APZ) (WAPC, 2017)

Fences: Within the APZ are constructed from non-combustible materials (e.g. iron, brick, limestone, metal post and wire). It is recommended that solid or slatted non-combustible perimeter fences are used.

Objects: Within 10 metres of a building, combustible objects must not be located close to the vulnerable parts of the building i.e. windows and doors.

Fine Fuel load: Combustible dead vegetation matter less than 6 millimetres in thickness reduced to and maintained at an average of two tonnes per hectare.

Trees (> 5 metres in height): Trunks at maturity should be a minimum distance of 6 metres from all elevations of the building, branches at maturity should not touch or overhang the building, lower branches should be removed to a height of 2 metres above the ground and or surface vegetation, canopy cover should be less than 15% with tree canopies at maturity well spread to at least 5 metres apart as to not form a continuous canopy. See Figure 10 (WAPC Figure 16, Appendix 4) below.

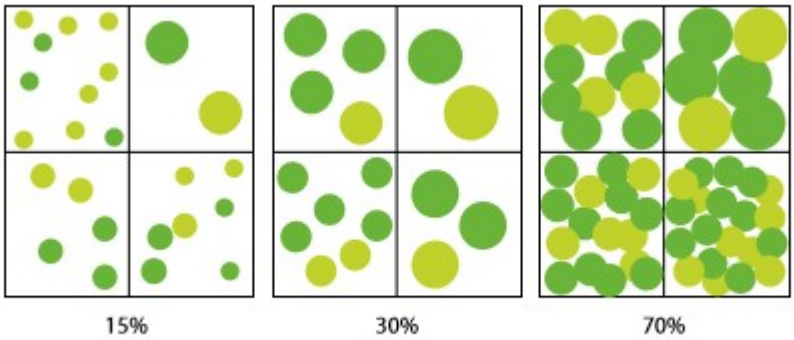


Figure 1 – Tree Canopy Cover

(WAPC, 2017)

Shrubs (0.5 metres to 5 metres in height): Should not be located under trees or within 3 metres of buildings, should not be planted in clumps greater than 5m2 in area, clumps of shrubs should be separated from each other and any exposed window or door by at least 10 metres. Shrubs greater than 5 metres in height are to be treated as trees.

Ground covers (<0.5 metres in height): Can be planted under trees but must be properly maintained to remove dead plant material and any parts within 2 metres of a structure, but 3 metres from windows or doors if greater than 100 millimetres in height. Ground covers greater than 0.5 metres in height are to be treated as shrubs. –

Grass: Should be managed to maintain a height of 100 millimetres or less.

Appendix 11

ELA Peer Review

Level 1, Bishop's See 235 St Georges Terrace Perth WA 6000
t: (08) 6218 2200

23 May 2019

Our ref: 12360

To whom it may concern,

Peer review of Bushfire Management Plan
Albany Motorsport Park: Lot 5780 Down Road, Drome

Eco Logical Australia (ELA) was engaged by Bio Diverse Solutions (BDS) to undertake a technical peer review of a Bushfire Management Plan (BMP) for the proposed development of the above-mentioned site.

ELA has not physically inspected the site, however, has reviewed data and photographs taken by BDS during their site assessments.

The technical peer review was undertaken by ELA Senior Bushfire Consultants Daniel Panickar (BPAD 37802) and Bruce Horkings (BPAD 29962). Bruce is a BPAD Level 3 accredited practitioner in NSW and has attended the relevant FPA workshop held in Sydney specifically for NSW based consultants undertaking BPAD Level 3 accredited works in WA.

BDS engaged ELA to undertake a technical peer review of the final Bushfire Management Plan (BMP), prepare a Bushfire Emergency Evacuation Plan (BEEP) and provide a letter documenting the completion of the review.

PEER REVIEW

The peer review process began at the inception of the project with the provision of ongoing technical advice and guidance in the development of the report. The final version of the BMP (dated 23 May 2019) was assessed against Policy Measures 6.2 and 6.3 of *State Planning Policy 3.7 Planning in Bushfire Prone Areas* (SPP 3.7; WAPC December 2015) with consideration given to Policy measure 6.6, and is technically consistent with the identified requirements of SPP 3.7 and *Guidelines for Planning in Bushfire Prone Areas v 1.3* (the Guidelines; WAPC December 2017).

The proposed development meets the bushfire protection criteria of the Guidelines using Acceptable Solutions where possible. Compliance with the Acceptable Solutions for *Element 3: Vehicular Access* is not possible and as such, the BEEP prepared to support this development provides contingency actions in accordance with the requirements of the D*raft Position Statement: Tourism land uses within bushfire*

prone areas (WAPC, 2018). These contingencies include early closure of the site, off-site evacuation and as a last resort, refuge on site in a suitable building / open space.

ELA note there are a few minor typographical errors in the report, however these do not detract from the overall outcomes of the plan.

BUSHFIRE EMERGENCY EVACUATION PLAN

The BEEP developed by ELA was produced in a usable poster style to be located at relevant locations in the site.

The aim of the BEEP is early, safe and timely evacuation of the site prior to bushfire events and no events are to be held on site during Catastrophic Fire Danger Rating (FDR) days. The BEEP has been prepared to support the proposed development will address on-site and off-site refuges, triggers for evacuation and roles and responsibilities for staff and stakeholders. As the proposed development progresses beyond the rezoning phase, the BEEP will be updated for each stage including further specific details.

As previously identified. the design of the site does not allow for alternative access and is a legacy issue. As a result of legacy issues of the surrounding public road network, these constraints are addressed by the BEEP providing contingency measures to address identified risks including:

- Clear triggers for off and onsite evacuation (to be updated to support future planning applications);
- Clear triggers & guidelines for scheduling events or cancelling based on such factors as Fire Danger Rating (FDR), evening events during certain times of the year, 'Total Fire Ban' days and "Restricted vehicle movement days" (harvest bans);
- An on-site refuge for use in an emergency (i.e. a building constructed to the requirements of a 'community refuge' as per the Australian Building Codes Board 'Design and Construction of Community Bushfire Refuges' that can accommodate the number of people using that part of the facility (i.e. 200-500 for a club event);
- The proposed building located within the site and position to limit radiant heat exposure to <10 kW/m^2 and constructed to BAL-29; and
- Open air refuge with the capacity for a large event (upto 10,000 approx.) located in area where radiant heat exposure is limited to <2 kW/m^2 and preferably shaded with non-combustible material.

This is compliant with the W*APC Draft Position Statement: Tourism land uses within bushfire prone areas* (WAPC 2018). The BEEP will form part of the Emergency Management Plan for the site which will be developed prior to operation of the site.

CONCLUSION

The peer review undertaken by ELA of the Bushfire Management Plan written by BDS (dated 23 May 2019) concludes that this report meets the technical requirements of SPP 3.7 and the Guidelines. Furthermore, the BMP incorporates a Bushfire Emergency Evacuation Plan developed by a suitably accredited Bushfire Planning Practitioner.

CV's of the ELA bushfire consultants involved in this project are included below.

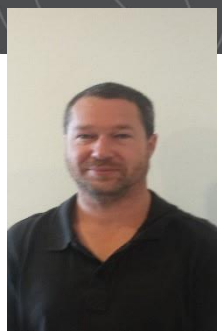
Yours sincerely,

Daniel Panickar
Manager and Bushfire Lead - WA (BPAD 37802)

BPAD Bushfire Planning & Design Accredited Practitioner Level 2

Bruce Horkings
Senior Bushfire Consultant (BPAD 29962)

BPAD Bushfire Planning & Design Accredited Practitioner Level 3



Bruce Horkings SENIOR BUSHFIRE CONSULTANT

Bruce holds a Post Graduate Diploma in Bushfire Protection from the University of Western Sydney, and also both an Associate Degree in Forestry Management and Diploma of Conservation and Land Management from Melbourne University. Bruce has over 14 years' experience in the environmental and bushfire realm with a focus on bushfire consulting over the last 10 years in Western Australia, Victoria and New South Wales and is an accredited Level 3 Bushfire Planning and Design (BPAD) practitioner.

Work undertaken includes bushfire site assessments and production of reports including constraints & analysis, Bushfire Protection Assessments, Bushfire Management Plans, Evacuations Plans and acceptable and performance-based solutions in line with current state standards and Australian Standard AS 3959. Most recently he has been involved with complex projects involving detailed bushfire weather analysis, short fire run modelling and landscape based modelling using SPARK.

He has a good working knowledge of bushfire planning legislation in many states and territories across the country especially WA, NSW and Vic and specialises in complex assessments, bushfire modelling and the development of performance solution response. Bruce is experienced in bushfire site assessment and analysis, project management, tender preparation and assessment, and detailed technical analysis of building design and construction materials against AS 3959.

QUALIFICATIONS

- Post Graduate Diploma of Bushfire Protection, University of Western Sydney (2013)
- Development and Building in Bushfire Prone Areas, UTS Centre for Local Government (2013)
- Associate Degree of Forestry Management, Melbourne University (2006)
- Diploma of Conservation and Land Management, Melbourne University (2004-2006)

PROJECT EXPERIENCE

- Development of a detailed bushfire risk analysis at a landscape and local scale of built assets, critical infrastructure and research facilities for CSIRO in Canberra with a corresponding Bushfire Operations Plan to implement risk mitigation measures to enhance resilience from bushfire for the rural site and surrounding residential developments.
- Use and development of the landscape bushfire modelling tool SPARK developed by CSIRO for projects where thousands of bushfire scenarios are assessed.
- Creation of a Short Fire Run models (point ignition) to demonstrate bushfire behaviour as part of developing performance solutions where the standard fire models found in AS 3959 over predict this scenario.
- Development of performance based solutions to demonstrate compliance to various state based bushfire planning requirements.
- Completion of hundreds of bushfire assessments across the country.
- Assessment of Defence projects from Bushfire Management Plans to compliance with bushfire specifications detailed in the Manual of Fire Protection Engineering (MFPE) and state-based requirements.
- Analysis of building design and construction materials against AS 3959 for residential and non-residential buildings.

Daniel Panickar **MANAGER AND BUSHFIRE LEAD - WA**

Daniel is an experienced environmental and bushfire consultant with over eight years' experience in the consulting industry. Initially trained as an ecologist and environmental planner, Daniel has gained invaluable experience in fire ecology, flora and fauna surveys and environmental approvals. Since being involved in the industry, Daniel's skills have diversified to include bushfire management planning and team management and he has held senior roles including lead ecologist and lead bushfire consultant. Daniel currently manages ELA's Western Australian operations.

Daniel also possesses well-developed project management skills and has managed over 50 land development projects throughout Western Australia and has been responsible for undertaking field investigations, managing sub-consultants and provision of advice regarding bushfire and environmental approvals.

Daniel has worked on over 500 bushfire management projects across Australia and is an accredited Level 2 Bushfire Planning and Design (BPAD) practitioner with experience in Bushfire Attack Level (BAL) assessments, preparation of Bushfire Management Plans, Bushfire Emergency Evacuation Plans, Bushfire Risk Assessments and providing expert advice at Joint Development Assessment Panel (JDAP) meetings and State Administrative Tribunal (SAT) hearings.

Daniel's experience in environmental approvals and bushfire planning, particularly in the land development and infrastructure sectors allow him to provide accurate, pragmatic advice regarding opportunities and constraints, and develop innovative solutions to facilitate development in potentially problematic areas. This experience has been acknowledged through Daniel's membership on the Fire Protection Association Australia (FPAA) WA Bushfire Working Group, National Environmental Law Association (NELA) WA State Committee and the Urban Development Institute of Australia (UDIA) Outlook Committee.

QUALIFICATIONS

Bachelor of Science (Environmental Biology; Honours), Curtin University of Technology, 2011

Graduate Diploma in Bushfire Protection, Western Sydney University, in progress

Level 2 accredited Bushfire Planning and Design (BPAD) practitioner, 2016

PUBLICATIONS

Panickar, D 2018, 'Bushfire protection and environmental management for mine sites in arid and semi-arid regions', *Goldfields Environmental Management Group, Kalgoorlie, 16-18 May*.

PROJECT EXPERIENCE

Land development

Daniel has been involved in over 100 urban development projects across WA, NSW and QLD. A few detailed examples are provided below, and some other key projects have been listed further to this.

The Hales: Satterley Property Group: Environmental project manager to ensure the project meets the requirements of all relevant environmental legislation whilst meeting project timeframes and yield objectives. Undertook and/or coordinated all environmental surveys within the development site (ecological and bushfire assessments, groundwater monitoring and contaminated sites investigations). Provided ongoing strategic environmental and bushfire management advice and prepared all required environmental approvals documentation including a native vegetation clearing permit application and referral to the Commonwealth Department of the Environment. Prepared the Bushfire Management Plan for the estate.

Shorehaven: Peet Limited: Led and coordinated all bushfire assessments within the development site. Provided ongoing strategic advice to reduce bushfire risk and maintain visual amenity and prepared/reviewed Bushfire Management Plans, Bushfire Attack Level Assessments and associated Native Vegetation Clearing permits to facilitate development. Assisted in negotiations with adjacent landowners to clear vegetation and reduce bushfire risk to the Shorehaven site.

Sienna Wood: Stockland: Undertook a bushfire hazard level assessment of the estate (including wetlands of conservation significance, revegetation areas and Aboriginal heritage areas). Provision of advice to the project team regarding redesigning road networks and landscaping areas (including natural streams and wetlands) to achieve a layout that was fully compliant with bushfire planning guidelines and State legislation while maintaining the integrity of the planning vision for the estate. The final Bushfire Management Plan prepared for the estate was endorsed by the Department of Fire and Emergency Services (DFES), the Department of Parks and Wildlife (Parks and Wildlife) and local government and approved for use.

Redevelopment of St Vincent's Aged Care Facility: Catholic Homes Inc.: Undertook a bushfire hazard level assessment, prepared a Bushfire Management and Evacuation Plan and coordinated geotechnical investigations. Site constraints compromised the ability to achieve a compliant bushfire management outcome and a strategy was developed whereby vegetation on neighbouring land would be cleared and landscaped to facilitate a compliant outcome. Organised meetings between the Western Australia Planning Commission, the project team and other relevant stakeholders to negotiate a favourable outcome. All stakeholders agreed with my proposed approach and following the preparation of the revised development design; the DA was lodged successfully.

Rezoning support – 119 Hammond Road: Private land developer: Managed and undertook an environmental opportunities and constraints analysis to inform proposed rezoning of the site. Facilitated environmental and bushfire planning approvals for the site which included undertaking a flora, vegetation and black cockatoo survey and preparation of a Bushfire Management Plan.

Frenchman Bay Resort: Private land developer: Developed a Bushfire Management Plan and Bushfire Emergency Evacuation Plan to support a resort in Frenchman Bay (an extreme bushfire risk area). Method 2 Bushfire Attack Level (BAL) assessments and performance-based bushfire management solutions were developed to facilitate development and ensure a safer outcome for future guests. The plans were approved by the City of Albany and Department of Fire and Emergency Services.

Some other key land development projects Daniel has been involved in as an environmental and bushfire consultant are:

- Butler North District Open Space, Butler;
- Baldivis District Open Space;
- Catalina Estate, Clarkson;
- Brightwood Estate, Baldivis;
- Flamewood Estate, Brabham;
- Mason Green Estate, Piara Waters;
- The Village at Wellard Estate, Wellard;
- Newhaven Estate, Piara Waters;
- Beenyup Grove Estate, Byford;
- Allara Estate, Eglinton;
- Burns Beach Estate, Burns Beach;
- Holland Park Estate, Piara Waters;
- Numerous BP and Caltex service stations across Western Australia;

- Chinatown Revitalisation Project, Broome;
- Glenmore Park/Mulgoa, Western Sydney;
- New Breeze Estate, Bardia (NSW).

Department of Defence

Daniel has been involved in ecological surveys and the preparation of bushfire management reports for numerous Department of Defence bases across Australia. Some key projects are highlighted below. Daniel also has baseline security clearance from the Department of Defence.

Preparation of bushfire construction advice (Campbell Barracks and RAAF Base Townsville): Assessed proposed building upgrades, refurbishments and new structures at Campbell Barracks, Western Australia and RAAF Base Townsville, Queensland. All structures were assessed for bushfire risk and treatments were prescribed based on State and National guidelines as well as relevant construction standards.

Preparation of Bushfire Management Plans for HMAS Stirling and Exmouth properties: Project manager and author for a new Bushfire Risk Management Plan, Emergency Evacuation Plan and Operations Plan for the entirety of Defence's operations on Garden Island and Exmouth, Western Australia. The project involved close liaison with Defence, Department of Biodiversity Conservation and Attractions, Department of Fire and Emergency Services and local stakeholders. Risk workshops were organised and facilitated to discuss risks and responses prior to finalisation.

Preparation of Bushfire Management Plans for RAAF Base Learmonth and Lancelin Defence Training Area: Project manager and author for a new Bushfire Risk Management Plan, Emergency Evacuation Plan, Bushfire Prevention Plan and Operations Plan for the entirety of Defence's operations at Learmonth and Lancelin, Western Australia. State of the art fire spread modelling was also undertaken to identify impacts associated with Defence activities on the base and surrounding properties. The project involved close liaison with Defence, Department of Fire and Emergency Services and local stakeholders. Risk workshops were organised and facilitated to discuss risks and responses prior to finalisation.

Preparation of Bushfire Management Plans for HMAS Albatross, Bhewerre Ridge and Beecroft Air Weapons Range properties: Prepared bushfire risk management plans and strategies for these three Defence properties in Shoalhaven NSW. Developed Emergency Evacuation Plans for HMAS Albatross and the high-risk Bhewerre Ridge properties as part of the works package.

Weed surveys for HMAS Stirling Garden Island: Managed and coordinated weed surveys throughout Garden Island, Western Australia to inform annual weed control programs and identify new species of invasive plants on the naval base and surrounding island.