Bushfire Management Plan Coversheet

This Coversheet and accompanying Bushfire Management Plan has been prepared and issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme.

Bushfire Management Plan and Site Details

Site Address / Plan Reference: Lot 300 (No. 2), 507 (No. 204) Lancaster Road		
Suburb: McKail	**State:** WA	**P/code:** 6330
Local government area: City of Albany		
Description of the planning proposal: Local structure plan to guide a future subdivision		
BMP Plan / Reference Number: MSC0595-001	**Version:** 5.0	**Date of Issue:** 01/08/2024
Client / Business Name: Acumen Development Solutions		

Reason for referral to DFES	Yes	No
Has the BAL been calculated by a method other than method 1 as outlined in AS3959 (tick no if AS3959 method 1 has been used to calculate the BAL)?	☐	☒
Have any of the bushfire protection criteria elements been addressed through the use of a performance principle (tick no if only acceptable solutions have been used to address all of the BPC elements)?	☐	☒
Is the proposal any of the following special development types (see SPP 3.7 for definitions)?		
Unavoidable development (in BAL-40 or BAL-FZ)	☐	☒
Strategic planning proposal (including rezoning applications)	☒	☐
Minor development (in BAL-40 or BAL-FZ)	☐	☒
High risk land-use	☐	☒
Vulnerable land-use	☐	☒

If the development is a special development type as listed above, explain why the proposal is considered to be one of the above listed classifications (E.g. considered vulnerable land-use as the development is for accommodation of the elderly, etc.)?

The purpose of this proposal is for a local structure plan to guide a future subdivision.

Note: The decision maker (e.g. local government or the WAPC) should only refer the proposal to DFES for comment if one (or more) of the above answers are ticked "Yes".

BPAD Accredited Practitioner Details and Declaration

Name	Accreditation Level	Accreditation No.	Accreditation Expiry
Jason Benson	Level 2	BPAD-37893	01/08/2025
Company Bio Diverse Solutions		**Contact No.** 9842 1575	

I declare that the information provided within this bushfire management plan is to the best of my knowledge true and correct

Signature of Practitioner  **Date** 01/08/2024

BHL Assessment and Bushfire Management Plan

Lot 300 (No. 2), 507 (No. 204) and Lot 526 Lancaster Road

McKail, WA 6330

Final v5

31/07/2024

Site Details					
Address:	Lot 300 (No. 2), 507 (No. 204) Lancaster Road				
Suburb:	McKail	**State:**	W.A.	**Postcode**	6330
Local Government Area:	City of Albany				
Description of Building Works:	Local structure plan to guide a future subdivision				
Stage of WAPC Planning	Local Structure Planning				

BHL Plan Details			
Report / Job Number:	MSC0595	**Report Version:**	Final v5
Assessment Date:	18 July 2023	**Report Date:**	1 August 2024
BPAD Practitioner	Jason Benson (Level 2)	**Accreditation No.**	BPAD-37893
BPAD Practitioner	Kathryn Kinnear (Level 2)	**Accreditation No.**	BPAD-30794

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1. Introduction

Acumen Development Solutions commissioned Bio Diverse Solutions (Bushfire Consultants) on behalf of the landowners to prepare a Bushfire Hazard Level (BHL) assessment and Bushfire Management Plan (BMP) to accompany the Local Structure Plan (LSP) to guide a future subdivision at Lot 300 (No. 2), 507 (No. 204) and Lot 526 Lancaster Road, McKail within the City of Albany (CoA). The BMP has been developed to assess the proposal to ensure it is consistent with the current and endorsed 'Guidelines for Planning in Bushfire Prone Areas Version v1.4 (WAPC, 2021)' and 'State Planning Policy 3.7 (WAPC, 2015).

This land was subject to the approved McKail North Outline Development Plan (ODP) in 2015. The updated LSP provides for approximately 309 residential lots ranging between 542sqm and 5,720sqm in area. The plan is for this LSP to provide 15m to 20m wide connecting public roads, various residentially zoned land (R2.5, R5, R10, R15, R20 and R25), four areas of Public Open Space (POS), including a district oval and a public-school site. BDS has prepared this BMP and has been assessed according to the current WAPC guidelines (WAPC, 2021). The proposed lot layout is not currently finalised. The overall proposed structure plan, showing the future access and R-codes, has been provided to indicate how it will comply with the new guidelines, see Figure 2: Local Structure Plan.

1.1 Location

The subject site is located to the northwest of the Albany CBD, as shown in Figure 1.

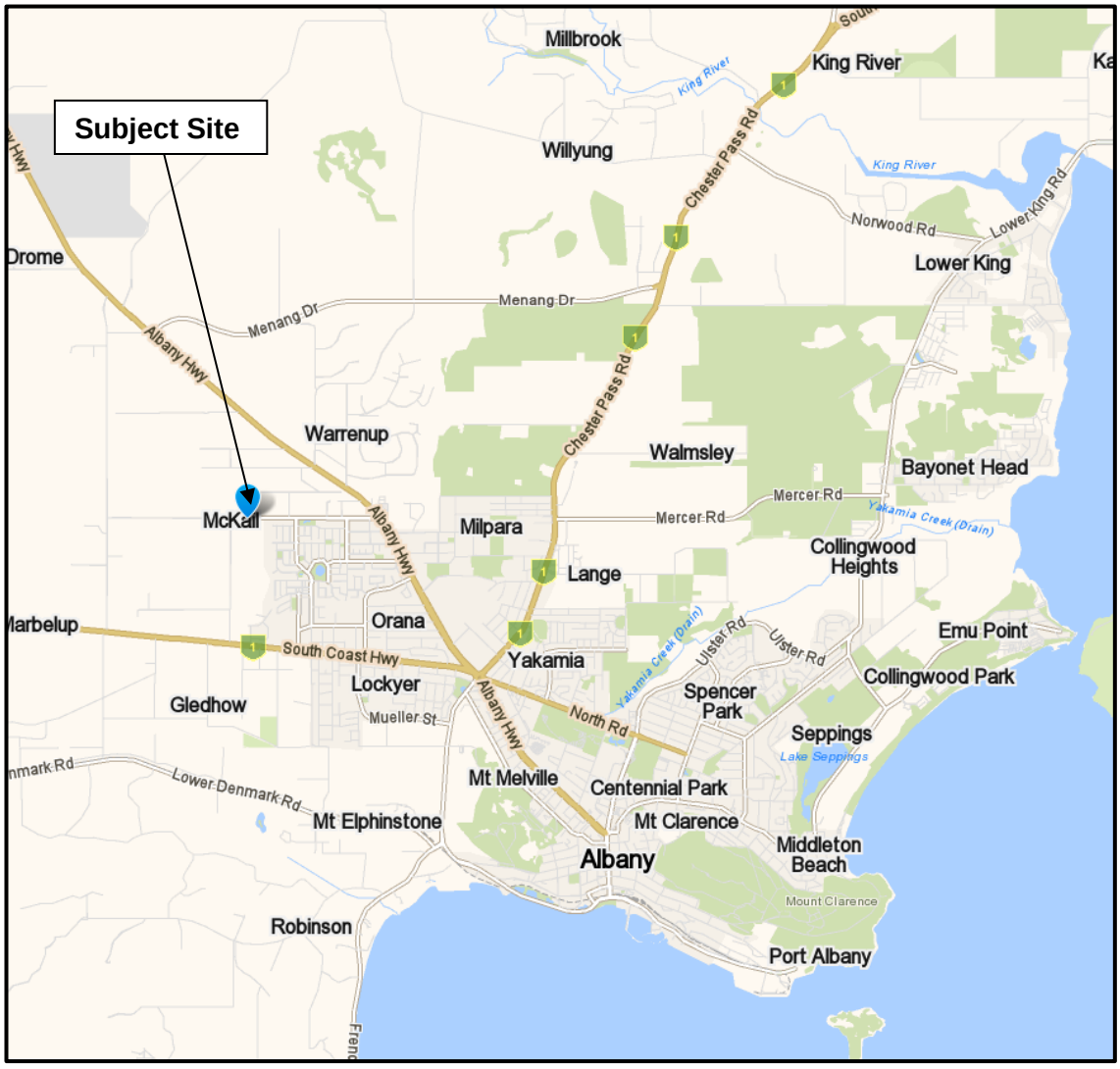
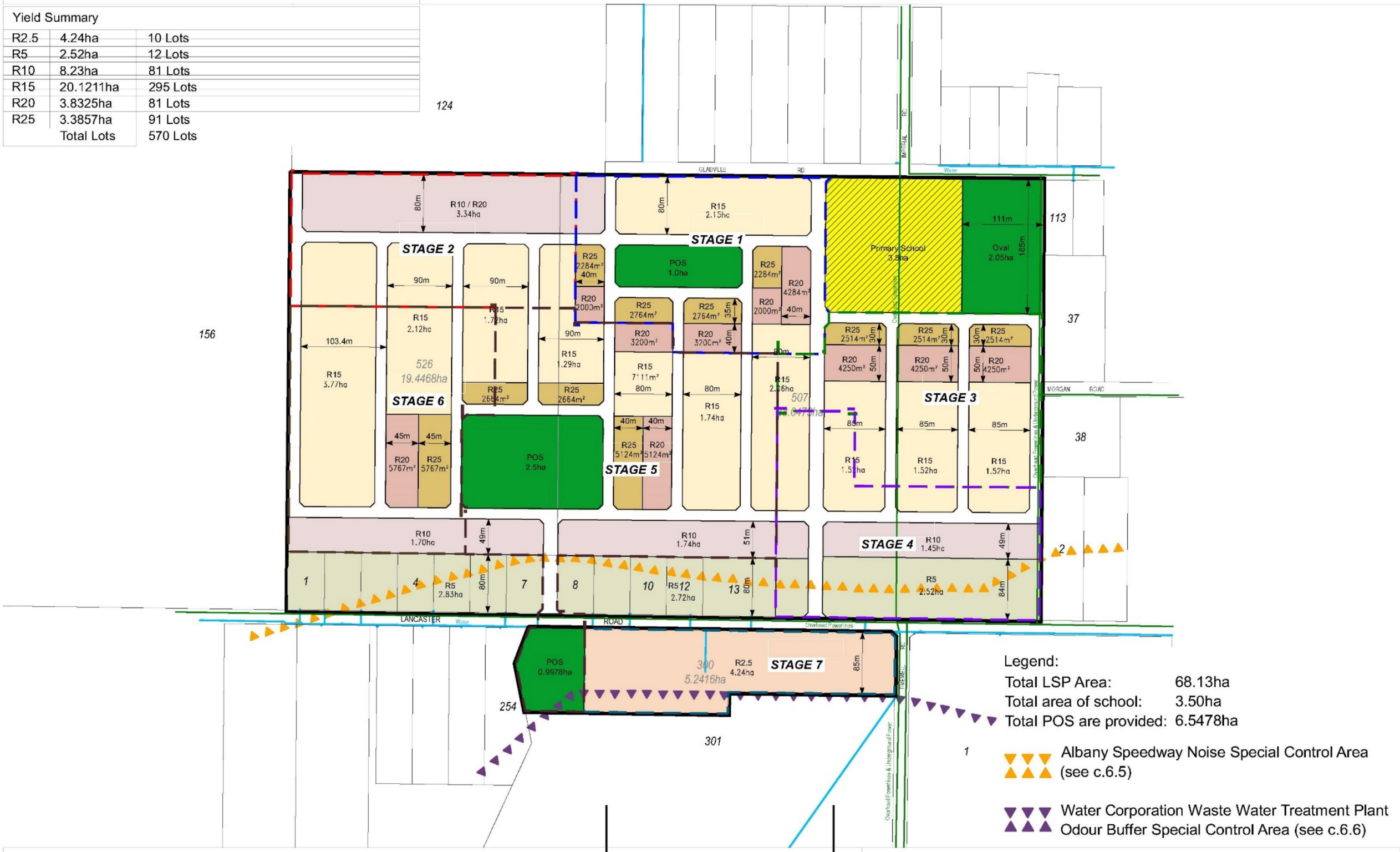


Figure 1: Location Mapping of the subject site

1.2 Development Proposal

The total area of the subject site is approximately 62.7347ha in size and is currently zoned as 'Urban development' under the City of Albany Local Planning Scheme (No. 2). The purpose of this report is to support an LSP to guide the future subdivision application of the site. The future subdivision will allow for approximately 309 new residential lots (R2.5, R5, R10, R15, R20 and R25), new public roads and POS and a public school site, see Figure 2: Local Structure Plan.

Yield Summary		
R2.5	4.24ha	10 Lots
R5	2.52ha	12 Lots
R10	8.23ha	81 Lots
R15	20.1211ha	295 Lots
R20	3.8325ha	81 Lots
R25	3.3857ha	91 Lots
	Total Lots	570 Lots



Legend:

Total LSP Area:	68.13ha
Total area of school:	3.50ha
Total POS are provided:	6.5478ha

Albany Speedway Noise Special Control Area (see c.6.5)

Water Corporation Waste Water Treatment Plant Odour Buffer Special Control Area (see c.6.6)

Figure 2: LOCAL STRUCTURE PLAN

LOTS 1 - 13, 507, 526 AND 300 LANCASTER ROAD
McKAIL

Urban Development Institute of Australia WESTERN AUSTRALIA

PIA Planning Institute Australia

CPP CERTIFIED PRACTISING PLANNER

SCALE: 1:5000 @ A3
DATE: 18th JULY 2024
FILE: 1773_18.07.2024.dwg
DRAW: - SB
CHECKED: -

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N W E S

1.3 Bushfire Prone Area

The publicly released Map of Bushfire Prone Areas (OBRM, 2021) shows that the subject site is partially located within a Bushfire Prone Area (within 100m of >1ha of bushfire prone vegetation) and as such is subject to a planning assessment of the bushfire risks. Bushfire Prone Area Mapping (OBRM, 2021) is shown in Figure 3.

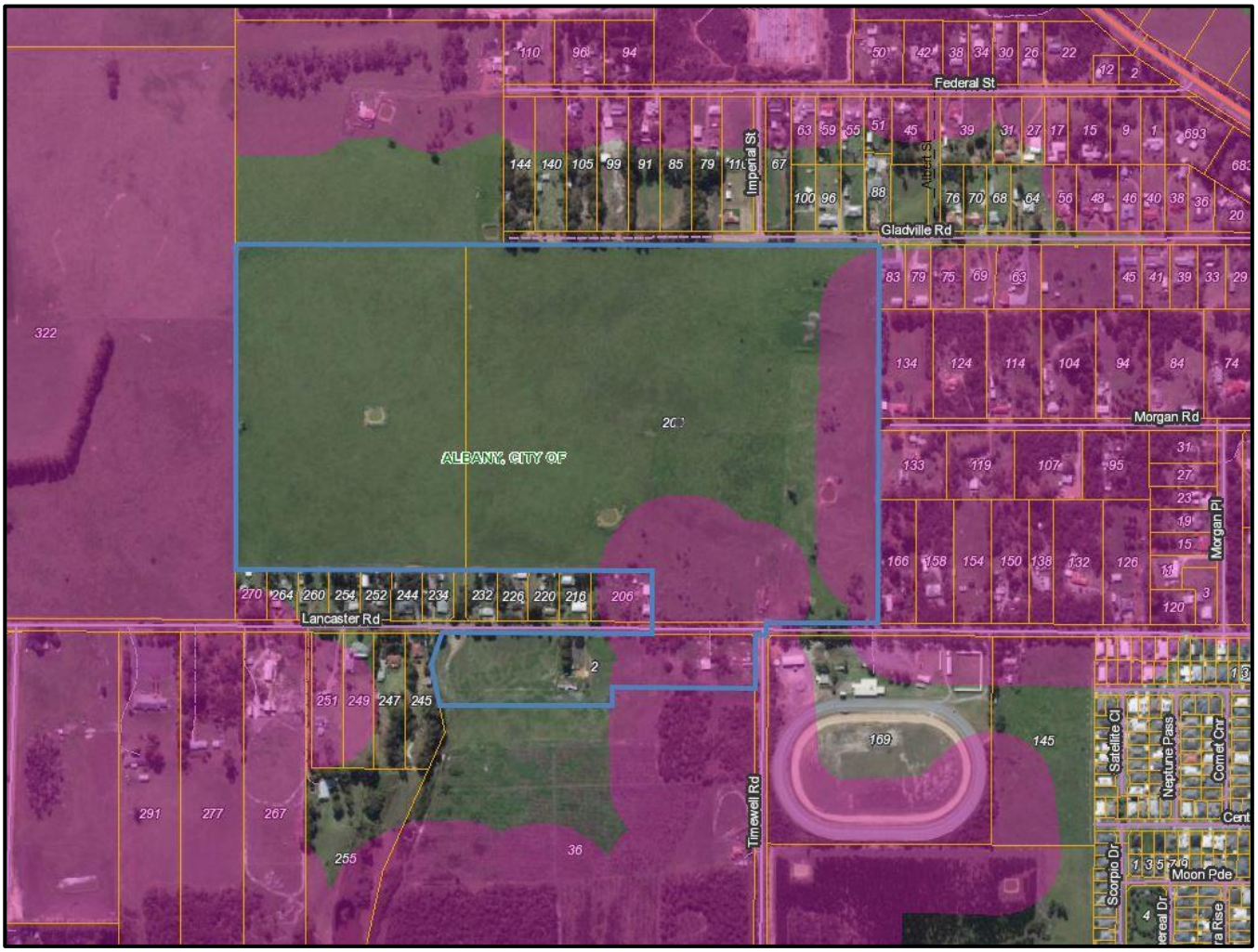


Figure 3: Map of Bushfire Prone Areas and relevance to subject site (OBRM, 2021)

1.4 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 (Local Planning Scheme) Regulations 2015;
- State Planning Policy (SPP) 3.7 Planning in Bushfire Prone Areas 2015 (WAPC, 2015);
- Guidelines for Planning in Bushfire Prone Areas v1.4 (WAPC, 2021);
- Building Act 2011;
- Building Regulations 2012;
- Building Code of Australia (National Construction Code) (NCC, n.d.);
- Fire and Emergency Services Act 1998;
- AS3959-2018 “Construction of Buildings in Bushfire Prone Areas” current and endorsed standards;
- Bushfires Act 1954; and
- CoA Fire Management Notice (CoA, 2023/24).

1.5 Suitably Qualified Bushfire Consultant

This BMP has been prepared by Jason Benson and Kathryn Kinnear. Jason has 8 years of operational fire experience with the (formerly) DEC (between 2002-2012) and has the following accreditation in bushfire management:

- Heavy Duty Fire Appliance Operator;
- Wildfire Suppression 1 & 2;
- Prescribed Burning Operations;
- Fire and Incident Operations;
- Structural Modules – Hydrants and hoses, Introduction to Structural Fires, and Fire extinguishers; and
- Ground Controller.

Jason Benson is an accredited Level 2 Bushfire Practitioner (Accreditation No: BPAD-37893) and has been an accredited Bushfire Consultant for 9 years. Jason is a suitably qualified Bushfire Practitioner to prepare this BMP.

Kathryn Kinnear (nee White), has 10 years of 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;
- Graduate Diploma in Environmental Management; and
- Progression to Masters Environmental Science (ECU).

Kathryn Kinnear is an accredited Level 2 Bushfire Practitioner (Accreditation No: BPAD-30794) with 29 years of bushfire management and planning experience. Bio Diverse Solutions are Silver Corporate Members of the Fire Protection Australia Association and are suitably qualified Bushfire Practitioners to prepare this BMP.

1.6 Objectives

The objectives of this BMP are to assess the present and future bushfire risks associated with the site for the proposed LSP to guide the future subdivision of Lot 300 (No. 2), 507 (No. 204) and Lot 526 Lancaster Road, McKail. The BMP aims 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 LSP by assessing the site to the Bushfire Protection Criteria Acceptable Solutions as outlined in the Guidelines for Planning in Bushfire Prone Areas Vers 1.4 (WAPC, 2021).

The BMP objectives are to:

- Achieve consistency with objectives and policy measures of SPP 3.7 (WAPC, 2015);
- Classify the vegetation in accordance with the AS3959-2018;
- Document areas for future fuel reduction within the development area;
- Assess any building requirements to AS3959-2018 (current and endorsed standards) and BAL Construction;
- Assess the proposed LPS against the Bushfire Protection Criteria Acceptable Solutions as outlined in the Guidelines for Planning in Bushfire Prone Areas (WAPC, 2021);
- Undertake a broader Landscape Risk Assessment of the proposal;
- Understand and document the extent of the bushfire risk and hazards pertinent to the subject site;
- Establish and document the requirements for access and a firefighting water supply;
- Prepare bushfire management measures within the subject site with due regard to life, property, infrastructure, and the environment; and
- Nominate individuals and organisations responsible for bushfire management and associated works for implementation within the subject site in the subsequent planning stages.

2 Environmental Considerations

2.1 Native Vegetation – Modification and Clearing

This BMP utilises the assumption that the future lots can be maintained in a low fuel state as per the WAPC Asset Protection Zone (APZ) Standards, Schedule 1 (refer to Appendix B). The site predominantly consists of grassland vegetation and some small patches of forest in the south of the subject site. The forest vegetation consists predominately of isolated paddock trees and is in a degraded state. The removal of native vegetation is not planned as part of this proposal, although, in the future, some vegetation may be modified as part of the subdivision (subsequent planning stage), see future low fuel in Figure 4: Vegetation Classes Map. Additional strategies to manage onsite vegetation for the developer and future landowners are outlined in Section 5.2 of this report.

2.2 Review of the Environmental Data Sets (Landgate, 2022)

A review of the environmental data sets (Landgate SLIP) as identified in the Department of Planning, Lands and Heritage BMP Template for a complex development application, does not identify that any regulated (restricted) vegetation will be affected by the proposal, see Table 1 Environment Dataset Review.

Table 1: Environmental Dataset Review.

Dataset	Impact on Proposal	Comment
Conservation category wetlands and buffer	Potentially	Part of the site is within an Albany waterways management area.
DBCA Lands of interest	No	
Wetlands and Waterways	No	
Landscape Hazards	Potentially	Soil Landscape Risk - Wind and water erosion risk area covers the subject site area and surrounds. Soil Landscape Quality - Surface acidity and salinity risk areas cover the subject site area and surrounds.
RAMSAR wetlands	No	
Threatened and priority flora	No	
Threatened Ecological Communities	No	
Clearing regulations – Environmentally Sensitive Areas	No	
Swan Bioplan Regionally Significant Natural Areas 2010	No	
Conservation Covenants Western Australia	Unaware	

Note: Relevant checks have been completed and the proposal does not currently impact on any of the above sites. However, the management strategies contained in this BMP, assume that all environmental approvals will be achieved or clearing permit exemptions will be applied. It is recommended that the proponent seeks specific advice in relation to the clearing of any native vegetation that is proposed as part of this development. Clearing of native vegetation may utilise an exemption under the EP act through the WAPC process. It is advised that the proponent seek further advice from an Environmental Consultant or the WA Department of Biodiversity, Conservation and Attractions (DBCA) on the condition and species contained within the development area and any requirement for referral of the proposal.

2.3 Revegetation or Landscaping

There are four proposed POS areas planned internal to the site. The area of POS in the north will be landscaped (turf, gardens, trees, playgrounds, drainage swale) and (in the long term) managed by the City of Albany. The POS area on the south side of Lancaster Road will consist of turf/trees and a drainage basin/swale. The drainage basin may be vegetated in the future, but at this stage the proposed revegetation strategy and management is unknown. It is estimated that the likely revegetation will consist of sedges, rushes, and reeds and will not negatively impact the BAL ratings over future lots. If the drainage basin is planted out, it should be done in a way that does not increase the bushfire risk over the site. A BAL contour plan will be reviewed and updated accordingly over the site at the subdivision stage. A third POS to the north of Lancaster Road will be the largest central POS and consist of turf/trees and a drainage basin/swale, while the school oval will be the fourth POS managed by the school site. An accredited Level 2 Bushfire Practitioner is to review and approve any future planting, revegetation, or landscaping within the development area to ascertain if the actions will increase the potential bushfire risk over the development.

3 Bushfire Assessment Results

The bushfire assessment for this site has followed the 'Bushfire Attack Level (BAL) Assessment' and 'WAPC Planning in Bushfire Prone Areas Guidelines v1.4' (WAPC, 2021).

3.1 Assessment Inputs

Bushfire Assessment inputs for the site has been calculated using the Method 1 BAL Assessment procedure as outlined in AS3959-2018. This incorporates the following factors:

- WA adopted Fire Danger Index (FDI), being FDI 80;
- Vegetation Classes;
- Effective Slope under classified vegetation; and
- Distance between proposed development site and classified vegetation.

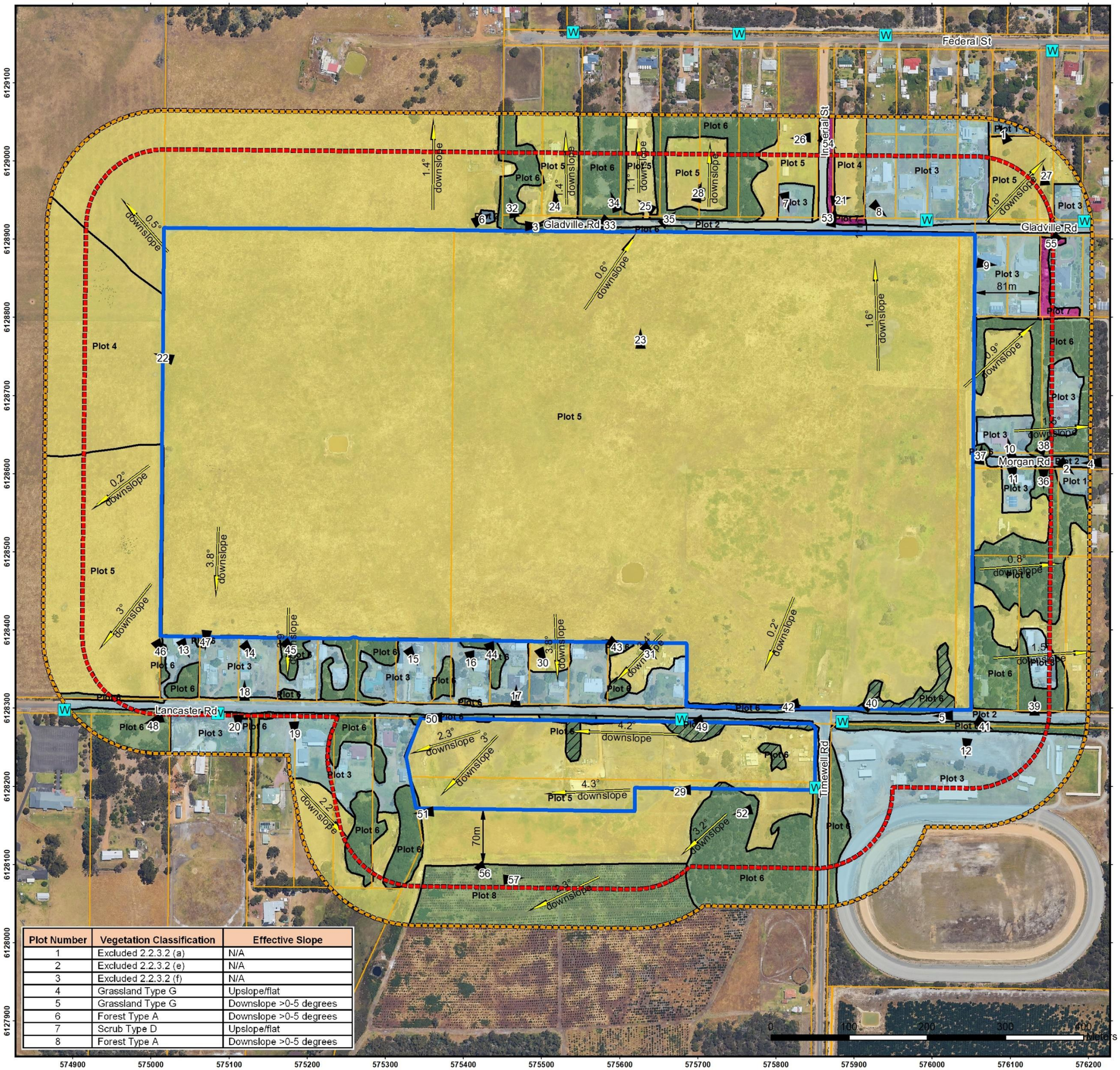
3.1.1 Vegetation Classification

Site assessment occurred on the 18th of July 2023 by Bushfire Practitioners from BDS, Jason Benson (BPAD-37893) and Kathryn Kinnear (BPAD-30794). All vegetation within 150m of the site/proposed development was classified in accordance with Clause 2.2.3 of AS3959-2018. 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, see Figure 4.

A summary of the Plot data assessed as per Clause 2.2.3 of AS3959-2018 is provided below in Table 2, detailed plot data is provided in Appendix A.

Table 2: Vegetation Classification Table (in accordance with AS 3959-2018) of the subject site.

Plot Number	Vegetation Classification	Effective Slope
1	Excluded 2.2.3.2 (a)	N/A
2	Excluded 2.2.3.2 (e)	N/A
3	Excluded 2.2.3.2 (f)	N/A
4	Grassland Type G	Upslope/flat
5	Grassland Type G	Downslope >0-5 degrees
6	Forest Type A	Downslope >0-5 degrees
7	Scrub Type D	Upslope/flat
8	Forest Type A	Downslope >0-5 degrees



Plot Number	Vegetation Classification	Effective Slope
1	Excluded 2.2.3.2 (a)	N/A
2	Excluded 2.2.3.2 (e)	N/A
3	Excluded 2.2.3.2 (f)	N/A
4	Grassland Type G	Upslope/flat
5	Grassland Type G	Downslope >0-5 degrees
6	Forest Type A	Downslope >0-5 degrees
7	Scrub Type D	Upslope/flat
8	Forest Type A	Downslope >0-5 degrees

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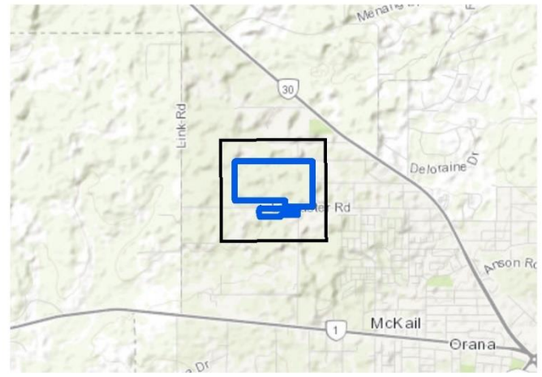

Overview Map Scale 1:100,000

Legend

- Subject Site
- 100m Assessment Boundary
- 150m Assessment Boundary
- Cadastre
- Separation Distance
- Slopes Degrees
- Photo Point
- Water Point
- Future Low Fuel
- Vegetation/Plot Boundary

Vegetation

- Forest Type A
- Scrub Type D
- Grassland Type G
- Excluded 2.2.3.2

Scale
1:4,750 @ A3
GDA MGA 2020 Zone 50

Data Sources
Aerial Imagery: WA Now, Landgate Subscription Imagery
Cadastre, Relief Contours and Roads: Landgate 2022
IRIS Road Network: Main Roads Western Australia 2017
Overview Map: World Topographic map service, ESRI 2012

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Acumen Development Solutions (Jarrod Rendell)
Lancaster Road Structure Plan
Lancaster Road
McKail, WA 6330

Figure 4: Vegetation Classes

BAL Assessor	QA Check	Drawn by
JRB	BRM	GSK
STATUS	**FILE**	**DATE**
FINAL	MSC0595	27/09/2023

3.2 Assessment Outputs (Bushfire Hazard Level)

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, 2021). The allocation of category of the bushfire hazard is determined as per Table 3 of the Guidelines for Planning in Bushfire Prone Areas (WAPC, 2021), as shown on Figure 5.

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, 2021)

3.3 Potential Bushfire Impacts - BHL allocation

The potential bushfire impact on the site/proposed development from each of the identified vegetation plots is presented in Table 3 and shown in Figure 6: BHL Map (Pre-Construction) and in Figure 7: BHL Map (Post-Construction).

Table 3: Potential Bushfire impacts on the Site (BHL Pre and Post-Construction).

Plot Number	Vegetation Type (Table 2.3)	Effective Slope (Table2.4.3)	BHL Allocation (Pre-Construction)	BHL Allocation (Post-Construction)
1	Excluded 2.2.3.2 (a)	N/A	Moderate	Moderate
2	Excluded 2.2.3.2 (e)	N/A	Low	Low
3	Excluded 2.2.3.2 (f)	N/A	Moderate	Low/Moderate
4	Grassland Type G	Upslope/flat	Moderate	Moderate
5	Grassland Type G	Downslope >0-5 degrees	Moderate	Low/Moderate
6	Forest Type A	Downslope >0-5 degrees	Extreme	Moderate/Extreme
7	Scrub Type D	Upslope/flat	Extreme	Extreme
8	Forest Type A	Downslope >0-5 degrees	Extreme	Extreme

NOTES ON BHL ASSESSMENT

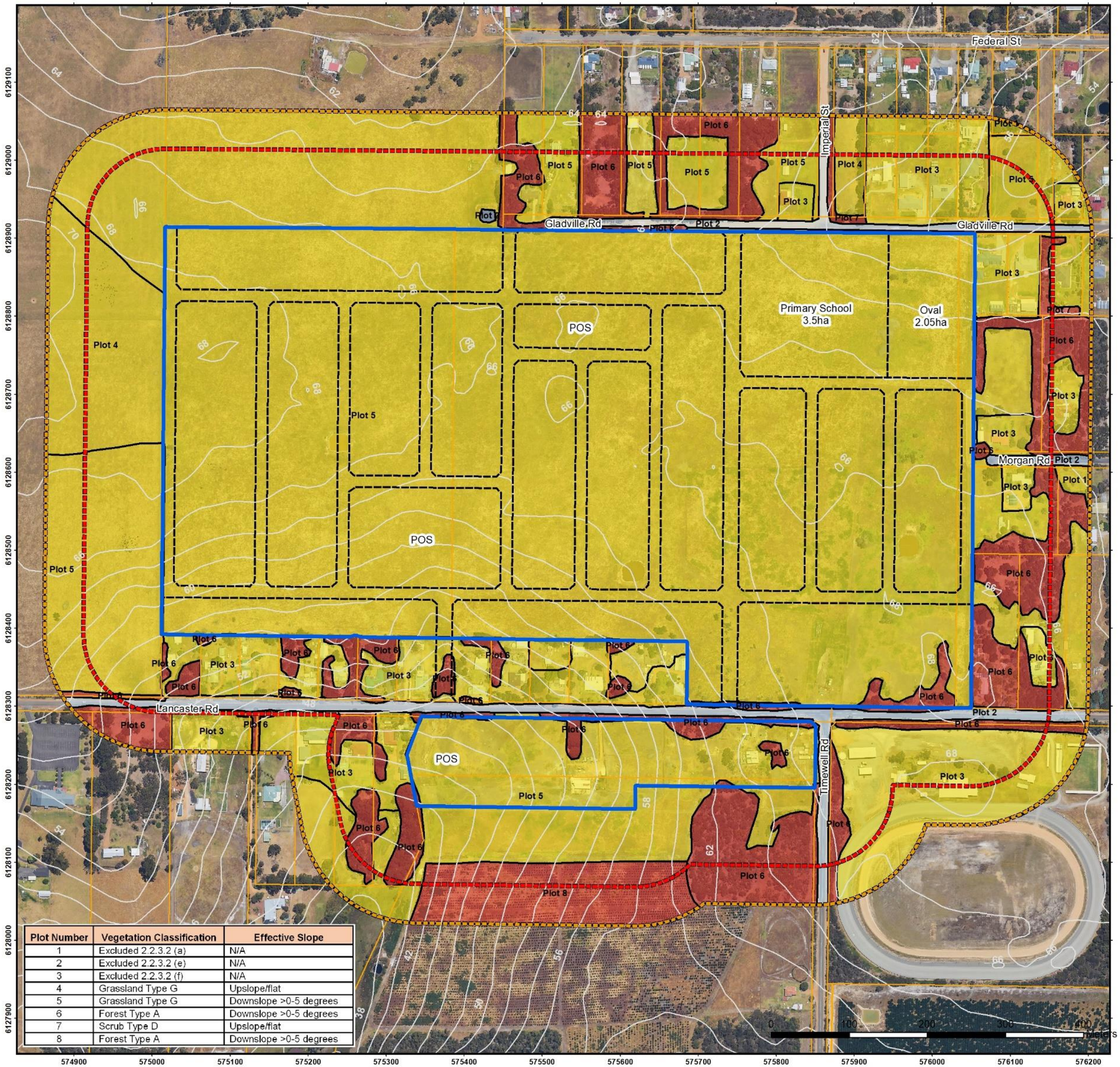
- The BHL assessment was prepared by an Accredited Level 2 Bushfire Planning Practitioner (BPAD37893);
- The BHL Assessment and Map has been prepared in accordance with Department of Planning (WAPC) Guidelines for Planning in Bushfire Prone Areas Version 1.4 (WAPC, 2021);
- It is noted that some of the vegetation is internal to the subject site. Therefore, the separation distance from this vegetation is 0m. However, this vegetation is in under the control of the landowner and can be removed/modified to a low threat state;
- In the future, internal grassland vegetation (part of Plot 5) will be managed in a low fuel condition;
- Forest vegetation (part of Plot 6), internal to the subject site in the south can be removed/modified to a low threat state. Therefore, the post development the BHL will be moderate/low;
- The area proposed for residential development is currently subject to a moderate BHL;
- The area in the southeast of the site (Plots 6 Forest), is currently an extreme BHL. Although, this internal vegetation will be modified to a low threat state in the future and subsequently presents as a Moderate BHL in the post development BHL. The appropriate separation distances will be established at the subdivision stage;
- The post development BHL will be dependent on the management of the internal grassland, it is expected that at the subdivision stage, the BHL over the site will be low/moderate;
- Once the lot layout is established, at the subdivision stage, a BAL contour plan will be completed to determine the BAL ratings over the proposed lots
- The assumptions contained within this report are based on the Local Structure Plan as supplied by the client (Figure 2); and
- Subject site is located in a Bushfire Prone Area; see Figure 3 (OBRM, 2021).

Note on internal vegetation

The lot contains significant areas of internal grasslands which are mapped as a moderate bushfire hazard. Internal to the subject site to the east of the small lot is a small area of Forest Type A (refer to Figure 4: Vegetation Classes Map). Onsite vegetation is within the control of the landowner and therefore can potentially be removed or modified to lower the bushfire risk, subject to approval. Offsite Vegetation is not within the control of the landowner. Therefore, this vegetation cannot be removed or modified by the landowner and as a result bushfire threat from offsite vegetation is unable to be reduced. Bushfire management measures external to the subject site are not required as part of this proposal. For the required separation distances from each vegetation plot to achieve a BAL-29 compliant Asset Protection Zone (APZ), refer to Table 4. A BAL-29 Developable Area has also been indicated on Figure 6 Bushfire Hazard Level Map.

Table 4: Separation Distances to achieve BAL-29 from each Vegetation Plot (BAL-29 APZ).

BAL-29 Asset Protection Zone				
Plot Number	**Vegetation Classification**	**Effective Slope Degrees**	**Achievable BAL Rating**	**Minimum Separation Distance Required (metres)**
4	Grassland Type G	Upslope/flat	**BAL-29**	8
5	Grassland Type G	Downslope >0-5 degrees		9
6	Forest Type A	Downslope >0-5 degrees		27
7	Scrub Type D	Upslope/flat		13
8	Forest Type A	Downslope >0-5 degrees		27



Plot Number	Vegetation Classification	Effective Slope
1	Excluded 2.2.3.2 (a)	N/A
2	Excluded 2.2.3.2 (e)	N/A
3	Excluded 2.2.3.2 (f)	N/A
4	Grassland Type G	Upslope/flat
5	Grassland Type G	Downslope >0-5 degrees
6	Forest Type A	Downslope >0-5 degrees
7	Scrub Type D	Upslope/flat
8	Forest Type A	Downslope >0-5 degrees

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BPAD Bushfire Planning & Design

BIO DIVERSE SOLUTIONS

Overview Map Scale 1:100,000

Legend

- Subject Site
- 100m Assessment Boundary
- 150m Assessment Boundary
- Cadastre
- 2m Contours
- Proposed Lot Layout
- Vegetation/Plot Boundary

Bushfire Hazard Level

- Extreme
- Moderate
- Low

Scale
1:4,750 @ A3
GDA MGA 2020 Zone 50

Data Sources
Aerial Imagery: WA Now, Landgate Subscription Imagery
Cadastre, Relief Contours and Roads: Landgate 2022
IRIS Road Network: Main Roads Western Australia 2017
Overview Map: World Topographic map service, ESRI 2012

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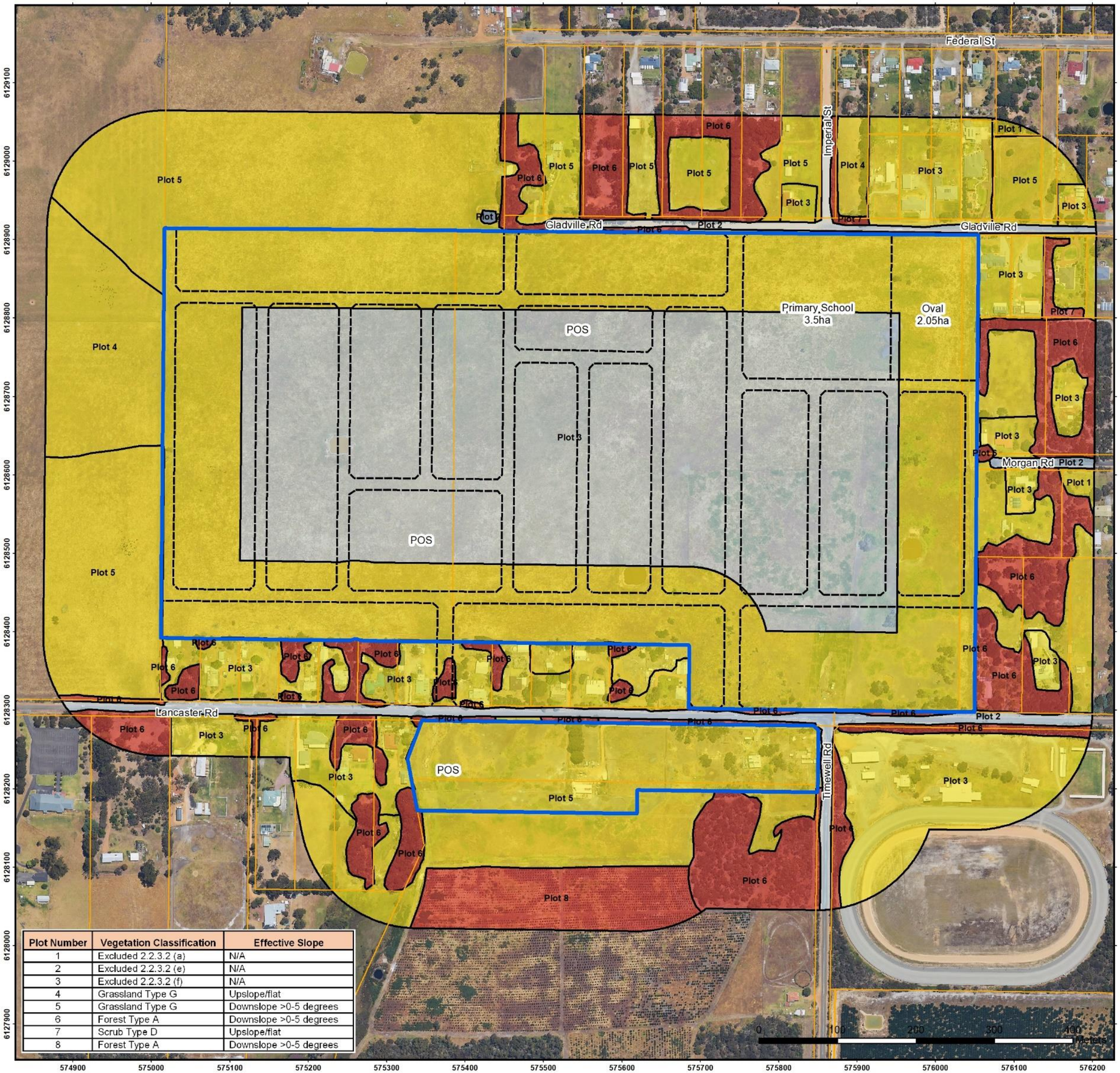
Acumen Development Solutions (Jarrod Rendell)
Lancaster Road Structure Plan
Lancaster Road
McKail, WA 6330

Figure 6: BHL Map (Pre-Construction)

BAL Assessor	*QA Check*	*Drawn by*
JRB	**BRM**	**GSK**
STATUS	*FILE*	*DATE*
FINAL	**MSC0595**	**01/08/2024**



Plot Number	Vegetation Classification	Effective Slope
1	Excluded 2.2.3.2 (a)	N/A
2	Excluded 2.2.3.2 (e)	N/A
3	Excluded 2.2.3.2 (f)	N/A
4	Grassland Type G	Upslope/flat
5	Grassland Type G	Downslope >0-5 degrees
6	Forest Type A	Downslope >0-5 degrees
7	Scrub Type D	Upslope/flat
8	Forest Type A	Downslope >0-5 degrees

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BPAD Bushfire Planning & Design

BIO DIVERSE SOLUTIONS

Overview Map Scale 1:100,000

Legend

- Subject Site
- Cadastre
- Proposed Lot Layout
- Vegetation/Plot Boundary

Bushfire Hazard Level

- Extreme
- Moderate
- Low

Scale
1:4,750 @ A3
GDA MGA 2020 Zone 50

Data Sources
Aerial Imagery: WA Now, Landgate Subscription Imagery
Cadastre, Relief Contours and Roads: Landgate 2022
IRIS Road Network: Main Roads Western Australia 2017
Overview Map: World Topographic map service, ESRI 2012

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Figure 7: BHL Map (Post-Construction)

BAL Assessor	*QA Check*	*Drawn by*
JRB	**BRM**	**GSK**
STATUS	*FILE*	*DATE*
FINAL	**MSC0595**	**01/08/2024**

4 Identification of Bushfire Hazard Issues

4.1 Bushfire Hazard Level

The identified bushfire risks associated with the subject site is the strips of vegetation external to the site to the north, east and south of the subject site. These areas consist of Forest Type A and Scrub Type D vegetation classification to AS3959 which is defined as an Extreme BHL. Under hot, dry, and unstable conditions (Extreme to Catastrophic bushfire weather) the subject site is most at risk from bushfire from these directions. Internal to the subject site in the southeast corner is a small patch of degraded forest vegetation, in the future (subdivision stage), it is expected that this vegetation will be modified to a low threat state.

Internal to the site and external in the north, east, south, and west are large areas of open unmanaged grasses and paddock areas. This vegetation has been classified as Grassland Type G, if left unmanaged this vegetation poses a moderate BHL to the proposed development. To the east and southeast of the subject site is an existing rural residential and residential subdivision and the City of Albany CBD which is predominately low fuel, presenting as a Low BHL. Although, if the fuel loads in these areas are not appropriately managed, can still pose a risk of bushfire to the site.

Post development the subject site will be predominantly located in a Moderate/Low BHL (See Figure 7: BHL Map Post-Construction) which is consistent with the acceptable solutions of the WAPC guidelines. At the subdivision stage, onsite vegetation within the subject site (Plot 4 and Plot 5 Grassland and Plot 6 Forest) will be modified and maintained in a low threat state, as per Appendix B Schedule 1 WAPC Asset Protection Zone (APZ) standards to apply. If the local structure plan and subsequent subdivision application are approved, ongoing management of vegetation compliance will be regulated via this BMP for the site and the prevailing CoA Fire Management Notice. A detailed BAL contour plan will be prepared at future West Australian Planning Commission (WAPC) subdivision stage/s.

The outer perimeter roads, structure plan layout and future onsite vegetation management will ensure that BAL 29 or less will prevail on the lot layout. Given the moderate to extreme bushfire risk associated with the site, it is recommended that planting guides are given to new lot owners indicating more flammable/less flammable plant species. This can assist in the land owner's decision making in the establishment and development of their lot. Also see Section 5.2.2.

The predominant onsite vegetation modification will consist of the management of grasses in paddock areas and the ongoing management of new planted vegetation, which can increase the bushfire risk of the area if left unmanaged. Grasses in residential land use areas should be maintained at <100mm at all times, with the balance of land in ownership of the developer to be maintained to this standard at all times.

4.2 Climate

The closest Bureau of Meteorology (BoM) site is Albany (009500). Albany's long-term mean annual rainfall is approximately 925.2 mm though there can be considerable variation in the total rainfall from year to year. Approximately 75 per cent of the annual rainfall occurs between May and October. Although cold fronts are responsible for much of the recorded rainfall total, a moist onshore flow can occur in any season and bring showers or drizzle along the south coast. Albany records rainfall on average 103.5 (≥1mm) rain days annually (BoM, 2022). July is the wettest month (long term average of 142.8mm). The driest month is February with a long-term average of 22.6 mm.

The average maximum temperatures peak in January and February, with monthly means of 22.8°C and 22.9°C (respectively) although temperatures above 35°C sometimes occur when hot, dry northerly winds arrive from the interior of WA. Overnight minimums also peak in January and February at a mild 15.6°C, on average. Winter daily maximum temperatures average approximately 15.8°C (July), while the average minimum is approximately 8.2°C to 8.5°C in July and August (respectively).

The dominant wind direction in summer is from the east and afternoon sea breezes occur from the south west/south east. During winter, southwest winds prevail and northwest storm events occur (BoM, 2022). Although fronts and depressions may bring strong to gale force winds, winter winds are more variable and generally lighter than those of summer. Please refer to Figures 8 to 11.

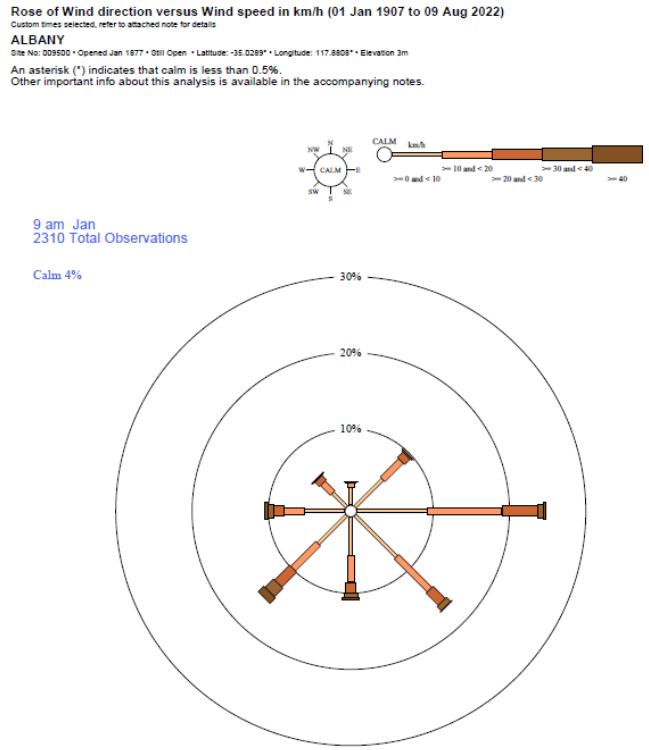


Figure 8: Albany Summer (Jan) 9am wind rose. (BOM, 2022)

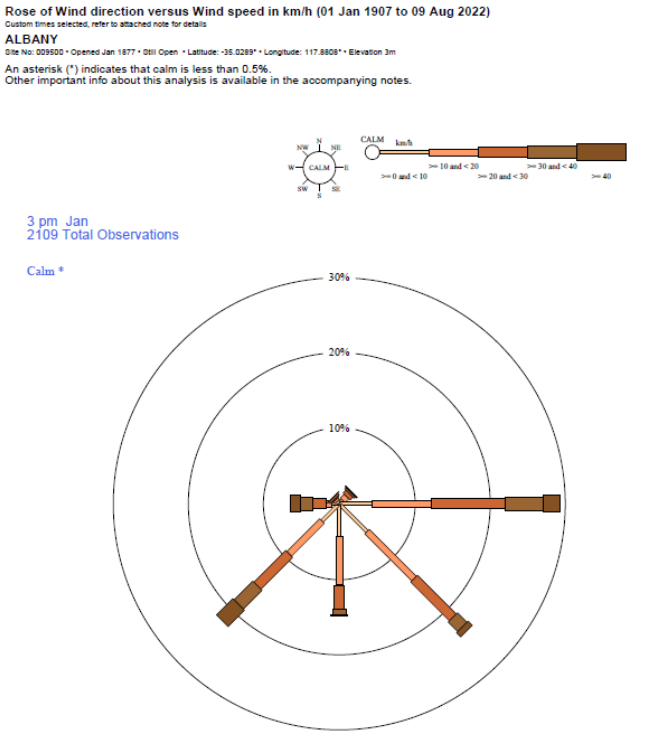


Figure 9: Albany Summer (Jan) 3pm wind rose (BOM, 2022)

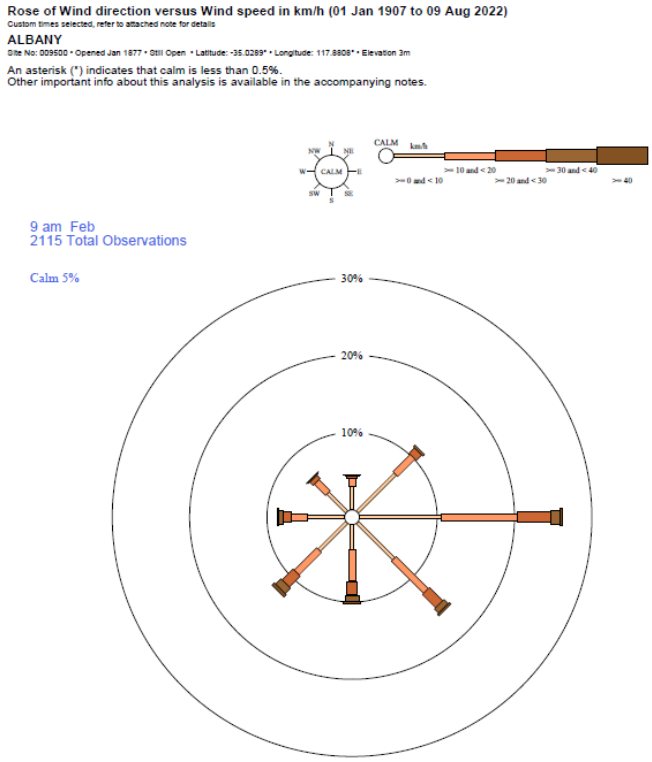


Figure 10: Albany Summer (Feb) 9am wind rose. (BoM, 2022)

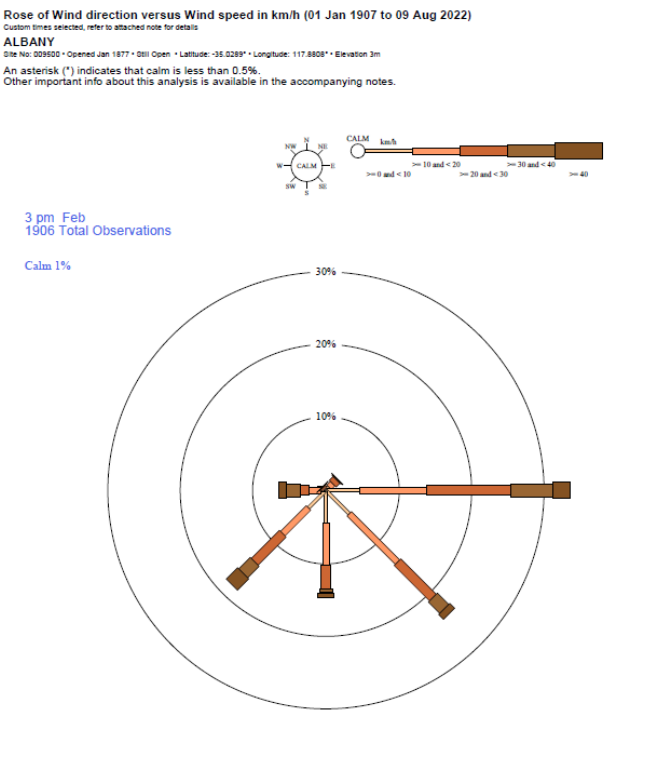


Figure 11: Albany Summer (Feb) 3pm wind rose. (BoM, 2022)

December, January, and February all have the lowest mean 3pm relative humidity recordings on average of 67. Highest curing rates for grasses for the south coast region are on average during January and February (driest periods and lowest relative humidity). Grassland curing refers to the dying or senescence of plant material caused by seasonal weather patterns, species specific phenological cycles and plant succession. Curing has a significant impact on fire behaviour in grasslands, particularly the probability of ignition and the subsequent rate of spread (CRC, 2010). The degree (as a percent) of grassland curing and moisture content are inputs into fire rate of spread models and grassland fire danger ratings.

Fire weather along the south coast region is characterised by mid-level disturbances across the southwest of Western Australia, bringing unstable atmospheric conditions (thunder and lightning) from the north or northwest wind directions. This is characteristic of "Extreme" Fire Weather conditions to the area with hot dry conditions prior to storm events. Risk of lightning strikes, spark ignition, arson and other causes of fire give rise to bushfires under these conditions. Following the unstable conditions, westerly and south westerly fronts across the south coast can bring strong onshore winds.

Prevalent winds which most bushfire events occur in the region are from the northwest, west and northeast direction. Conditions tend to be dry with low relative humidity. High winds and excess fuels can lead to hazardous conditions for residents. Strong easterly and south-westerly winds exist at the subject site during dry summer periods as shown from Albany wind roses in Figure 8-11. The risk of fire from the east onto the subject site (prevalent wind direction) is limited with the lower risk of the Albany urban areas from this direction, also see Section 4.3 Broader Landscape Risk.

4.3 Broader Landscape Risk

Analysis of the broader landscape indicates the subject site is in a predominantly cleared agricultural landscape, the 2km mapping (see Figure 12) indicates that the bushfire risks on a landscape scale would be from the north, northwest and west, and southwest with lesser risks to the south, east and northeast due to the urban areas of Albany. Forest Type A would increase the scale and intensity of bushfire, with Grassland Type G creating fast moving intense fires in the landscape. The fragmented rural residential areas to the south present moderate bushfire risk to the proposed LSP with smaller fragmented areas of Forest Type A, Grassland Type G and Low Fuel exclusions to AS3959.

The vegetation to the north, northwest and west, and southwest has the highest risk of bushfire run into the subject site. Forest Type A is classified as Extreme BHL and presents the highest risk to the site, with large tracts of Forest Type A located to the west of the subject site (>2km from the site). Modified agricultural landscapes dominated by Grassland Type G exist adjacent to the site to the north, northwest, west and pose a moderate risk of fire run into the subject site.

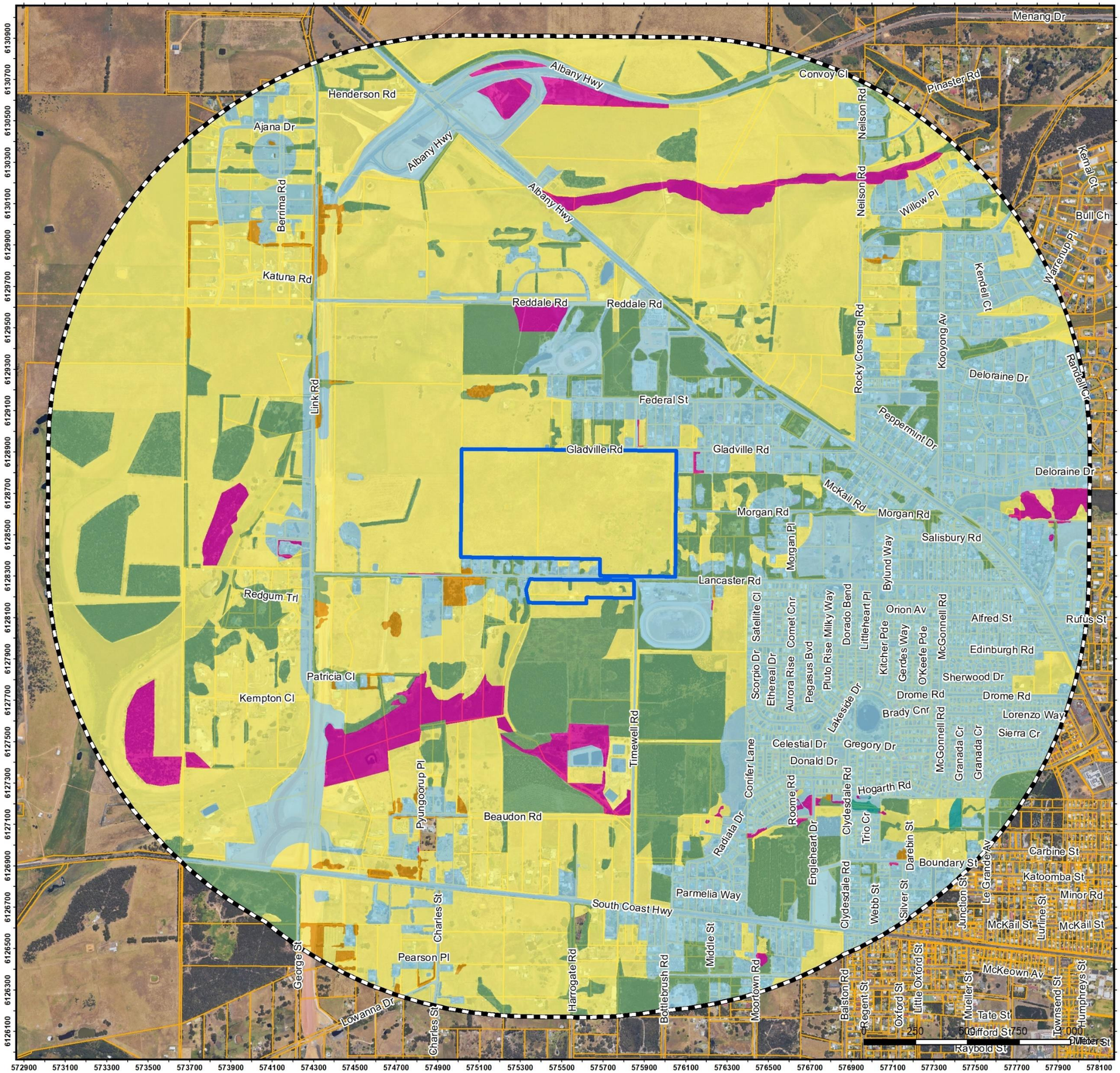
The LSP outlines approximately 326 residential lots ranging between 476sqm and 5719sqm in area. Other future urban development is proposed to the north and west of the subject site. The bushfire risks for the proposed LSP will be the external perimeters to the north and the west until the future urbanisation of the local area occurs. Outer perimeter roads are proposed with the extension of Gladville Road to the west in future development (along most of the northern boundary). Perimeter roads can offer some protection to bushfire attack and enable firefighting agencies to conduct suppression operations more safely.

The predominant vegetation within and surrounding the development area is Grassland Type G in existing paddock/pasture areas. The ongoing management of grasses within residential areas should be maintained at <100mm at all times. The management of new planted vegetation can impact the overall bushfire risk of the area if not maintained in a low fuel condition. Given the bushfire risk associated with the site, it is recommended that new lot owners are provided with planting guides to ensure that the vegetation planted within the lots does not add to the overall fuel loads in the area and contribute to a landscape scale bushfire. Onsite vegetation management and planting of low flammability species can reduce the likelihood of bushfire attack within the future residential development, also see Section 5.2.2.

The safer location in the event of bushfire is evacuation early to the east to the Albany CBD, this is also in the direction of least landscape bushfire risk to the subject site. Also see Section 4.4 Access.

In assessing the broader landscape risk, and noting the proposed development of a school site within the LSP is being contemplated, the draft Planning for Bushfire Guidelines (WAPC, 2023) "Points-based system for determining a broader landscape type" was assessed. This was undertaken as the span of this LSP approval may require assessment in the future to version 2.0 of the WAPC bushfire/framework and guidelines. An assessment of the broader landscape risk has determined a scoring of 5 points, Broader Landscape A based on:

- **Proximity of the planning proposal to a suitable destination:** *Not adjoining but within 1km – 2 points.*
- **The road pattern immediate to the planning proposal is:** *Direct and/or straight view lines (grid or modified grid)– 1 point.*
- **Public road access to a suitable destination from the planning proposal is**: *Provided to two suitable destinations – 1 point.*
- **Exposure of the planning proposal to an identified external bushfire hazard (excluding Grassland Type G) is from:** *from nil, one or two aspects only; and all of the identified aspects have a slope under the vegetation of less than 10 degrees – 1 point.*



572900 573100 573300 573500 573700 573900 574100 574300 574500 574700 574900 575100 575300 575500 575700 575900 576100 576300 576500 576700 576900 577100 577300 577500 577700 577900 578100

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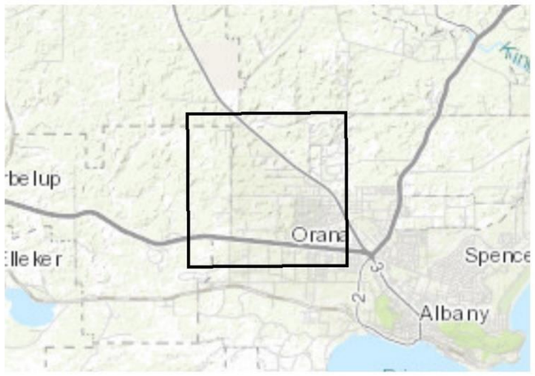

Overview Map Scale 1:250,000

Legend

- Subject Site
- Cadastre
- 2km Awareness Zone

Vegetation

- Forest Type A
- Woodland Type B
- Shrubland Type C
- Scrub Type D
- Grassland Type G
- Excluded 2.2.3.2

Scale
1:18,000 @ A3
GDA MGA 2020 Zone 50

Data Sources
Aerial Imagery: WA Now, Landgate Subscription Imagery
Cadastre, Relief Contours and Roads: Landgate 2022
IRIS Road Network: Main Roads Western Australia 2017
Overview Map: World Topographic map service, ESRI 2012

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Figure 12: Broader Landscape Assessment

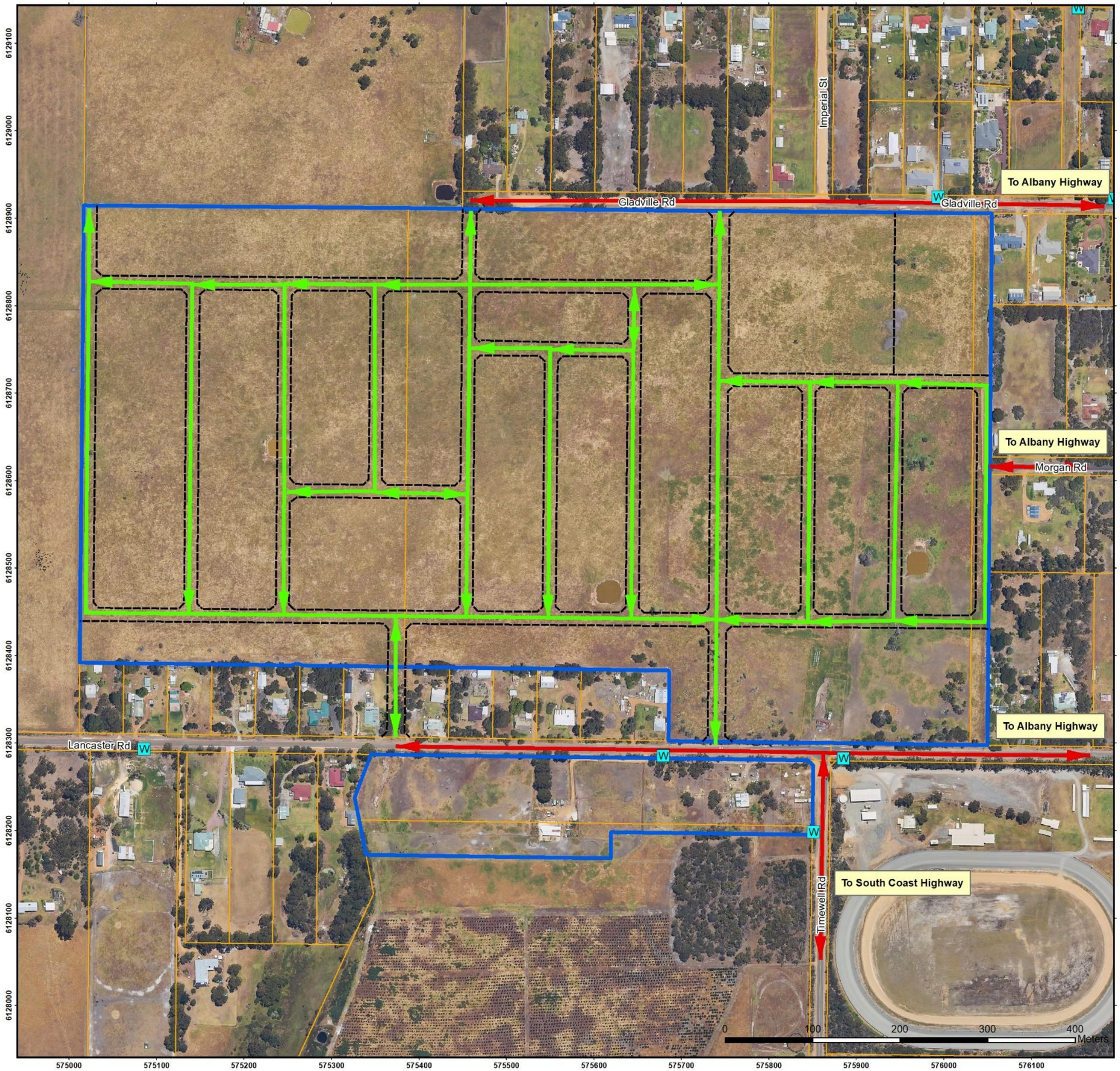
BAL Assessor	*QA Check*	*Drawn by*
JRB	**KPK**	**GSK**
STATUS	*FILE*	*DATE*
FINAL	**MSC0595**	**05/10/2023**

4.4 Access

The development area is accessed via Gladville Road to the north, Morgan Road to the east and Lancaster Road to the south, which all connect with Albany Highway to the east. Albany Highway heads south to the Albany CBD and north to Mount Barker. The proposal will include the construction of a new internal road network as well as upgrading and extending the existing Gladville Road. In the future, all new lots will have safe access and egress in two different directions to at least two different destinations, see Figure 13: Access and Water Map. All new and existing public roads will be all-weather construction and meet the minimum technical requirements established by the guidelines, see Figure 14: Vehicle Access Technical Requirements.

4.5 Water Supply

A reticulated water supply will be made available to the subject site. The nearest Water Corporation WA (WCWA) standard hydrant is located directly adjacent to the subject site on Lancaster Road to the south and Gladville Road to the north. The reticulated water network will be extended into the development area at the subdivision stage and new hydrants will be installed consistent with the Design Standard DS63 Water Reticulation Standard Design and Construction Requirements for Water Reticulation Systems up to DN250 (Water Corporation, 2012). All new hydrants will be identified by standard pole and/or road markings. This will meet the current acceptable solutions of the guidelines.



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BPAD Bushfire Planning & Design

BIO DIVERSE SOLUTIONS

Overview Map Scale 1:100,000

Legend

- Subject Site
- Cadastre
- Proposed Lot Layout
- Water Point
- Existing Access Route
- Proposed Access Route

Scale
1:4,250 @ A3
GDA MGA 2020 Zone 50

Data Sources
Aerial Imagery: WA Now, Landgate Subscription Imagery
Cadastre, Relief Contours and Roads: Landgate 2022
IRIS Road Network: Main Roads Western Australia 2017
Overview Map: World Topographic map service, ESRI 2012

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Figure 13: Access and Water Map

BAL Assessor	*QA Check*	*Drawn by*
JRB	**BRM**	**GSK**
STATUS	*FILE*	*DATE*
FINAL	**MSC0595**	**01/08/2024**

5 Assessment against the Bushfire Protection Criteria

5.1 Compliance Table

The Guidelines for Planning in Bushfire Prone Areas (WAPC, 2021) outlines bushfire protection criteria which subdivision and development proposals are assessed for compliance. The bushfire protection criteria (Appendix 4, WAPC, 2021) are 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.

The subject site and the plan of subdivision has been assessed and are required to meet the “Acceptable Solutions” of each element of the bushfire mitigation measures (WAPC, 2021). The proposal has been assessed against all elements of the bushfire protection criteria and found to be compliant, refer to Table 5.

Table 5: Bushfire protection criteria applicable to the subject site.

Element	Acceptable Solution	Applicable or not Yes/No	Proposal meets Acceptable Solution
Element 1 – Location	A1.1 Development Location	Yes	Compliant As per SPP 3.7 and the Guidelines for Planning in Bushfire Prone Areas, the local structure plan and subsequent subdivision development will not be subject to a higher BHL than moderate. All new residential buildings can be located within a "Moderate" BHL area and in the future, BAL-29 or lower can be achieved on the lots. Proposal meets Acceptable Solution A1.1.
Element 2 – Siting and Design	A2.1 Asset Protection Zone (APZ)	Yes	Compliant An APZ can be applied and maintained within all future lots and will be required to meet BAL-29 or less. APZ areas associated with BAL-29 or less are deemed to be achievable in the low-fuel urban environment proposed. Moderate to Low BHL will prevail over all lots post-development, see Figure 7: BHL Map (Post-Construction). There is a small patch of forest vegetation in the southeast of the development area. It is expected that in the future at the subdivision stage, this internal vegetation will be modified to a low-threat state and appropriate setbacks from all areas of vegetation will ensure BAL-29 can be achieved for all lots. For required setbacks from classified vegetation, refer to Table 4: BAL-29 Compliant Asset Protection Zone. In the future, all APZs will be maintained to the required standards set out in the guidelines, see Appendix B – Schedule 1 WAPC Asset Protection Zone (APZ) standards. If the subsequent subdivision is staged, the developer is to maintain the balance of land in ownership in accordance with the CoA Fire Management Notice and the WAPC APZ standards. Any landscaping, replanting for buffers, screening or enhancement of the site is to conform to WAPC APZ requirements and should be reviewed by the bushfire practitioner before approval from the Local Government to meet low fuel requirements or to ensure it does not increase the bushfire threat. Proposal meets Acceptable Solution A2.1.
Element 3 – Vehicular Access	A3.1 Public Roads	Yes	Compliant All existing and public roads are or will be constructed to the minimum technical standards as required by the guidelines, refer to Figure 14. All public roads are to meet the relevant trafficable (carriageway/pavement) width as defined/established by CoA. Internal roads currently indicate they will have a 15-20m wide road reserve (subject to detailed engineering design). Public road designs are to be approved at subdivision approval stages by the CoA. Proposal meets Acceptable Solution A3.1.
	A3.2a Multiple Access Routes	Yes	Compliant Lancaster Road, Timewell Road, Morgan Road, Gladville Road, Imperial Street, the surrounding existing road network and the proposed internal road network will provide safe access and egress to two different destinations. Gladville Road will be extended to the west to connect to the proposed new road. The new public road will also connect to Lancaster Road in two locations. Timewell Road heads south to South Coast Highway and Lancaster Road, Morgan Road and Gladville Road all head east, connecting onto Albany Highway, see Figure 13: Access and Water Map. Proposal meets Acceptable Solution A3.2a.
	A3.2b Emergency Access Ways	No	Emergency Access Ways and not planned or required as part of this proposal. Not assessed to A3.2b.

Table 5 cont.

Element	Acceptable Solution	Applicable or Not Yes/No	Proposal meets Acceptable Solution
Element 3 – Vehicular Access cont.	A3.3 Through Roads	Yes	Compliant Lancaster Road, Morgan Road and Gladville Road are currently no through roads, these will be extended/connected to meet two-way access requirements. All new lots will have access to the public road network and have the option of travelling in two different directions to a suitable destination. No through roads are not planned as part of this proposal. Proposal meets Acceptable Solution A3.3.
	A3.4a Perimeter roads	No	Upon completion, the subject site will have constructed public roads to the west and part of the north, part of the east and south as well as an internal road network. External to the subject site on the western and northwestern boundaries, is grassland vegetation. To the north, east and south are mixed forest, grassland, and low fuel areas and will predominantly have a moderate BHL in these areas. All future lots will have public road frontage. Perimeter roads are not planned as part of this proposal. Not assessed to A3.4a.
	A3.4b Fire Service Access Route	No	Suitable access will be provided within the proposed development. No Fire Service Access Routes are proposed. Not assessed to A3.4b.
	A3.5 Battle axe access legs	No	Not addressed at the structure plan stage, to be actioned at the WAPC subdivision stage (WAPC approval) not assessed to A3.5.
	A3.6 Private driveways	No	Not addressed at the structure plan stage, to be actioned in subsequent planning stages (D.A and building approval) not assessed to A3.6.
Element 4 – Water	A4.1 Identification of future water supply	Yes	Compliant. A reticulated water supply will be made available to the subject site. The nearest Water Corporation WA (WCWA) standard hydrants are located to the north on Gladville Road and south on Lancaster Road, in the nearby Rural Residential development. The reticulated water network will be extended into the development area at the subdivision stage and new hydrants will be installed consistent with the Design Standard DS 63 Water Reticulation Standard Design and Construction Requirements for Water Reticulation Systems up to DN250 (Water Corporation, 2012). All new hydrants will be identified by standard pole and/or road markings. This will meet the acceptable solutions of the guidelines. Proposal meets Acceptable Solution A4.1.
	A4.2 Provision of water for firefighting supply	No	Not addressed at the structure plan stage, to be actioned at the WAPC subdivision stage (WAPC approval) not assessed to A4.2.

5.2 Other Bushfire Mitigation Measures

The bushfire risk assessment (Section 4) and assessment to the Bushfire Protection Criteria (Section 5.1) has outlined the bushfire risks for the site and the future development of the subject site. The following sections outlines additional measures and strategies to mitigate the bushfire risk and assist in guiding the future lot owners and the developer of the lots.

5.2.1 Vehicle access technical requirements

All public roads are to be constructed in accordance with the WAPC guidelines. The developer and the appointed civil engineer are to ensure all public roads meet the standards stated in the Figure 14 below at the WAPC subdivision stage.

TECHNICAL REQUIREMENTS	1 Public roads	2 Emergency access way[1]	3 Fire service access route[1]	4 Battle-axe and private driveways[2]
Minimum trafficable surface (metres)	In accordance with A3.1	6	6	4
Minimum horizontal clearance (metres)	N/A	6	6	6
Minimum vertical clearance (metres)	4.5			
Minimum weight capacity (tonnes)	15			
Maximum grade unsealed road[3]	As outlined in the IPWEA Subdivision Guidelines	1:10 (10%)		
Maximum grade sealed road[3]		1:7 (14.3%)		
Maximum average grade sealed road		1:10 (10%)		
Minimum inner radius of road curves (metres)		8.5		

Notes:

[1] To have crossfalls between 3 and 6%.

[2] Where driveways and battle-axe legs are not required to comply with the widths in A3.5 or A3.6, they are to comply with the Residential Design Codes and Development Control Policy 2.2 Residential Subdivision.

[3] Dips must have no more than a 1 in 8 (12.5% -7.1 degree) entry and exit angle.

Figure 14: Vehicle Access Technical Requirements

Turnarounds are to be constructed in accordance with the WAPC guidelines, see Figure 15 below.

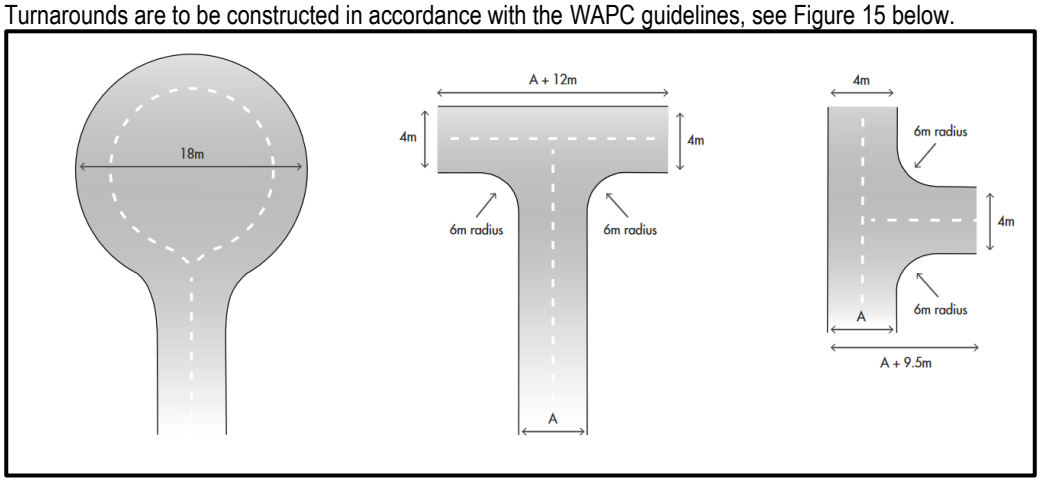

Figure 15: Turn Around Technical Requirements

5.2.2 Minimise Ignition Sources

There is little control of offsite ignition sources, however the following is recommended to be undertaken by the developer while in ownership of the land and any subsequent lots.

Prior to the bushfire season (October) the following activities are undertaken:

- Mowing, slashing and brush cutting (noting illegal to do so on designated total fire ban days) to maintain low fuel across the subject lots and road reserves;
- Maintenance of road access into and out of the site; and
- Sub-contractors are aware of their obligations of minimising ignition sources through documented contractual requirements.

During the summer bushfire season (1st December to 30th April inclusive as designated in the fire control notice) maintenance activities internal to the site should be planned and risk assessed prior to commencement. This includes but not limited to:

- Mowing, slashing and brush cutting (noting illegal to do so on designated total fire ban days);
- Welding, grinding and hot works (not undertaken on designated total fire ban days);
- Temporary waste disposal areas and green waste dumps – ensure piles are not exceeding 1.5m high and have bare mineral earth surrounding (min of 10m); and
- A water tender (min of 200L) fast attack unit is on site during the fire season (any site construction activities).

The Site Construction manager (during subdivision construction phases) in consultation with developer are responsible for safety in construction activities during the bushfire season and are to ensure safety of the site and adjacent properties at all times from potential ignition sources.

5.2.3 Fuel Reduction and APZ Management

Ongoing fuel reduction by landowners to ensure their allocated BAL applies through mechanical slashing and mowing will be required to be undertaken regularly to ensure all internal grasses are maintained. Buildings are to be inspected regularly for build-up of wind-borne debris and leaf accumulation in gutters and at penetrations to buildings (doors, windows, etc). The lot owner is to be responsible for implementation of the maintenance schedule to maintain their BAL setback zones and general bushfire preparedness which should generally reflect the following actions, refer to Table 6.

Table 6: Maintenance schedule – landowners.

Frequency	*Activity*
Weekly **(During fire season operations and prior to bushfire event)** **Also refer to Schedule 1, Appendix B**	Check all buildings for wind-borne debris build-up and remove.
	Check gutters are free from vegetation or overhanging branches.
	Trimming and removing dead plants or leaf litter.
	Pruning climbing vegetation (such as vines) on a trellis, to ensure it does not connect to a building, particularly near windows and doors.
	Check outdoor objects around buildings (see list below).
	Raking and cleaning underfloor spaces (if applicable).
Monthly	Mowing, slashing, and maintaining grasses, more frequently during spring and autumn growth periods.
	Whipper snipper/grass cutter around all buildings.
	Check no combustible materials are stored near buildings or penetrations of buildings (windows doors etc), includes but not limited to – gas bottles, fences, stored combustible material, vines, plants etc.
	Ensure weeds or woody material is not encroaching into the APZ area around buildings (20m minimum), attend to any dead material through trimming and pruning, raking and removing to green waste.
	Any material from pre fire season preparation is either disposed to green waste or burn in piles away for the buildings with a 10m mineral earth break around the pile.

Prior to a bushfire event best practice recommends that objects within the APZ are moved away from the building prior to any bushfire event. Objects may include, but are not limited to:

- Door mats;
- Outdoor furniture;
- Potted plants;
- Shade sails or umbrellas;
- Plastic garbage bins;
- Firewood stacks;
- Flammable sculptures; and
- Playground equipment and children's toys.

These should always be considered in the proximity to buildings and stored appropriately when not in attendance at site. For any replanting or landscaping refer to the Country Fire Authority's Landscaping for Bushfire: Garden Design and Plant Selection (CFA, 2022), and the CFA Key Plant Selection which aims for plants within the APZ that have the following characteristics:

- Grow in a predicted structure, shape and height.
- Are open and loose branching with leaves that are thinly spread.
- Have a coarse texture and low surface-area-to-volume ratio.
- Will not drop large amounts of leaves or limbs, that require regular maintenance.
- Have wide, flat, and thick or succulent leaves.
- Trees that have bark attached tightly to their trunk or have smooth bark.
- Have low amounts of oils, waxes, and resins (which will often have a strong scent when crushed).
- Do not produce or hold large amounts of fine dead material in their crowns.
- Will not become a weed in the area.

Also refer to Schedule 1, Appendix B of this report.

5.2.4 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, 2021), through 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 developer will be encouraged to build Colourbond or non-combustible fences where applicable.

5.2.5 Evaporative Air Conditioners

Evaporative air conditioning units can catch fire as a result of embers from bushfires entering the unit. These embers can then spread quickly through the home causing rapid destruction. It can be difficult for fire-fighters to put out a fire in the roof spaces of homes.

It is also recommended that the Proponent:

- Ensure that suitable external ember screens are placed on roof top mounted evaporative air conditioners compliant with AS3959-2018 (current and endorsed standards) and that the screens are checked annually; and
- Maintain evaporative air conditioners regularly as per DFES recommendations, refer to the DFES website for further details: http://www.dfes.wa.gov.au.

5.2.6 Individual Fire Plan

Residents should prepare their own individual fire plans, as they need to make a commitment to develop a bushfire survival plan detailing preparations and actions to take if a bushfire threatens. By compiling information as outlined above, the individual lot owner can be prepared for their response in a bushfire emergency. Home owners should not rely on emergency personnel to attend their home and thus it is stressed to prepare an individual bushfire emergency plan regarding their intentions and property. This Bushfire Management Plan is not an individual bushfire emergency plan. More information can be gained from the DFES website (s):

www.dfes./wa.gov.au

www.emergency.wa.gov.au

Figure 16: DFES emergency access plan home page (DFES, 2022)

The DFES FDR ratings and warning systems are shown below in Figure 17.

Figure 17: DFES Warning Systems (DFES, 2022)

6 Implementation Actions

The responsibilities of the developer(s), Landowners and local government are shown in Table 7, 8 and 9.

6.1 Future Lot owner's Responsibility

It is recommended the future property owners shall be responsible for the following:

Table 7: Implementation actions future lot owners.

Future Lot owner				
No	**Implementation Action**	**Initial**	**Annual**	**All times**
1	Build to AS3959-2018 as it applies to their property and provide a certified BAL to their proposed building at building approval stages.	✓		
2	Establish/maintain APZ's to the standard stated in this BMP and their allocated certified BAL, see Schedule 1 Standards for APZ's (Appendix B; WAPC, 2021).	✓	✓	✓
3	Maintain individual lots fire breaks and bushfire fuel load in accordance with the current CoA Fire Management Notice and Schedule 1 Standards for APZs (See Appendix B).		✓	
4	A driveway cross over to be designated/ installed for access into the lots to the minimum technical standards as required by current and endorsed WAPC guidelines. To be demonstrated to CoA at planning approval / building approval stages.	✓		✓

6.2 Developer's Responsibility

It is recommended the developer be responsible for the following:

Table 8: Implementation actions current land owner/developer.

Developer		
No	**Implementation Action**	**Subdivision Clearance**
1	Planning approval may be conditioned with the requirement to make appropriate notifications (on the certificates of title and the deposited plan), of the existence of this Bushfire Management Plan and that the land is within a designated bushfire prone area. A Notification, pursuant to Section 165 of the Planning and Development Act 2005 may be required to be placed on the certificate(s) of title of the proposed lot(s) with a Bushfire Attack Level (BAL) rating of 12.5 or above, advising of the existence of a hazard or other factors. Notice of this notification is to be included on the diagram or plan of survey (deposited plan). The notification is to state as follows: 'This land is within a bushfire prone area as designated by an Order made by the Fire and Emergency Services Commissioner and is subject to a Bushfire Management Plan. Additional planning and building requirements apply to development on this land'.	**Developer**
2	Ensure a BMP/BAL contour plan is prepared to support the WAPC subdivision application at the subdivision stage.	**Developer**
3	Ensure in the future that prospective buyers are aware of the BAL Contour Plan and the applicable BAL to their property through provision of BAL Contour Plan. Update the BAL contour plan and provide certification of BAL Contour prior to lodgement of titles (post construction).	**Bushfire practitioner**
4	Ensure lots are compliant with the relevant local government's annual firebreak notice issued under s33 of the Bushfires Act 1954.	**Bushfire practitioner**
5	Construct public roads to the standards stated in this BMP (Figure 14).	**Developer and civil engineer**
6	Install reticulated water supply to the standards stated in this BMP.	**Developer and civil engineer**
7	Update or review this BMP report as required or as further planning or design information is available to assist through subsequent levels of WAPC planning.	**Developer**

6.3 Local Government Responsibility

It is recommended the local government be responsible for the following:

Table 9: Implementation actions, City of Albany.

CoA		
No	**Implementation Action**	**Stage of approval**
1	Request for the update of the BAL contour plan and certification of BAL Contour prior to clearance of titles (post construction).	**WAPC Subdivision Stage**
2	Request BAL certification at Building Approval stages on any proposed habitable buildings. Buildings to be located in BAL-29, BAL-19 and BAL-12.5 zones. Increased construction standards to BAL and AS3959-2018 applies to buildings located in the WA bushfire Prone Area Mapping (OBRM, 2021).	**Development and Building Approval**
3	Ensure vehicle access standards are achieved as per Figure 8.	**WAPC Subdivision Stage**
4	Ensure all buildings and their respective driveways conform at DA stages to the current and endorsed WAPC guidelines technical standards which apply to driveway construction.	**Development Approval**
5	Ensure reticulated water is suppled in accordance with the Water Corporation's No. 63 Water Reticulation Standard (WC, 2016) and hydrants are to be identified by standard pole and/or road markings at WAPC subdivision stage.	**WAPC Subdivision Stage**
6	Monitor landowner compliance with this Bushfire Management Plan and the annual CoA Fire Management notice.	**Ongoing**
7	Where control of an area of vegetated land is vested in the control of the local government and that area of land has potential to influence the assessed BAL rating/s of future buildings - there is an obligation to consider the impact of any changes to future vegetation management and/or revegetation plans with respect to that area.	**Ongoing**

7 Disclaimer

The recommendations and measures contained in this assessment report are based on the information available at the time of writing following the instructions of the regulatory authorities and following the requirements of the Australian Standards 3959-2018 – Building in Bushfire Prone Areas, WAPC State Planning Policy 3.7 (WAPC, 2015), WAPC Guidelines for Planning in Bushfire Prone Areas (WAPC, 2021), and applying best practise as described by Fire Protection Association Australia. These are considered the minimum standards required to balance the protection of the dwellings 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, people injured, or fatalities occur either at the site or while evacuating. All surveys and forecasts, projections and recommendations made in this assessment report and associated with this proposed development 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 bushfire consultant has no control. Notwithstanding anything contained within, the consultant/s will not, except as the law may require, be liable for any loss or other consequences (whether or not due to negligence of the bushfire consultant) arising out of the services rendered by the consultant.

AS3959-2018 disclaimer: It should be borne in mind that the measures contained within this Standard (AS3959-2018) 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 condition.

Building to AS3959-2018 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, 2018).

8 Certification

I hereby certify that I have undertaken the assessment of the above site and determined the Bushfire Attack Level(s) stated in this document have been prepared in accordance with the requirements of AS 3959-2018 and the Guidelines for Planning in Bushfire Prone Areas (WAPC, 2021).

SIGNED, ASSESSOR: ..... DATE: 1/08/2024

Jason Benson, Bio Diverse Solutions

Accredited Level 2 Bushfire Practitioner (Accreditation No: BPAD3785)

9 Revision Record

Revision	Prepared By	Summary	Reviewed By	Date
Draft Id	Jason Benson	Internal QA review	Graham Penter	5/10/2023
Draft Id	Jason Benson	Internal Technical review	Melanie Haymont	6/10/2023
Final Id v1	Jason Benson	Final Issued to client		9/10/2023
Final Id v2	Jason Benson	Minor amendments		19/01/2024
Final Id v3	Jason Benson	Minor amendments		12/02/2024
Final Id v4	Jason Benson	Minor amendments		15/03/2024
Final Id v5	Jason Benson	Minor amendments		1/08/2024

10 References

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Western Australian Planning Commission (WAPC) (2021). *Guidelines for Planning in Bushfire Prone Areas Version 1.4.* Western Australian Planning Commission and Department of Planning WA, Government of Western Australia.

11 Appendices

Appendix A: Vegetation Classifications to AS3959-2018

Appendix B: Schedule 1 - WAPC Asset Protection Zone (APZ) standards to apply

Appendix C: City of Albany, Fire Management Notice (CoA 2023/2024)

Appendix A

Vegetation Classification to AS3959-2018

Vegetation classification to AS3959-2018

Site Details			
Address:	Lots 526 &507 Lancaster Road		
Suburb:	McKail	**State:**	W.A.
Local Government Area:	City of Albany		
Stage of WAPC Planning	Local Structure Planning		

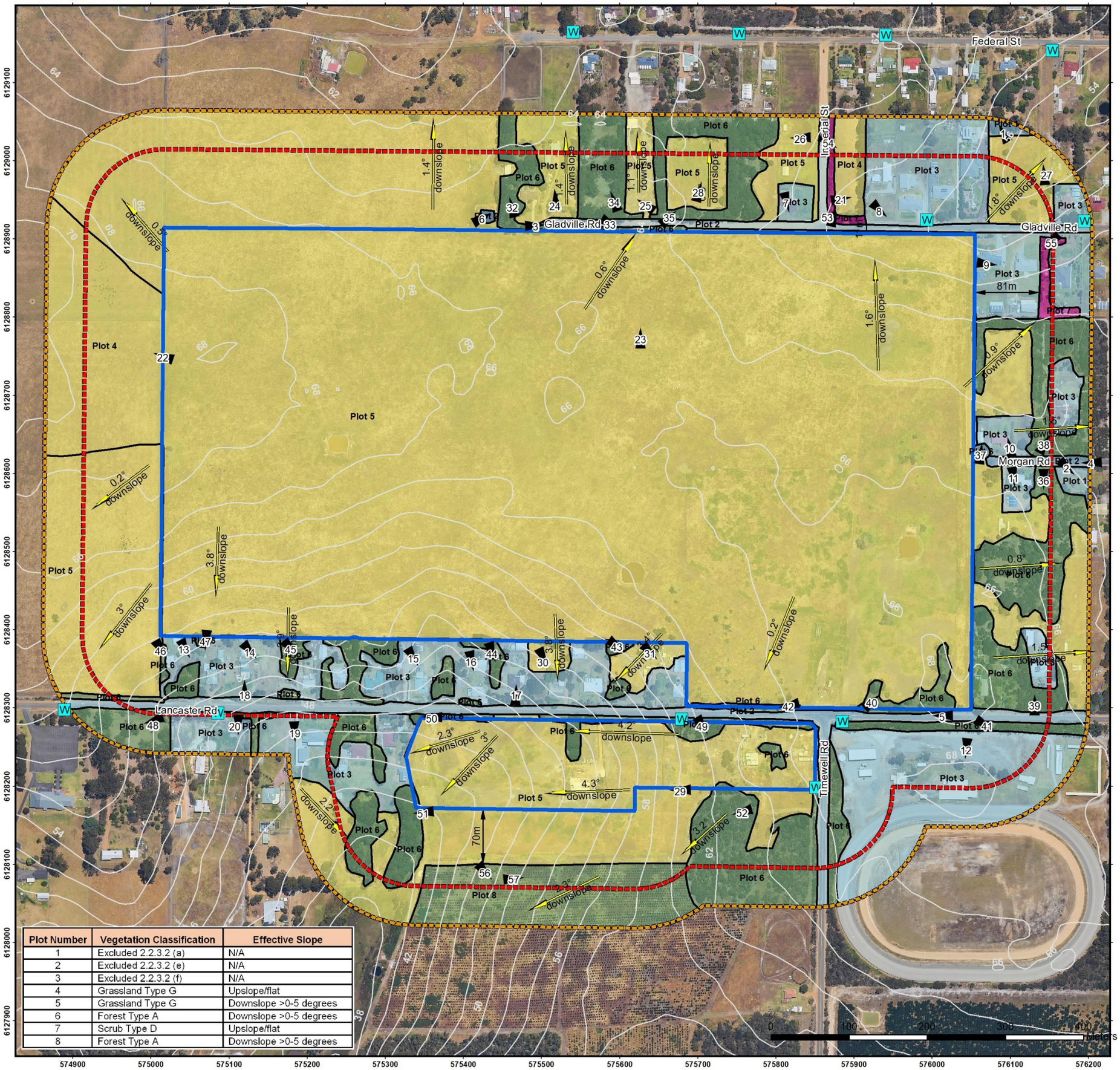
BMP Plan Details			
Report / Job Number:	MSC0595	**Report Version:**	Final
Assessment Date:	18 July 2023	**Report Date:**	31 July 2024
BPAD Practitioner	Jason Benson	**Accreditation No.**	BPAD 37893
BPAD Practitioner	Kathryn Kinnear	**Accreditation No.**	BPAD 30794

Vegetation Classification

Site assessment occurred on the 18 July 2023 by Jason Benson (BPAD 37893) and Kathryn Kinnear (BPAD 30794). All vegetation within 150m of the site / proposed development was classified in accordance with Clause 2.2.3 of AS 3959-2018. 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 3.

Table 1: Vegetation Classification Table (in accordance with AS 3959-2018) of the subject site

Plot Number	Vegetation Classification	Slope (Table 2.4.3)
1	Excluded 2.2.3.2 (a)	N/A
2	Excluded 2.2.3.2 (e)	N/A
3	Excluded 2.2.3.2 (f)	N/A
4	Grassland Type G	Upslope/flat
5	Grassland Type G	Downslope >0-5 degrees
6	Forest Type A	Downslope >0-5 degrees
7	Scrub Type D	Downslope >0-5 degrees
8	Forest Type A	Downslope >0-5 degrees



Plot Number	Vegetation Classification	Effective Slope
1	Excluded 2.2.3.2 (a)	N/A
2	Excluded 2.2.3.2 (e)	N/A
3	Excluded 2.2.3.2 (f)	N/A
4	Grassland Type G	Upslope/flat
5	Grassland Type G	Downslope >0-5 degrees
6	Forest Type A	Downslope >0-5 degrees
7	Scrub Type D	Upslope/flat
8	Forest Type A	Downslope >0-5 degrees

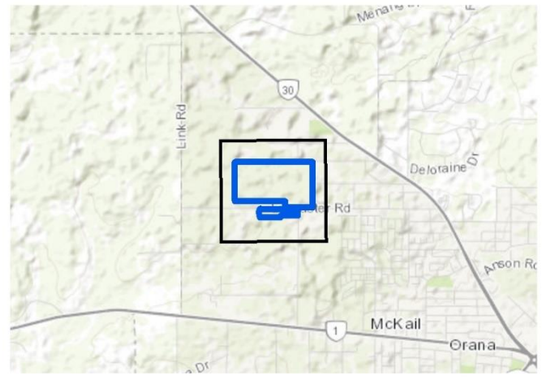
Albany Office:
29 Hercules Crescent
Albany, WA 6330
(08) 9842 1575

Denmark Office:
7/40 South Coast Highway
Denmark, WA 6333
(08) 9848 1309

Esperance Office:
2A/113 Dempster Street
Esperance, WA 6450
(08) 9072 1382

BPAD Bushfire Planning & Design

BIO DIVERSE SOLUTIONS



Overview Map Scale 1:100,000

Legend

- Subject Site
- 100m Assessment Boundary
- 150m Assessment Boundary
- 2m Contours
- Separation Distance
- Slopes Degrees
- Photo Point
- Water Point
- Vegetation/Plot Boundary

Vegetation

- Forest Type A
- Scrub Type D
- Grassland Type G
- Excluded 2.2.3.2

Scale
1:4,750 @ A3
GDA MGA 2020 Zone 50

Data Sources
Aerial Imagery: WA Now, Landgate Subscription Imagery
Cadastre, Relief Contours and Roads: Landgate 2022
IRIS Road Network: Main Roads Western Australia 2017
Overview Map: World Topographic map service, ESRI 2012

CLIENT
Acumen Development Solutions (Jarrod Rendell)
Lancaster Road Structure Plan
Lancaster Road
McKail, WA 6330

Vegetation Classes

BAL Assessor	*QA Check*	*Drawn by*
JRB	**BRM**	**GSK**
STATUS	*FILE*	*DATE*
FINAL	**MSC0595**	**16/08/2023**

Plot	1	Classification or Exclusion Clause	Excludable - 2.2.3.2(a) >100m from site
			**Location:** Northeast and east of the subject site. **Separation Distance:** >100m. **Description:** Areas of classified vegetation >100m from the subject site. Excluded as per AS3959 exclusion clause 2.2.3.2 (a).
Photo Id 1: View to the north-northwest towards vegetation located >100m from the subject site to the northeast. Note: Photo taken at a distance due to lack of access.			
Plot	**1 cont.**	**Classification or Exclusion Clause**	**Excludable - 2.2.3.2(a) >100m from site**
			**Additional Photo of Plot 1.**
Photo Id 2: View to the southeast towards vegetation located >100m from the subject site to the east. Note: Direction stamp on photo is incorrect.			

Plot	2	Classification or Exclusion Clause	Excludable - 2.2.3.2(e) Non Vegetated Areas

Location: North, east, and south of the subject site.

Description: Roads, driveways, buildings, dams, and other non-vegetated areas.

As per exclusion clause 2.2.3.2 (e) of AS3959-2018.

Photo Id 3: View facing east along Gladville Road, located to the north of the subject site.

Plot	2 cont.	Classification or Exclusion Clause	Excludable - 2.2.3.2(e) Non Vegetated Areas

Additional Photo of Plot 2.

Photo Id 4: View facing west along Morgan Road, located to the east of the subject site.

Plot	2 cont.	Classification or Exclusion Clause	Excludable - 2.2.3.2(e) Non Vegetated Areas
			**Additional Photo of Plot 2.**
Photo Id 5: View facing west along Lancaster Road, located adjacent to the southeast corner of the subject site.			
Plot	**2 cont.**	**Classification or Exclusion Clause**	**Excludable - 2.2.3.2(e) Non Vegetated Areas**
			**Additional Photo of Plot 2.**
Photo Id 6: View to the east-northeast towards a dam, located to the north of the subject site.			

Plot	3	Classification or Exclusion Clause	Excludable - 2.2.3.2(f) Low Threat Vegetation
			**Location:** North, east, and south of the subject site. **Description:** Maintained gardens and lawns in Asset Protection Zone (APZ) areas surrounding existing buildings, managed lawns at the trotting track, City of Albany managed road reserves and firebreaks. As per exclusion clause 2.2.3.2 (f) of AS3959-2018.

Photo Id 7: View to the south-southeast towards a maintained APZ, located to the north of the subject site.

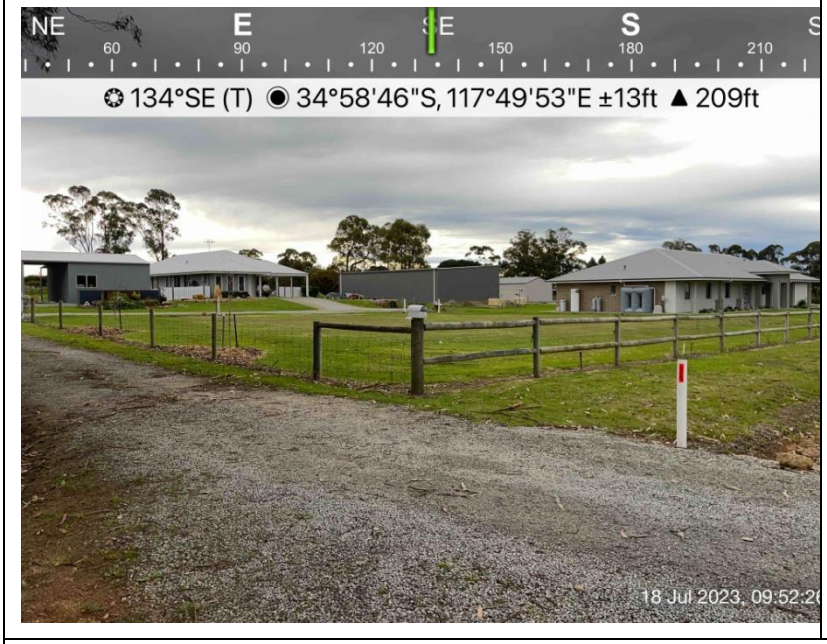
Plot	3 cont.	Classification or Exclusion Clause	Excludable - 2.2.3.2(f) Low Threat Vegetation
			**Additional Photo of Plot 3.**

Photo Id 8: View to the southeast towards a maintained APZ, located to the north of the subject site.

Plot	3 cont.	Classification or Exclusion Clause	Excludable - 2.2.3.2(f) Low Threat Vegetation
			**Additional Photo of Plot 3.**
Photo Id 9. View to the east towards a maintained APZ, located to the east of the subject site, adjacent to the northeast corner.			
Plot	**3 cont.**	**Classification or Exclusion Clause**	**Excludable - 2.2.3.2(f) Low Threat Vegetation**
			**Additional Photo of Plot 3.**
Photo Id 10: View to the north towards a maintained APZ, located to the east of the subject site.			

Plot	3 cont.	Classification or Exclusion Clause	Excludable - 2.2.3.2(f) Low Threat Vegetation
			**Additional Photo of Plot 3.**

Photo Id 11: View facing south towards a maintained APZ, located to the east of the subject site.

Plot	3 cont.	Classification or Exclusion Clause	Excludable - 2.2.3.2(f) Low Threat Vegetation
			**Additional Photo of Plot 3.**

Photo Id 12: View facing south towards managed area at the Albany Trotting Track, located to the southeast of the subject site.

Plot	3 cont.	Classification or Exclusion Clause	Excludable - 2.2.3.2(f) Low Threat Vegetation
			**Additional Photo of Plot 3.**
Photo Id 13: View facing south-southeast towards maintained APZ area, located to the south of the northern portion of the subject site.			
Plot	**3 cont.**	**Classification or Exclusion Clause**	**Excludable - 2.2.3.2(f) Low Threat Vegetation**
			**Additional Photo of Plot 3.**
Photo Id 14: View facing southeast towards maintained APZ area, located to the south of the northern portion of the subject site.			

Plot	3 cont.	Classification or Exclusion Clause	Excludable - 2.2.3.2(f) Low Threat Vegetation
			**Additional Photo of Plot 3.**
Photo Id 15: View facing south-southeast towards maintained APZ area, located to the south of the northern portion of the subject site.			
Plot	**3 cont.**	**Classification or Exclusion Clause**	**Excludable - 2.2.3.2(f) Low Threat Vegetation**
			**Additional Photo of Plot 3.**
Photo Id 16: View facing south towards maintained APZ area, located to the south of the northern portion of the subject site.			

Plot	3 cont.	Classification or Exclusion Clause	Excludable - 2.2.3.2(f) Low Threat Vegetation
			**Additional Photo of Plot 3.**

Photo Id 17: View facing north towards maintained APZ, located between the two portions of the subject site.

Plot	3 cont.	Classification or Exclusion Clause	Excludable - 2.2.3.2(f) Low Threat Vegetation
			**Additional Photo of Plot 3.**

Photo Id 18: View facing north towards maintained APZ, located to the south of the northern portion of the subject site. Note: Direction stamp on photo is incorrect.

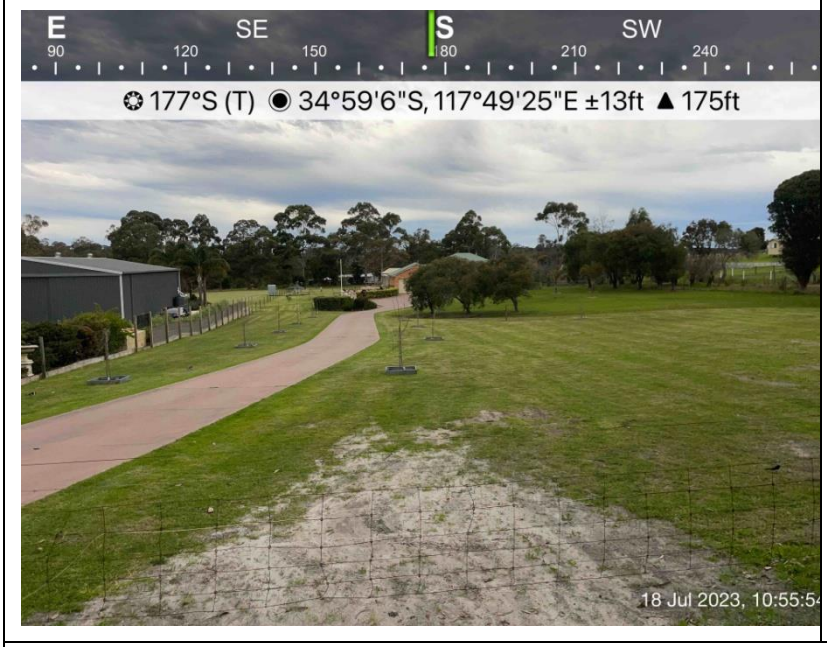
Plot	3 cont.	Classification or Exclusion Clause	Excludable - 2.2.3.2(f) Low Threat Vegetation
			**Additional Photo of Plot 3.**

Photo Id 19: View facing south towards maintained APZ, located to the south of the northern portion of the subject site.

Plot	3 cont.	Classification or Exclusion Clause	Excludable - 2.2.3.2(f) Low Threat Vegetation
			**Additional Photo of Plot 3.**

Photo Id 20: View facing south towards managed low fuel area, located to the south of the northern portion of the subject site. Note: Direction stamp on photo is incorrect.

Plot	4	Classification or Exclusion Clause	Class G Grassland – Sown pasture G-26
			**Location:** North and west of the subject site. **Separation Distance:** 0m from the subject site boundary. **Description:** Mixed unmanaged grasses, sedges, and weeds in paddock and other open areas. Some trees present, less than 10% canopy cover noted. **Average vegetation height:** 50-300m. **Vegetation Coverage:** <10% trees. **Available fuel loading**: 4.5t/ha. **Effective slope:** Upslope/flat.
Photo Id 21: View facing east towards grassland vegetation, located to the north of the subject site.			
Plot	**4 cont.**	**Classification or Exclusion Clause**	**Class G Grassland – Sown pasture G-26**
			**Additional Photo of Plot 4.**
Photo Id 22: View facing west-northwest towards grassland vegetation, located to the west of the subject site.			

Plot	5	Classification or Exclusion Clause	Class G Grassland – Sown pasture G-26
			**Location:** Internal to the subject site in the north, east, south, and west. **Separation Distance:** 0m. **Description:** Mixed unmanaged grasses, sedges, and weeds in paddock and other open areas. Some trees present, less than 10% canopy cover noted. **Average vegetation height:** 50-300m. **Vegetation Coverage:** <10% trees. **Available fuel loading**: 4.5t/ha. **Effective slope:** Downslope >0-5 degrees.
Photo Id 23: View facing north towards grassland vegetation, located to the north of the subject site.			
Plot	**5 cont.**	**Classification or Exclusion Clause**	**Class G Grassland – Sown pasture G-26**
			**Additional Photo of Plot 5.**
Photo Id 24: View facing north towards grassland vegetation, located to the north of the subject site.			

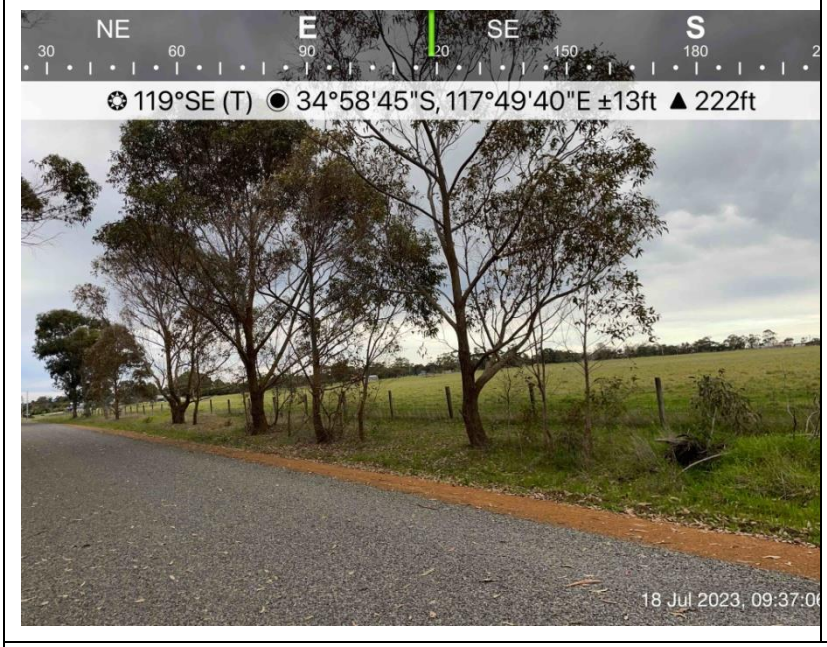
Plot	5 cont.	Classification or Exclusion Clause	Class G Grassland – Sown pasture G-26
			**Additional Photo of Plot 5.**
Photo Id 25: View facing northwest towards grassland vegetation, located to the north of the subject site.			
Plot	**5 cont.**	**Classification or Exclusion Clause**	**Class G Grassland – Sown pasture G-26**
			**Additional Photo of Plot 5.**
Photo Id 26: View facing west towards grassland vegetation, located to the north of the subject site.			

Plot	5 cont.	Classification or Exclusion Clause	Class G Grassland – Sown pasture G-26
			**Additional Photo of Plot 5.** .
Photo Id 27: View facing north towards grassland vegetation, located to the northeast of the subject site.			

Plot	5 cont.	Classification or Exclusion Clause	Class G Grassland – Sown pasture G-26
			**Additional Photo of Plot 5.** .
Photo Id 28: View facing north-northeast towards grassland vegetation, located to the north of the subject site.			

Plot	5 cont.	Classification or Exclusion Clause	Class G Grassland – Sown pasture G-26
			**Additional Photo of Plot 5.**
Photo Id 29: View facing west towards grassland vegetation, located to the south of the southern portion of the subject site.			
Plot	**5 cont.**	**Classification or Exclusion Clause**	**Class G Grassland – Sown pasture G-26**
			**Additional Photo of Plot 5.**
Photo Id 30: View facing south-southeast toward grassland vegetation, located to the south of the subject site.			

Plot	5 cont.	Classification or Exclusion Clause	Class G Grassland – Sown pasture G-26
			**Additional Photo of Plot 5.**
Photo Id 31: View facing southeast towards grassland vegetation, located to the south of the subject site.			
Plot	**6**	**Classification or Exclusion Clause**	**Class A Forest - Low open forest A-04**
			**Location:** Internal in the south and southeast and external in the north, east, and south of the subject site. **Separation Distance:** 0m. **Description:** Forest vegetation consisting of mixed Eucalyptus, Casuarina, marri, and Acacia Trees. Dense canopy cover with multilayered scrub mid/understorey of Acacia, Leucopogon, Xanthorrhoea, grasses, sedges, and rushes. **Average vegetation height:** 4-15m. **Vegetation Coverage:** 30-70% foliage cover. **Available fuel loading:** 25-35t/ha. **Effective slope:** Downslope >0-5 degrees.
Photo Id 32: View facing north-northwest towards forest vegetation, located to the north of the subject site.			

Plot	6 cont.	Classification or Exclusion Clause	Class A Forest - Low open forest A-04
			**Additional Photo of Plot 6.** *Note: Single row of trees, ongoing management unknown, precautionary principle applied.*
Photo Id 33: View facing east-southeast toward forest vegetation, located to the north of the subject site.			

Plot	6 cont.	Classification or Exclusion Clause	Class A Forest - Low open forest A-04
			**Additional Photo of Plot 6.**
Photo Id 34: View facing north-northwest toward forest vegetation, located to the north of the subject site. Note: Photo direction incorrect.			

Plot	6 cont.	Classification or Exclusion Clause	Class A Forest - Low open forest A-04
			**Additional Photo of Plot 6.**
Photo Id 35: View facing northeast toward forest vegetation, located to the north of the subject site			
Plot	**6 cont.**	**Classification or Exclusion Clause**	**Class A Forest - Low open forest A-04**
			**Additional Photo of Plot 6.**
Photo Id 36: View facing south toward forest vegetation, located to the east of the subject site. Note: Photo direction incorrect.			

Plot	6 cont.	Classification or Exclusion Clause	Class A Forest - Low open forest A-04
			**Additional Photo of Plot 6.**

Photo Id 37: View facing north toward small patch of forest vegetation located to the east of the subject site.

Plot	6 cont.	Classification or Exclusion Clause	Class A Forest - Low open forest A-04
			**Additional Photo of Plot 6.**

Photo Id 38: View facing north-northeast toward forest vegetation, located to the east of the subject site. Note: Photo direction incorrect.

Plot	6 cont.	Classification or Exclusion Clause	Class A Forest - Low open forest A-04
			**Additional Photo of Plot 6.**

Photo Id 39: View facing north toward forest vegetation, located near the southeast corner of the subject site.

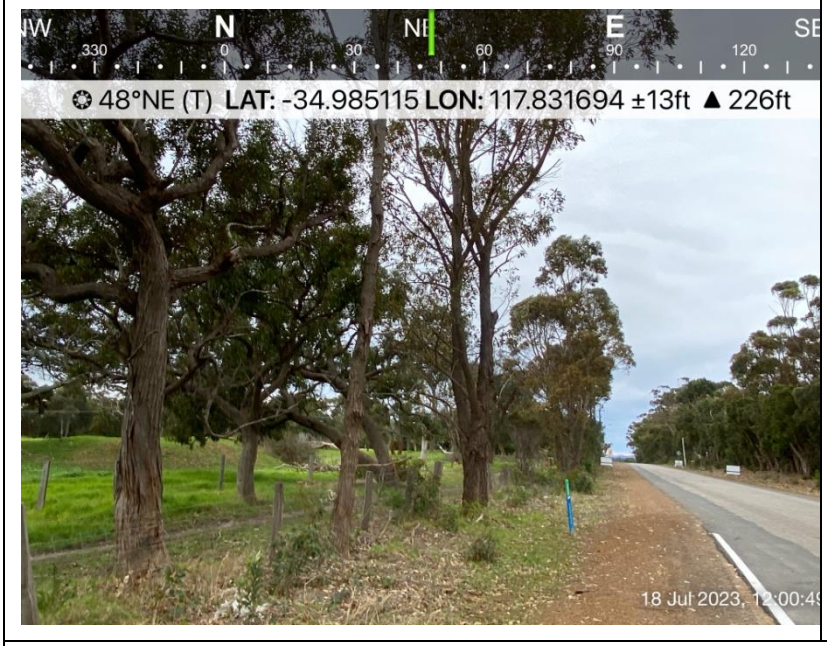
Plot	6 cont.	Classification or Exclusion Clause	Class A Forest - Low open forest A-04
			**Additional Photo of Plot 6.**

Photo Id 40: View facing northeast towards thin strip of forest vegetation, located to the south of the northern portion of the subject site.

Plot	6 cont.	Classification or Exclusion Clause	Class A Forest - Low open forest A-04
			**Additional Photo of Plot 6.**
Photo Id 41: View facing east-southeast toward forest vegetation, located adjacent to the southeast corner of the subject site.			

Plot	6 cont.	Classification or Exclusion Clause	Class A Forest - Low open forest A-04
			**Additional Photo of Plot 6.**
Photo Id 42: View facing west towards forest vegetation, located to the south of the northern portion of the subject site.			

Plot	6 cont.	Classification or Exclusion Clause	Class A Forest - Low open forest A-04
			**Additional Photo of Plot 6.**
Photo Id 43: View facing southeast towards forest vegetation, located to the south of the northern portion of the subject site in adjacent private property.			

Plot	6 cont.	Classification or Exclusion Clause	Class A Forest - Low open forest A-04
			**Additional Photo of Plot 6.**
Photo Id 44: View facing south-southeast towards forest vegetation, located to the south of the northern portion of the subject site in adjacent private property.			

Plot	6 cont.	Classification or Exclusion Clause	Class A Forest - Low open forest A-04
			**Additional Photo of Plot 6.**
Photo Id 45: View facing southeast towards forest vegetation, located to the south of the northern portion of the subject site in adjacent private property.			

Plot	6 cont.	Classification or Exclusion Clause	Class A Forest - Low open forest A-04
			**Additional Photo of Plot 6.**
Photo Id 46: View facing south-southeast towards forest vegetation, located to the south of the northern portion of the subject site in adjacent private property.			

Plot	6 cont.	Classification or Exclusion Clause	Class A Forest - Low open forest A-04
			**Additional Photo of Plot 6.**
Photo Id 47: View facing south towards forest vegetation, located to the south of the northern portion of the subject site in adjacent private property.			

Plot	6 cont.	Classification or Exclusion Clause	Class A Forest - Low open forest A-04
			**Additional Photo of Plot 6.**
Photo Id 48: View facing west-southwest towards forest vegetation, located near the southwest corner of the subject site.			

Plot	6 cont.	Classification or Exclusion Clause	Class A Forest - Low open forest A-04
			**Additional Photo of Plot 6.**
Photo Id 49: View facing south-southeast towards forest vegetation, located on the northern boundary of the southern portion of the subject site.			

Plot	6 cont.	Classification or Exclusion Clause	Class A Forest - Low open forest A-04
			**Additional Photo of Plot 6.**
Photo Id 50: View facing west towards forest vegetation, located on the northern boundary of the southern portion of the subject site.			

Plot	6 cont.	Classification or Exclusion Clause	Class A Forest - Low open forest A-04
			**Additional Photo of Plot 6.**
Photo Id 51: View facing west towards forest vegetation, located in the southwest corner of the southern portion of the subject site.			

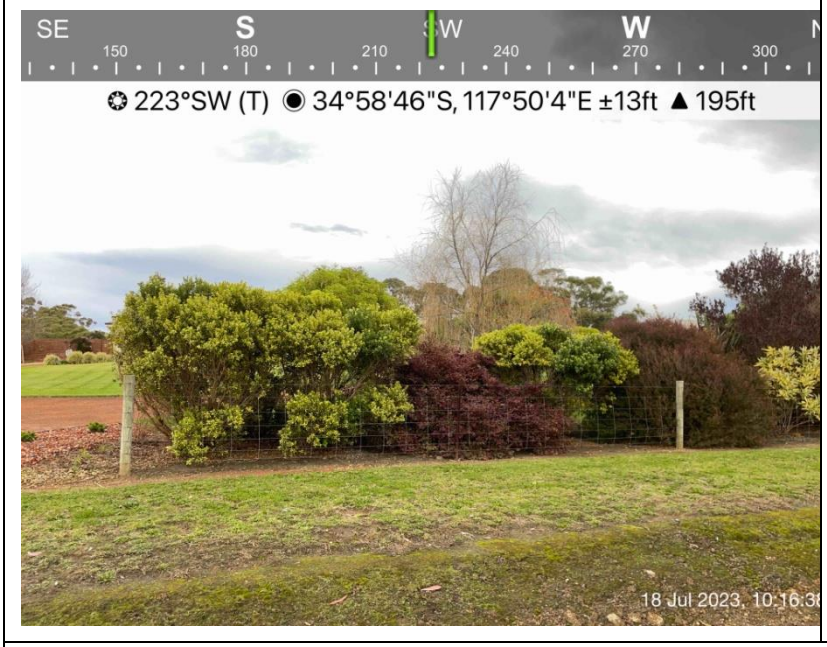
Plot	6 cont.	Classification or Exclusion Clause	Class A Forest - Low open forest A-04
			**Additional Photo of Plot 6.**
Photo Id 52: View facing west-southwest towards forest vegetation, located to the south of the subject site.			

Plot	7	Classification or Exclusion Clause	Class D Scrub - Open scrub D-14
			**Location:** North and east of the subject site. **Separation Distance:** 11m to the north and 81m to the east. **Description:** Scrub vegetation consisting of planted rows of mixed garden plants and scrub species. **Average vegetation height:** 2-4m. **Vegetation Coverage:** 10-30% foliage cover. **Available fuel loading:** 25t/ha. **Effective slope:** Upslope/flat.

Photo Id 53: View facing north-northeast toward scrub vegetation, located to the north of the subject site.

Plot	7 cont.	Classification or Exclusion Clause	Class D Scrub - Open scrub D-14
			**Additional Photo of Plot 7.**

Photo Id 54: View facing east-southeast toward scrub vegetation, located to the north of the subject site.

Plot	7 cont.	Classification or Exclusion Clause	Class D Scrub - Open scrub D-14
			**Additional Photo of Plot 7.**
Photo Id 55: View facing southwest toward scrub vegetation, located to the east-northeast of the subject site.			
Plot	**8**	**Classification or Exclusion Clause**	**Class A Forest - Pine plantation**
			**Location:** South of the subject site. **Separation Distance:** 70m. **Description:** Forest vegetation consisting of planted pine trees. Currently only young and approximately 4-6m in height. At maturity could reach up to 30m and will present as forest vegetation. **Average vegetation height:** Currently 4-6m, though could reach up to 30m in height. **Vegetation Coverage:** 30-70% foliage cover. **Available fuel loading:** 25-35t/ha. **Effective slope:** Downslope >0-5 degrees.
Photo Id 56: View facing southeast through forest vegetation, located to the south of the subject site.			

Plot	8 cont.	Classification or Exclusion Clause	Class A Forest - Pine plantation
			**Additional Photo of Plot 8.**
Photo Id 57: View facing east through forest vegetation, located to the south of the subject site.			

COMMENTS ON VEGETATION CLASSIFCATIONS:

- 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 (AS3959-2018) 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 3959-2018.

SIGNED, ASSESSOR: ..... DATE: 31/07/2024

Jason Benson, Bio Diverse Solutions
Accredited Level 2 BAL Assessor (Accreditation No: BPAD37893)

REVISION RECORD

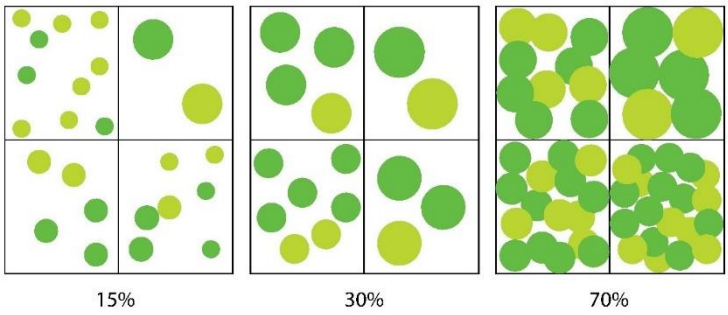
Revision	Prepared By	Summary	Reviewed By	Date
Draft Id	Jason Benson	Internal Review	Melanie Haymont	16/08/2023
Final Id	Jason Benson	Final Issued to Client		12/02/2024
Final Id	Jason Benson	Minor amendments		31/07/2024

Appendix B

Schedule 1 WAPC Asset Protection Zone (APZ) standards to apply

ELEMENT 2: SITING AND DESIGN OF DEVELOPMENT

SCHEDULE 1: STANDARDS FOR ASSET PROTECTION ZONES

OBJECT	REQUIREMENT
Fences within the APZ	• Should be constructed from non-combustible materials (for example, iron, brick, limestone, metal post and wire, or bushfire-resisting timber referenced in Appendix F of AS 3959).
Fine fuel load (Combustible, dead vegetation matter <6 millimetres in thickness)	• Should be managed and removed on a regular basis to maintain a low threat state. • Should be maintained at <2 tonnes per hectare (on average). • Mulches should be non-combustible such as stone, gravel or crushed mineral earth or wood mulch >6 millimetres in thickness.
Trees* (>6 metres in height)	• Trunks at maturity should be a minimum distance of six metres from all elevations of the building. • Branches at maturity should not touch or overhang a building or powerline. • Lower branches and loose bark should be removed to a height of two metres above the ground and/or surface vegetation. • Canopy cover within the APZ should be <15 per cent of the total APZ area. • Tree canopies at maturity should be at least five metres apart to avoid forming a continuous canopy. Stands of existing mature trees with interlocking canopies may be treated as an individual canopy provided that the total canopy cover within the APZ will not exceed 15 per cent and are not connected to the tree canopy outside the APZ. **Figure 19:** Tree canopy cover – ranging from 15 to 70 per cent at maturity  15% 30% 70%
Shrub* and scrub* (0.5 metres to six metres in height). Shrub and scrub >6 metres in height are to be treated as trees.	• Should not be located under trees or within three metres of buildings. • Should not be planted in clumps >5 square metres in area. • Clumps should be separated from each other and any exposed window or door by at least 10 metres.
Ground covers* (<0.5 metres in height. Ground covers >0.5 metres in height are to be treated as shrubs)	• Can be planted under trees but must be maintained to remove dead plant material, as prescribed in 'Fine fuel load' above. • Can be located within two metres of a structure, but three metres from windows or doors if >100 millimetres in height.

ELEMENT 2: SITING AND DESIGN OF DEVELOPMENT

SCHEDULE 1: STANDARDS FOR ASSET PROTECTION ZONES

OBJECT	REQUIREMENT
Grass	• Grass should be maintained at a height of 100 millimetres or less, at all times. • Wherever possible, perennial grasses should be used and well-hydrated with regular application of wetting agents and efficient irrigation.
Defendable space	• Within three metres of each wall or supporting post of a habitable building, the area is kept free from vegetation, but can include ground covers, grass and non-combustible mulches as prescribed above.
LP Gas Cylinders	• Should be located on the side of a building furthest from the likely direction of a bushfire or on the side of a building where surrounding classified vegetation is upslope, at least one metre from vulnerable parts of a building. • The pressure relief valve should point away from the house. • No flammable material within six metres from the front of the valve. • Must sit on a firm, level and non-combustible base and be secured to a solid structure.

** Plant flammability, landscaping design and maintenance should be considered – refer to explanatory notes*

Appendix C

City of Albany, Fire Management Notice (CoA, 2023/2024)

FIRE MANAGEMENT NOTICE

2023 - 2024

FIRST AND FINAL NOTICE IS HEREBY SERVED TO OWNERS AND OCCUPIERS OF LAND IN THE CITY OF ALBANY

This Notice constitutes the City of Albany Fire Management Notice pursuant to Section 33 of the *Bush Fires Act 1954*.

You are required to prepare and maintain your property for the fire season. This Notice sets out the actions you must take.

All fire mitigation measures must be in place by and maintained for the following periods:

NORTHEAST SECTOR	01 October 2023 to 30 April 2024
SOUTHWEST SECTOR	01 December 2023 to 14 May 2024

City of Albany officers are authorised to enter private property, without notice to the owner, to inspect and confirm compliance with this notice. If you fail to comply with the requirements contained within this Notice, penalties under the *Bush Fire Act 1954* may apply.

CITY OF Albany

The owner or occupier of land who has received notice under Section 33(1) of the Bush Fires Act 1954 and who fails or neglects in any respect duly to comply with the requirements of the notice is guilty of an offence and liable to a fine of $5000.

Properties up to 4000m2

The owner or occupier must reduce any fire hazard on their land by:

- Creating and maintaining *perimeter fire breaks**
- Maintaining *fine fuel load** over whole property to an average of two (2) tonnes per hectare
- Creating and maintaining *hazard specific fire breaks**
- Creating and maintaining *building protection zones**

*SEE DEFINITIONS

Properties 4000m2 to 50 Hectares

The owner or occupier must reduce any fire hazard on their land by:

- Creating and maintaining *perimeter fire breaks**
- Maintaining *fine fuel load** over whole property to an average of eight (8) tonnes per hectare
- Creating and maintaining *hazard specific fire breaks**
- Creating and maintaining *building protection zones**

*SEE DEFINITIONS

Non-Agricultural Non-Cropping Non-Stock Properties over 50 Hectares

The owner or occupier must reduce any fire hazard on their land by:

- Creating and maintaining *perimeter fire breaks**
- Creating and maintaining *hazard specific fire breaks**
- Creating and maintaining *building protection zones**

*SEE DEFINITIONS

Agricultural Cropping and/or Stock Properties over 50 Hectares

The owner or occupier must reduce any fire hazard on their land by:

- Creating and maintaining *perimeter fire breaks** are not compulsory but recommended
- Creating and maintaining *hazard specific fire breaks**
- Creating and maintaining *building protection zones**
- Cropping paddocks must be broken into compartments not exceeding 250 hectares in area, each separated by internal trafficable breaks.

*SEE DEFINITIONS

Definitions

Perimeter Fire Breaks - are a continuous *trafficable* access track that has standard dimensions of 3 metres wide with 4 metres vertical clearance, located within 20 metres of the property boundary. It can be created by ploughing, cultivating, scarifying, burning or otherwise clearing including slashing and maintaining vegetation length below 50mm.

Hazard Specific Fire Breaks - are a 3 metre low fuel area around inflammable hazards with vegetation maintained below 50mm. Includes but is not limited to; haystacks, non-dwelling sheds, green electricity power domes, electricity power poles and fuel storage areas.

Fine Fuel Load - are grasses and dead combustible vegetation matter less than 6mm in thickness. It does not include processed mulch below an average depth of 50mm.

Building Protection Zone - is a defendable space immediately adjacent to a building *no less* than three metres wide, clear of inflammable vegetation and material. Further, combustible objects, plants, garden supplies such as mulches should be avoided within 10 metres of the building and vegetation kept to a minimum and kept in a low fuel state. The *building protection zone* may reduce the likelihood and impact that direct flame contact, radiant heat or ember attack may have on buildings in the event of a bushfire.

Inflammable - means a substance or material easily ignited and capable of bursting into flames without the need of an ignition source.

Trafficable - means the capacity to allow a firefighting truck or other firefighting vehicle to safely navigate the interior perimeter of the property safely without impediment.

Information Subsidiary to the Fire Management Notice

Variation to the requirements of the Fire Management Notice:

If you cannot meet these fire management notice requirements, you must apply for a variation or submit an approved Bush Fire Management Plan (BFMP).

Applications for variations must be submitted to the City of Albany by the 01 November 2023.

The City will only accept a BFMP completed by an accredited Bush Fire Planning and Design Practitioner. A BFMP can encompass single or multiple properties. All properties covered by a BFMP must comply with the conditions of the BFMP.

Please contact the City of Albany on 6820 3000 or visit the City's website www.albany.wa.gov.au.

Conservation, Special Residential, Rural Residential and Special Rural Zones:

Properties located in these zones approved under subdivision plans in the Albany Local Planning Scheme Number 1 where required are to comply with fire mitigation requirement conditions under the subdivision plan. If an owner or occupier of a property in one of these zones fails to maintain the mitigation requirements under the subdivision plan, then they will be subject to the requirements of this Fire Management Notice.

To check your property zone and subdivision mitigation requirements please contact City of Albany Planning Services on 6820 3000 or email planning@albany.wa.gov.au

Information Subsidiary to the Fire Management Notice

Plantation Lots:

Owners and lessees of plantation lots must comply with the Department of Fire and Emergency Services (DFES) *Guidelines for Plantation Fire Protection (the guidelines)* in addition to this fire management notice. The guidelines are available from the DFES website https://publications.dfes.wa.gov.au/.

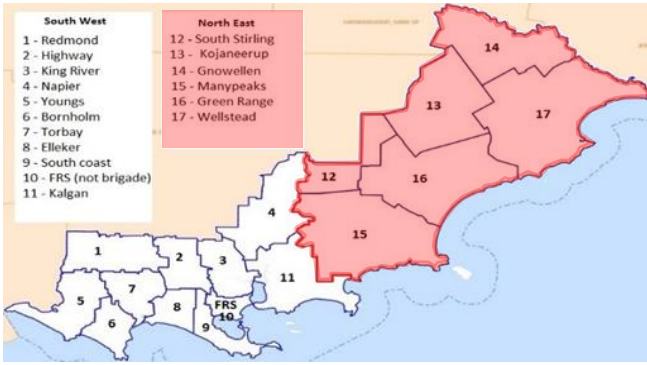
Significant Dates:

NORTH EAST SECTOR FIRE SEASON	
1 October 2023 – 14 November 2023	Restricted Burning permits required
1 October 2023	Requirements of Fire Notice MUST be in place and maintained
15 November 2023 – 15 February 2024	BURNING PROHIBITED
16 February 2024 – 30 April 2024	Restricted Burning permits required

SOUTH WEST SECTOR FIRE SEASON	
1 November 2023 – 14 December 2023	Restricted Burning permits required
1 December 2023	Requirements of Fire Notice MUST be in place and maintained
15 December 2023 – 14 March 2024	BURNING PROHIBITED
15 March 2024 – 14 May 2024	Restricted Burning permits required

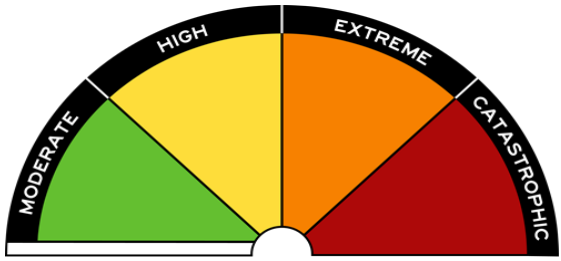
These dates are subject to change. Any changes will be published in the local newspapers and on the City of Albany website at www.albany.wa.gov.au

City of Albany Sector Map



Fire Danger Rating

Fire Danger Ratings (FDRs) tell you how dangerous a fire would be if one started. The higher the FDR, the more severe the bushfire will be. They are based on weather conditions forecast by the Bureau of Meteorology.



The new Australian Fire Danger Rating System (AFDRS) levels are:

Moderate: Plan and prepare.
Most fires can be controlled. Stay up to date and be alert for fires in your area.

High: Be ready to act.
Fires can be dangerous. Decide what you will do if a fire starts.
Leave bushfire risk areas if necessary.

Extreme: Take action now to protect your life and property.
Fires will spread quickly and be extremely dangerous. Put your bushfire plan into action.
If you and your property are not prepared to the highest level, plan to leave early.

Catastrophic: For your survival, **leave bushfire risk areas.**
These are the most dangerous conditions for a fire. Homes cannot withstand fires in these conditions and if a fire starts and takes hold, lives are likely to be lost. Stay safe by going to a safer location early in the morning or the night before.

Disclaimer:

The requirement to clear a fire break exempts an owner or occupier from needing a permit to clear native vegetation under the Environmental Protection Act 1986 however it does not authorise an owner or occupier to carry out excessive clearing. Clearing or removal of native vegetation beyond the requirements of this notice will require permission from other State Legislative Authorities.

The City of Albany, or a contractor engaged by the City, may enter your land to install fire breaks or reduce fuel loads with any expenses incurred charged to the owner or occupier.

The City may vary a requirement or condition of this Notice at its discretion.

Any 'variation to requirements' approval you hold may be declared void at any time by the City.

This notice is issued and authorised by:

Andrew Sharpe
Chief Executive Officer

102 North Road, Yakamia
PO Box 484, ALBANY WA 6330
Phone 6820 3000
Email staff@albany.wa.gov.au
www.albany.wa.gov.au