Bushfire Management Plan Coversheet

Site address:	Multiple Lots in the localities of Hill River, Boothendarra and Badgingarra in the Shire of Dandaragan

Site visit / date:	Yes	✓	No	13 January 2026

Report author or reviewer:	Mike Scott (BPAD Level 3 No. 27795)

Not accredited		Level 1 BAL assessor		Level 2 practitioner		Level 3 practitioner	✓

BPAD accreditation number:	27795	Accreditation expiry – month / year	February 2027

Bushfire Management Plan - version / date:	V1.3	24 August 2026

If one or more of the following responses are yes, then these should be automatically referred to DFES.	**Yes**	**No**
Strategic planning is required to address SPP 3.7 and the Guidelines		✓
The application is a vulnerable land use		✓

If one or more of the following responses are yes, and the decision-maker requires input from DFES, then the application can be referred.	**Yes**	**No**
The BAL rating has been calculated by a method other than Method 1 as prescribed by AS 3959	✓	
An outcomes-based approach has been submitted to demonstrate compliance with the bushfire protection criteria		✓

Note: If a subdivision or development application meets all the acceptable solutions and does not otherwise trigger a referral as listed above, seeking advice from DFES on SPP 3.7 or other matters is at the discretion of the decision-maker.

The information provided within this bushfire management plan, to the best of my knowledge, is true and correct:

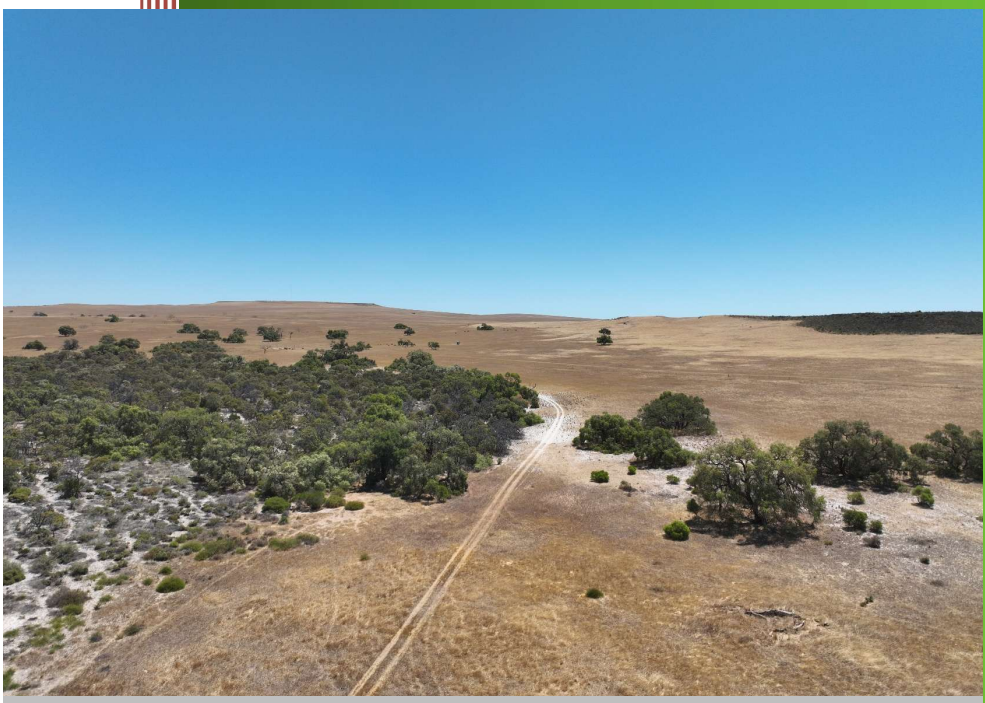
Dated signature of report author or reviewer:		24 August 2026

BUSHFIRE PRONE PLANNING

Dinner Hill Windfarm Badgingarra

Bushfire Management Plan

(PREPARED FOR PLANNING APPLICATION ASSESSMENT PURPOSES)



Compiled in accordance with State Planning Policy 3.7 Bushfire and the Planning for Bushfire Guidelines

Multiple Lots in the localities of Hill River, Boothendarra and Badgingarra in the Shire of Dandaragan

Shire of Dandaragan

Development Application - Commercial/Industrial Development

24 August 2026

Job Reference No: **240073 - 2**

BPP GROUP PTY LTD T/A BUSHFIRE PRONE PLANNING

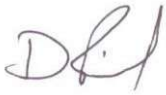
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LIMITATIONS AND DISCLAIMER

Management of Risks Associated with Bushfire

For the subject planning proposal, the protection measures to be implemented based on information presented in this Bushfire Management Plan, prepared for land-use planning purposes, are the minimum requirements for management of the relevant risks.

The applied protection measures do not guarantee that during a bushfire event, no buildings or infrastructure will be damaged, persons injured, or fatalities occur - either on the subject site or off the site when evacuating.

This is substantially due to the unpredictable nature of fire weather conditions, bushfire behaviour and the actions of landowners and/or operators – including the correct implementation and ongoing maintenance of required and recommended protection measures (including bushfire resistant construction) and complying with public bushfire warnings and directions from emergency services - over which Bushfire Prone Planning has no control.

Provision of Mapping Data

All maps produced by Bushfire Prone Planning included herein are indicative in nature and are not to be used for accurate calculations. This data has been prepared for bushfire risk management planning purposes only. All depicted areas, contours and any dimensions shown are subject to survey.

Bushfire Prone Planning does not guarantee that this data is without flaw of any kind and disclaims all liability for any errors, loss or other consequence arising from relying on any information depicted.

When the separate provision of Digital Geographic Data (GIS Files) is an agreed project deliverable, these should be used in conjunction with the relevant information presented in the associated report. Areas and/or Dimensions specified in the report will have priority over digital data transmitted and must correspond to the final 'as-built' location of the applicable buildings, other structures or boundaries.

Bushfire Prone Planning's Liability

All surveys, forecasts, projections and recommendations made in this report by Bushfire Prone Planning, associated with the subject planning proposal, are made in good faith based on information available to Bushfire Prone Planning at the time.

Notwithstanding anything contained therein, Bushfire Prone Planning will not, except as the law may require, be liable for any loss or other consequences whether or not due to the negligence of their consultants, their servants or agents, arising out of the services provided by their consultants.

TABLE OF CONTENTS

STATEMENT OF PURPOSE – THE 'PLANNING' BUSHFIRE MANAGEMENT PLAN (BMP) 4

1 THE PLANNING PROPOSAL 5

1.1 DETAILS, PLANS AND MAPS 5

1.2 THE PLANNING PROPOSAL AND ITS REQUIREMENT TO ADDRESS BUSHFIRE RISK 9

1.2.1 APPLIED STATUTORY BUSHFIRE PROVISIONS REQUIRING A PLANNING APPLICATION 9

1.2.2 APPLIED TRIGGERS TO APPLY STATE PLANNING POLICY 3.7 BUSHFIRE 11

1.2.3 IDENTIFIED EXEMPTIONS 12

1.3 REQUIRED 'BUSHFIRE PLANNING' ASSESSMENTS AND DOCUMENTS 14

1.4 OTHER DOCUMENTS RELEVANT TO PREPARING THE BMP 15

2.1 BIODIVERSITY OR CONSERVATION VALUES IDENTIFIED 16

2.1.1 PUBLICLY AVAILABLE STATE GOVERNMENT DATABASES 17

3 THE BUSHFIRE HAZARD – POTENTIAL IMPACT - LANDSCAPE AND VEGETATION DATA 21

3.1 BUSHFIRE ATTACK LEVEL (BAL) ASSESSMENT SUMMARY (TABLE FORMAT) 21

3.1.3 SITE ASSESSMENT MAP(S) 23

4 IDENTIFICATION OF BUSHFIRE HAZARD ISSUES 46

5 ASSESSMENT AGAINST THE BUSHFIRE PROTECTION CRITERIA (BPC) 47

5.1 IDENTIFICATION OF ENDORSED VARIATIONS TO THE BPC APPLIED BY THE LOCAL GOVERNMENT 47

5.3 BPC 7: DEVELOPMENT – COMMERCIAL AND INDUSTRIAL - ACCEPTABLE SOLUTIONS ASSESSMENT 49

5.3.1 ELEMENT 2: SITING AND DESIGN 49

5.4 REQUIRED ADDITIONAL BUSHFIRE PROTECTION MEASURES 58

6 PROTECTION MEASURE IMPLEMENTATION CHECKLISTS (RESPONSIBILITIES) 59

6.1 PROTECTION MEASURE IMPLEMENTATION CHECKLISTS (RESPONSIBILITIES) 60

6.2 PROTECTION MEASURE MAINTENANCE CHECKLIST 63

APPENDIX A: DETAILED BAL ASSESSMENT DATA AND SUPPORTING INFORMATION 65

A1: BAL ASSESSMENT INPUTS COMMON TO THE METHOD 1 AND METHOD 2 PROCEDURES 65

A1.1: FIRE DANGER INDEX (FDI) 65

A1.2: VEGETATION ASSESSMENT AND CLASSIFICATION 65

A1.3: EFFECTIVE SLOPE 76

A1.4: SEPARATION DISTANCE 79

A2: BAL ASSESSMENT INPUTS APPLIED USING THE METHOD 2 PROCEDURE 80

A2.1: SUMMARY OF CALCULATION INPUTS APPLIED AND THE LEVEL OF JUSTIFICATION REQUIRED 81

A2.2: FLAME TEMPERATURE 83

A2.3: SITE SLOPE 84

A3: BAL CALCULATOR – COPY OF INPUT/OUTPUT VALUES 85

APPENDIX B: GUIDANCE – BUSHFIRE ATTACK LEVELS AND ASSET PROTECTION ZONES 88

B1: UNDERSTANDING BUSHFIRE ATTACK LEVEL (BAL) RATINGS 88

B2: BAL CONTOUR MAP INTERPRETATION 90

B3: THE ASSET PROTECTION ZONE (APZ) 91

B4: VEGETATION EXCLUDED FROM CLASSIFICATION – ENSURE CONTINUED LOW THREAT STATUS 93

APPENDIX C: GUIDANCE - TECHNICAL REQUIREMENTS FOR VEHICULAR ACCESS 95

C1: ROAD COMPONENT TERMINOLOGY 95

C2: VEHICULAR ACCESS TECHNICAL REQUIREMENTS 96

APPENDIX D: GUIDANCE - TECHNICAL REQUIREMENTS FOR FIREFIGHTING WATER SUPPLY 98

D1: HYDRANT LOCATION IN RETICULATED AREAS 98

D2: FIREFIGHTING WATER SUPPLY - TANK AND FITTINGS 99

ATTACHMENT 1: BUSHFIRE RISK REPORT 102

LIST OF FIGURES

Figure 1.1: Proposed development plan. 7
Figure 1.2: Location map (spatial context). 8
Figure 1.3: Extract from Map of Bushfire Prone Areas (Office of Bushfire Risk Management, DFES) 13
Figure 3.1: Site Assessment Index 23
Figure 3.1.1: Classified Vegetation Map 1 24
Figure 3.1.2: Classified Vegetation Map 2 25
Figure 3.1.3: Classified Vegetation Map 3 26
Figure 3.1.4: Classified Vegetation Map 4 27
Figure 3.1.5: Classified Vegetation Map 5 28
Figure 3.1.6: Classified Vegetation Map 6 29
Figure 3.1.7: Classified Vegetation Map 7 30
Figure 3.1.8: Classified Vegetation Map 8 31
Figure 3.1.9: Classified Vegetation Map 9 32
Figure 3.1.10: Classified Vegetation Map 10 33
Figure 3.1.11: Classified Vegetation Map 11 34
Figure 3.1.12: Classified Vegetation Map 12 35
Figure 3.1.13: Classified Vegetation Map 13 36
Figure 3.1.14: Classified Vegetation Map 14 37
Figure 3.1.15: Classified Vegetation Map 15 38
Figure 3.1.16: Classified Vegetation Map 16 39
Figure 3.2.1: Classified Vegetation Map (Post Development) – BESS & Operations and Maintenance. 40
Figure 3.2.3: Classified Vegetation Map (Post Development) – Wind Turbine DIN.10790 42
Figure 3.2.4: Classified Vegetation Map (Post Development) – Wind Turbine DIN.10150 43
Figure 3.2.5: Classified Vegetation Map (Post Development) – Wind Turbine DIN.11040 44
Figure 3.2.5: Classified Vegetation Map (Post Development) – Substation 45

STATEMENT OF PURPOSE – THE 'PLANNING' BUSHFIRE MANAGEMENT PLAN (BMP)

EXPLANATORY INFORMATION

SITE/USE PLANNING

This BMP is produced to present the information necessary for a planning proposal's assessment against the State's bushfire planning requirements. The developed information is to inform and assist decision-making authorities, planners, landowners/proponents and referral agencies in their implementation WA's State Planning Policy 3.7 Bushfire – and where relevant, any supplementary provisions of a local planning scheme or policy.

Policy Document Versions Applied in This BMP	State Planning Policy 3.7 Bushfire (SPP 3.7)	November 2024	Planning for Bushfire Guidelines (supporting SPP 3.7)	November 2024

> The Stated Intent of SPP 3.7 is to *implement effective, risk based land use planning and development which in the first instance avoids bushfire risk, but where unavoidable, manages and/or mitigates the risk to people, property and infrastructure to an acceptable level. The preservation of life and the management of bushfire impact are paramount.*

SITE OPERATIONS

This BMP is not an 'operational' BMP for property and operations management. Such a BMP would apply additional and more specific bushfire protection measures to more comprehensively reduce the level of risks associated with a bushfire event. These being the potential loss of life, injury, or destroyed or damaged assets which results in personal loss and economic loss.

However, this 'planning' BMP does establish certain responsibilities for the implementation and maintenance of the bushfire protection measures that are considered the minimum for bushfire planning decision making.

BUSHFIRE RESISTENT CONSTRUCTION

This 'planning' BMP is not required to consider the requirement to construct certain buildings, in designated bushfire prone areas, to the standard corresponding to the Bushfire Attack Level (BAL) they are subject to. This requirement is dealt with under the State Building Act 2011/Building Regulations 2012 and the referenced Building Code of Australia.

DETERMINED BUSHFIRE ATTACK LEVEL (BAL) RATINGS AND CONSTRUCTION – CAUTION!

For construction purposes a determined (not indicative) BAL rating is required to be known and a BAL Certificate produced for submission with a building application. This establishes the construction design and materials that are to be complied with in accordance with AS 3959 Construction in bushfire prone areas (as amended) and/or NS 300 NASH Standard Steel Framed Construction in Bushfire Areas (as amended).

This 'planning' BMP cannot necessarily determine a BAL rating that will apply to a future building. All variables required for that calculation may not be known at the assessed stage of planning. For example, actual location of a building footprint on a lot and/or any classified vegetation that will remain, at the time of construction, within the lot or on neighbouring lots.

This 'planning' BMP is only required to identify if a viable sized building can be located on a lot and be subject to a BAL rating not exceeding BAL-29, based on certain allowable assumptions. This is a planning requirement not a building requirement and a BAL contour map can be used to illustrate this information as an 'indicative' BAL rating.

Be aware that typically you cannot derive the determined BAL rating for a future building(s) on a specific lot from a BAL contour map (when presented in a BMP prepared for planning approval purposes). This is only possible in limited circumstances.

Planning assessment requirements are different to building assessment requirements. Refer to explanatory information above and Appendix B1 and B2 for additional information.

1 THE PLANNING PROPOSAL

1.1 Details, Plans and Maps

SUBJECT LAND AND PROPONENT (PROPONENT)		
Address Details	Multiple Lots in the Shire of Dandaragan	
Applicable Local Government	Shire of Dandaragan	
Entity Commissioning the BMP	Umwelt (Australia) Pty Limited	
THE PLANNING PROPOSAL STAGE AND TYPE		
Strategic Planning Document	☐	Select.
Structure Plan	☐	Select.
Subdivision Application	☐	Select.
Development Application	☑	Construction of a habitable building that is subject to bushfire planning requirements.
DESCRIPTION		

The Dinner Hill Wind Farm Project (the Project) comprises up to 131 wind turbine generators (WTGs) with a generation capacity of up to 943 MW, a Battery Energy Storage System (BESS) with a capacity of up to 300 MW (4 – 8 hrs), and associated infrastructure. The Project is located approximately 200 km north of Perth within the Shire of Dandaragan and occupies a Project Area of approximately 30,024 ha of predominantly cleared agricultural land. The Development Footprint occupies approximately 960 ha (around 3% of the Project Area), allowing existing cropping and grazing activities to continue alongside the Project.

A Western Power transmission line easement runs approximately North – South through Lot 2. The BESS compound, a Substation, and the Switchyards will be sited to connect to the Transmission Line and the SWIS.

A Site Assessment was conducted from the 13th to 16th January 2026.

The site will have regular staffing and will include Class 3, 5, 7b, 10a, and 10b buildings. (*Ref. NCC 2022 Volume One - Building Code of Australia - Part A6 Building classification)*. Due to the scale of the development site, a Site Assessment Index Map has been provided in Figure 3.1. Figures 3.1.1-3.1.15 provide Classified Vegetation and Topography Maps zoomed to the mosaic shown.

<table>
<tr><th colspan="4">Primary Proposed or Planned Construction</th></tr>
<tr><td colspan="4">Note:
A habitable building is defined in the WA Planning and Development (LPS) Regulations 2015 to mean:
A permanent or temporary structure on land that:
(a) Is fully or partially enclosed; and
(b) Has at least one wall of solid material and a roof of solid material; and
(c) Is used for a purpose that involves the use of the interior of the structure by people for living, working, studying or being entertained.</td></tr>
<tr><td>Primary Type(s)</td><td colspan="2">New Building(s)</td><td>Electricity generation</td></tr>
<tr><td rowspan="3">BCA Classification
(Ref. NCC 2022 Volume One - Building Code of Australia - Part A6 Building classification).</td><td>Class 3 (residential building not Class 1 or 2)</td><td>Class 5 (office building - professionals)</td></tr>
<tr><td>Class 7b (warehouse/storage/wholesale)</td><td>Class 10a (non-habitable building)</td></tr>
<tr><td>Class 10b (certain structures)</td><td></td></tr>
<tr><th colspan="4">Development Type - Establishing the Applicable Bushfire Protection Criteria</th></tr>
<tr><td>Residential</td><td colspan="3">Construction of, or addition to, a habitable building, including a single house, ancillary dwelling, grouped dwelling, multiple dwelling or mixed used development. Includes an associated Class 10A building or deck (non-habitable) within 6 m of the habitable building. [Guidelines s6]</td></tr>
<tr><td>Commercial and Industrial</td><td colspan="3">Construction of or addition to, a habitable building for commercial or industrial uses. [Guidelines s7]</td></tr>
<tr><td colspan="4"><u>Assessment Supporting Details:</u>
As discussed within Section 1.2, the proposal includes numerous asset and structure types which are not ‘Habitable Buildings.’ The Wind Turbines, O&M Buildings, BESS, Substations, and Batch Plants, have all been considered ‘Habitable Buildings’ for the purposes of the assessment against the Bushfire Protection Criteria.</td></tr>
</table>

Figure 1.1

Proposed Development

Multiple Lots in the localities of Hill River, Boothendarra and Badgingarra

SHIRE OF DANDARAGAN

------ LEGEND ------

- 150m Assessment Area
- Wind Turbines v9

Facility Layout

- BESS/OM/Water Rentention
- Satellite Substation
- Substation
- Switching Yard
- Temp construction facilities

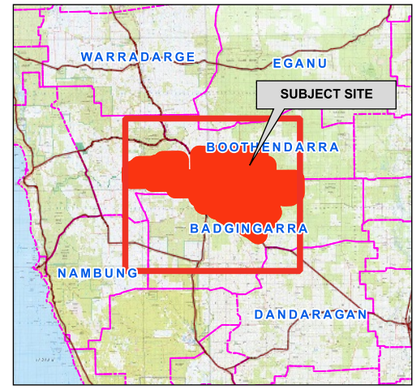
MET Masts

- Permenant MET Mast
- Temporary MET Mast
- Development Footprint
- Transmission Lines - 132 330kv

0 2,000 4,000 6,000 8,000

Metres

------ LOCALITY ------



AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA94 / MGA zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: David Richer 31-07-2026
SCALE (A3): 1 : 130000

BUSHFIRE PRONE PLANNING

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Figure 1.2

Location Map

Multiple Lots in the localities of Hill River, Boothendarra and Badgingarra

SHIRE OF DANDARAGAN

------ LEGEND ------

- Subject Site

DFES Stations (DFES-023)

- Bush Fire Brigade
- State Emergency Service Unit
- Volunteer Fire & Emergency Service Unit
- Volunteer Fire & Rescue Service
- Reserves

DBCA Lands of Interest (DBCA-012)

- Crown Freehold - Dept Interest

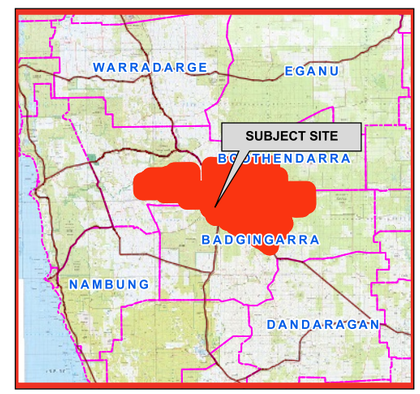
DBCA Legislated Lands and Waters (DBCA-011)

- Conservation Park
- Marine Park
- National Park
- Nature Reserve
- Section 34A Freehold
- Section 5(1)(g) Reserve
- Section 5(1)(h) Reserve

0 4,000 8,000 12,000 16,000

Metres

------ LOCALITY ------



AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA94 / MGA zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: David Richer 31-07-2026
SCALE (A3): 1 : 318863

BUSHFIRE PRONE PLANNING

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1.2 The Planning Proposal and its Requirement to Address Bushfire Risk

EXPLANATORY INFORMATION

For the subject planning proposal, the intent of this section is to:

- Identify the relevant statutory bushfire planning provisions that have established its requirement to address bushfire risk;
- Identify the relevant policy/guideline 'triggers' to apply SPP 3.7 Bushfire;
- Identify when a local government, as the decision maker, has established additional 'triggers' to apply defined bushfire planning assessments; and
- Identify the consideration of any relevant exemptions from application of SPP 3.7 Bushfire.

Relevant Terms

Development means the development or use of any land, including (a) any demolition, erection, construction, alteration of or addition to any building or structure on the land (b) the carrying out on the land of any excavation or other works (Planning and Development Act 2005, Part1, s.4; and

Habitable building means a permanent or temporary structure on land that:

(a) is fully or partially enclosed; and
(b) has at least one wall of solid material and a roof of solid material; and
(c) is used for a purpose that involves the use of the interior of the structure by people for living, working, studying or being entertained;

Specified building means a structure of a kind specified in this Scheme as a kind of structure to which this Part applies in addition to its application to habitable buildings.

Development site means that part of a lot on which a building that is the subject of development stands or is to be constructed - Planning and Development (LPS) Regulations 2015, s.78A.

Construction of a building includes the erection, assembly or placement of a building but does not include the renovation, alteration, extension, improvement or repair of a building;

1.2.1 APPLIED STATUTORY BUSHFIRE PROVISIONS REQUIRING A PLANNING APPLICATION

A PLANNING APPLICATION IS TO BE SUBMITTED TO THE LOCAL GOVERNMENT FOR DETERMINATION

For the proposed development (construction and/or use) the local government is the decision maker. The local government determination will be made under:

- The Planning and Development Act 2005, its relevant subsidiary legislation (e.g. Regulations) and associated policies that establish the objectives and high-level guidance; and/or
- The local government's local planning scheme and associated policies that establishes objectives and guidance, specific to the jurisdiction, in addressing the requirements established by the above legislation and associated policy.

Assessment Supporting Details:

The subject Development Application does not technically trigger any bushfire assessment under the current *State Planning Policy 3.7 Bushfire* (WAPC November 2024).

The *Planning and Development (Local Planning Schemes) Regulations 2015* Section 78B describes the development types within a Bushfire Prone Area subject to the *Regulations* Part 10A – Bushfire risk management. These are:

- Single houses or ancillary dwellings on lots with an area of >1,100m2;
- Habitable buildings other than a single house or ancillary dwelling, or;
- Specified buildings.

State Planning Policy 3.7 Bushfire (WAPC November 2024) and the associated *Planning for Bushfire Guidelines* (WAPC November 2024) aligns with these definitions and reference 'Habitable Buildings' and 'Specified Buildings' requiring application of the Policy.

The subject Development Application does not propose to locate any 'Habitable Buildings' within a Bushfire Prone Area.

'Specified Buildings' are those which are specifically designated in the Local Government's Local Planning Scheme as being subject to Part 10A of the *Planning and Development (Local Planning Schemes) Regulations 2015*. To date, no Local Planning Schemes have identified a 'Specified Building.'

The *Planning and Development (Local Planning Schemes) Regulations 2015* Clause 67.2 requires due regard be given to:

> "*(q) the suitability of the land for the development taking into account the possible risk of flooding, tidal inundation, subsidence, landslip, bush fire, soil erosion, land degradation or any other risk;*
>
> *(r) the suitability of the land for the development taking into account the possible risk to human health or safety;*"

The proposal is for a major infrastructure asset in a Bushfire Prone Area (BPA) as defined and mapped by Area 2 on the Bushfire Prone Areas Map (Figure 1.3), and the potential may exist for the site to either instigate or have hazardous interactions with a bushfire. The decision maker must have due regard to Subclauses q) and r) despite the limited scope of SPP 3.7.

Policy can never fully capture appropriate bushfire protection measures for all development types. This is particularly in the case of very large proposals, complex sites, emerging technologies, or complex/hazardous uses. BPP note this development is technically exempt from SPP3.7 and the Guidelines; but there are still relevant parameters contained within these documents that can inform the project and the planning determination.

To assist the decision maker of all the necessary considerations to make an informed, robust decision regarding bushfire risks, BPP's approach is to:

a) Apply a precautionary approach and assess relevant assets (as identified by the Bushfire Planning Practitioner) to be 'Habitable Buildings' for the purposes of initial assessment;
b) Conduct a Risk Assessment (provided in a separate report) to comprehensively assess the proposal and determine appropriate bushfire protection measures applicable to the specific development, and;
c) Produce a Bushfire Management Plan (this document) for planning consideration, which establishes the specific bushfire protection measures for this particular proposal.

In aligning with SPP 3.7 and the Guidelines, the outcome is to meet the intent of the Bushfire Protection Criteria by establishing relevant bespoke Criteria applicable to the development.

1.2.2 APPLIED TRIGGERS TO APPLY STATE PLANNING POLICY 3.7 BUSHFIRE

EXPLANATORY INFORMATION

State Planning Policy 3.7 Bushfire (SPP 3.7) provides broad objectives and high-level guidance for how planning proposals and development applications within bushfire prone areas should be considered. Implementation is supported by more detailed instructions within the *Planning for Bushfire Guidelines*.

The following table identifies the guidance that has resulted in the planning proposal being required to apply SPP 3.7.

Inconsistent Information (as of December 2024):

- There are inconsistences between the provisions of the applicable legislation (Planning and Development (LPS) Regulations 2015), the clauses of the associated policy (SPP 3.7 Bushfire) and its associated guidance (Planning for Bushfire Guidelines Nov. 2024).
- This has resulted in inconsistencies in the establishment of the 'triggers' to lodge proposals, plans and applications for planning approval sourced from these documents.

Until legislation/policy/guideline amendments are completed, the advice from WAPC/DPLH is that the decision maker should apply SPP 3.7 and the Guidelines as they deem necessary. *(Source: Explanatory Note SPP 3.7, DPLH, 25/11/24)*

Bushfire Prone Planning's Current Approach:

- To apply the 'triggers' for application of SPP 3.7/Guidelines in accordance with the current version of the Guidelines (Planning for Bushfire Guidelines, November 2024), in Sections 6, 7 and 8 - as this is best aligned with the current version (3 Nov 2024) of the LPS Regulations 2015; unless
- The relevant decision maker has determined, and confirmed in writing to the proponent, that SPP 3.7/Guidelines is to be applied.

	SPP 3.7 AND THE GUIDELINES - ESTABLISHING THE NEED TO GIVE DUE REGARD TO SPP 3.7	APPLICABLE
1	THE LAND SUBJECT TO THE PLANNING PROPOSAL IS:	
	Designated bushfire prone and 'Area 1 (Urban)' on the Map of Bushfire Prone Areas (refer to Figure 1.4); or	No
	Designated bushfire prone and 'Area 2' on the Map of Bushfire Prone Areas (refer to Figure 1.4).	Yes
	AND	
2	THE PLANNING PROPOSAL WILL:	
	Result in the intensification of development (or land use); or	Yes
	Result in an increase of visitors, residents or employees; or	Yes
	Adversely impact or increase the bushfire risk to the subject or surrounding site(s).	Yes
	AND	
3	THE PLANNING PROPOSAL IS A: (Source: Guidelines s.7) A development application for construction of or additions to a habitable building for commercial or industrial uses in an area subject to a pre-development radiant heat impact exceeding 29kW/m² (BAL-40 or BAL-FZ) and designated as Area 1 (Urban) or Area 2 on the Map of BPA. Note: An application for additions to a habitable building to which SPP 3.7 and these Guidelines apply, is required to address the bushfire protection criteria for the entire site. It should be noted that there are no requirements under SPP 3.7 or the Guidelines to retrofit existing buildings to the appropriate bushfire construction standard, or any requirement for these existing buildings to be located within an area with a radiant heat impact not exceeding 29 kW/m2 (BAL-29).	

Assessment Supporting Details:

See Section 1.2.1.

1.2.3 IDENTIFIED EXEMPTIONS

EXPLANATORY INFORMATION

The following situations provide for an exemption from the application of SPP 3.7/Guidelines. They are established by the stated sources and are presented below as:

- Evidence they have been considered when relevant; and
- Justification for the application of SPP 3.7/Guidelines despite a relevant exemption applying to part or all of the planning proposal.

EXEMPTION SCENARIOS	APPLICABLE
(Source: LPS Regulations 2015 Part 10A - Bushfire risk management) Does not apply to land where there is no existing local planning scheme or where a local planning scheme has ceased to have legal effect.	No
(Source: Guidelines s1.2.1) For a structure plan or subdivision application, for proposed lot(s) that: • Are not designated as bushfire prone; • Or where there is no increase in the development potential and therefore no intensification of land use or bushfire risk, such as a boundary realignment, that does not restrict the ability to establish or maintain an APZ; and • does not restrict vehicular access to any existing or future habitable building.	No
(Source: Guidelines s1.2.1) - For incidental non- habitable buildings or structures located not less than six metres from the habitable building, including but not limited to private garages, carports, patios, storage sheds, outbuildings, swimming pools, spa pools and fences.	No
(Source: Guidelines s1.2.1) - For a change of use, minor renovations, extensions, alterations, improvements or repair of an existing habitable building where: • The application does not result in an increase of occupants onsite; and/or • There is no increase in the bushfire risk, such as an extension being further away from the bushfire hazard, or the extension does not restrict vehicular access or the provision of water for the development.	No
Assessment Supporting Details: None Required.	

Figure 1.3

Bushfire Prone Area

Multiple Lots in the localities of Hill River, Boothendarra and Badgingarra

SHIRE OF DANDARAGAN

------ LEGEND ------

Subject Site

Bushfire Prone Area 2024 OBRM_023

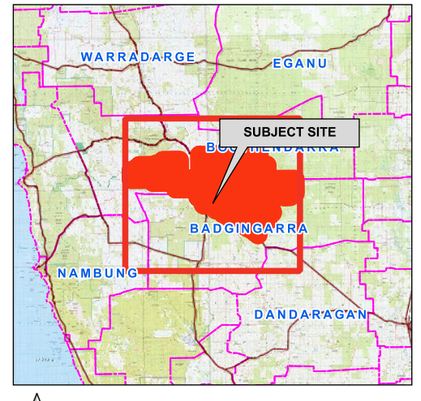
Bushfire Prone Area 2

Development Footprint

0 2,000 4,000 6,000 8,000

Metres

------ LOCALITY ------



AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA94 / MGA zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: David Richer 31-07-2026
SCALE (A3): 1 : 130000

BUSHFIRE PRONE PLANNING

Disclaimer and Limitation: This map has been prepared for bushfire management planning purposes only. All depicted areas, contours and any dimensions shown are subject to survey. Bushfire Prone Planning does not guarantee that this map is without flaw of any kind and disclaims all liability for any errors, loss or other consequence which may arise from relying on any information depicted.

1.3 Required 'Bushfire Planning' Assessments and Documents

INFORMATION PRESENTED IN THIS 'PLANNING' BMP (OR THE BEP) - PROVIDED TO ACCOMPANY THE PROPONENT'S PLANNING SUBMISSION						
The requirements are established by SPP 3.7 Part 4, Guidelines Section 1.2, 4.4, 5.5, 6.4, 7.2, 8.3 and A1.2. The green highlighted column identifies the required information for the subject planning proposal.		Strategic Planning Document		Structure Plan / Subdivision Application		Development Application
Required Information	Details	Map of Bushfire Prone Areas Designation				
		Area 1 (Urban)	Area 2	Area 1 (Urban)	Area 2	Areas 1 & 2
Environment - Identification of environmental, biodiversity or conservation values on subject site(s)	Presented in the BMP. Identifies how proposal siting and design avoids and/or minimises clearing of native vegetation in applying required bushfire protection measures.	BUSHFIRE PLANNING ASSESSMENTS ARE NOT REQUIRED	✓	✓	✓	✓
BLA - Broader Landscape Assessment (see note below)	Presented in the BMP. Considers subject site suitability based on exposure to bushfire hazards, potential for landscape scale bushfire, road network and suitable evacuation destinations.		✓	-	✓	-
BHL - Bushfire Hazard Level Assessment (pre-development)	Presented in the BMP. Can include detail of treatments required to achieve BHL of moderate and/or low.		✓	-	-	-
BAL - Bushfire Attack Level Assessment	Presented in the BMP in BAL contour map format as a requirement and in table format as an additional option.		-	✓	✓	-
	Presented in the BMP in table format and/or BAL contour map format – dependant on which is more efficient and effective at presenting the results (e.g. BAL contour map for multiple buildings).		-	-	-	✓
BPC - Assessment against the relevant Elements (E1 – E4) of the Bushfire Protection Criteria	Presented in the BMP. Strategic planning will necessarily focus on Element 1: Location. Can demonstrate compliance using acceptable solutions and/or an outcomes-based approach.		✓	✓ **Excluding E1**	✓	✓ **Excluding E1**
BEP - Bushfire Emergency Plan	For vulnerable land uses only. Provided as a separate document or an addition / modification to an existing BEP or site Emergency Management Plan.		-	-	-	-
LMP – Landscape Management Plan	For vulnerable land uses only. Provided as a separate document or an addendum to the BMP.					
Note: Where a relevant planning proposal (e.g. subdivision) was previously assessed and approved under the SPP 3.7/Guidelines 2015, it is likely that a BLA will not be required. Also, if an application (e.g. subdivision) is compliant with a structure plan and/or a local planning scheme amendment, which were assessed and approved under the 2015 SPP/Guidelines, it is likely that a BLA will not be required. Confirmation from a relevant DPLH officer may be required (DPLH advice to BPP 20/2/2025).						

1.4 Other Documents Relevant to Preparing the BMP

EXPLANATORY INFORMATION

This section identifies any known assessments, reports or plans that have been conducted and prepared previously, or are being prepared concurrently, and are relevant to the subject planning proposal.

They may have implications for the assessment of bushfire hazard threats and the identification and implementation of the bushfire protection measures that are established by this BMP.

RELEVANT DOCUMENTS

Document	Relevant	Exists	Prepared Concurrently	Title
Preliminary Bushfire Advice	No	No	No	Not Applicable
Implications for the BMP: None				
Bushfire Risk Report	Yes	No	Yes	240073-1 – Dinner Hill Windfarm Badgingarra (BRR) v1.0 (Bushfire Prone Planning May 2026).
Implications for the BMP: The Bushfire Risk Report prepared alongside this BMP identifies the appropriate measures to reduce the risk of onsite and/or offsite ignition, asset damage, and harm to persons, environment, and community. Additional Bushfire Protection Measures to meet or exceed the intent of the Acceptable Solutions of Elements 2-4 of the Bushfire Protection Criteria have been provided within the Section 5.3 Assessment Statements. These are measures which are considered relevant to the planning process.				
Environmental Survey	Yes	Yes	Yes	*Dinner Hill Ecological Impact Assessment – RPS 2026*
Implications for the BMP: The Project has been designed to minimise impacts to vegetation where possible, with fragmentation of stands of remnant vegetation limited to the proposed transmission line through the Hill River Reserve. Impacts to vegetation within this area will be limited to a width of 10m. All other vegetation intersected by the Development Footprint is already isolated by agricultural uses or intersected by existing roads and tracks and as such, the proposed clearing will not significantly increase the fragmentation of this vegetation.				

2 ENVIRONMENTAL CONSIDERATIONS

EXPLANATORY INFORMATION

Some bushfire prone areas also have high biodiversity values. SPP3.7 objective 5.4 prioritises the retention of native vegetation for biodiversity conservation, environmental protection and landscape amenity.

Clearing or modification of native vegetation for the purpose of land use or development is assessed under **State Planning Policy 2: Environment (SPP 2), State Planning Policy 2.8: Bushland policy for the Perth Metropolitan Region (SPP 2.8)** and relevant environmental legislation. A key objective of these polices is to avoid development that may result in unacceptable environmental damage.

Any 'modification' or 'clearing' of vegetation to reduce bushfire risk is considered 'clearing' under the ***Environmental Protection Act 1986*** (EP Act) and requires a clearing permit under the ***Environmental Protection (Clearing of Native Vegetation) Regulations 2004*** (Clearing Regulations) – unless for an exempt purpose.

Clearing native vegetation is an offence, unless done under a clearing permit or the clearing is for an exempt purpose. Exemptions are contained in the EP Act or are prescribed in the Clearing Regulations (note: these exemptions do not apply in environmentally sensitive areas).

The ***Department of Water and Environmental Regulation*** (DWER) is responsible for issuing 'clearing' permits and the framework for the regulation of clearing. Approvals under other legislation, from other agencies, may also be required, dependent on the type of flora or fauna present.

Local Planning Policy or Local Biodiversity Strategy: Natural areas that are not protected by the above Act and Regulation (or any other National or State Acts) may be protected by a local planning policy or local biodiversity strategy. Permission from the local government will be required for any modification or removal of native vegetation in these Local Natural Areas (LNA's). Refer to the relevant local government for detail.

For further Information refer to Native vegetation clearing permits | Western Australian Government, the Planning for Bushfire Guidelines (as amended) and the Bushfire and Vegetation Factsheet - WAPC, Dec 2021.

2.1 Biodiversity or Conservation Values Identified

EXPLANATORY INFORMATION

The required information, relevant to bushfire planning and informing the production of this BMP, is sourced and presented as indicated below.

Note that where a 'desktop' assessment has been conducted, this should not be considered a replacement for a full Environmental Impact Assessment. It is a summary of potential biodiversity or conservation values at the subject site, inferred from information contained in public available datasets and/or reports, which are only current to the date of last modification.

The information provided in the BMP should be considered indicative where the subject site has not previously been subject to a site-specific environmental assessment by an appropriate professional.

The required information is sourced by the bushfire consultant as a 'desktop' assessment from publicly available data bases and/or a local government's local biodiversity strategy or local planning strategy. When applicable, this information is presented on the following pages of this BMP.	Yes - Fully

2.1.1 PUBLICLY AVAILABLE STATE GOVERNMENT DATABASES

IDENTIFICATION OF RELEVANT BIODIVERSITY OR CONSERVATION VALUES							
Dataset	Relevant to Subject Planning Proposal	Influence on Bushfire Threat Levels and / or Application of Bushfire Protection Measures	Information Source(s) Applied				Further Action Required by Proponent
			WA Govt. Agency Dataset (ID)		Proponent Statements	Environmental Asset or Vegetation Survey Report	
Department of Biodiversity, Conservation and Attractions (DBCA) Datasets							
Conservation Category Wetlands and Buffer (geomorphic wetlands – relevant area)	No	-	☒	DBCA-012	☐	☐	None
RAMSAR Sites (wetlands of international importance)	No	-	☒	DBCA-010	☐	☐	None
Threatened and Priority Flora	Yes	-	Restricted Scale of Data Available (security)	DBCA-036	☐	☒	None
Threatened Ecological Communities	Yes	-		DBCA-038	☐	☒	None
Legislated Lands and Waters (national/conservation parks, nature/crown reserves, state forest)	No	-	☒	DBCA-011	☐	☐	None
Department of Planning, Lands and Heritage (DPLH) Datasets							
Bush Forever Areas 2000	No	-	☒	DPLH-019, 022 and MRS Bush Forever	☐	☐	None
Department of Water and Environmental Resources (DWER) Datasets							
Clearing Regulations – Environmentally Sensitive Areas	No	-	☒	DWER-046	☐	☐	None
Swan Bioplan Regionally Significant Natural Areas 2010	No	-	☒	DWER-070	☐	☐	None

2.2 Response of the Planning Proposal to Protection of Native Vegetation

The protection of native vegetation is to be prioritised by avoiding areas that would require clearing or modification of native vegetation, specifically for the purpose of bushfire mitigation (BMP Manual, November 2024 DPLH).

SOLUTIONS APPLIED TO MINIMISE NATIVE VEGETATION REMOVAL / MODIFICATION	
Clearing and/or modification of native vegetation is proposed and necessary.	Not required
Proposed Clearing: The Project has been designed to minimise impacts to vegetation where possible, with fragmentation of stands of remnant vegetation limited to the proposed transmission line through the Hill River Reserve. Impacts to vegetation within this area will be limited to a width of 10m. All other vegetation intersected by the Development Footprint is already isolated by agricultural uses or intersected by existing roads and tracks and as such, the proposed clearing will not significantly increase the fragmentation of this vegetation. (*Ref. Dinner Hill Ecological Impact Assessment – RPS 2026)*.	
Conservation Response	
The proposal reserves native vegetation for conservation, recreation or environmental protection purpose. These can include ecological linkage, local natural area, waterway, or foreshore area or wetland buffer.	Not required
Siting / Design / Construction Responses	
Reduction in the proposed intensification of land use or development potential.	Considered and applied
The Project has undergone substantial redesign, resulting in avoidance of key ecological values as summarised in Section 1.2.2.1. of Dinner Hill Ecological Impact Assessment – RPS 2026.	
Containing or clustering areas of intensification of land use to reduce clearing requirements.	Not required
Consideration of locating proposed development to have greater initial vegetation separation distances from bushfire hazards by utilising non-vegetated interfaces.	Considered and applied
Project infrastructure sited to provide separation where possible from classified Vegetation.	
Modification or redesign of the proposed areas of intensification of land use to avoid areas with high environmental, biodiversity or conservation values.	Considered and applied
The Project has undergone substantial redesign, resulting in avoidance of key ecological values as summarised in Section 1.2.2.1. of Dinner Hill Ecological Impact Assessment – RPS 2026.	
The proposal applies building envelopes, and these have located to minimise the requirement to clear and/or modify native vegetation.	N/A
The proposal utilises the clustering habitable buildings to reduce requirements for native vegetation clearing and/or modification.	N/A
The proposal aligns roads and pathways to work around trees and other vegetation, preserving their ecological values.	N/A
The proposal establishes requirements for the construction of building(s) to satisfy the requirements corresponding to higher BAL ratings to ensure a reduced vegetation separation distance requirement.	N/A

2.3 Vegetation Management Plans with Implications for the BMP

EXPLANATORY INFORMATION

This section identifies the area(s) of land (supporting vegetation), within or near the subject site (i.e. onsite or offsite) to which one or more of the following scenarios and their corresponding management actions applies.

If none of these scenarios is relevant to the subject planning proposal, this is stated.

1. Area(s) subject to a **LANDSCAPE PLAN THAT RESULTS IN RELEVANT ELEMENTS AT RISK BEING EXPOSED TO A LOW BUSHFIRE THREAT LEVEL** from existing or planned area(s) of vegetation and establishes the following management actions:

    (a) To apply landscaping design (including the modification and/or establishment of plants/shrubs/trees), that will enable the area(s) to be excluded from classification under AS 3959 BAL determination methodology;

    (b) To actively manage the area(s) to maintain the low bushfire threat level in perpetuity. Thereby ensuring the applicable bushfire protection measures, applied in accordance with the BMP, remain effective;

    (c) To achieve and maintain the low threat state through using a combination of mechanisms including:

        (i) Minimising vegetation fuel loads through design and ongoing management;

        (ii) Using low flammability and/or higher moisture content species;

        (iii) Incorporating non-vegetated elements; and

    (d) To identify the entity responsible for ensuring the landscape plan is complied with in perpetuity and when required, will contain written confirmation of their acceptance of the responsibility.

2. Area(s) subject to a **LANDSCAPE PLAN THAT RESULTS IN RELEVANT ELEMENTS AT RISK BEING EXPOSED TO A REDUCED BUSHFIRE THREAT LEVEL** from existing or planned area(s) of vegetation and establishes the following management actions:

    (a) To apply landscaping design involving the removal and/or modification of existing vegetation that will enable the area(s) to be classified as a lower threat class under AS 3959:2018 BAL determination methodology;

    (b) To actively manage the area(s) to maintain the reduced bushfire threat level in perpetuity. Thereby ensuring the applicable bushfire protection measures, applied in accordance with the BMP, remain effective;

    (c) To identify the entity responsible for ensuring the landscape plan is complied with in perpetuity and when required, will contain written confirmation of their acceptance of the responsibility.

3. Area(s) subject to a **REVEGETATION PLAN THAT MAY RESULT IN RELEVANT ELEMENTS AT RISK BEING EXPOSED TO AN ADDITIONAL BUSHFIRE HAZARD AND/OR AN INCREASED BUSHFIRE THREAT LEVEL** from an existing area(s) of vegetation and establishes the following information:

    (a) The location of the areas to be revegetated (as distinct from natural regeneration which is accounted for in the vegetation classification under AS 3959 BAL determination methodology); and

    (b) A description of the planned design regarding density and species of plants/shrubs/trees to inform the bushfire consultant's classification of the vegetation under AS 3959:2018 BAL determination methodology.

Relevance of the Stated Scenarios to the Subject Planning Proposal	Only Scenario 3 is relevant.

2.3.1 Revegetation Plan – Additional Bushfire Hazard

PLANNED REVEGETATION – ADDITIONAL BUSHFIRE HAZARD	
Assessment Details	Relevant
The area of land that is to be subject to a revegetation plan is within the subject site (onsite).	Possible
The area of land that is to be subject to a revegetation plan is outside the subject site (offsite).	No
The revegetation plan will introduce a bushfire hazard that doesn't currently exist.	No
The area of land subject to the revegetation plan will introduce a bushfire hazard with a greater bushfire threat level than currently exists. its classification under AS 3959 (as amended) BAL determination methodology will be changed to a higher threat level classification.	Possible
Identification of the Area(s) of Land Subject to a Revegetation Plan	
No revegetation is currently planned or proposed. However, the possibility exists for planted visual screening to be applied at the perimeter of the development area. Where this occurs, the vegetation will either: • Be designed, planted, and managed to allow exclusion following AS 3959-2018 clause 2.2.3.2(f), or; • Be sited with sufficient separation to ensure bushfire impacts on the development site do not exceed those applied in this BMP. Measures 1.9 and 6.4 of the associated Bushfire Risk Report requires any such revegetation plan to be reviewed by a suitable bushfire consultant.	
Implications for the BMP	
Table 6.1, Responsibility 5 states: "*The advice of an accredited Bushfire Planning Practitioner must be sought where revegetation within the lease area is proposed. Revegetation may require a Landscape Management Plan, and update to this Bushfire Management Plan, or Addendum to this Bushfire Management Plan.*"	

3 THE BUSHFIRE HAZARD – POTENTIAL IMPACT - LANDSCAPE AND VEGETATION DATA

3.1 Bushfire Attack Level (BAL) Assessment Summary (Table Format)

EXPLANATORY INFORMATION

The BAL ratings identified for a planning assessment are likely to be only 'indicative' of what can be achieved – with planning compliance for this factor being achieved when BAL-29 is indicated.

Deriving the required 'determined' BAL rating for building application purposes requires assessed building site conditions to be in a known and final state (e.g. the building location is fixed and/or location of classified vegetation is known post approved modification/removal). A separate BAL assessment report will likely be required for each such building works. Refer to Appendices B1 for additional information.

3.1.1 BAL Determination Methodology and Location of Data and Results

LOCATION OF DATA & RESULTS					
BAL Determination Methodology		Location of the Site Assessment Data			Location of the Results
AS 3959:2018	Applied to Assessment	Classified Vegetation and Topography Map(s)	Calculation Input Variables		Assessed Bushfire Attack Levels and/or Radiant Heat Levels
			Summary Data	Detailed Data with Explanatory and Supporting Information	
Method 1 (Simplified)	Yes	Figure 3.1 Figure 3.1.1	Table 3.1	Appendix A1	Table 3.1
Method 2 (Detailed)	Yes			Appendix A1 and A3	

Reasons for the Application of the Method 2 Procedure	
1.	A more specific result is sought.
2.	To apply the requirement to assume a higher flame temperature of 1200K when determining the availability of suitable onsite sheltering options for tourism vulnerable land uses (Guidelines v1.4 s5.5.3.1.3). This ensures the margin of safety is increased.

Identification of the specific issues associated with the site and/or proposed development that have necessitated the use of the Method 2 procedure:

A 10kW/m2 APZ (calculated at 1090K Flame Temperature) has been applied as an appropriate maximum acceptable heat flux exposure for BESS / Power Conversion System (PCS) area and control building for secondary systems, high voltage substation (33/330kV) and terminal substation (330kV).

A 10kW/m2 APZ (1200K Flame Temperature) has been applied to the operations and maintenance building, site offices.

Assessment Comments: The proposed development includes habitable and non-habitable structures. Radiant heat and direct flame impact assessments are required due to the nature and proximity of these assets to each other and localised vegetation on neighbouring properties. APZ's have been identified for each specified area. Refer to Figure 3.1.2.

3.1.2 Site Assessment Data and BAL Results

Table 3.1: Summary of applied calculation input variables applied in deriving the BAL rating for the identified exposed element (the relevant building/structure).

DATA APPLIED TO THE DERIVATION OF RADIANT HEAT FLUX LEVELS [1]															
Applied BAL Determination Method	METHOD 1 - SIMPLIFIED PROCEDURE (AS 3959:2018 CLAUSE 2.2) AND METHOD 2 - DETAILED PROCEDURE (AS 3959:2018 APPENDIX B)														
The Receiver of Radiant Heat Relevant Building(s) / Structure(s) and Their Location	Calculation Variables Corresponding to the BAL Determination Method														
	Methods 1 and 2		Method 1	Method 2			Method 2						Method 1 and 2	Indicative Radiant Heat Flux Stated as kW/m² or Bushfire Attack Level (BAL)
	Vegetation Classification		FDI	Effective Slope		Site Slope	FFDI or GFDI	Flame Temp.	Elevation of Receiver	Flame Width	Fireline Intensity	Flame Length	Modified View Factor	Separation Distance Required	
	Area	Class		Applied Range	Determined										
				degree range	degrees	degrees		K	metres	metres	kW/m	metres	% Reduction	metres	
Operations and Maintenance Buildings	1	(A) Forest	80	d/slope >0-5	d/slope 5	upslope 5	80	1200	Default					76.4	<10kW/m2 (Calculated at 1200K Flame Temperature)
	2	(B) Woodland	80	d/slope >0-5	d/slope 5	upslope 5	80							56.3	
	3	(C) Shrubland	80	d/slope >0-5	d/slope 5	upslope 5	80							37.2	
	4	(D) Scrub	80	d/slope >0-5	d/slope 5	upslope 5	80							50	
	5	(G) Grassland	110	d/slope >0-5	d/slope 5	upslope 5	110							34.3	
BESS Cabinets Substations Meteorological Masts (tower only) Critical Class 10 Buildings Terminals (Switchyards)	1	(A) Forest	80	d/slope >0-5	d/slope 5	upslope 5	80	1090						60.4	<10kW/m2 (Calculated at 1090K Flame Temperature)
	2	(B) Woodland	80	d/slope >0-5	d/slope 5	upslope 5	80							43.2	
	3	(C) Shrubland	80	d/slope >0-5	d/slope 5	upslope 5	80							27.3	
	4	(D) Scrub	80	d/slope >0-5	d/slope 5	upslope 5	80							37.9	
	5	(G) Grassland	110	d/slope >0-5	d/slope 5	upslope 5	110							25	
Wind Turbines Meteorological Mast Guy Wire Anchors Laydown Areas Batch Plants Construction Compounds Other Class 1-10 Buildings	1	(A) Forest	80	d/slope >0-5	-									27	BAL-29
	2	(B) Woodland	80	d/slope >0-5										17	
	3	(C) Shrubland	80	d/slope >0-5										10	
	4	(D) Scrub	80	d/slope >0-5										15	
	5	(G) Grassland	110	d/slope >0-5										9	

[1] All data and information supporting the determination of the classifications and values stated in this table and any associated justification, is presented in Appendix A. Where the values are stated as 'default' these are either the values stated in AS 3959:2018, Table B1 or the values calculated as intermediate or final outputs through application of the equations of the AS 3959:2018 BAL determination methodology. They are not values derived by the assessor.

Figure 3.1

Site Assessment Index

Multiple Lots in the localities of Hill River, Boothendarra and Badgingarra

SHIRE OF DANDARAGAN

------ LEGEND ------

- Subject Site
- 150m Assessment Area
- Atlas Grid — atlas
- Development Footprint

Facility Layout

- BESS/OM/Water Rentention
- Satellite Substation
- Substation
- Switching Yard
- Temp construction facilities
- Wind Turbines v9

MET Masts

- Permenant MET Mast
- Temporary MET Mast

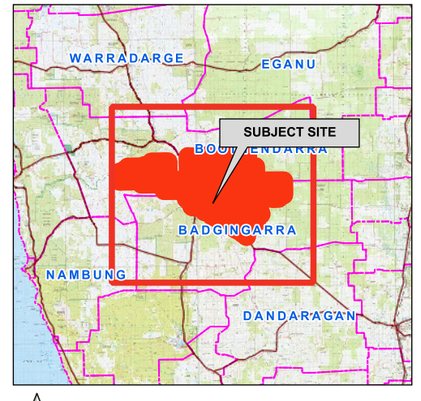
Classified Vegetation

- Forest
- Woodland
- Shrubland
- Scrub
- Grassland
- Excluded 2,2,3,2 (e)
- Excluded 2,2,3,2 (f)

0 2,000 4,000 6,000 8,000

Metres

------ LOCALITY ------



AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA94 / MGA zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: David Richer 31-07-2026
SCALE (A3): 1 : 150000

BUSHFIRE PRONE PLANNING

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Figure 3.1.1

Classified Vegetation Map 1

Multiple Lots in the localities of Hill River, Boothendarra and Badgingarra

SHIRE OF DANDARAGAN

NYLAGARDA RD

NYLAGARDA RD

CANTABILLING RD

YERRAMULLAH RD

1

2

28

AREA 4
Class (D) Scrub
Effective Slope >0-5°

AREA 2
Class (B) Woodland
Effective Slope >0-5°

AREA 3
Class (C) Shrubland
Effective Slope >0-5°

AREA 6
Class (G) Grassland
Effective Slope >0-5°

------ LEGEND ------

- 150m Assessment Area
- Subject Site
- Atlas Grid — atlas
- Development Footprint
- Photos and Direction

Facility Layout

- BESS/OM/Water Rentention
- Substation
- Switching Yard
- Temp construction facilities
- Storage Area

MET Masts

- Permenant MET Mast
- Wind Turbines v9
- Access Roads

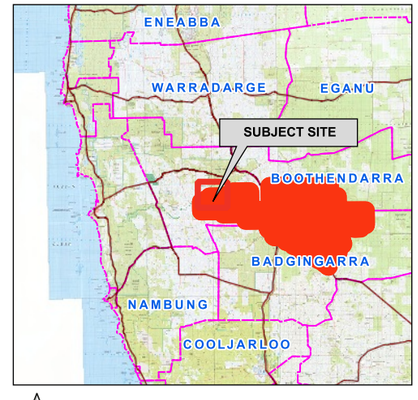
Classified Vegetation

- Woodland
- Shrubland
- Scrub
- Grassland

0 200 400 600 800 1,000

Metres

------ LOCALITY ------



AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA94 / MGA zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: David Richer 31-07-2026
SCALE (A3): 1 : 22073

BUSHFIRE PRONE PLANNING

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Figure 3.1.2

Classified Vegetation Map 2

Multiple Lots in the localities of Hill River, Boothendarra and Badgingarra

SHIRE OF DANDARAGAN

AREA 4
Class (D) Scrub
Effective Slope >0-5°

AREA 4
Class (D) Scrub
Effective Slope >0-5°

AREA 4
Class (D) Scrub
Effective Slope >0-5°

AREA 4
Class (D) Scrub
Effective Slope >0-5°

AREA 6
Class (G) Grassland
Effective Slope >0-5°

AREA 4
Class (D) Scrub
Effective Slope >0-5°

2

COWALLA PEAK RD

YERRAMULLAH RD

COWALLA RD

------ LEGEND ------

- 150m Assessment Area
- Subject Site
- Atlas Grid — atlas
- Development Footprint

Facility Layout

- BESS/OM/Water Rentention
- Substation
- Wind Turbines v9
- Access Roads

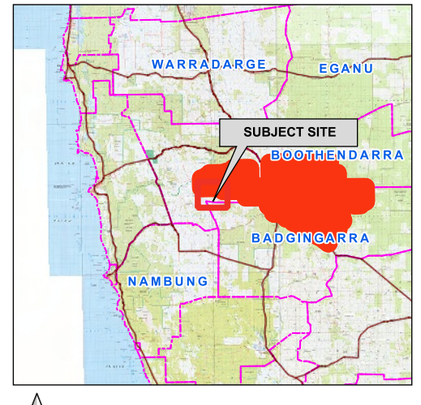
Classified Vegetation

- Woodland
- Shrubland
- Scrub
- Grassland

0 200 400 600 800 1,000

Metres

------ LOCALITY ------



N

AERIAL IMAGERY: Landgate/SLIP

BUSHFIRE PRONE PLANNING

Coordinate System: GDA94 / MGA zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: David Richer 31-07-2026
SCALE (A3): 1 : 22073

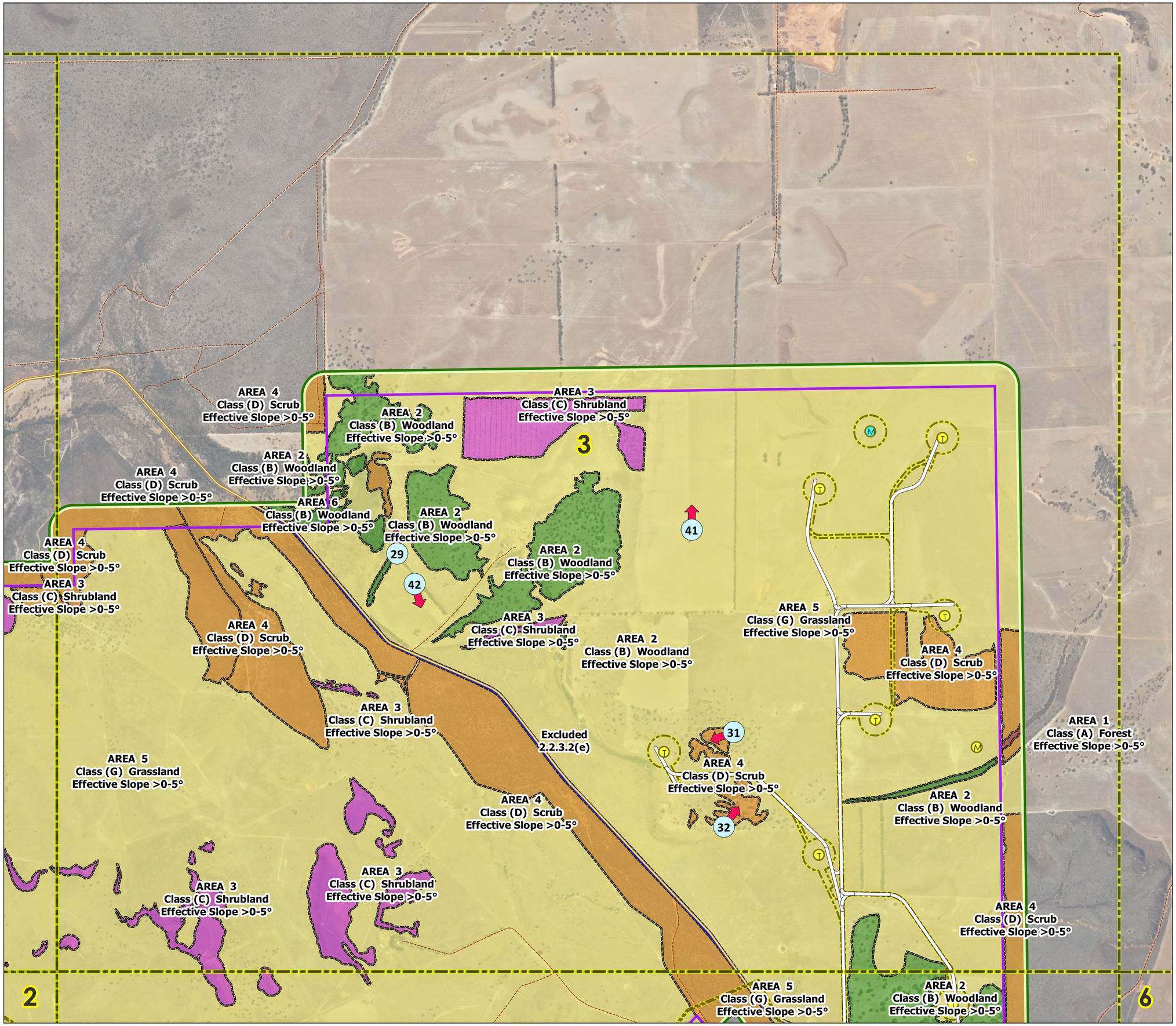
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Figure 3.1.3

Classified Vegetation Map 3

Multiple Lots in the localities of Hill River, Boothendarra and Badgingarra

SHIRE OF DANDARAGAN



------ LEGEND ------

- 150m Assessment Area
- Subject Site
- Atlas Grid — atlas
- Development Footprint
- Photos and Direction

MET Masts

- Permenant MET Mast
- Temporary MET Mast
- Wind Turbines v9
- Access Roads

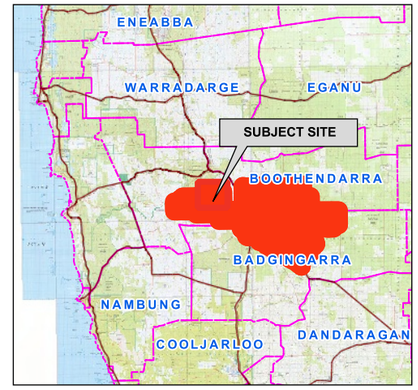
Classified Vegetation

- Forest
- Woodland
- Shrubland
- Scrub
- Grassland
- Excluded 2,2,3,2 (e)

0 200 400 600 800 1,000

Metres

------ LOCALITY ------



AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA94 / MGA zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: David Richer 31-07-2026
SCALE (A3): 1 : 22073

BUSHFIRE PRONE PLANNING

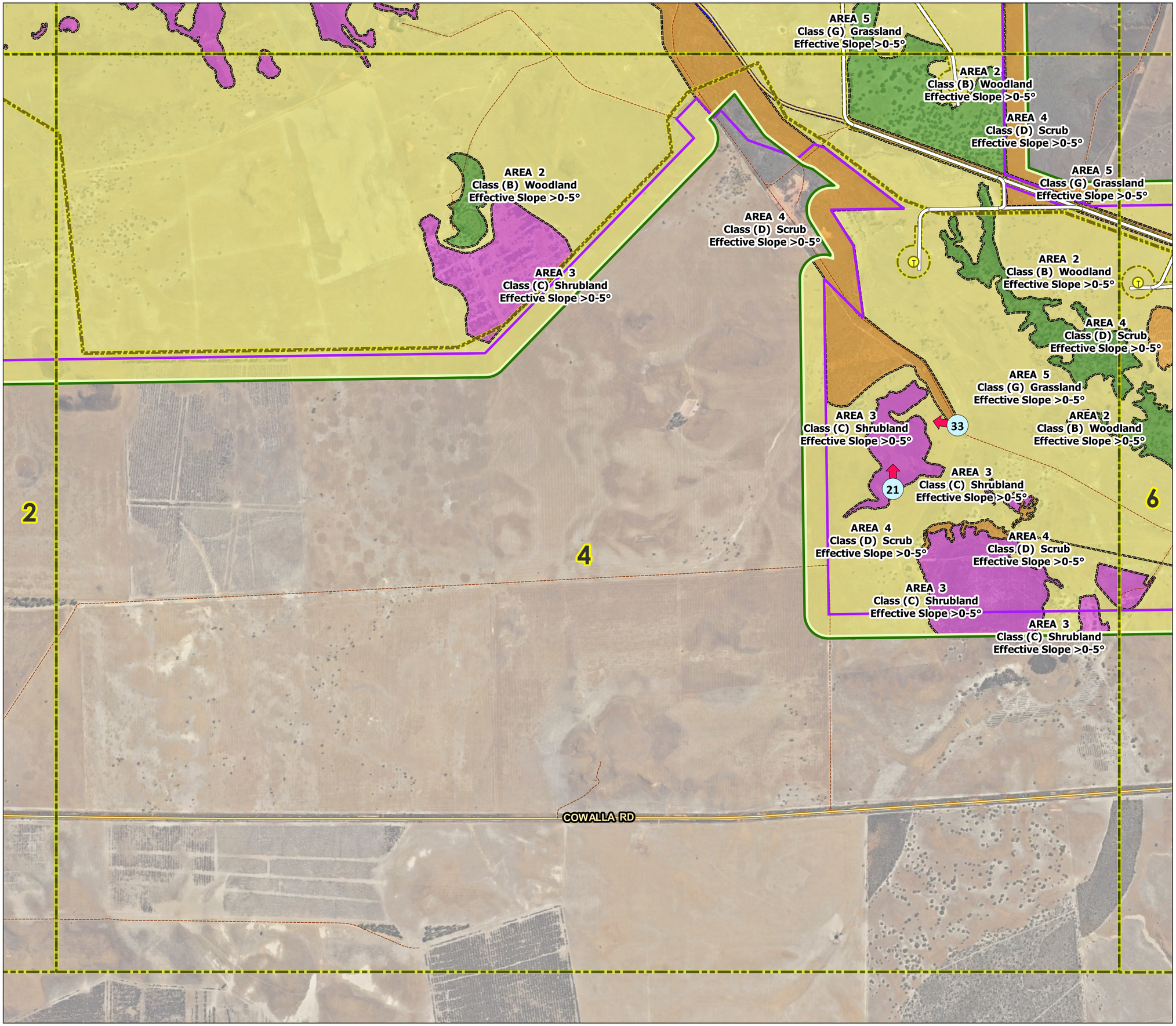
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Figure 3.1.4

Classified Vegetation Map 4

Multiple Lots in the localities of Hill River, Boothendarra and Badgingarra

SHIRE OF DANDARAGAN



------ LEGEND ------

- 150m Assessment Area
- Subject Site
- Atlas Grid — atlas
- Development Footprint
- Photos and Direction
- Wind Turbines v9
- Access Roads

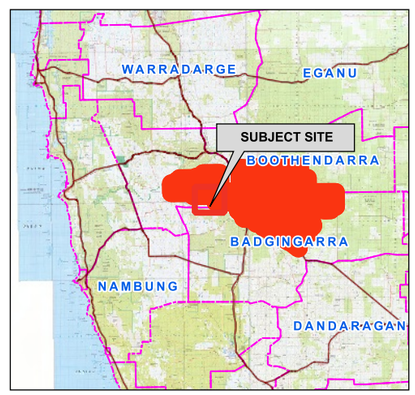
Classified Vegetation

- Woodland
- Shrubland
- Scrub
- Grassland
- Excluded 2,2,3,2 (e)

0 200 400 600 800 1,000

Metres

------ LOCALITY ------



N

AERIAL IMAGERY: Landgate/SLIP

BUSHFIRE PRONE PLANNING

Coordinate System: GDA94 / MGA zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: David Richer 31-07-2026
SCALE (A3): 1 : 22073

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Figure 3.1.5

Classified Vegetation Map 5

Multiple Lots in the localities of Hill River, Boothendarra and Badgingarra

SHIRE OF DANDARAGAN

BOOTHENDARRA RD

BRAND HWY

AREA 6
Class (G) Grassland
Effective Slope >0-5°

AREA 4
Class (D) Scrub
Effective Slope >0-5°

AREA 4
Class (D) Scrub
Effective Slope >0-5°

AREA 6
Class (G) Grassland
Effective Slope >0-5°

AREA 3
Class (C) Shrubland
Effective Slope >0-5°

AREA 4
Class (B) Woodland
Effective Slope >0-5°

AREA 2
Class (B) Woodland
Effective Slope >0-5°

AREA 2
Class (B) Woodland
Effective Slope >0-5°

AREA 3
Class (C) Shrubland
Effective Slope >0-5°

AREA 6
Class (G) Grassland
Effective Slope >0-5°

AREA 4
Class (D) Scrub
Effective Slope >0-5°

Excluded
2.2.3.2(f)

Excluded
2.2.3.2(f)

AREA 2
Class (B) Woodland
Effective Slope >0-5°

AREA 2
Class (B) Woodland
Effective Slope >0-5°

AREA 2
Class (B) Woodland
Effective Slope >0-5°

Excluded
2.2.3.2(f)

Excluded
2.2.3.2(f)

AREA 3
Class (C) Shrubland
Effective Slope >0-5°

AREA 4
Class (D) Scrub
Effective Slope >0-5°

5

8

AREA 2
Class (B) Woodland
Effective Slope >0-5°

AREA 2
Class (B) Woodland
Effective Slope >0-5°

AREA 6
Class (G) Grassland
Effective Slope >0-5°

AREA 3
Class (C) Shrubland
Effective Slope >0-5°

AREA 2
Class (B) Woodland
Effective Slope >0-5°

AREA 4
Class (D) Scrub
Effective Slope >0-5°

AREA 6
Class (G) Grassland
Effective Slope >0-5°

AREA 2
Class (B) Woodland
Effective Slope >0-5°

AREA 2
Class (B) Woodland
Effective Slope >0-5°

45

AREA 4
Class (D) Scrub
Effective Slope >0-5°

Excluded
2.2.3.2(f)

AREA 3
Class (C) Shrubland
Effective Slope >0-5°

AREA 4
Class (D) Scrub
Effective Slope >0-5°

6

9

------ LEGEND ------

- 150m Assessment Area
- Subject Site
- Atlas Grid — atlas
- Development Footprint
- Photos and Direction

MET Masts

- Permenant MET Mast
- Wind Turbines v9
- Access Roads

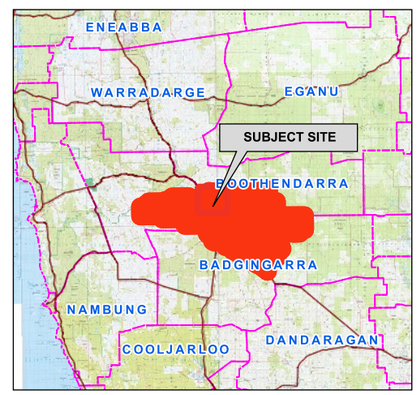
Classified Vegetation

- Woodland
- Shrubland
- Scrub
- Grassland
- Excluded 2,2,3,2 (e)
- Excluded 2,2,3,2 (f)

0 200 400 600 800 1,000

Metres

------ LOCALITY ------



AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA94 / MGA zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: David Richer 31-07-2026
SCALE (A3): 1 : 22073

BUSHFIRE PRONE PLANNING

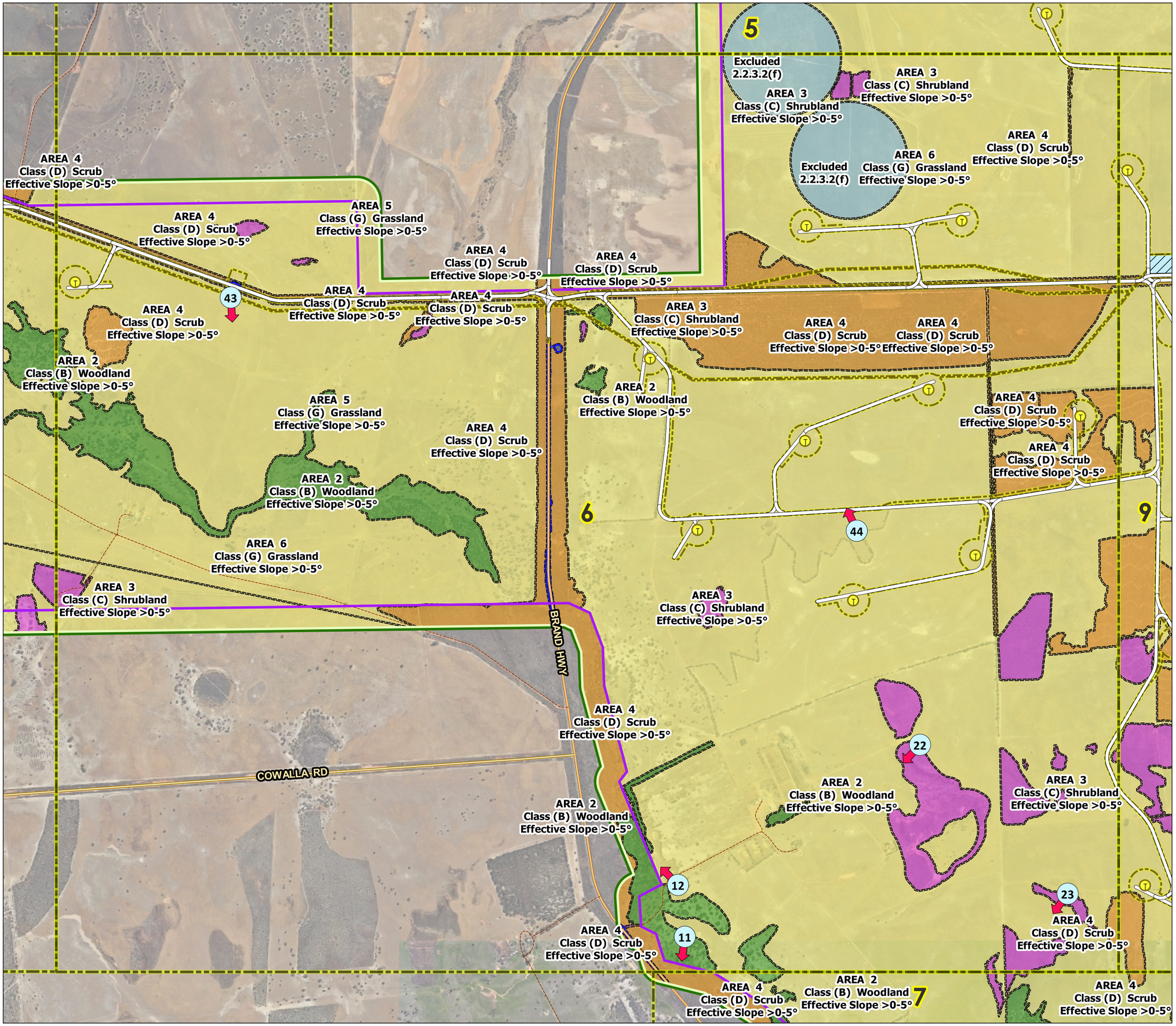
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Figure 3.1.6

Classified Vegetation Map 6

Multiple Lots in the localities of Hill River, Boothendarra and Badgingarra

SHIRE OF DANDARAGAN



------ LEGEND ------

- 150m Assessment Area
- Subject Site
- Atlas Grid — atlas
- Development Footprint
- Photos and Direction

Facility Layout

- Storage Area
- Wind Turbines v9
- Access Roads

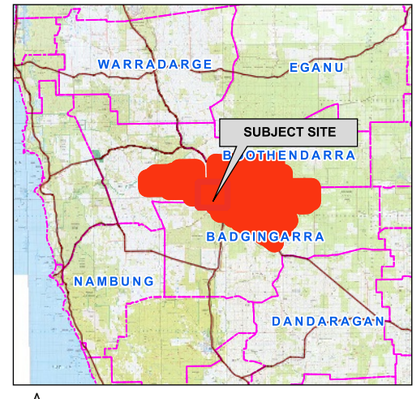
Classified Vegetation

- Woodland
- Shrubland
- Scrub
- Grassland
- Excluded 2,2,3,2 (e)
- Excluded 2,2,3,2 (f)

0 200 400 600 800 1,000

Metres

------ LOCALITY ------



AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA94 / MGA zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: David Richer 31-07-2026
SCALE (A3): 1 : 22073

BUSHFIRE PRONE PLANNING

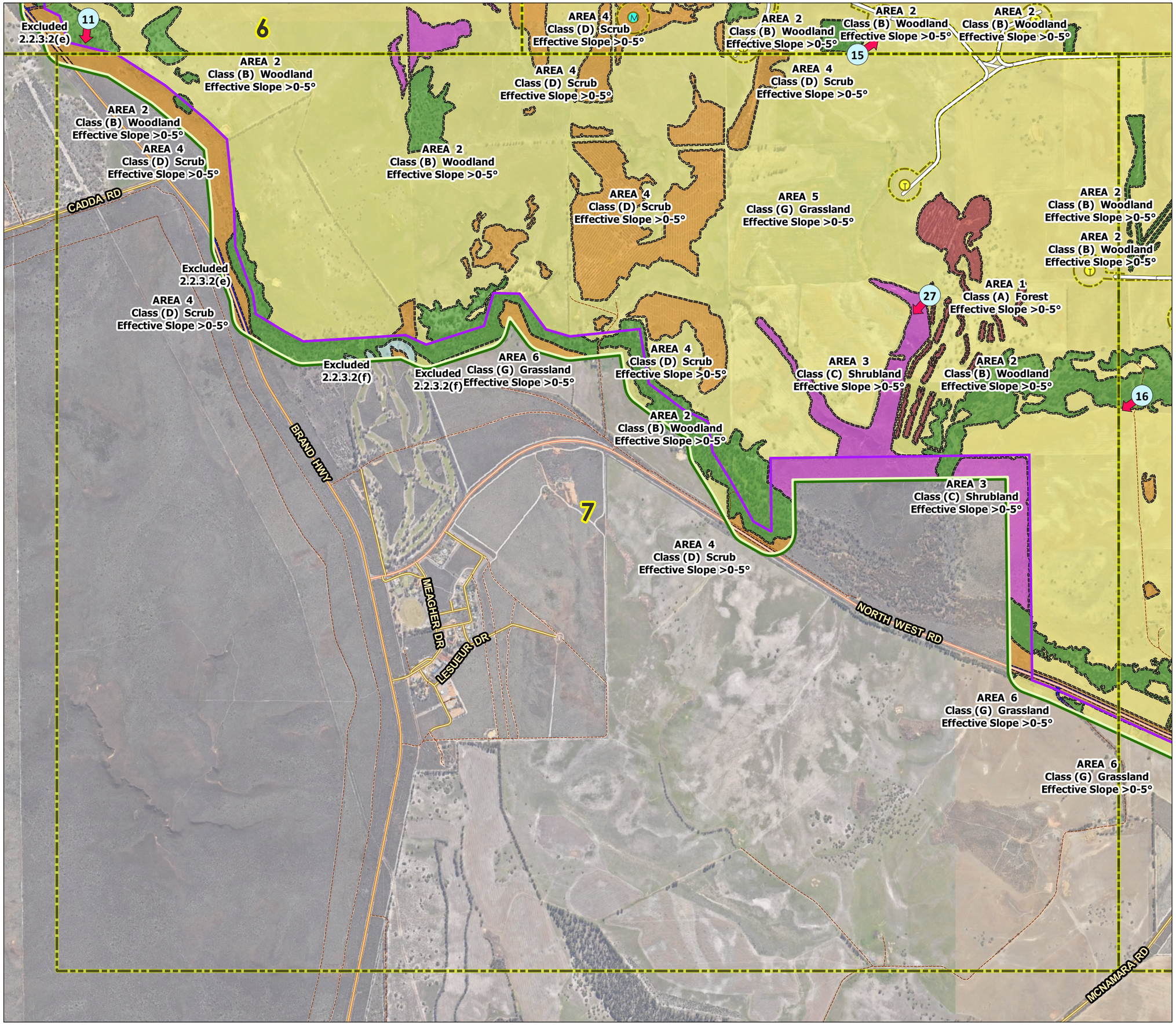
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Figure 3.1.7

Classified Vegetation Map 7

Multiple Lots in the localities of Hill River, Boothendarra and Badgingarra

SHIRE OF DANDARAGAN



------ LEGEND ------

- 150m Assessment Area
- Subject Site
- Atlas Grid — atlas
- Development Footprint
- Photos and Direction

MET Masts

- Permenant MET Mast
- Wind Turbines v9
- Access Roads

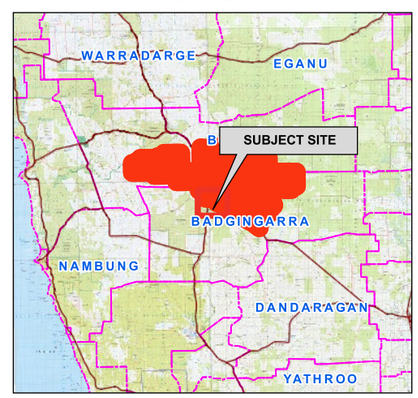
Classified Vegetation

- Forest
- Woodland
- Shrubland
- Scrub
- Grassland
- Excluded 2,2,3,2 (e)
- Excluded 2,2,3,2 (f)

0 200 400 600 800 1,000

Metres

------ LOCALITY ------



AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA94 / MGA zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: David Richer 31-07-2026
SCALE (A3): 1 : 22073

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Figure 3.1.8

Classified Vegetation Map 8

Multiple Lots in the localities of Hill River, Boothendarra and Badgingarra

SHIRE OF DANDARAGAN

AREA 4 Class (D) Scrub Effective Slope >0-5°

AREA 6 Class (G) Grassland Effective Slope >0-5°

AREA 4 Class (D) Scrub Effective Slope >0-5°

AREA 4 Class (D) Scrub Effective Slope >0-5°

BOOTHENDARRA RD

DEVAR RD

AREA 6 Class (G) Grassland Effective Slope >0-5°

AREA 4 Class (D) Scrub Effective Slope >0-5°

AREA 6 Class (G) Grassland Effective Slope >0-5°

AREA 3 Class (C) Shrubland Effective Slope >0-5°

AREA 6 Class (G) Grassland Effective Slope >0-5°

AREA 4 Class (D) Scrub Effective Slope >0-5°

AREA 2 Class (B) Woodland Effective Slope >0-5°

AREA 2 Class (B) Woodland Effective Slope >0-5°

AREA 2 Class (B) Woodland Effective Slope >0-5°

AREA 2 Class (B) Woodland Effective Slope >0-5°

AREA 2 Class (B) Woodland Effective Slope >0-5°

AREA 4 Class (D) Scrub Effective Slope >0-5°

AREA 6 Class (G) Grassland Effective Slope >0-5°

AREA 4 Class (D) Scrub Effective Slope >0-5°

AREA 4 Class (D) Scrub Effective Slope >0-5°

AREA 6 Class (G) Grassland Effective Slope >0-5°

AREA 4 Class (D) Scrub Effective Slope >0-5°

AREA 2 Class (B) Woodland Effective Slope >0-5°

AREA 2 Class (B) Woodland Effective Slope >0-5°

AREA 4 Class (D) Scrub Effective Slope >0-5°

AREA 4 Class (D) Scrub Effective Slope >0-5°

AREA 3 Class (C) Shrubland Effective Slope >0-5°

AREA 6 Class (G) Grassland Effective Slope >0-5°

AREA 2 Class (B) Woodland Effective Slope >0-5°

AREA 2 Class (B) Woodland Effective Slope >0-5°

AREA 2 Class (B) Woodland Effective Slope >0-5°

AREA 4 Class (D) Scrub Effective Slope >0-5°

AREA 2 Class (B) Woodland Effective Slope >0-5°

AREA 6 Class (G) Grassland Effective Slope >0-5°

AREA 4 Class (D) Scrub Effective Slope >0-5°

AREA 2 Class (B) Woodland Effective Slope >0-5°

AREA 2 Class (B) Woodland Effective Slope >0-5°

AREA 4 Class (D) Scrub Effective Slope >0-5°

AREA 2 Class (B) Woodland Effective Slope >0-5°

5

8

12

9

20

46

------ LEGEND ------

- 150m Assessment Area
- Subject Site
- Atlas Grid — atlas
- Development Footprint
- Photos and Direction

MET Masts

- Temporary MET Mast
- Wind Turbines v9
- Access Roads

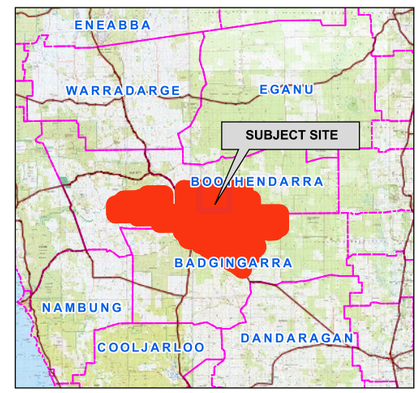
Classified Vegetation

- Woodland
- Shrubland
- Scrub
- Grassland
- Excluded 2,2,3,2 (e)

0 200 400 600 800 1,000

Metres

------ LOCALITY ------



AERIAL IMAGERY: Landgate/SLIP

N

BUSHFIRE PRONE PLANNING

Coordinate System: GDA94 / MGA zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: David Richer 31-07-2026
SCALE (A3): 1 : 22073

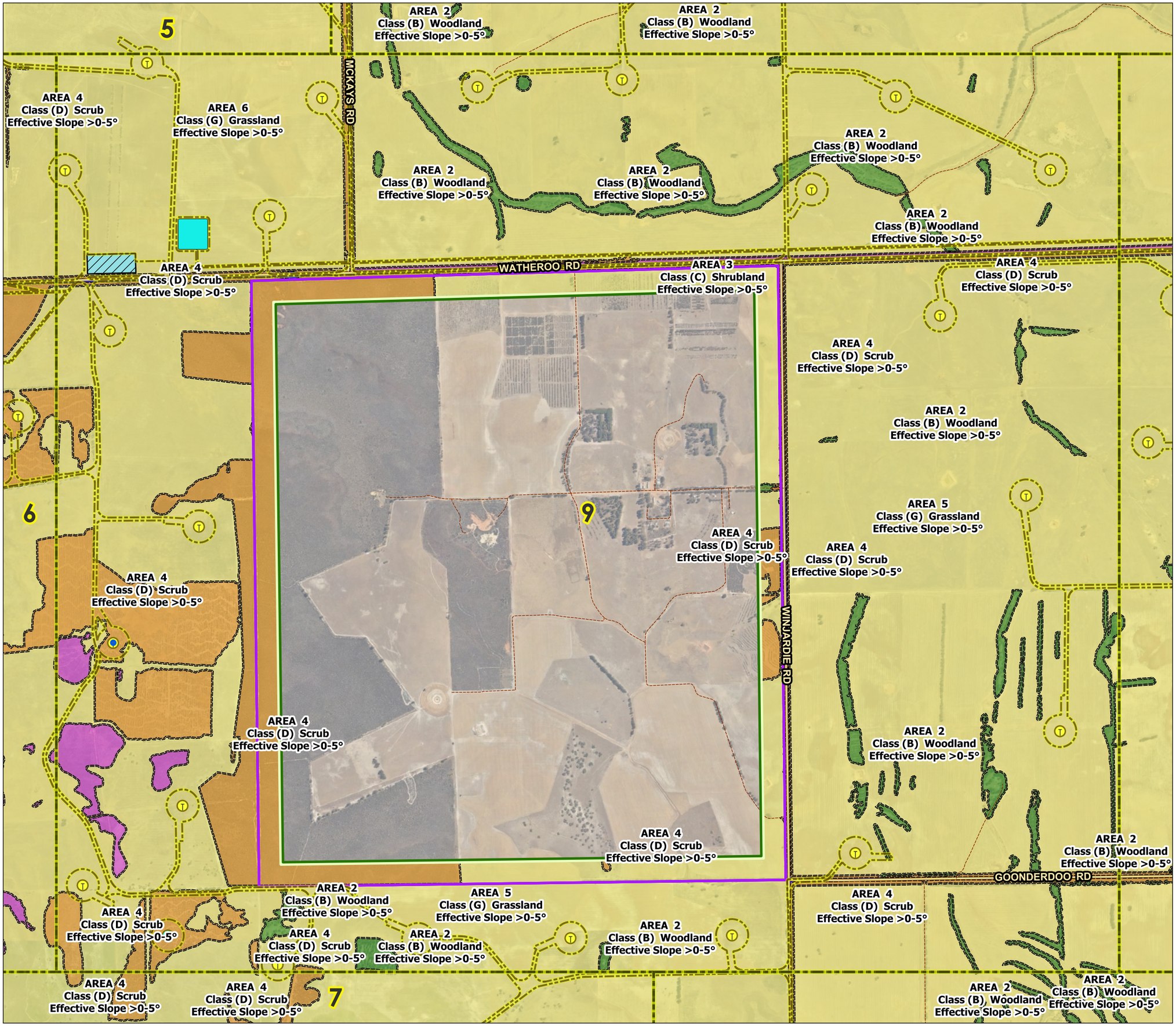
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Figure 3.1.9

Classified Vegetation Map 9

Multiple Lots in the localities of Hill River, Boothendarra and Badgingarra

SHIRE OF DANDARAGAN



------ LEGEND ------

- 150m Assessment Area
- Atlas Grid — atlas

Facility Layout

- Substation
- Storage Area
- Subject Site

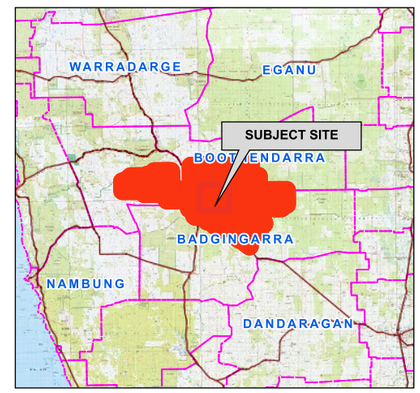
Classified Vegetation

- Woodland
- Shrubland
- Scrub
- Grassland
- Excluded 2,2,3,2 (e)

0 200 400 600 800 1,000

Metres

------ LOCALITY ------



AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA94 / MGA zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: David Richer 24-08-2026
SCALE (A3): 1 : 22073

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Figure 3.1.10

Classified Vegetation Map 10

Multiple Lots in the localities of Hill River, Boothendarra and Badgingarra

SHIRE OF DANDARAGAN

AREA 2 Class (B) Woodland Effective Slope >0-5°

AREA 6 Class (G) Grassland Effective Slope >0-5°

AREA 4 Class (D) Scrub Effective Slope >0-5°

AREA 4 Class (C) Shrubland Effective Slope >0-5°

Excluded 2.2.3.2(e)

DINNER HILL RD

WINJARDIE RD

MCNAMARA RD

NORTH WEST RD

9

7

10

16 17 18 19 25 49

------ LEGEND ------

- 150m Assessment Area
- Subject Site
- Atlas Grid — atlas
- Development Footprint
- Photos and Direction

MET Masts

- Permenant MET Mast
- Wind Turbines v9
- Access Roads

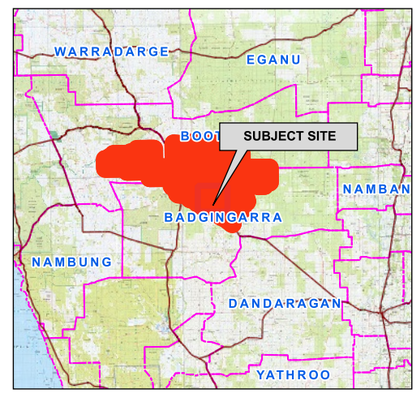
Classified Vegetation

- Woodland
- Shrubland
- Scrub
- Grassland
- Excluded 2,2,3,2 (e)
- Excluded 2,2,3,2 (f)

0 200 400 600 800 1,000

Metres

------ LOCALITY ------



AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA94 / MGA zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: David Richer 31-07-2026
SCALE (A3): 1 : 22073

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Figure 3.1.11

Classified Vegetation Map 11

Multiple Lots in the localities of Hill River, Boothendarra and Badgingarra

SHIRE OF DANDARAGAN

AREA 2
Class (B) Woodland
Effective Slope >0-5°

AREA 2
Class (B) Woodland
Effective Slope >0-5°

AREA 6
Class (G) Grassland
Effective Slope >0-5°

AREA 2
Class (B) Woodland
Effective Slope >0-5°

AREA 3
Class (C) Shrubland
Effective Slope >0-5°

AREA 4
Class (D) Scrub
Effective Slope >0-5°

AREA 2
Class (B) Woodland
Effective Slope >0-5°

WATHINGARRA RD

50

AREA 4
Class (D) Scrub
Effective Slope >0-5°

AREA 4
Class (D) Scrub
Effective Slope >0-5°

AREA 2
Class (B) Woodland
Effective Slope >0-5°

AREA 2
Class (B) Woodland
Effective Slope >0-5°

AREA 4
Class (D) Scrub
Effective Slope >0-5°

AREA 6
Class (G) Grassland
Effective Slope >0-5°

AREA 2
Class (B) Woodland
Effective Slope >0-5°

AREA 6
Class (G) Grassland
Effective Slope >0-5°

AREA 2
Class (B) Woodland
Effective Slope >0-5°

AREA 4
Class (D) Scrub
Effective Slope >0-5°

AREA 3
Class (C) Shrubland
Effective Slope >0-5°

NORTH WEST RD

11

BADGINGARRA RD

------ LEGEND ------

- 150m Assessment Area
- Subject Site
- Atlas Grid — atlas
- Development Footprint
- Photos and Direction

MET Masts

- Permenant MET Mast
- Wind Turbines v9
- Access Roads

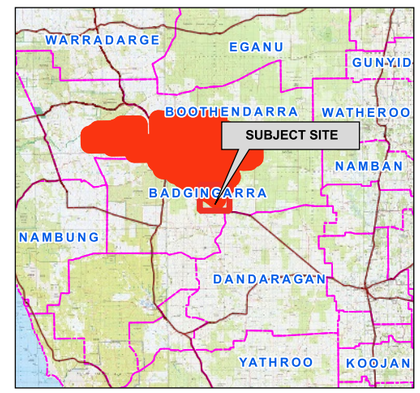
Classified Vegetation

- Woodland
- Shrubland
- Scrub
- Grassland
- Excluded 2,2,3,2 (e)

0 200 400 600 800 1,000

Metres

------ LOCALITY ------



AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA94 / MGA zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: David Richer 31-07-2026
SCALE (A3): 1 : 22073

BUSHFIRE PRONE PLANNING

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Figure 3.1.12

Classified Vegetation Map 12

Multiple Lots in the localities of Hill River, Boothendarra and Badgingarra

SHIRE OF DANDARAGAN

HERSCHELL RD

BOOTHENDARRA RD

AREA 6
Class (G) Grassland
Effective Slope >0-5°

AREA 3
Class (C) Shrubland
Effective Slope >0-5°

AREA 4
Class (D) Scrub
Effective Slope >0-5°

AREA 3
Class (C) Shrubland
Effective Slope >0-5°

AREA 3
Class (C) Shrubland
Effective Slope >0-5°

AREA 2
Class (B) Woodland
Effective Slope >0-5°

AREA 3
Class (C) Shrubland
Effective Slope >0-5°

8

12

AREA 3
Class (C) Shrubland
Effective Slope >0-5°

AREA 2
Class (B) Woodland
Effective Slope >0-5°

47

AREA 2
Class (B) Woodland
Effective Slope >0-5°

AREA 2
Class (B) Woodland
Effective Slope >0-5°

AREA 3
Class (C) Shrubland
Effective Slope >0-5°

AREA 4
Class (D) Scrub
Effective Slope >0-5°

AREA 4
Class (D) Scrub
Effective Slope >0-5°

AREA 2
Class (B) Woodland
Effective Slope >0-5°

AREA 2
Class (B) Woodland
Effective Slope >0-5°

AREA 4
Class (D) Scrub
Effective Slope >0-5°

40

AREA 2
Class (B) Woodland
Effective Slope >0-5°

AREA 4
Class (D) Scrub
Effective Slope >0-5°

AREA 2
Class (B) Woodland
Effective Slope >0-5°

AREA 3
Class (C) Shrubland
Effective Slope >0-5°

6

AREA 1
Class (A) Forest
Effective Slope >0-5°

------ LEGEND ------

- 150m Assessment Area
- Subject Site
- Atlas Grid — atlas
- Development Footprint
- Photos and Direction

MET Masts

- Permenant MET Mast
- Temporary MET Mast
- Wind Turbines v9
- Access Roads

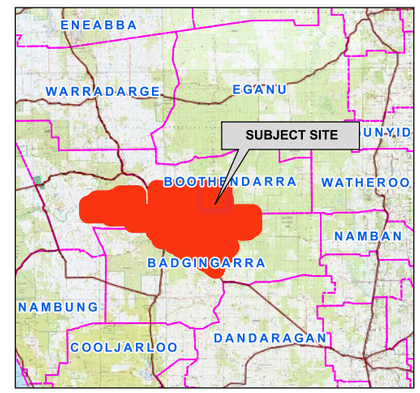
Classified Vegetation

- Forest
- Woodland
- Shrubland
- Scrub
- Grassland
- Excluded 2,2,3,2 (e)

0 200 400 600 800 1,000

Metres

------ LOCALITY ------



AERIAL IMAGERY: Landgate/SLIP

BUSHFIRE PRONE PLANNING

Coordinate System: GDA94 / MGA zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: David Richer 31-07-2026
SCALE (A3): 1 : 22073

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Figure 3.1.13

Classified Vegetation Map 13

Multiple Lots in the localities of Hill River, Boothendarra and Badgingarra

SHIRE OF DANDARAGAN

DEWAR RD
WATHEROO RD
DINNER HILL RD
GOONDERDOO RD

AREA 2 Class (B) Woodland Effective Slope >0-5°
AREA 3 Class (C) Shrubland Effective Slope >0-5°
AREA 4 Class (D) Scrub Effective Slope >0-5°
AREA 6 Class (G) Grassland Effective Slope >0-5°
AREA 1 Class (A) Forest Effective Slope >0-5°

8
9
13
24
34
37
48
26
39
19
14

------ LEGEND ------

- 150m Assessment Area
- Subject Site
- Atlas Grid — atlas
- Development Footprint
- Photos and Direction

Facility Layout

- Satellite Substation
- Quarry
- Wind Turbines v9
- Access Roads

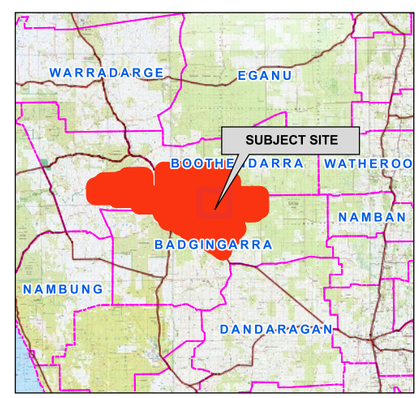
Classified Vegetation

- Forest
- Woodland
- Shrubland
- Scrub
- Grassland
- Excluded 2,2,3,2 (e)

0 200 400 600 800 1,000

Metres

------ LOCALITY ------



AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA94 / MGA zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: David Richer 31-07-2026
SCALE (A3): 1 : 22073

BUSHFIRE PRONE PLANNING

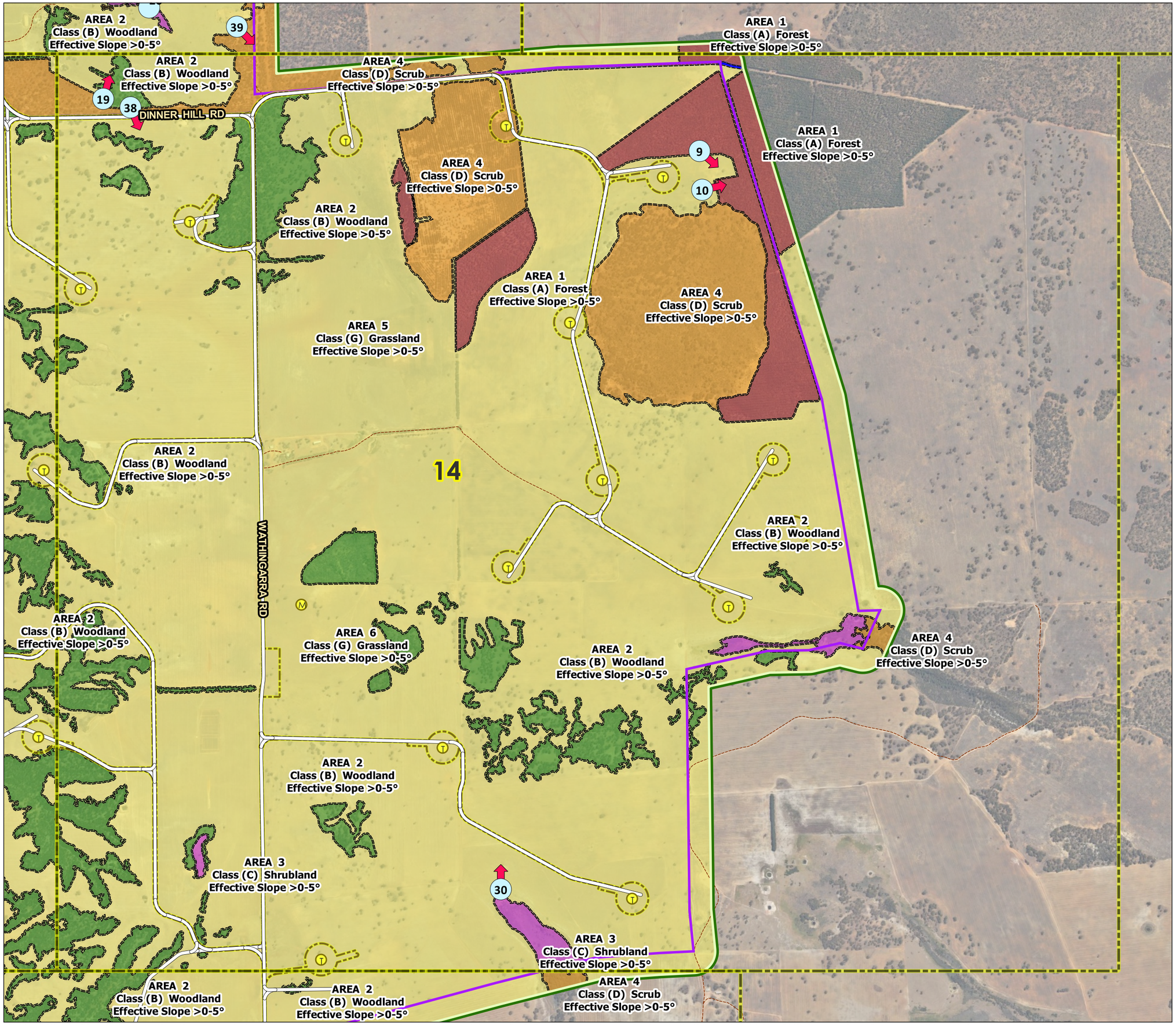
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Figure 3.1.14

Classified Vegetation Map 14

Multiple Lots in the localities of Hill River, Boothendarra and Badgingarra

SHIRE OF DANDARAGAN



------ LEGEND ------

- 150m Assessment Area
- Subject Site
- Atlas Grid — atlas
- Development Footprint
- Photos and Direction

MET Masts

- Permenant MET Mast
- Temporary MET Mast
- Wind Turbines v9
- Access Roads

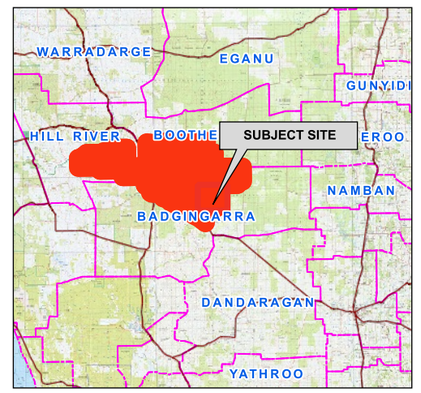
Classified Vegetation

- Forest
- Woodland
- Shrubland
- Scrub
- Grassland
- Excluded 2,2,3,2 (e)

0 200 400 600 800 1,000

Metres

------ LOCALITY ------



AERIAL IMAGERY: Landgate/SLIP

N

BUSHFIRE PRONE PLANNING

Coordinate System: GDA94 / MGA zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: David Richer 31-07-2026
SCALE (A3): 1 : 22073

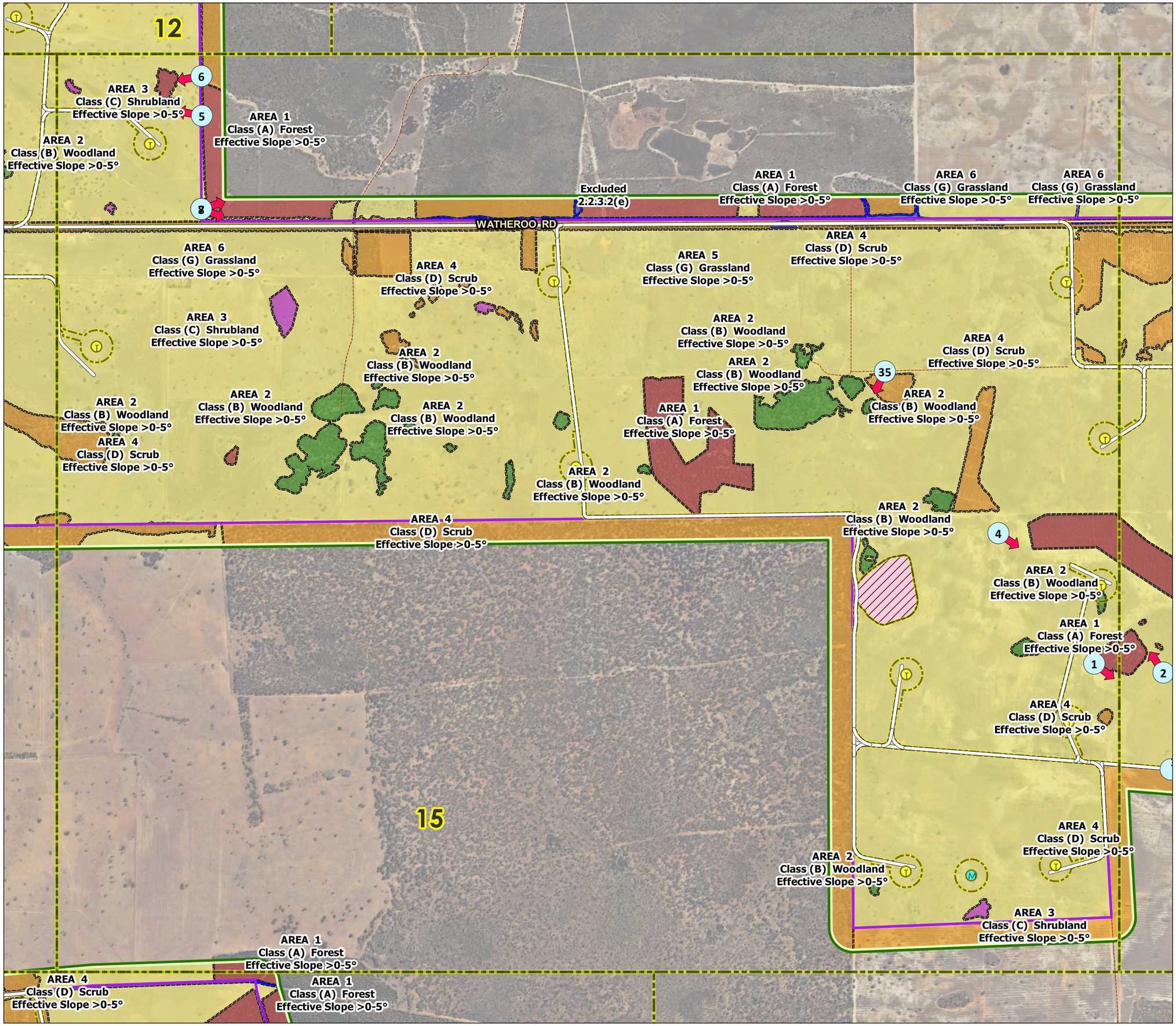
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Figure 3.1.15

Classified Vegetation Map 15

Multiple Lots in the localities of Hill River, Boothendarra and Badgingarra

SHIRE OF DANDARAGAN



------ LEGEND ------

- 150m Assessment Area
- Subject Site
- Atlas Grid — atlas
- Development Footprint
- Photos and Direction

Facility Layout
- Quarry

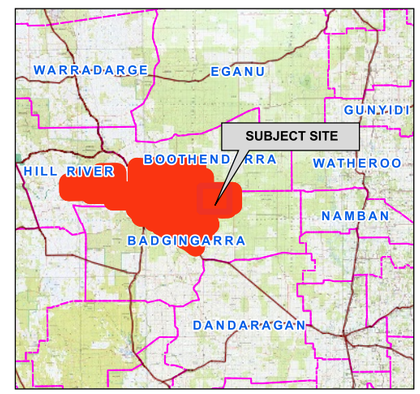
MET Masts
- Permenant MET Mast
- Wind Turbines v9
- Access Roads

Classified Vegetation
- Forest
- Woodland
- Shrubland
- Scrub
- Grassland
- Excluded 2,2,3,2 (e)

0 200 400 600 800 1,000

Metres

------ LOCALITY ------



AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA94 / MGA zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: David Richer 31-07-2026
SCALE (A3): 1 : 22073

BUSHFIRE PRONE PLANNING

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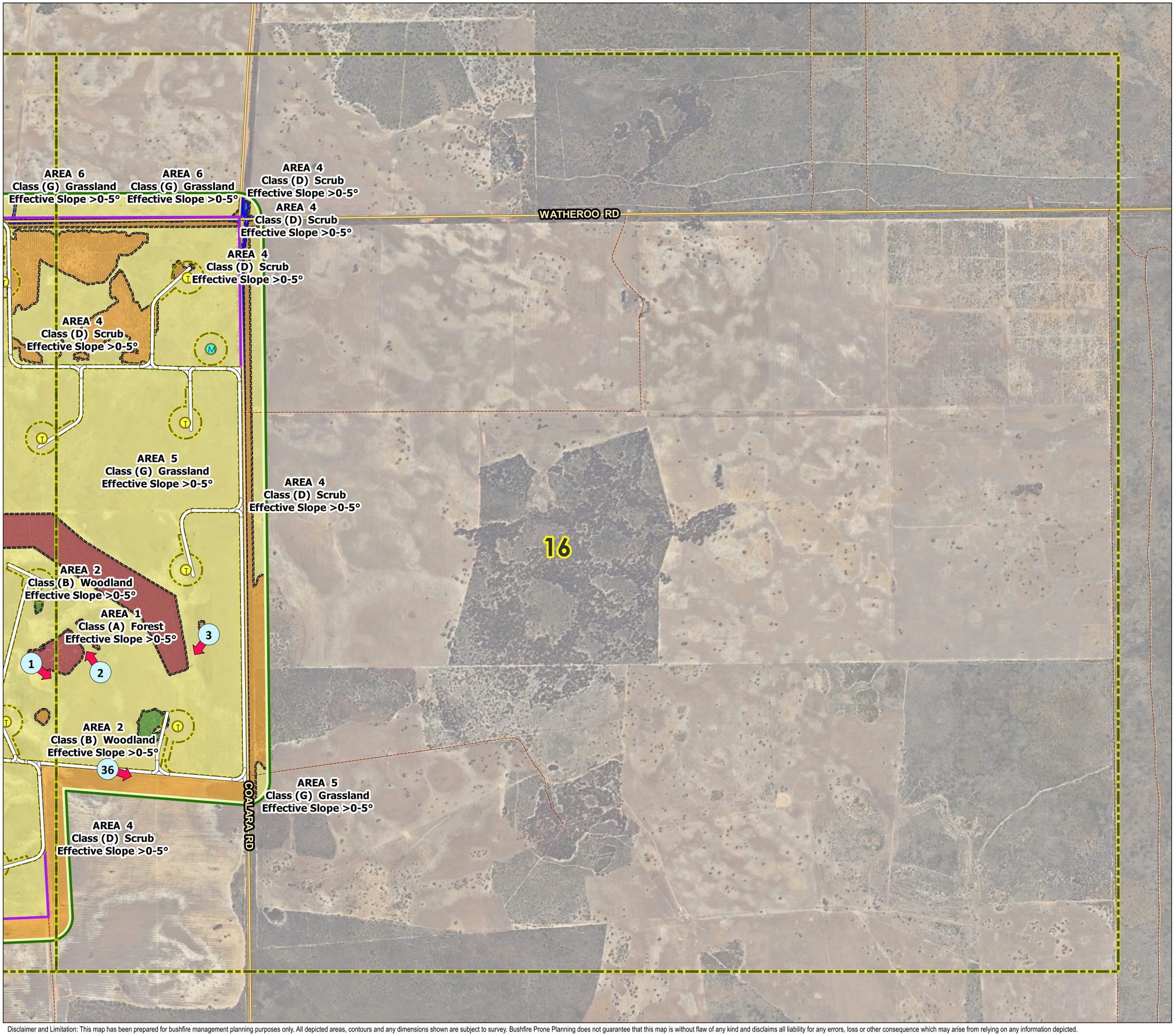


Figure 3.1.16

Classified Vegetation Map 16

Multiple Lots in the localities of Hill River, Boothendarra and Badgingarra

SHIRE OF DANDARAGAN

------ LEGEND ------

- 150m Assessment Area
- Subject Site
- Atlas Grid — atlas
- Development Footprint
- Photos and Direction

MET Masts

- Permenant MET Mast
- Wind Turbines v9
- Access Roads

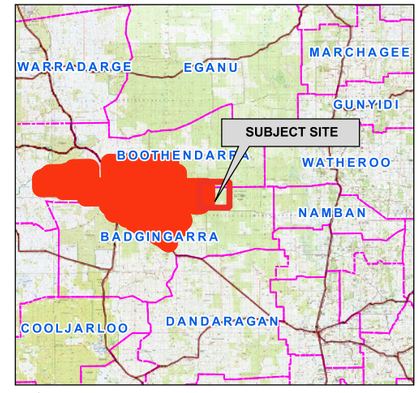
Classified Vegetation

- Forest
- Woodland
- Scrub
- Grassland
- Excluded 2,2,3,2 (e)

0 200 400 600 800 1,000

Metres

------ LOCALITY ------



AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA94 / MGA zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: David Richer 31-07-2026
SCALE (A3): 1 : 22073

BUSHFIRE PRONE PLANNING

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Figure 3.2.1

Classified Vegetation (Post Dev) BESS & O&M Facility

Multiple Lots in the localities of Hill River, Boothendarra and Badgingarra

SHIRE OF DANDARAGAN

25 m
9m
Excluded 2.2.3.2(e)
35 m
AREA 4
Class (D) Scrub
Effective Slope >0-5°
9m

------ LEGEND ------

- Subject Site
- 150m Assessment Area
- Development Footprint
- APZ 10kW-m2 1200K
- APZ 10kW-m2 1090K
- APZ BAL-29 1090K
- APZ Distance (m)
- Access Roads

Facility Layout

- BESS/OM/Water Rentention
- Substation
- Switching Yard
- Temp construction facilities

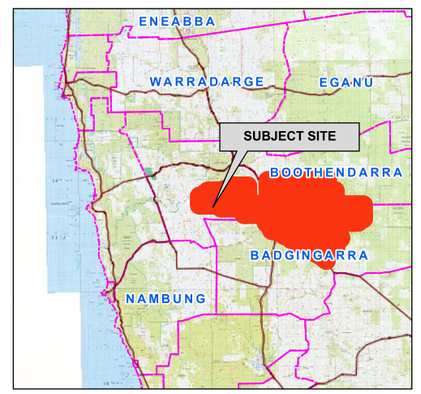
Classified Vegetation (Post Dev)

- Scrub
- Grassland
- Excluded 2,2,3,2 (e)

0 50 100 150 200

Metres

------ LOCALITY ------



N

AERIAL IMAGERY: Landgate/SLIP

BUSHFIRE PRONE PLANNING

Coordinate System: GDA94 / MGA zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: David Richer 31-07-2026
SCALE (A3): 1 : 3000

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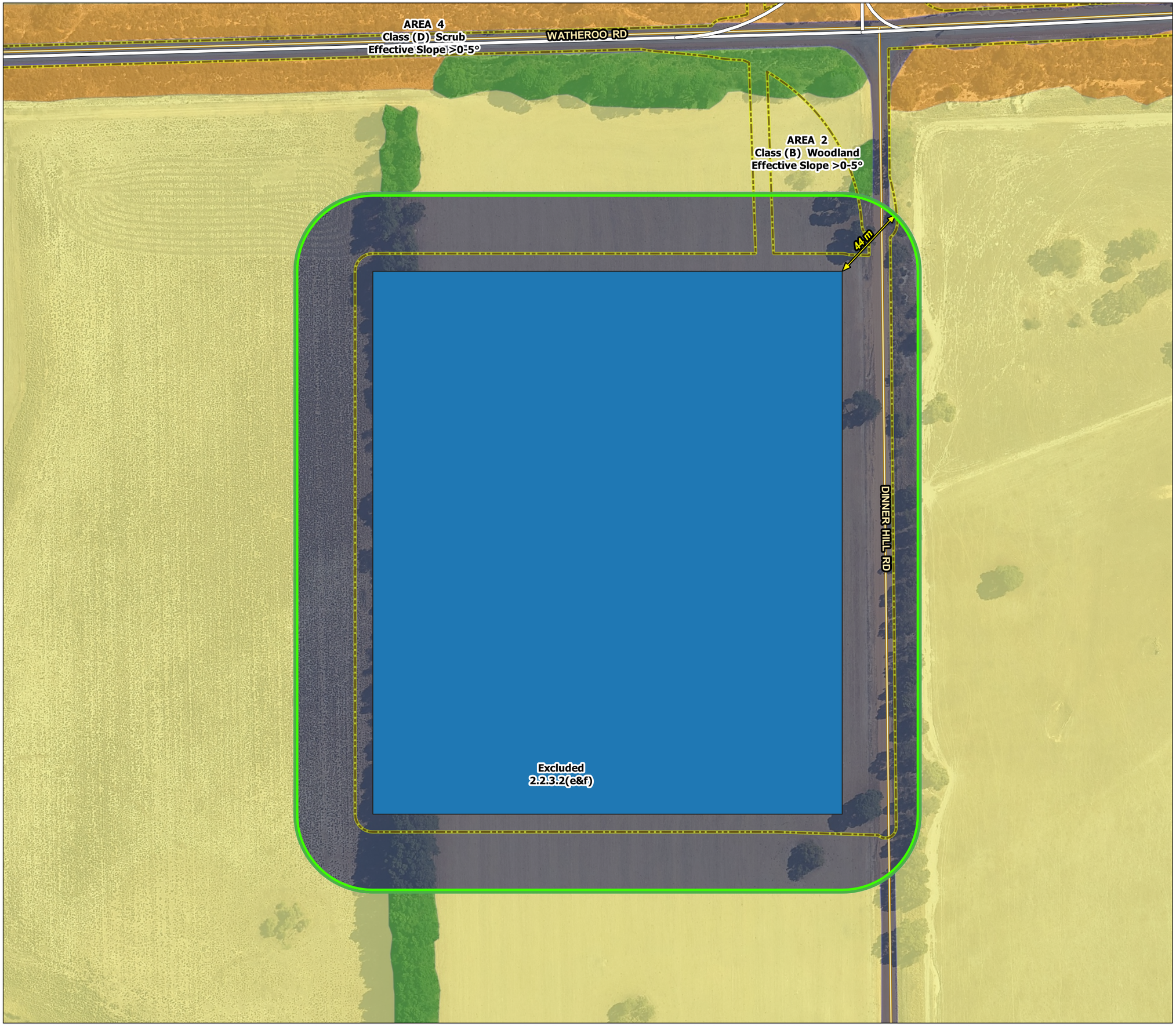


Figure 3.2.2

Classified Vegetation (Post Dev) Satellite Substation

Multiple Lots in the localities of Hill River, Boothendarra and Badgingarra

SHIRE OF DANDARAGAN

------ LEGEND ------

- Subject Site
- 150m Assessment Area
- Development Footprint
- APZ 10kW-m2 1090K
- APZ Distance (m)

Facility Layout

- Satellite Substation
- Access Roads

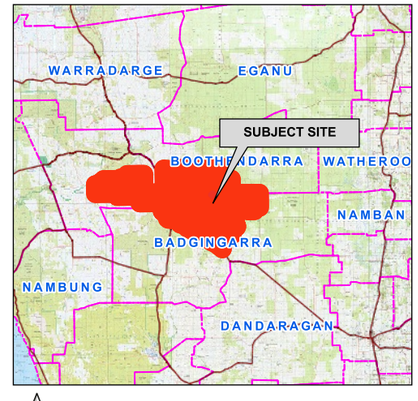
Classified Vegetation (Post Dev)

- Woodland
- Scrub
- Grassland
- Excluded 2,2,3,2 (e)

0 20 40 60 80 100

Metres

------ LOCALITY ------



AERIAL IMAGERY: Landgate/SLIP

BUSHFIRE PRONE PLANNING

Coordinate System: GDA94 / MGA zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: David Richer 31-07-2026
SCALE (A3): 1 : 2000

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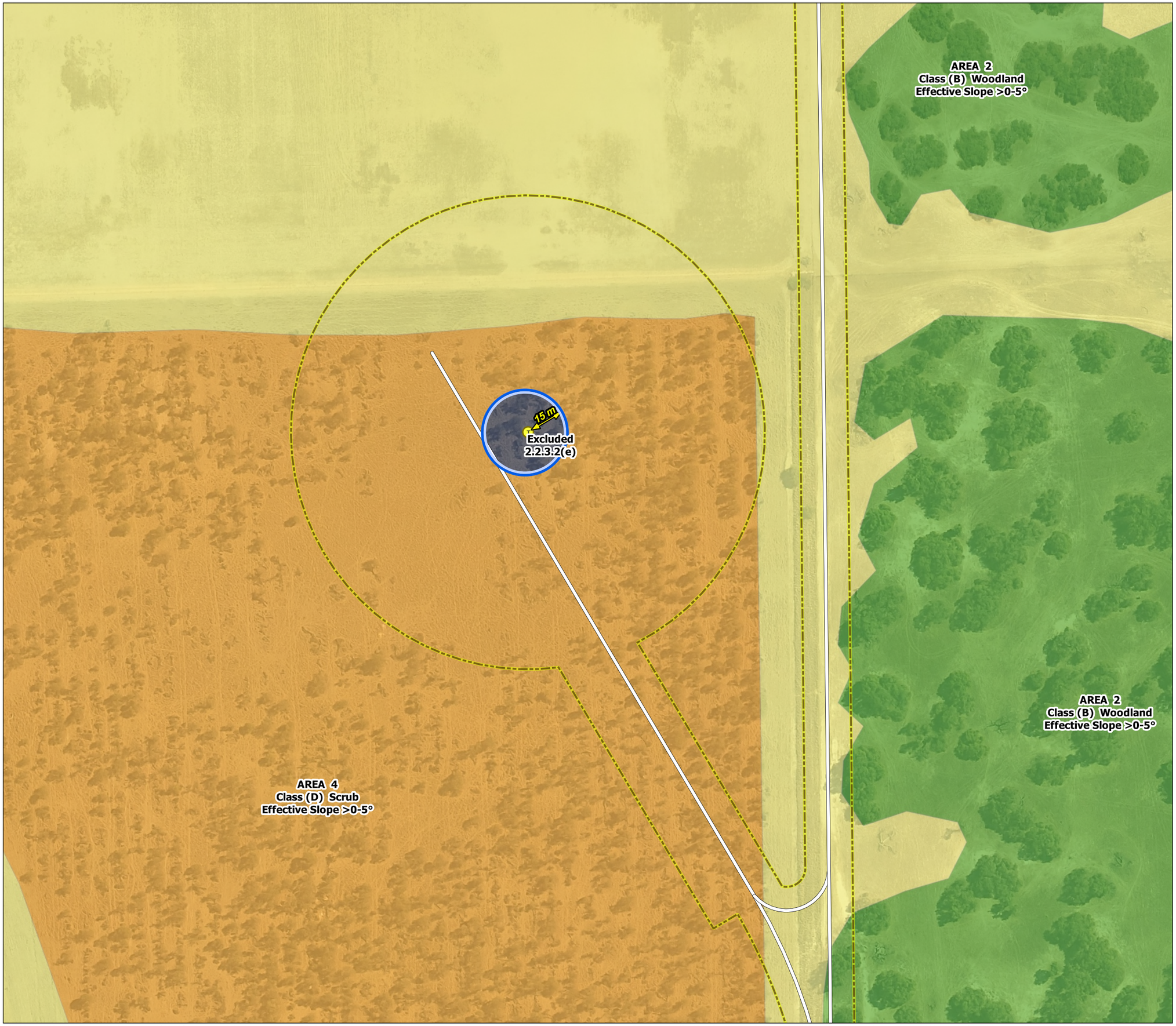


Figure 3.2.3

Classified Vegetation (Post Dev) Wind Turbine DIN.10790

Multiple Lots in the localities of Hill River, Boothendarra and Badgingarra

SHIRE OF DANDARAGAN

------ LEGEND ------

- Subject Site
- Development Footprint
- 150m Assessment Area
- APZ BAL-29 1090K
- APZ Distance (m)
- Wind Turbines v9

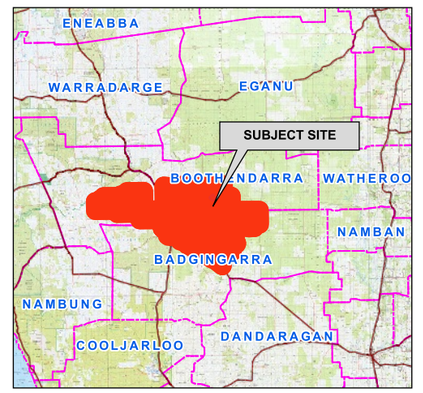
Classified Vegetation (Post Dev)

- Woodland
- Scrub
- Grassland
- Excluded 2,2,3,2 (e)
- Access Roads

0 20 40 60 80 100

Metres

------ LOCALITY ------



AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA94 / MGA zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: David Richer 31-07-2026
SCALE (A3): 1 : 1500

BUSHFIRE PRONE PLANNING

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Figure 3.2.4

Classified Vegetation (Post Dev) Wind Turbine DIN.10150

Multiple Lots in the localities of Hill River, Boothendarra and Badgingarra

SHIRE OF DANDARAGAN

AREA 4
Class (D) Scrub
Effective Slope >0-5°

AREA 5
Class (G) Grassland
Effective Slope >0-5°

AREA 2
Class (B) Woodland
Effective Slope >0-5°

9m

Excluded
2.2.3.2(e)

------ LEGEND ------

- Development Footprint
- APZ BAL-29 1090K
- Subject Site
- 150m Assessment Area
- APZ Distance (m)

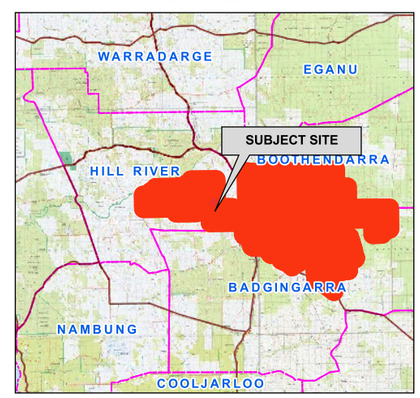
Classified Vegetation (Post Dev)

- Woodland
- Scrub
- Grassland
- Excluded 2,2,3,2 (e)
- Access Roads

0 20 40 60 80 100

Metres

------ LOCALITY ------



N

AERIAL IMAGERY: Landgate/SLIP

BUSHFIRE PRONE PLANNING

Coordinate System: GDA94 / MGA zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: David Richer 31-07-2026
SCALE (A3): 1 : 2000

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Figure 3.2.5

Classified Vegetation (Post Dev) Wind Turbine DIN.11040

Multiple Lots in the localities of Hill River, Boothendarra and Badgingarra

SHIRE OF DANDARAGAN

AREA 5
Class (G) Grassland
Effective Slope >0-5°

AREA 4
Class (D) Scrub
Effective Slope >0-5°

15 m
Excluded
2.2.3.2(e)

------ LEGEND ------

- Subject Site
- 150m Assessment Area
- Development Footprint
- APZ BAL-29 1090K
- APZ Distance (m)
- Access Roads

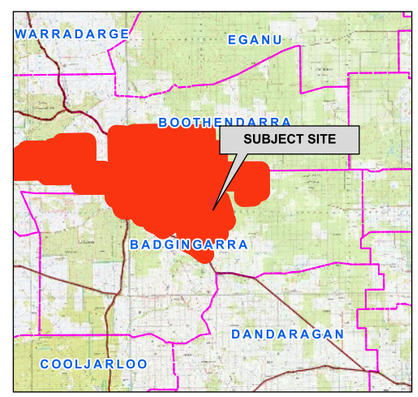
Classified Vegetation (Post Dev)

- Scrub
- Grassland
- Excluded 2,2,3,2 (e)

0 20 40 60 80 100

Metres

------ LOCALITY ------



N

AERIAL IMAGERY: Landgate/SLIP

BUSHFIRE PRONE PLANNING

Coordinate System: GDA94 / MGA zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: David Richer 03-08-2026
SCALE (A3): 1 : 2000

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240073-2 - FIG 1-1 Dinner Hill Wind Farm.qgz

Figure 3.2.6

Classified Vegetation (Post Dev) Substation

Multiple Lots in the localities of Hill River, Boothendarra and Badgingarra

SHIRE OF DANDARAGAN

Substation

25m

Excluded
2.2.3.2(e)

AREA 6
Class (G) Grassland
Effective Slope >0-5°

Storage Area

WATHEROO RD

AREA 4
Class (D) Scrub
Effective Slope >0-5°

------ LEGEND ------

- 150m Assessment Area
- Development Footprint
- APZ 10kW-m2 1090K
- APZ Distance (m)

Facility Layout

- Substation
- Storage Area

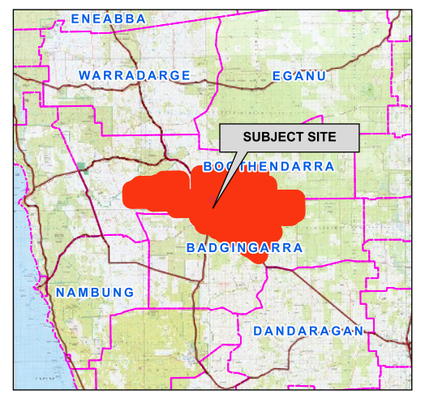
Classified Vegetation (Post Dev)

- Scrub
- Grassland
- Excluded 2,2,3,2 (e)

0 20 40 60 80 100

Metres

------ LOCALITY ------



N

AERIAL IMAGERY: Landgate/SLIP

BUSHFIRE PRONE PLANNING

Coordinate System: GDA94 / MGA zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: David Richer 24-08-2026
SCALE (A3): 1 : 3000

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4 IDENTIFICATION OF BUSHFIRE HAZARD ISSUES

EXPLANATORY INFORMATION

Section Intent

1. To function as a concise initial reference point informing decision makers of key bushfire hazard issues specific to the planning proposal. This is achieved by providing context regarding:
   (a) How the identified bushfire prone vegetation contributes to the level of risks to persons/property and infrastructure. With injury/death, damage/loss, and service disruption being the relevant risks associated with a bushfire event (i.e. 'bushfire risk'); and
   (b) How likely the application of the relevant deemed to comply bushfire protection measures (i.e. the acceptable solutions of the BPC), will contribute to mitigating this bushfire risk to an acceptable or tolerable level.
2. To inform decision makers of any bushfire hazard issues that, in the opinion of the bushfire consultant, are likely to require specific consideration and are additional to a 'standard' review of the submitted BMP.
3. When necessary, to provide the bushfire consultant a location in the BMP where matters can be noted that would either not be considered or only be partially considered, under the assessments conducted in accordance with SPP 3.7/Guidelines. These include matters that would potentially reflect poorly on their professional integrity if ignored.

Achieving the Intent

1. Identify when environmental constraints are likely to limit a proposal's ability to apply effective bushfire protection measures that reduce bushfire hazard threat levels and/or persons/property exposure to those threats.
2. Identify if bushfire hazard threats and the level of those threats is significantly greater or lower than implied by the bushfire assessment methodologies applied in accordance with the Guidelines.
3. Stating when an outcomes-based approach has been applied as a justifiable alternative to compliance with the applicable acceptable solutions, and if the approach:
   (a) Delivers an equivalent or lower level of residual bushfire risk than that intended to be derived from the application of those acceptable solutions; or
   (b) Delivers higher level of residual risk and justifies why this can and should be tolerated.
4. Identifying when compliance with the BPC requires the establishment of vegetation management responsibilities - including formal management agreements when necessary – for vegetation on land adjoining a lot that is part of a planning proposal, but that land does or could have different legal ownership.
5. Identify other relevant issues as necessary. This may include the possible development, by the bushfire consultant, of required and/or recommended additional bushfire protection measures for consideration by the decision maker.

This Bushfire Management Plan is supported by a Bushfire Risk Report concurrently produced, which comprehensively assesses the regional bushfire risk.

See Section 5.1 of the associated report *240073-2 - Dinner Hill Wind Farm Badgingarra (BRR) v1.0* (Bushfire Prone Planning May 2026).

5 ASSESSMENT AGAINST THE BUSHFIRE PROTECTION CRITERIA (BPC)

EXPLANATORY INFORMATION

TO SATISFY THE OBJECTIVES AND POLICY OUTCOMES OF SPP 3.7, A PLANNING PROPOSAL IN A DESIGNATED BUSHFIRE PRONE AREA IS REQUIRED TO DEMONSTRATE THAT COMPLIANCE WITH THE BUSHFIRE PROTECTION CRITERIA CAN BE ACHIEVED.

State Planning Policy 3.7 Bushfire (SPP 3.7) establishes policy outcomes that "specify the role of planning and development in contributing to the overall objectives" of the policy. The policy outcomes are incorporated into the four elements of the bushfire protection criteria (BPC) established in the Planning for Bushfire Guidelines (Guidelines).

The Guidelines in Section 2.2.1 establish two assessment pathways to demonstrate compliance:

1. The deemed to comply pathway - in which compliance is able to be demonstrated with all relevant acceptable solutions associated with each Element, for a specific planning stage or use; or

2. An alternative pathway when all relevant acceptable solutions cannot be fully achieved, which utilises either:

    (a) The outcomes-based approach alone (established by SPP 3.7 cl. 7.5); or

    (b) A combination of the outcomes-based approach and the acceptable solutions.

The assessment applying the deemed to comply pathway assessment is presented in Section 5.3. When applied, additional assessments conducted in applying the alternative pathway are presented in Section 5.4.

5.1 Identification of Endorsed Variations to the BPC Applied by the Local Government

EXPLANATORY INFORMATION

This section of the BMP identifies any variations that must be applied to the acceptable solutions of the BPC for a specific local government. Typically, this will be in accordance with part of a local planning strategy and/or local planning scheme via a scheme amendment or special control area.

These variations will have been appropriately justified to and endorsed by WAPC, in accordance with the Guidelines s.3,4, to recognise special local or regional circumstances that reinforce the SPP 3.7 objectives and outcomes.

For the planning proposal, endorsed regional or local variations to the acceptable solutions apply to the assessments against the Bushfire Protection Criteria. The variations will be identified and assessed against within the BPC.	No

5.2 Assessment Summary

HOW THE REQUIRED BUSHFIRE PLANNING OUTCOMES OF SPP 3.7 ARE ACHIEVED FOR THE PLANNING PROPOSAL		
DEVELOPMENT – COMMERCIAL AND INDUSTRIAL		
The Bushfire Protection Criteria (BPC) Elements and Acceptable Solutions	Compliance Pathway Applied and Assessment Outcome	
	Deemed to Comply	Outcomes-Based Approach
	Requires Compliance with All Applicable Acceptable Solutions	Expert Opinion Identifies Achieving the Required SPP 3.7 Outcomes can be Demonstrated [1]
E2: SITING AND DESIGN	Fully Compliant	Not Required
A2.1a Siting and design	Fully Compliant	
A2.1b Siting in an area with a radiant heat impact exceeding 29 kW/m² (BAL-40 or BAL-FZ)	Not Applicable	
A2.2 Asset Protection Zone (APZ)	Fully Compliant	
A2.3 Clearing of native vegetation	Fully Compliant	
A2.4 Storage of hazardous, flammable and/or combustible materials	Fully Compliant	
E3: VEHICULAR ACCESS	Fully Compliant	Not Required
A3.1 Private Driveways	Fully Compliant	
E4: WATER SUPPLY	Fully Compliant	Not Required
A4.1 Water supply	Fully Compliant	
Note 1: Assessment details addressing the criteria established by SPP 3.7 cl. 7.5, are provided in the following section when this compliance pathway is applied.		

5.3 BPC 7: Development – Commercial and Industrial - Acceptable Solutions Assessment

5.3.1 ELEMENT 2: SITING AND DESIGN

ELEMENT 2: SITING AND DESIGN (DEVELOPMENT - COMMERCIAL/INDUSTRIAL)

EXPLANATORY INFORMATION

Refer to Appendices B1 and B3 of this BMP for additional information and to *the bushfire protection measure implementation checklist in Section 6 for the APZ dimensions applicable to this planning proposal.*

The Planning Assessment and the APZ

This assessment is a 'planning assessment' being conducted for planning approval purposes only. All details of acceptable solution requirements are established in the Planning for Bushfire Guidelines (Guidelines) – WA Department of Planning, Lands and Heritage (DPLH, as amended).

> *Note the assessment is not conducted for building approval purposes. The derivation of 'determined' BAL ratings for building permit applications is not the intended outcome of this planning assessment. However, in limited situations, the presented indicative BAL rating might also be considered as 'determined'.*

To comply with the relevant acceptable solutions contained in the 'Bushfire Planning Guidelines', the subject planning proposal must demonstrate that the required minimum sized asset protection zone (APZ) - subject to location constraints and allowances established by the Guidelines - can be installed surrounding a habitable or specified building.

Approved BMP's and the APZ Dimensions to be Implemented

An approved BMP, unless stated otherwise, is only approving the installation of an APZ comprised of:

- The minimum dimensions that ensure the radiant heat impact of a bushfire (on building works) does not exceed 29 kW/m² (BAL-29); or
- For specific 'vulnerable' land uses, the minimum dimensions that ensures the radiant heat impact of a bushfire (on building works) does not exceed the level of radiant heat exposure stated in the applicable acceptable solution; or
- The specific minimum dimensions that may be applied through the application of an outcomes-based approach.

Consequently, the 'minimum' dimensions of the approved APZ are also the 'maximum' approved dimensions when installation of the APZ will require the modification/removal of native vegetation. Installing a larger dimensioned APZ, to lower the determined BAL rating of specific building works, will need additional approval from the relevant planning authority.

The following bushfire planning policy and guidance potentially limit installed APZ dimensions:

- SPP 3.7 Bushfire, Policy Objectives, cl. 5.5 states – "Prioritise the retention of native vegetation for biodiversity conservation, environmental protection and landscape amenity.
- SPP 3.7 Bushfire, Policy Outcomes, cl. 6.2 - establishes that clearing of native vegetation is to be avoided or minimised in managing or mitigating bushfire risk.
- The Guidelines, Appendix B2, B.2.1 states - "clearing or modification of native vegetation to reduce the radiant heat impact below 29 kW/m² is generally not supported."

	State Planning Policy 3.7 Bushfire - Outcomes to be Achieved
O2	**SPP 3.7, 6.2: Ensure siting and design solutions:** • **Manage or mitigate the bushfire risk to people, property and infrastructure; and** • **Avoid, or where unavoidable, minimises the clearing of native vegetation.**
E2	Statement for Compliance with Element E1 – The Deemed to Comply Pathway
	The planning proposal is fully compliant with all applicable acceptable solutions and therefore achieves the required outcomes of this element.
	Alternative Pathway Applied to Achieve SPP 3.7 Outcomes
	N/A

ACCEPTABLE SOLUTIONS - ASSESSMENT STATEMENTS

Check Box Legend: ☑ Relevant & met ☒ Relevant & not met ⃠ Not relevant

A2.1a Siting and design	Applicable:	Yes	Compliant:	Yes

☑ ☐ ☐	Every habitable building achieves a radiant heat impact not exceeding 29 kW/m² (BAL-29).
☐ ☐ ⃠	A2.1a is not applicable to the subject planning proposal as it cannot be complied with and an alternative acceptable solution A2.1b (dealing with the same protection measure), is provided and establishes a higher level of radiant heat impact that will be considered for planning approval, if it can be satisfactorily demonstrated that the allowable constraints apply to the subject development site.

Assessment Supporting Details:

The installation of an APZ is required for structures to be subject to a radiant heat impact not exceeding 29 kW/m² (BAL-29). Acceptable Solution A2.2 applies.

A2.1b Siting in an area with a radiant heat impact exceeding 29 kW/m² (BAL-40 or BAL-FZ)	Applicable:	No	Compliant:	-
A2.2 Asset Protection Zone (APZ)	Applicable:	Yes	Compliant:	Yes

☑ ☐ ☐	A2.2 is not applicable to the subject planning proposal because it is a requirement associated with the compliant application of A2.1a. Given A2.1a is not applicable to the subject planning proposal, A2.2 is also not applicable.

Where a habitable building(s) cannot be wholly within an area with a radiant heat impact not exceeding 29 kW/m² (BAL-29) in its pre-development state, an indicative APZ is to be provided and meet the following requirements for width, location and management:

☑ ☐ ☐	**APZ Width:** The APZ, when measured from any external wall or supporting post or column, is of sufficient size to ensure the radiant heat impact of a bushfire does not exceed 29 kW/m² (BAL-29) to any part of the building, in all circumstances.
☑ ☐ ☐	**APZ Location – Option 1:** The indicative 'Planning BAL-29' APZ can be contained solely within the boundaries of the lot.

☑ ☐ ☐ **APZ Location – Option 2:** The indicative 'Planning BAL-29' APZ cannot be contained solely within the boundaries of the lot. However, the relevant vegetation on the adjoining land / lot(s) is, and will continue to be, on an ongoing basis in perpetuity, low threat as per:

- Clause 2.2.3.2 of AS 3959 (including non-vegetated land such as a sealed or unsealed road, or a water body); or
- The requirements of the Guidelines Appendix B.2, Table 9 – APZ technical requirements; or
- The alternative standard in the local planning scheme (when it exists).

☑ ☐ ☐ **APZ Management:** The APZ is (or can and will be) managed in accordance with the requirements established in the Guidelines, Appendix B.2 or the alternative standard in the gazetted local planning scheme (when it exists).

Assessment Supporting Details:

Multiple lots are subject to the Development Application. Potential design modification (re-siting of assets) may result in an APZ extending across neighbouring lots.

However, all APZs will be contained wholly within the lots subject to the Development Application and therefore will be enforceable in perpetuity. APZs will be managed in accordance with Appendix B of the Guidelines.

The associated Bushfire Risk Report has identified the appropriate APZ dimensions, associated with the maximum acceptable radiant heat flux exposure of the asset.

The APZ requirements for the Dinner Hill Wind Farm are as follows:

<10kW/m2 (calculated at 1200K flame temperature):

- Operations and Maintenance Buildings

<10kW/m2 (calculated at 1090K flame temperature):

- BESS Cabinets
  - The 10m portion of the APZ immediately around BESS cabinets must be entirely and permanently non-vegetated (sealed, compacted limestone, gravel, mineral earth etc). BESS cabinets are recommended to be sited on concrete slabs or other sealed, non-combustible surface.
- Substations
- Meteorological Masts (tower only)
- Critical Class 10 Buildings
- Terminals (Switchyards)

<29kW/m2 (BAL-29):

- Wind Turbines
- Meteorological Mast Guy Wire Anchors
- Laydown Areas
- Batch Plants
- Construction Compounds
- Other Class 1-10 Buildings

A2.3 Clearing of native vegetation	Applicable:	Yes	Compliant:	Yes

☑ ☐ ☐ The development avoids, or where unavoidable, minimises the clearing of native vegetation.

Assessment Supporting Details:

The Project has been designed to minimise impacts to vegetation where possible, with fragmentation of stands of remnant vegetation limited to the proposed transmission line through the Hill River Reserve. Impacts to vegetation within this area will be limited to a width of 10m. All other vegetation intersected by the Development Footprint is already isolated by agricultural uses or intersected by existing roads and tracks and as such, the proposed clearing will not significantly increase the fragmentation of this vegetation. (Ref. Dinner Hill Ecological Impact Assessment – RPS 2026).

A2.4 Storage of hazardous, flammable and/or combustible materials	Applicable:	Yes	Compliant:	Yes

☐ ☐ ⊘	The proposed land use does not include the storage of hazardous, flammable and/or combustible materials as part of its ongoing day to day operations. Therefore, A2.6 is not applicable to the subject planning proposal.
☐ ☐ ⊘	The proposed land use will include the storage of hazardous, flammable and/or combustible materials as part of its ongoing day to day operations. These will be a quantity that trigger the requirement for a licence under the *Dangerous Goods Safety Act 2004* or the *Environmental Protection Act 1986*. Consequently, the requirements under the above legislation will establish the storage requirements and therefore A2.6 is not applicable to the subject planning proposal.
☑ ☐ ☐	The proposed development will include the storage of hazardous, flammable and/or combustible materials as part of its ongoing day to day operations. These are not at a quantity that trigger the requirement for a licence under the *Dangerous Goods Safety Act 2004* or the *Environmental Protection Act 1986*. Consequently, the following established storage area requirements can and will be applied.
☑ ☐ ☐	The storage area Is subject to a radiant heat impact not exceeding 29 kW/m^2 (BAL-29); and
☑ ☐ ☐	The construction of the storage area is non-combustible and shields the materials to reduce their exposure to radiant heat from the bushfire to levels significantly lower than 29 kW/m^2 and prevents the entry of debris and embers; and
☑ ☐ ☐	The construction of the storage area limits to the degree necessary and practical, the escape of sources of ignition from the stored materials into bushfire prone vegetation.

Assessment Supporting Details:

Lithium-ion batteries are classified as dangerous good under the *Dangerous Goods Safety (Road and Rail Transport of Non-explosives) Regulations 2007,* when they are in transport and temporary (transit) storage.

Section 7.1.1 of the *Planning for Bushfire Guidelines* states the Acceptable Solution is not applicable due to the requirement for a dangerous goods licence.

When installed and connected to a consuming device (the grid) the batteries are currently **not** considered as dangerous goods under the *Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007,* therefore the following acceptable solution applies:

- As discussed in A2.2 above, all assets will be subject to no greater than 29kW/m^2 radiant heat flux (BAL-29).
- Shielding of the storage area is achieved by the external battery cabinet itself, being an insulated and climate-controlled steel enclosure. These materials are potentially exposed '*to radiant heat from the bushfire to levels significantly lower than 29 kW/m^2*'due to the <10kW/m^2 @ 1090K APZ applied.

The BESS units will be sited on a non-combustible hardstand, with minimum 10m additional non-vegetated area to prevent surface fire interactions to/from the unit. These are measures established through the associated Bushfire Risk Report *240073-2 - Dinner Hill Wind Farm Badgingarra (BRR) v1.0 (Bushfire Prone Planning May 2026)*.

5.3.2 Element 3: Vehicular Access

ELEMENT 3: VEHICULAR ACCESS (DEVELOPMENT - COMMERCIAL/INDUSTRIAL)	
All details of acceptable solution requirements are established in the Planning for Bushfire Guidelines (Guidelines) – WA Department of Planning, Lands and Heritage (DPLH, as amended). When relevant, the 'Bushfire Management Plan Guidance for the Dampier Peninsula' (DPLH, 2021 Rev B), is also referenced. The technical construction requirements for access types and components are established in the Guidelines Appendix B.3, Table 10 (certain information is copied and presented in Appendix C of this BMP). The local government will advise the proponent where different requirements are to apply and when any additional specifications such as those for signage and gates are to apply. These are included as an appendix if requested by the local government. ***Note:*** *The following understanding of what constitutes a 'road', and the stated definitions can be important considerations for assessments against an acceptable solution for Element 3.* • *Guidelines Appendix B3: Vehicular Access, identifies a 'road' as being either a public road (that includes a no-through road) or a perimeter road. All other access types (i.e. emergency access ways, fire service access routes, battle-axes and private driveways) are considered a different class of access i.e. they are not roads.* • *SPP 3.7 defines 'no-through road' as "a cul-de-sac or dead-end road".* • *SPP 3.7 defines 'two-way access' as "vehicular access from a site in two different directions to at least two different suitable destinations". This allows for required access to potentially be provided by an emergency access way.*	
O3	State Planning Policy 3.7 Bushfire - Outcomes to be Achieved
	SPP 3.7, 6.3: Ensure the design and capacity of vehicular access and egress provide: • **For efficient and effective evacuation to a suitable destination(s); and/or** • **As a contingency measure for vulnerable land uses, an on-site shelter, where demonstrated appropriate, as a last resort option.**
E3	Statement for Compliance with Element E1 – The Deemed to Comply Pathway
	The planning proposal is fully compliant with all applicable acceptable solutions and therefore achieves the required outcomes of this element.
	Alternative Pathway Applied to Achieve SPP 3.7 Outcomes
	N/A

ACCEPTABLE SOLUTIONS - ASSESSMENT STATEMENTS					
Check Box Legend:	☑ Relevant & met	☒ Relevant & not met	⃠ Not relevant		
A3.1 Private driveways			Applicable:	Yes	Compliant: Yes
☐ ☐ ⃠	The subject lot is serviced by reticulated water and the private driveway is no greater than 70 metres in length between the most distant external part of the habitable building and the public road. For these conditions, no private driveway technical requirements are prescribed by the Guidelines. All the following established requirements do not need to be met.				
☑ ☐ ☐	The private driveway meets (or can and will meet) the technical requirements (Guidelines Appendix B3, Table 10) for minimum horizontal clearance (6 metres) or where not required to comply with the				

	Guidelines width, it meets (or can and will meet) the requirements of the Residential Design Codes and Development Control Policy 2.2 Residential Subdivision; and
☑ ☐ ☐	The private driveway meets (or can and will meet) the technical requirements (Guidelines Appendix B3, Table 10) for minimum vertical clearance (4.5 metres), minimum weight capacity (15 tonnes - includes bridges, culverts) and minimum inner radius of road curves (8.5 metres); and
☑ ☐ ☐	The private driveway meets (or can and will meet) the technical requirements (Guidelines Appendix B3, Table 10) for the gradients of different surfaces and dips; and
☐ ☐ ⊘	Passing bays are (or can and will be) installed every 200 metres with a minimum length of 20 metres and a minimum additional carriageway width of 2 metres i.e. the combined carriageway width of the passing bay and constructed private driveway will be a minimum 6 metres; and
☑ ☐ ☐	The turnaround area/head meets (or can and will meet) the design and location (within 30m of main habitable building) requirements established by the Guidelines (refer to Figures 30 and 38).

Assessment Supporting Details:

The development site is across multiple lots and crossed by public roads. The site layout will include multiple points of entry from public roads onto the internal access network, linking the asset locations.

Operations and Maintenance Buildings, Wind Turbines, BESS infrastructure, and Substations should meet the requirements for a 'habitable building,' for the purposes of Element 3 A3.1 Private Driveways.

All internal roads within the development area will comply with technical construction requirements as outlined in Table 6 of the Guidelines and Appendix C of this document. The internal roads will be constructed to no less than 6m trafficable width (thus eliminating the requirement for passing bays), and 100 tonne weight capacity to support delivery of wind turbine components. Turnarounds will be installed at each Wind Turbine to the dimensions required for oversize/overmass vehicles.

Turnaround areas may be in the form of a perimeter access track, meeting the required turnaround area through a '*circular and loop driveway design*' (Guidelines B3.8).

There are no constraints to all components of the project meeting the required access. All components will be accessed via the internal road network as for the rest of the site.

5.3.3 Element 4: Water Supply

ELEMENT 4: WATER SUPPLY (DEVELOPMENT - COMMERCIAL/INDUSTRIAL)	
All details of acceptable solution requirements are established in the Planning for Bushfire Guidelines (Guidelines) – WA Department of Planning, Lands and Heritage (DPLH, as amended). When relevant, the 'Bushfire Management Plan Guidance for the Dampier Peninsula' (DPLH, 2021 Rev B), is also referenced.	
O4	State Planning Policy 3.7 Bushfire - Outcomes to be Achieved
	SPP 3.7, 6.4: Ensure that sufficient water is available and accessible for emergency services, to enable people, property and infrastructure to be defended from bushfire.
E4	Statement for Compliance with Element E1 – The Deemed to Comply Pathway
	The planning proposal is fully compliant with all applicable acceptable solutions and therefore achieves the required outcomes of this element.
	Alternative Pathway Applied to Achieve SPP 3.7 Outcomes
	N/A

ACCEPTABLE SOLUTIONS - ASSESSMENT STATEMENTS					
Check Box Legend:	☑ Relevant & met	☒ Relevant & not met	⃠ Not relevant		
A4.1 Water supply			Applicable:	Yes	Compliant: Yes
☐ ☐ ⃠	Evidence is provided that a reticulated water supply, available for firefighting purposes, exists or can be provided. Hydrant connection(s) will be provided in accordance with the specifications established by the relevant water supply authority (refer also to hydrant location information in Appendix D of this BMP).				
☑ ☐ ☐	The provision of or the specifications of a reticulated water supply cannot be met. Evidence is provided that a sufficient, sustainable and accessible non-reticulated water supply, dedicated to firefighting purposes, can and will be provided in accordance with the specifications established in the Guidelines, Appendix B4: Water Supply.				
☑ ☐ ☐	The planning proposal is for commercial/industrial development. For <u>each habitable building</u> a water supply, dedicated to firefighting purposes, will be stored in tanks at 10,000 litres of water per 1,500 m^2 of floor area up to 50,000 litres in total.				
☑ ☐ ☐	The above ground water supply tank(s), dedicated to firefighting purposes (and tank stand(s) when applicable), will be constructed of non-combustible material and as necessary, will comply with AS/NZS 3500.1(as amended). This includes not using the same water supply for both domestic use and firefighting purposes. If a combined use tank(s) is to be used, it will separate the storage compartments in accordance with the provisions of the standard (i.e. internal installation of double partition walls).				
☑ ☐ ☐	The planning proposal is for a commercial/industrial land use. The tank(s) water outlet connection fitting will be 125 mm Storz.				
☐ ☐ ⃠	All above-ground, exposed water supply pipes and fittings will be metal and positioned facing away from the source of bushfire hazard and/or shielded against potential bushfire impact – to allow access by emergency services.				

☑ ☐ ☐	The planned provision of the water supply tank(s) will consider locations relative to the bushfire hazard. Location of the tank(s) and management of vegetation will ensure vegetation will not exist over or against the tank(s) and that sufficient separation exists to limit the potential bushfire impact. Due consideration will also be given to the provision of sufficient separation from vegetation and/or shielding for the protection of firefighters accessing the water supply.
☑ ☐ ☐	An unobstructed, hardened ground surface, for emergency services vehicle access, can and will be installed within 4 metres of the water supply outlet (refer to Figure 39, Guidelines).
☐ ☐ ⊘	It is proposed for a water supply tank outlet(s) is to be remote from the tank, the local government and DFES will have been consulted regarding the application and location. The determined requirements are presented as an Addendum in this BMP.
☐ ☐ ⊘	Planned below ground water supply tank(s), dedicated to firefighting purposes, will have at least a 200 mm diameter access hole – or a suitable inspection opening - to allow tankers or emergency services vehicles to refill direct from the tank, with the outlet location clearly marked on the surface. As necessary, the tanks(s) will comply with AS/NZS 3500.1 (as amended).
☐ ☐ ⊘	The planning proposal intends that a suitable static water supply is to be provided by a dam or river that complies with the DFES guidelines for acceptable sources of water for firefighting purposes. Evidence is provided that: • Demonstrates that the water level will be maintained above the top of the highest fire brigade suction point; and • Approval has been obtained from the decision maker in consultation with the emergency services and is presented as an Addendum in this BMP.
☐ ☐ ⊘	The BPC Explanatory Notes in Appendix B.4: Water Supply introduce additional measures as best practice but voluntary. The following measure is adopted by the planning proposal: The subject site is in a non-reticulated area. Pumping equipment is installed and will be powered by means other than the electricity network such as an appropriately powered and capacity petrol/diesel or onsite generator/electricity, driven pump, and be shielded against potential bushfire impact.
☐ ☐ ⊘	The BPC Explanatory Notes in Appendix B.4: Water Supply introduce additional measure as best practice but voluntary. The following measure is adopted by the planning proposal: The subject site will have a reticulated water supply but is in an area designated as Area 2 on the Map of BPA and/or the local government area has known issues with water supply or pressure. Water supply tank(s) and fittings dedicated to firefighting purposes (noting that combining drinking and firefighting uses of water is not recommended and may be contrary to relevant provisions), that satisfy the construction and design requirements established in the Guidelines, Appendix B4: Water Supply, will be provided.
☐ ☐ ⊘	The BPC Explanatory Notes in Appendix B.4: Water Supply introduce additional measure as best practice but voluntary. The following measure is adopted by the planning proposal: The subject site is serviced by reticulated water. However, the distance from the public road (along which the fire hydrant is located) to the farthest part of the habitable building is greater than 70 metres, exceeding the reach of a hose reel. A water supply tank will be installed within the lot.

Assessment Supporting Details:

The associated Bushfire Risk Report has identified the aggregate firefighting water requirements, exceeding the requirements of the Guidelines.

The firefighting water supply requirements for the Dinner Hill Wind Farm are as follows:

Access

- Firefighting water access points (hydrants, hard suction, or drafting) must be clearly identifiable, visible from internal roads, and unobstructed.
- Signage must be provided at each vehicle entrance to the facility, indicating the direction to the nearest firefighting water access point.
- An all-weather hardstand turnaround area meeting the requirements of the *Planning for Bushfire Guidelines* (Figure 30) must be provided within 4 metres static water storage tank(s) and any independent hard suction points (hydrants).
- Site Operating Procedures must include that access routes must be unobstructed at all times.

Siting and Capacity

- The Wind Farm development will require multiple tanks installed throughout the development area, each with a minimum capacity of 50,000L. The specific location of water tanks will be determined in an updated submission at the detailed design stage. The following requirements apply:
    - Tanks must be installed reasonably adjacent to either external access points (to public roads), or to internal access points (near gated lot boundaries).
    - Tanks ***may*** be installed within public road reserves if requested by (or in consultation with) the Local Government. This is provided as an option for siting, not a requirement.
    - Wind turbines must be within 10-minute travel (20-minute turnaround) of a water tank.
- The BESS development area will be required to install a static firefighting water supply. The volume will be calculated following AS 2419.1 based on the footprint of the BESS development. The estimated area footprint of >27000m^2 would require a supply of 576,000L. This number may be revised once the layout of the BESS development is determined.
    - Where another firefighting water supply is determined elsewhere (for asset fire etc), the greater volume is to apply.
    - This water tank can be considered a strategic water tank for the purposes of the water tank network for the Wind Farm (above).
- All BESS cabinets must be wholly within 70m of a water outlet.
- Water tanks must be positioned >15m from BESS cabinets, wind turbines, PCUs, etc.
- Water tanks should apply a BAL-29 dimensioned APZ at a minimum.

Construction

- Static water storage tanks must be an above-ground water tank constructed of concrete or steel.
- An external water level indicator must be installed on static water storage tanks and be visible from internal roads and the adjoining turnaround area.
- Signage indicating 'FIRE WATER' and the tank capacity must be fixed to each tank.
- Couplings at hard suction points are required to be 125mm Storz fittings (*Guidelines B.4.1.2.* The local emergency services should be contacted for input on appropriate couplings and adaptors.

5.4 Required Additional Bushfire Protection Measures

EXPLANATORY INFORMATION

The following bushfire protection measures are additional to, or a variation of, those established by the relevant acceptable solutions of the bushfire protection criteria and applied to the planning proposal within Section 5 of this BMP.

The intent of their application is to improve the bushfire performance of the future development/use and reduce for persons and property, the residual levels of risks associated with a bushfire event.

The development of these additional and/or varied bushfire protection measures will originate from the following sources (not exhaustive):

1. The outcomes-based approach when it is applied in the BMP in addition to or instead of, the deemed to comply approach of compliance with the relevant acceptable solutions of the bushfire protection criteria.
2. Operations assessment and procedure documents associated with the management of bushfire risk when required to be produced for the subject planning proposal. These can include a Bushfire Risk Report (Assessment and Management), a Bushfire Emergency Plan or where a use or structure is not subject to SPP 3.7 (e.g. various infrastructure).
3. Any additional bushfire planning guidance documents or position statements issued by the WA Department of Planning, Lands and Heritage.
4. Local government variations to acceptable solutions and/or additional protection measures to be implemented. These can include any 'Conditions' which may be applied to a 'Planning Approval' or a 'Notice of Determination.
5. The application of a radiant heat barrier.

When applicable, the implementation and maintenance responsibility for these additional protection measures are stated in Section 6: Responsibility Checklists and included in any associated operational documents as relevant.

Section 4.2 of the associated Bushfire Risk Report includes a full list of Additional Bushfire Protection Measures identified by the Risk Assessment process. Many of these measures relate to operating procedures, emergency planning, or detailed design/construction which do not form part of the planning assessment process.

Additional Bushfire Protection Measures to meet or exceed the intent of the Acceptable Solutions of Elements 2-4 of the Bushfire Protection Criteria have been provided within the Section 5.3 Assessment Statements. These are measures which are relevant to the planning process.

6 PROTECTION MEASURE IMPLEMENTATION CHECKLISTS (RESPONSIBILITIES)

EXPLANATORY INFORMATION

This section of the BMP sets out the responsibilities of the relevant entity or person for:

- The initial implementation of the required bushfire protection measures and their timing; and
- The ongoing maintenance of the required bushfire protection measures to ensure their continued effectiveness.

Note: Protection measures recommended by the bushfire consultant in the section titled "Recommended Additional Bushfire Protection Measures' are not included in the Responsibility Checklists. Primarily this is because these have been identified as additional risk management advice to the proponent and it is up to them to choose to apply. Should these measures become part of planning approval conditions, the BMP will require updating.

6.1 PROTECTION MEASURE IMPLEMENTATION CHECKLISTS (RESPONSIBILITIES)

TABLE 6.3
PROPONENT RESPONSIBILITIES PRIOR TO COMMISSIONING

No.	IMPLEMENTATION OF BUSHFIRE PROTECTION MEASURES Measures Established by the Acceptable Solutions of the Bushfire Protection Criteria (Guidelines)
1	Install an Asset Protection Zone (APZ) surrounding assessed assets. The APZ must establish the minimum separation distances detailed below between the asset and each vegetation area. The APZ must: 1. Consist of non-vegetated areas and low bushfire threat vegetation, able to be maintained in perpetuity in a low threat state, by complying with the established APZ technical requirements (refer to the Guidelines Appendix B2 and Appendix B3 of this BMP); and 2. Be located within the boundaries of the lot except for any allowable variances allowed and discussed in the assessment against the bushfire protection criteria in Section 5, Element 2: Siting and design, and the relevant APZ acceptable solution. (Refer also to the illustrated APZ on the Property Bushfire Management Statement in Section 6.3); and 3. Establish the minimum separation distances between the relevant asset and each vegetation area, as shown in the insert table below. **IMPORTANT:** 1. **REFER TO APPENDICES B3, B4 AND B5 FOR APZ TECHNICAL REQUIREMENTS AND DIMENSION GUIDANCE.** 2. **IF NATIVE VEGETATION IS REQUIRED TO BE MODIFIED OR REMOVED, ENSURE THAT PRIOR APPROVAL HAS BEEN RECEIVED FROM THE RELEVANT AUTHORITY (REFER TO THE RELEVANT LOCAL GOVERNMENT FOR ADVICE).**

THE MINIMUM (SITE SPECIFIC) VEGETATION SEPARATION DISTANCES ESTABLISHING APZ DIMENSIONS [1]

Building/Asset	Vegetation Classification [2]		Minimum Distances (metres) Corresponding to Potential Bushfire Impact					
	Area / Class		BAL-29	BAL-19	BAL12.5	1090K 10kW/m²	1200L 10kW/m²	Firebreak Notice[3]
Operations and Maintenance Buildings	1	(A) Forest	27	37	50	60.4	76.4	20
	2	(B) Woodland	17	25	35	43.2	56.3	20
	3	(C) Shrubland	10	15	22	27.3	37.2	20
	4	(D) Scrub	15	22	31	37.9	50	20
	5	(G) Grassland	9	14	20	25	34.3	20
BESS Cabinets Substations Meteorological Masts (tower only) Critical Class 10 Buildings Terminals (Switchyards)	1	(A) Forest	27	37	50	60.4	76.4	20
	2	(B) Woodland	33	46	61	43.2	56.3	20
	3	(C) Shrubland	17	25	35	27.3	37.2	20
	4	(D) Scrub	22	31	43	37.9	50	20
	5	(G) Grassland	10	15	22	25	34.3	20
Wind Turbines	1	(A) Forest	27	37	50	60.4	76.4	20

Meteorological Mast Guy Wire Anchors Laydown Areas Batch Plants Construction Compounds Other Class 1-10 Buildings	2	(B) Woodland	33	46	61	75.2	93.4	20
	3	(C) Shrubland	17	25	35	43.2	56.3	20
	4	(D) Scrub	22	31	43	54.3	69.3	20
	5	(G) Grassland	10	15	22	27.3	37.2	20

Note 1: Will include the application of the radiant heat barrier when applicable to the proposal.
Note 2: Refer to the Vegetation and Topography Map in Section 3.1
Note 3: The Shire of Dandaragan Fire Break & Fuel Hazard Reduction Notice imposes a minimum 20m APZ dimension.

2	Construct the private driveways / internal vehicular access to comply with the technical requirements stated and/or referenced in Section 5.3 of the BMP at Element 3: Vehicular access, A3.1 Private driveways.
3	Install the firefighting water supplies, including fittings and the required hardstand/access, to comply with the technical requirements stated and/or referenced in Section 5.3 of the BMP at Element 4: Water supply.
4	A purchaser, occupier and/or operator of the site must be made aware of the existence of this approved BMP and provided with access to a copy and be informed of their ongoing responsibilities it contains.
5	The advice of an accredited Bushfire Planning Practitioner must be sought where revegetation within the lease area is proposed. Revegetation may require a Landscape Management Plan, and update to this Bushfire Management Plan, or Addendum to this Bushfire Management Plan.
	IMPLEMENTATION OF BUSHFIRE PROTECTION MEASURES Measures Established by this BMP as a Required Additional Measure in Section 5.5
6	Prior to operation, review and implement the 'Required or Recommended Additional Bushfire Protection Measures' discussed in Section 5.4 of this BMP. The Measures are detailed in Section 4.2 of the associated Bushfire Risk Report *240073-2 - Dinner Hill Wind Farm Badgingarra (BRR)* v1.0 (Bushfire Prone Planning May 2026).
	IMPLEMENTATION OF BUSHFIRE PROTECTION MEASURES Measures Established by a Local Government's Section 33 Notice Under the Bush Fires Act 1954
7	Install the required firebreaks, providing emergency access within the lot, to the stated specifications established by the Shire of Dandaragan Fire Break & Fuel Hazard Reduction Notice.
	IMPLEMENTATION OF BUSHFIRE PROTECTION MEASURES Measures Established by the Building Code of Australia (Vol. 1 and 2 of the National Construction Code)
8	Inform builders engaged to construct dwellings/additions and/or other relevant structures on the subject lot of the existence of this approved Bushfire Management Plan (BMP). The BMP identifies that the development site is within a designated bushfire prone area and states the indicative (or determined) BAL rating(s) that may (or will) be applied to buildings/structures. A BAL assessment report may

	be required to confirm determined ratings and will be required when stated ratings are only indicative. BAL certificates will need to be produced to accompany building applications. Compliance with the current Building Code of Australia (Volumes 1 and 2 of the National Construction Code), will require certain bushfire resistant construction requirements be applied to residential buildings in bushfire prone areas (i.e., Class 1, 2 and 3 and associated Class 10a buildings and decks) and certain Class 9 buildings. Other classes of buildings may also be required to comply with these when established by the relevant authority or if identified as a 'Required Additional Bushfire Protection Measure' bushfire protection measure within the BMP. The deemed to satisfy solutions that will meet the relevant bushfire performance requirements are found in AS 3959 – Construction of Building in Bushfire Prone Areas (as amended) and the NASH Standard - Steel Framed Construction in Bushfire Areas (as amended).

6.2 Protection Measure Maintenance Checklist

TABLE 6.2 PROPONENT – MAINTENANCE OF BUSHFIRE PROTECTION MEASURES	
No.	MAINTENANCE OF BUSHFIRE PROTECTION MEASURES Measures Established by the Acceptable Solutions of the Bushfire Protection Criteria (Guidelines)
1	Annually review and enact the following maintenance responsibilities established in this approved BMP for the development site prior to the bushfire season.
2	Maintain the Asset Protection Zone (APZ) around habitable buildings (and other structures as required) that consists of: 1. Non-vegetated areas and low bushfire threat vegetation maintained in perpetuity in a low threat state by complying with established APZ technical requirements; and 2. The required zone dimensions that are established by the required separation distances from any areas classified vegetation. These distances should in most situations correspond to either: • The determined BAL rating for a relevant building(s) / structure(s); or • The maximum acceptable level of radiant heat transfer that is to apply. These distances will account for the specific site conditions. This ensures the building's/structure's constructed bushfire resistance continues to align with its calculated potential exposure to flame and radiant heat. **IMPORTANT:** **1. REFER TO THE APPLICABLE APZ DIMENSIONS IN TABLE 6.1.** **REFER TO APPENDICES B3, B4 AND B5 FOR APZ TECHNICAL REQUIREMENTS AND DIMENSION GUIDANCE.**
3	Maintain the private driveways / internal vehicular access to comply with the technical requirements stated and/or referenced in Section 5.3 of the BMP at Element 3: Vehicular access, A3.1 Private driveways.
4	Maintain the fighting water supplies, including fittings and the required hardstand/access, in good working condition. Ensure the tanks are maintained at full capacity.
5	When the property changes ownership or occupancy, to assist with the ongoing maintenance of the implemented bushfire protection measures, ensure that the relevant person(s) is aware of the BMP, and the responsibilities it contains. Provide access to a copy of the BMP and Bushfire Risk Report (BRR).

MAINTENANCE OF BUSHFIRE PROTECTION MEASURES Measures Established by this BMP as a Required Additional Measure in Section 5.5	
6	Maintain the 'Required or Recommended Additional Bushfire Protection Measures' discussed in Section 5.4 of this BMP. The Measures are detailed in Section 4.2 of the associated Bushfire Risk Report *240073 – Harvest BESS Hill River (BRR)* v1.1 (Bushfire Prone Planning March 2026).
MAINTENANCE OF BUSHFIRE PROTECTION MEASURES Measures Established by a Local Government's Section 33 Notice Under the Bush Fires Act 1954	
7	Maintain the required firebreaks, providing emergency access within the lot, to the stated specifications established by the Shire of Dandaragan Fire Break & Fuel Hazard Reduction Notice.
MAINTENANCE OF BUSHFIRE PROTECTION MEASURES Measures Established by the Building Code of Australia (Vol. 1 and 2 of the National Construction Code)	
8	Prior to any future building work, inform the builder of the existence of this approved Bushfire Management Plan (BMP). The BMP identifies that the development site is within a designated bushfire prone area and states the indicative (or determined) BAL rating(s) that may (or will) be applied to buildings/structures. A BAL assessment report may be required to confirm determined ratings and will be required when stated ratings are only indicative. BAL certificates will need to be produced to accompany building applications. The BMP may also establish, as a 'Required Additional Bushfire Protection Measure', that bushfire construction requirements to be applied must be those corresponding to a specified higher BAL rating. Compliance with the current Building Code of Australia (Volumes 1 and 2 of the National Construction Code), will require certain bushfire resistant construction requirements be applied to residential buildings in bushfire prone areas (i.e., Class 1, 2 and 3 and associated Class 10a buildings and decks) and certain Class 9 buildings. Other classes of buildings may also be required to comply with this construction when established by the relevant authority or if identified as a 'Required Additional Bushfire Protection Measure' bushfire protection measure within the BMP. The deemed to satisfy solutions that will meet the relevant bushfire performance requirements are found in AS 3959 – Construction of Building in Bushfire Prone Areas (as amended) and the NASH Standard - Steel Framed Construction in Bushfire Areas (as amended).

APPENDIX A: DETAILED BAL ASSESSMENT DATA AND SUPPORTING INFORMATION

A1: BAL Assessment Inputs Common to the Method 1 and Method 2 Procedures

A1.1: FIRE DANGER INDEX (FDI)

FIRE DANGER INDEX APPLIED						
When using Method 1 the relevant FDI value required to be applied for each state and region is established by AS 3959:2018, Table 2.1. Each FDI value applied in Tables 2.4 – 2.7 represents both the Forest Fire Danger Index (FFDI) and a deemed equivalent for the Grassland Fire Danger Index (GFDI), as per Table B2 in Appendix B. When using Method 2, the relevant FFDI and GFDI are applied. The values may be able to be refined within a jurisdiction, where sufficient climatological data is available and in consultation with the relevant authority.						
Relevant Jurisdiction:	WA	Region:	Whole State	Method 1	Applied FDI:	80
				Method 2	Applied FFDI:	80
					Applied GFDI:	110

A1.2: VEGETATION ASSESSMENT AND CLASSIFICATION

CLASSIFIED VEGETATION – APPLICATION OF METHODOLOGY	
VEGETATION TYPES AND CLASSIFICATION In accordance with AS 3959:2018 Clauses 2.2.3 and C2.2.3.1, all vegetation types within 100 metres of the 'site' (defined as "the part of the allotment of land on which a building stands or is to be erected"), are identified and classified. Any vegetation more than 100 metres from the site that has influenced the classification of vegetation within 100 metres of the site, is identified and noted. The maximum excess distance is established by AS 3959: 2018 Clause 2.2.3.2 and is an additional 100 metres. Classification is also guided by the Visual Guide for Bushfire Risk Assessment in WA (WA Department of Planning February 2016) and any relevant FPA Australia practice notes. **MODIFIED VEGETATION** The vegetation types have been assessed as they will be in their natural mature states, rather than what might be observed on the day. Vegetation destroyed or damaged by a bushfire or other natural disaster has been assessed on its expected re-generated mature state. Modified areas of vegetation can be excluded from classification if they consist of low threat vegetation (refer to Appendix B) and that any required active management can be expected to continue in perpetuity, and this can be adequately justified. **THE INFLUENCE OF GROUND SLOPE UNDER THE VEGETATION** Where significant variation in effective slope exists under a consistent vegetation type, these will be delineated as separate vegetation areas to account for the difference in potential bushfire behaviour, in accordance with AS 3959:2018 Clauses 2.2.5 and C2.2.5.	
THE INFLUENCE OF VEGETATION GREATER THAN 100 METRES FROM THE SUBJECT SITE	
Vegetation area(s) within 100m of the site whose classification has been influenced by the existence of bushfire prone vegetation from 100m – 200m from the site:	None
Assessment Statement:	No vegetation types exist close enough, or to a sufficient extent, within the relevant area to influence classification of vegetation within 100 metres of the subject site.

VEGETATION AREA 1						
Classification	**A. FOREST**					
Types Identified	Tall open forest A-01		Open forest A-03		Pine plantation	
Exclusion Clause	N/A					
Effective Slope	Measured	d/slope 5 degrees	Applied Range (Method 1)		Downslope >0-5 degrees	
Foliage Cover (all layers)	30-70%	Shrub/Heath Height	1-2m	Tree Height	Up to 30m	
Dominant & Sub-Dominant Layers	Areas of mixed eucalypt forest with low hanging canopy and tall scrub(>6m). Understory is sometimes absent but with >30% canopy cover. A 5-degree slope has been applied regardless of the effective slope relative to assets.					
Justification Comments:	Not Required.					
Post Development Assumptions:	Areas are expected to maintain their mature condition.					



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VEGETATION AREA 2						
Classification	**B. WOODLAND**					
Types Identified	Woodland B-05		Low woodland B-07		Sown pasture G-26	
Exclusion Clause	N/A					
Effective Slope	Measured	d/slope 5 degrees	Applied Range (Method 1)		Downslope >0-5 degrees	
Foliage Cover (all layers)	30-70%	Shrub/Heath Height	N/A	Tree Height	Up to 30m	
Dominant & Sub-Dominant Layers	Woodlands with variable tree composition. Understory is often absent or sparse grasses only. Areas have <30% canopy cover. A 5-degree slope has been applied regardless of the effective slope relative to assets.					
Justification Comments:	Not Required.					
Post Development Assumptions:	Areas are expected to maintain their mature condition.					



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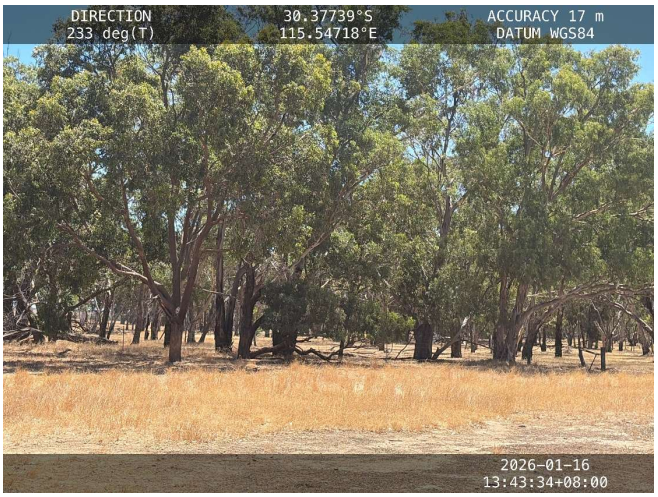


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VEGETATION AREA 3						
Classification	**C. SHRUBLAND**					
Types Identified	Closed (low) heath C-10		Low shrubland C-12		Tussock grassland G-22	
Exclusion Clause	N/A					
Effective Slope	Measured	d/slope 5 degrees	Applied Range (Method 1)		Downslope >0-5 degrees	
Foliage Cover (all layers)	N/A	Shrub/Heath Height	1-2m	Tree Height	N/A	
Dominant & Sub-Dominant Layers	Low vegetation <2m tall with sparse or absent overstory, often in areas of shallow water tables and associated salinity or rocky outcrops. A 5-degree slope has been applied regardless of the effective slope relative to assets.					
Justification Comments:	Not Required.					
Post Development Assumptions:	Areas are expected to maintain their mature condition.					



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VEGETATION AREA 4						
Classification	**D. SCRUB**					
Types Identified	Closed scrub D-13		Open scrub D-14		Tall shrubland E-15	
Exclusion Clause	N/A					
Effective Slope	Measured	d/slope 5 degrees	Applied Range (Method 1)		Downslope >0-5 degrees	
Foliage Cover (all layers)	N/A	Shrub/Heath Height	Up to 6m	Tree Height	Up to 10m	
Dominant & Sub-Dominant Layers	Sparce trees over a broad range of native shrubs and low planted species.					
Justification Comments:	Tall shrubs and/or stunted trees, generally up to 3 metres in height but up to 6m in some locations. Trees are present but with <10% overall canopy cover.					
Post Development Assumptions:	The vegetation is expected to remain in its current condition.					



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VEGETATION AREA 5						
Classification	**G. GRASSLAND**					
Types Identified	Sown pasture G-26		Tussock grassland G-22		Open herbfield G-27	
Exclusion Clause	N/A					
Effective Slope	Measured	d/slope 5 degrees	Applied Range (Method 1)		Downslope >0-5 degrees	
Foliage Cover (all layers)	N/A	Shrub/Heath Height	1-2m	Tree Height	Up to 30m	
Dominant & Sub-Dominant Layers	Pasture or cropland consistent with the region. Pasture areas display regular grazing. Cropland is harvested annually but significant stubble will remain. Windbreaks (exclusion clause 2.2.3.2(f)) with a grassy understory have been classified as Class G Grassland. A 5-degree slope has been applied regardless of the effective slope relative to assets.					
Justification Comments:	Not Required.					
Post Development Assumptions:	Clearing will be required to establish required APZs. Grassland areas onsite can be managed to a low threat state without environmental approvals					



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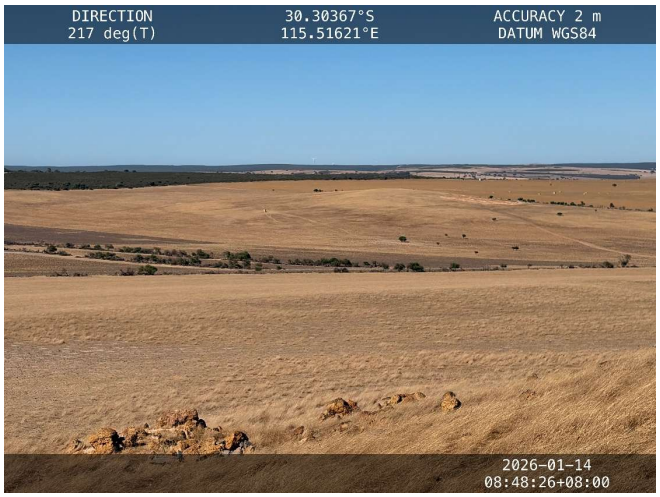


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A1.3: EFFECTIVE SLOPE

EFFECTIVE SLOPE

DEFINITION

Effective slope is "the slope under that classified vegetation which most influences the bushfire attack" (AS 3959:2018, Clause 1.5.11).

"The effective slope under the classified vegetation is not the same as the average slope for the land surrounding the site of the proposed building. The effective slope is that slope which most significantly influences bushfire behaviour" (AS 3959:2018, Clause CB4).

The slope is described as upslope, flat or downslope when viewed from an exposed element (e.g., building) and looking towards the vegetation. It is measured in degrees.

COMPOUND SLOPES UNDER VEGETATION AND DETERMINING SLOPE SIGNIFICANCE - EXPLAINING THE ASSESSMENT METHODOLOGY APPLIED BY BUSHFIRE PRONE PLANNING

[Note: Additional relevant guidance provided by AS 3959:2018 and NSW RFS, Planning for Bushfire Protection (2019) is incorporated into the applied assessment methodology and is presented at the end of this explanation.]

Non-Linear Slopes: When the slope of ground under the vegetation out to the distance to be assessed (100 m or further if necessary), is not a straight line or nearly straight line slope, then it is made up of several different slopes i.e., it is a compound slope. The different slope angles and lengths must be factored into the determination of the effective slope value to be applied. Different slopes will potentially influence the bushfire rate of spread and intensity, both increasing and decreasing it.

Significant Slope: The AS 3959:2018 bushfire attack level determination methodology, with default inputs, models a fully developed bushfire. Therefore, a 'significant' slope is one that will significantly influence bushfire behaviour. To be 'significant' the length of the slope must be 'sufficient' to support a fully developed fire on that slope. The angle of a significant slope could be the determined effective slope for the area of classified vegetation if it is the one that 'most influences the bushfire attack'.

Sufficient Slope Length: Is a slope that will, as a minimum, allow the entire flame depth (flaming zone) of a fully developed fire (100m flame width) to exist on that slope.

The expected flame depth of a fully developed bushfire is a function of the length of time the flaming phase will exist on a section of the fuel bed (the 'residence time') and the bushfire's 'rate of spread'. For a given rate of spread, longer residence times result in greater flame depths. Greater flame depths are correlated with greater flame temperatures and greater flows of radiant heat.

The primary factors that will increase the residence time are:

- Heavier fine fuel loads of grass, leaf litter, twigs, bark etc less than 6mm in width and existing within the surface and near surface layers (and elevated fuel layers when contiguous with the base layers); and
- A greater percentage of larger fine fuels within the fuel load.

The primary factors that increase the rate of spread (apart from fire weather factors), include finer fuels, drier fuels, horizonal continuity of fuel and steeper upward ground slope in the direction of fire travel.

Example values:

- Residence Time: Grassfire 5 – 15 seconds, Forest fire 25 -50 seconds.
- Rate of Spread: Grassfires of a few km/hr are considered fast moving, 5-10 km/hr is common and fastest in the order of 25km/hr. Forest fire typically recorded in metres/hour with 1-1.5 km/hr being considered fast moving and fastest in the order of 3–4 km/hr.
- Flame Depth: More typically, a few metres for grasses to tens of metres for forest fires.

An Isolated Slope: For scenarios where there is a single significant slope (based on the above criteria) additional consideration would need to be given to the time and distance consumed by a bushfire still in its 'developing'

phase. This will require due consideration be given to how it is potentially ignited i.e., from a single or multiple points, as this will influence the time and distance required to fully develop. For such scenarios, a normally significant slope may not be sufficiently long. It may be necessary to determine the potential bushfire impact more accurately by justifying the application of a lesser effective slope, or a lower threat vegetation classification, or calculating a reduced head fire width (using short fire run modelling).

Determined Effective Slope: Only a 'significant' slope can potentially be the effective slope by itself. In which case, for a defined area of classified vegetation area, the worst significant slope under that vegetation is to apply.

The table below presents Bushfire Prone Planning's considerations applied to assessing short and/or compound slopes in determining the effective slope.

Slope Length (m)	Considered a Significant Slope	Considerations in Determining the Effective Slope
< 5	No	Where these short slopes exist as part of a compound slope under an area of classified vegetation, they can be ignored as they will not influence the fire behaviour in that vegetation.
5-20	Will Vary	These slopes will have a range of influence on fire behaviour from very little to a degree of influence that must be accounted for to some extent by the effective slope value that is applied (i.e., with a greater length - apply to a greater extent). But the actual slope of these shorter slopes is less likely to be applied as it is not a 'significant' length.
20-30	Possibly - Likely	The same considerations applied to the 5-20m slope lengths should be applied here. However, more justification would need to be presented to support an assessment of not 'significant'. For these slope lengths, consideration must be given more broadly to the potential level of risks associated with a bushfire event in this location. The risk level will be a function of the bushfire hazard threat levels (direct attack mechanisms) within the immediate and broader assessment area as influenced by local topography, vegetation extents and types and the exposure and vulnerability of persons and/or buildings/structures to these threats. Higher consequent risk levels require greater precaution meaning these length slopes should be considered 'significant', and vice versa. Consider the potential for a bushfire on adjoining or nearby land be a source of ignition and/or pre-heating to vegetation on the subject slope. Consider if vegetation on the slope is likely be ignited by a single ignition point or is multipoint ignition possible from bushfire an adjoining slopes or the surrounding area. Single point ignition will require a fire to travel further before being fully developed (DFES considers less than 100m fire runs may be considered a short fire run for forest, woodland and scrub vegetation classifications, RFS NSW applies 150m). Isolated slopes of this length are less likely to be considered significant as compared to when part of a compound slope.
>30	Yes	Likely to always be a significant slope unless isolated (i.e., exists alone) – in which case, justifying the application of a lesser effective slope, or a lower threat vegetation classification, or calculating a reduced head fire width, are approaches that may justifiably be applied.

BPP Approach - Slope Variation Within Areas of Vegetation

When multiple 'significant' slope lengths with large differences in degrees of effective slope (or different applicable slope ranges when AS 3959:2018 Method 1 is applied), exists under a single vegetation classification, these will be delineated as separate vegetation areas of classified vegetation to account for the difference in potential bushfire behaviour and impact, in accordance with AS 3959:2018 clauses 2.2.5 and C2.2.5.

Effective Slope Variation Due to Multiple Development Sites

When the effective slope, under a single area of bushfire prone vegetation, will vary significantly relative to multiple proposed development sites (exposed elements), then the effective slopes corresponding to each of the different locations, are separately identified. The relevant (worst case) effective slope is determined in the direction corresponding to the potential directions of fire spread towards the subject building(s).

AS 3959:2018 EFFECTIVE SLOPE DETERMINATION - GUIDANCE

The Standard presents a broad set of guidance statements that indicate the intent of deriving an effective slope value for use in calculations, rather than detailing the 'in the field' determination process. These include:

- Highlighting the importance of the value by stating "The slope of the land under the classified vegetation has a direct influence on the rate of fire spread the severity of the fire and the ultimate level of radiant heat flux" (Clause C2.2.5). [Note: A common rule of thumb is that for every 10 degrees of upslope, a fire will double its rate of spread if moving in the direction of the prevailing wind].
- "It may be necessary to consider the slope under the classified vegetation for distances greater than 100 m in order to determine the effective slope for that vegetation classification) … (i.e. the vegetation within 100 m) (Clause C2.2.5).
- "Where there is more than one slope within the classified vegetation, each slope shall be individually assessed, and the worst case Bushfire Attack Level shall apply" (Clause 2.2.5).

NSW RFS 2019, PLANNING FOR BUSHFIRE PROTECTION - APPENDIX A1.5 - ADDITIONAL DETERMINATION GUIDANCE

- "In identifying the effective slope - it may be found that there are a variety of slopes covering different distances within the vegetation. The effective slope is considered to be the slope under the vegetation which will most significantly influence the bushfire behaviour for each aspect. This is usually the steepest slope. In situations where this is not the case, the proposed approach must be justified".
- "Vegetation located closest to an asset may not necessarily be located on the effective slope".

SITE ASSESSMENT DETAILS - EXPLANATION & JUSTIFICATION

The effective slopes determined from the site assessment are recorded in Table 3.2 of this Bushfire Management Plan.

A 5-degree downslope has been applied to all vegetation areas in establishing the appropriate APZs. As the site is within cropped pasture, a consistent APZ dimension can be applied without environmental impact.

A1.4: SEPARATION DISTANCE

SEPARATION DISTANCE

DEFINITION AND MEASURING

The separation distance is the distance in the horizontal plane between the receiver (building/structure or area of land being considered) and the edge of the classified vegetation (AS 3959:2018, clause 2.2.4)

The relevant parts of a building/structure from which the measurement is taken is the nearest part of an external wall or where a wall does not exist, the supporting posts or columns. Certain parts of buildings are excluded including eaves and roof overhangs.

The edge of the vegetation, for forests and woodlands, will be determined by the unmanaged understorey rather than either the canopy (drip line) or the trunk (AS 3959:2018, clause C2.2.5).

MEASURED SEPARATION DISTANCE AS A CALCULATION INPUT

If a separation distance can be measured because the location of the building/structure relative to the edge of the relevant classified vegetation is known, this figure can be entered into the BAL calculation. The result is a determined BAL rating.

ASSUMED SEPARATION DISTANCE AS A CALCULATION INPUT

When the building/structure location within the lot is not known, an assumed building location will be applied based on a factor that puts a restriction on a building location such as:

- An established setback from the boundary of a lot, such as a residential design code setback or some other mechanism that establishes an appropriate location limitation; or
- Within an established building envelope.

The resultant BAL rating would be indicative and require later confirmation (via a Compliance Report) of the building/structure actual location relative to the vegetation to establish the determined BAL rating.

SEPARATION DISTANCE AS A CALCULATION OUTPUT

With the necessary site specific assessment inputs and using the AS 3959:2018 bushfire modelling equations, the range of separation distances that will correspond to each BAL rating can be calculated. This has application for bushfire planning scenarios such as:

- When the separation distance cannot be measured because the exact location of the exposed element (i.e., the building/structure, area or persons), relative to classified vegetation, is yet to be determined.

  In this scenario, the required information is the identification of locations on-site that will correspond to each BAL rating (or a specific level radiant heat). Indicative BAL ratings can be derived for a variety of potential locations; or

- The separation distance is known for a given building, structure or area (and a determined BAL rating can be derived), but additional information is required regarding the level of exposure to radiant heat from a bushfire to buildings or persons, that will exist at different locations within a subject site.

The calculated range of separation distances corresponding to each BAL rating can be presented in a table and/or illustrated as a BAL Contour Map – whichever is determined to best fit the purpose of the assessment.

For additional information refer Appendix B.

SITE ASSESSMENT DETAILS - EXPLANATION & JUSTIFICATION

For the subject development/use the applicable separation distances values are derived from calculations applying the assessed site data. They are an output value, not an input value and therefore are not presented or justified in this appendix.

The derived values are presented in Section 3, Table 3.1.

A2: BAL Assessment Inputs Applied Using the Method 2 Procedure

STATING AND JUSTIFYING THE METHOD 2 CALCULATION INPUT VARIABLES APPLIED

AS 3959:2018 BAL Determination Procedures: AS 3959:2018 establishes the official methodology to determine the radiant heat flux (RHF) a receiver (e.g., a building, structure, person or specified location), will potentially be exposed to from a fully developed bushfire within any adjacent classified vegetation. The methodology accounts for the configuration of a specific site and its surrounds.

The model calculations are complex. Consequently, AS 3959:2018 establishes two acceptable pathways to apply the methodology - a simplified procedure (Method 1) and a detailed procedure (Method 2).

Method 1: This procedure has limitations to both its scope and the degree to which site specific conditions can be applied. However, it requires minimal site assessment inputs and provides a standardised output that is satisfactory for many situations.

A moderate level of justification for some of the assessed inputs applied is required. This will demonstrate how the procedure detailed within AS 3959:2018 for Method 1(Section 2) has been followed.

Method 2: This procedure is used when the site conditions are out of the scope of Method 1 or when it is necessary to produce a more specific result. Higher levels of justification will be required for many of the input variables that are able to be modified using Method 2 (AS 3959:2018 Appendix B).

Section A2.1 below identifies the input variables that have been assessed for the proposed development and indicates the level of justification required for their application.

The required level and detail of justification information is presented within this Appendix as necessary.

A2.1: SUMMARY OF CALCULATION INPUTS APPLIED AND THE LEVEL OF JUSTIFICATION REQUIRED

AS 3959:2018 BUSHFIRE ATTACK LEVEL (BAL) DETERMINATION PROCEDURES INPUT VARIABLES FOR THE FIRE BEHAVIOUR AND RADIATION MODELS						
✓	Indicates which site specific variables have been assessed and applied to the assessment of the proposed development/use.	**IDENTIFICATION OF THE CALCULATION INPUT VARIABLES ASSESSED AND/OR MODIFIED FOR THE PROPOSED DEVELOPMENT/USE**				
	Indicates an AS 3959 methodology or jurisdiction default variable (or a methodology calculated variable in the case of EOR or flame angle). No justification required.					
	Indicates a variable that either must or can have an assessor value applied. Requires justification.					
	Indicates a variable that can have an assessor value applied. Requires detailed justification.	Using Method 1		Using Method 2		
ASSESSOR QUALIFICATION REQUIRED [1]		BPAD Level 1		BPAD Level 3		
LEVEL OF JUSTIFICATION REQUIRED TO APPLY [2]		None	Moderate	None	Moderate	High
Fire weather	Fire danger index (FDI/FFDI/GFDI)			✓		
	Wind speed					
	Ambient temperature					
	Relative humidity					
Bushfire Prone Vegetation and slope of the land it grows on	Vegetation classification [3]				✓	
	Effective slope					
	Understorey and total fuel loads [4]					
	Vegetation height					
	Fuel age					
	Fuel moisture					
Receiver (building) positioning parameters	Site slope				✓	
	Separation distance					
	Elevation of the receiver (EOR).					
Bushfire flame parameters	Flame temperature [5]			✓		
	Flame width					
	Flame angle					
	Flame emissivity					
	Heat of combustion					
INTERMEDIATE OUTPUT FROM THE FIRE BEHAVIOUR AND RADIATION MODELS						
Rate of Spread - derived from fuel loads, fuel type, fuel height, FDI, effective slope and wind speed.						
Fire Intensity – derived from fuel loads, rate of spread and heat of combustion [6]						
Path Length – derived from flame angle and separation distance.						
Transmittance – derived from ambient temperature and relative humidity.						
View Factor – derived from flame length, flame width, flame angle, separation distance, elevation of receiver and site slope.						
FINAL OUTPUT OF THE FIRE BEHAVIOUR AND RADIATION MODELS						
Flame Length – derived from fuel loads, ROS (for Forest, Woodland) and fire intensity (for Scrub, Shrubland, Grassland) [6]						
Radiant Heat Flux and the Corresponding Bushfire Attack Level (BAL) – derived from view factor, flame emissivity, flame temperature, transmittance and corresponding to the worst possible flame angle.						
TABLE NOTES (see next page)						

[1] **Authority to Use Method 2:** Within WA, use of this procedure is restricted to bushfire practitioners who hold the BPAD Level 3 accreditation as issued by the Fire Protection Association Australia (FPAA) through their Bushfire Planning and Design Accreditation Scheme (BPAD Scheme) that complies with the Western Australian Bushfire Accreditation Framework.

[2] **Level of Justification Required in Applying Method 2:** AS 3959:2018 Appendix B establishes the detailed procedure for the Method 2 determination of BAL(s) as consisting of 10 steps. When justification is required for an assessed variable value to be applied, the required level of justification can vary. The level definitions used in this table are:

Moderate: Requires the provision of readily available and understood argument and evidence such as when:

1. The methodology step requires or allows for an input variable to be a site assessed value; or
2. A methodology step requires a jurisdictionally determined value which the relevant authority may change for different land use scenarios; or

High: Requires a detailed argument, appropriate evidence and justification when:

1. The variable is derived from the methodology step that applies an AS 3959:2018 default value or determines an intermediate output value (i.e. the result of applying a step's equations).

[3] **Applying a Different Vegetation Classification:** This approach may be justified when certain characteristics of the site's local vegetation complex align with the broad based descriptions of AS 3959:2018, but expert knowledge identifies characteristics that would result in the applied AS 3959 bushfire behaviour model not being properly representative of a fire in the local vegetation. This potential outcome is in part due to the ecological classification of vegetation that is used in AS 3959 rather than a classification more aligned with fuel structure/fire behaviour.

The justification of using a different classification is predicated on the fact that the intent of classifying vegetation in the BAL determination methodology of AS 3959:2018, is to identify the most appropriate fire behaviour model equations to apply.

For example, with respect to contribution to potential fire behaviour, it is often more important to consider vegetation structure rather than canopy cover, yet canopy cover is a key classification factor applied in AS 3959:2018.

Also findings from more recent bushfire behaviour research is not yet incorporated into the current version of the Standard. Certain currently applied bushfire behaviour models within As 3959:2018 are outdated and may under or over predict radiant heat flux and flame length.

[4] **Modifying Fuel Loads:** Potential steady state maximum fuel loads at a specific site for a given vegetation classification may vary significantly (above and below) from those that are to be applied as the default values in AS 3959:2018.

The Standard only provides the single set of ecological descriptors and corresponding fuel loads that are to be applied to vegetation complexes across Australia, hence its accuracy for all situations will be questionable. The relevant authority for a jurisdiction can establish different fuel loads to be applied.

However, fuel loads for the purposes of determining expected fire behaviour have not currently been determined to the degree necessary in WA, which results in the default values both over and underestimating fuel loads for WA vegetation types. WA DFES in providing advice to decision makers, will currently not accept any assessment and subsequent variation of the default fuel loads. If any variation was to be applied in an assessment, it would need to be argued for based on appropriate evidence and the development of a merit based case to the satisfaction of the decision maker.

The one circumstance where Bushfire Prone Planning will reduce fuel loads is in the calculations associated with a short fire run in forest type vegetation – in which the developing fire will not crown. Therefore, most bark and all canopy fuels can justifiably be excluded from total fuel load.

Note [5] - Flame Temperature: The Guidelines (DPLH, November 2024) establish the requirement to apply 1200 K as the flame temperature to determine an on-site shelter's maximum exposure to radiant heat flux and the corresponding vegetation separation distance, when an on-site shelter is required for vulnerable land use proposals (refer to Guidelines, Appendix B5.2.3 and BPC 8, A2.5). The requirement refers to the guidance presented in the ABCB Design and Construction of Community Bushfire Refuges Handbook 2014 to support the requirement.

Note [6] – Fireline Intensity and Flame Length: These values are determined as intermediate and final outputs of the AS 3959:2018 modelling. Changing these values would not be a valid use of the methodology for a fully developed fire. However, for the circumstance of a developing fire in small patches or corridors of vegetation, there may be justification when an authoritative source is identified to provide an override value.

A2.2: FLAME TEMPERATURE

FLAME TEMPERATURE APPLIED
ESTABLISHED BY AS 3959:2018 The AS 3959:2018 radiation modelling assumes an effective flame temperature of 1090 K and that it is sustained for a 2 minute period over a fire front width of 100 m. It states that instantaneous flame temperature may peak above 1090 K (AS 3959:2018 Table B1, clause B2 and clause 1.5.17). Existing scientific literature suggests that flame temperatures for determining flame emissive power vary greatly and the majority fall between 1000 K and 1200 K. An appropriate flame temperature is chosen from this range in accordance with the minimum level of stringency or safety required by the relevant authority having jurisdiction (AS 3959:2018, CB10.2). **ESTABLISHED BY THE GUIDELINES** The Guidelines (DPLH, November 2024) establish the requirement to apply 1200 K as the flame temperature to determine an on-site shelter's maximum exposure to radiant heat flux and the corresponding vegetation separation distance, when an on-site shelter is required for vulnerable land use proposals (refer to Guidelines, Appendix B5.2.3 and BPC 8, A2.5). The requirement refers to the guidance presented in the ABCB Design and Construction of Community Bushfire Refuges Handbook 2014 to support the application of 1200 K.

Relevant Site	Flame Temperature Applied (Kelvin)	Explanation and Justification
Operations and Maintenance Building(s)	**1200 K**	The requirement to apply the higher flame temperature (1200K) is established by the *Guidelines* (refer to information above). The Operations and Maintenance building will be nominated as an on-site shelter location.
Wind Turbines BESS / PCS and associated infrastructure On-site Substation Terminal Substation Critical Class 10 Buildings	**1090 K**	The default 1090K flame temperature is applied to other assets.

A2.3: SITE SLOPE

SITE SLOPE
DEFINITION
Site slope is the 'line of sight' slope between the 'site' and the edge of the relevant area of classified vegetation (AS 3959:2018 clause B5). The 'site' being "the part of the allotment of land on which a building stands or is to be erected" (AS 3959:2018 clause 1.5.30). It is the straight line slope that ignores any changes in slope or any other physical obstructions between these two points.
PURPOSE
Site slope is applied to position the potential receiver of radiant heat (typically a building) relative to the modelled bushfire (the radiant heat panel as a black body of evenly distributed heat) at the edge of the vegetation. This enables the use of the view factor radiant heat model in the AS 3959:2018 BAL determination methodology, to calculate of the potential level of radiant heat that can transfer from the bushfire to the structure.
SLOPE LIMITS
AS 3959:2018 clause B1 limits site slope to 20^0 but explains that this limitation due to the considered impracticality of maintaining relevant vegetation in a low threat state in perpetuity on steeper slopes. This is likely to result in an inability to maintain the assessed separation distance between the building and the classified vegetation. Consequently, where the maintenance of vegetation is not a limiting factor, the application of a greater site slope can be justified to position the building relative to the bushfire more accurately.
AS 3959:2018 METHOD 1 AND METHOD 2 – DIFFERENCES IN APPLYING SITE SLOPE
The Method 1 procedure assumes the site slope to be the same as the effective slope being applied to a subject site (i.e. the slope under the classified vegetation). This results in potential site downslope values being applied in five degree increments and corresponding to the highest of the effective slope range being applied (i.e. zero, 5, 10, 15 or 20 degrees). Site upslopes are considered as flat. This simplified approach can potentially (not always) significantly over or under determine the potential radiant heat impact. The Method 2 procedure allows for the input of the actual measured or calculated site slope. The slope can be flat, upslope (entered in calculations as negative degrees), or downslope (entered in calculations as positive degrees). The slope direction is determined by the view from the building/structure (i.e. the receiver) to the classified vegetation. The intent is to better represent the site conditions by locating the building/structure more accurately relative to the bushfire.

A site slope equal to the effective slope has been applied (5 degrees).

A3: BAL Calculator – Copy of Input/Output Values

DETERMINING 10 kW/m² SEPARATION DISTANCES

Vegetation Classification	A. FOREST <0-5 Downslope

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Calculated May 6, 2026, 6:22 pm (MDc v.4.9)

Forest <0-5

Minimum Distance Calculator - AS3959-2018 (Method 2)			
Inputs		Outputs	
Fire Danger Index	80	Rate of spread	3.38 km/h
Vegetation Classification	Forest	Flame length	26.22 m
Understorey fuel load	25 t/ha	Flame angle	48 °, 56 °, 62 °, 66 °, 67 ° & 75 °
Total fuel load	35 t/ha	Elevation of receiver	11.66 m, 13.38 m, 15.03 m, 16.57 m, 17.35 m & 24.03 m
Vegetation height	n/a	Fire intensity	61,280 kW/m
Effective slope	5 °	Transmissivity	0.852, 0.827, 0.797, 0.772, 0.76 & 0.705
Site slope	-5 °	Viewfactor	0.6165, 0.46, 0.3127, 0.2125, 0.1727 & 0.0465
Flame width	100 m	Minimum distance to < 40 kW/m²	22 m
Windspeed	n/a	Minimum distance to < 29 kW/m²	28.7 m
Heat of combustion	18,600 kJ/kg	Minimum distance to < 19 kW/m²	39.5 m
Flame temperature	1,090 K	Minimum distance to < 12.5 kW/m²	52.5 m
		Minimum distance to < 10 kW/m²	60.4 m

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Calculated May 6, 2026, 6:24 pm (MDc v.4.9)

Forest <0-5

Minimum Distance Calculator - AS3959-2018 (Method 2)			
Inputs		Outputs	
Fire Danger Index	80	Rate of spread	3.38 km/h
Vegetation Classification	Forest	Flame length	26.22 m
Understorey fuel load	25 t/ha	Flame angle	57 °, 62 °, 65 °, 68 °, 70 ° & 76 °
Total fuel load	35 t/ha	Elevation of receiver	13.65 m, 14.96 m, 16.41 m, 18.03 m, 19.01 m & 26.59 m
Vegetation height	n/a	Fire intensity	61,280 kW/m
Effective slope	5 °	Transmissivity	0.83, 0.808, 0.783, 0.763, 0.754 & 0.699
Site slope	-5 °	Viewfactor	0.4304, 0.321, 0.2166, 0.1463, 0.1186 & 0.0319
Flame width	100 m	Minimum distance to < 40 kW/m²	30.4 m
Windspeed	n/a	Minimum distance to < 29 kW/m²	38.7 m
Heat of combustion	18,600 kJ/kg	Minimum distance to < 19 kW/m²	51.8 m
Flame temperature	1,200 K	Minimum distance to < 12.5 kW/m²	67.2 m
		Minimum distance to < 10 kW/m²	76.4 m

Vegetation Classification	B. WOODLAND <0-5 Downslope

FLAMESOL FPA AUSTRALIA

Calculated May 6, 2026, 6:06 pm (MDc v.4.9)

Woodland <0-5

Minimum Distance Calculator - AS3959-2018 (Method 2)			
Inputs		Outputs	
Fire Danger Index	80	Rate of spread	2.03 km/h
Vegetation Classification	Woodland	Flame length	16.21 m
Understorey fuel load	15 t/ha	Flame angle	49 °, 58 °, 66 °, 70 °, 71 ° & 77 °
Total fuel load	25 t/ha	Elevation of receiver	7.34 m, 8.5 m, 9.72 m, 10.82 m, 11.44 m & 16.66 m
Vegetation height	n/a	Fire intensity	26,263 kW/m
Effective slope	5 °	Transmissivity	0.868, 0.848, 0.821, 0.796, 0.783 & 0.723
Site slope	-5 °	Viewfactor	0.6027, 0.4476, 0.3037, 0.2064, 0.1674 & 0.0454
Flame width	100 m	Minimum distance to < 40 kW/m²	13.9 m
Windspeed	n/a	Minimum distance to < 29 kW/m²	18.5 m
Heat of combustion	18,600 kJ/kg	Minimum distance to < 19 kW/m²	26.5 m
Flame temperature	1,090 K	Minimum distance to < 12.5 kW/m²	36.7 m
		Minimum distance to < 10 kW/m²	43.2 m

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Calculated May 6, 2026, 6:09 pm (MDc v.4.9)

Woodland <0-5

Minimum Distance Calculator - AS3959-2018 (Method 2)			
Inputs		Outputs	
Fire Danger Index	80	Rate of spread	2.03 km/h
Vegetation Classification	Woodland	Flame length	16.21 m
Understorey fuel load	15 t/ha	Flame angle	60 °, 65 °, 70 °, 72 °, 73 ° & 78 °
Total fuel load	25 t/ha	Elevation of receiver	8.75 m, 9.61 m, 10.77 m, 11.96 m, 12.67 m & 18.76 m
Vegetation height	n/a	Fire intensity	26,263 kW/m
Effective slope	5 °	Transmissivity	0.851, 0.832, 0.806, 0.783, 0.772 & 0.72
Site slope	-5 °	Viewfactor	0.4187, 0.3117, 0.2107, 0.1427, 0.1156 & 0.031
Flame width	100 m	Minimum distance to < 40 kW/m²	19.8 m
Windspeed	n/a	Minimum distance to < 29 kW/m²	25.9 m
Heat of combustion	18,600 kJ/kg	Minimum distance to < 19 kW/m²	36.1 m
Flame temperature	1,200 K	Minimum distance to < 12.5 kW/m²	48.6 m
		Minimum distance to < 10 kW/m²	56.3 m

Vegetation Classification	C. SHRUBLAND <0-5 Downslope

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Calculated May 6, 2026, 6:16 pm (MDc v.4.9)

Shrubland <0-5

Minimum Distance Calculator - AS3959-2018 (Method 2)			
Inputs		Outputs	
Fire Danger Index	80	Rate of spread	4.04 km/h
Vegetation Classification	Shrubland	Flame length	9.07 m
Understorey fuel load	15 t/ha	Flame angle	51 °, 60 °, 68 °, 73 °, 74 ° & 79 °
Total fuel load	15 t/ha	Elevation of receiver	4.22 m, 4.87 m, 5.58 m, 6.32 m, 6.74 m & 10.71 m
Vegetation height	m	Fire intensity	31,357 kW/m
Effective slope	5 °	Transmissivity	0.882, 0.869, 0.849, 0.827, 0.814 & 0.744
Site slope	-5 °	Viewfactor	0.591, 0.4343, 0.2923, 0.1983, 0.1613 & 0.0441
Flame width	100 m	Minimum distance to < 40 kW/m²	7.9 m
Windspeed	45 km/h	Minimum distance to < 29 kW/m²	10.7 m
Heat of combustion	18,600 kJ/kg	Minimum distance to < 19 kW/m²	15.7 m
Flame temperature	1,090 K	Minimum distance to < 12.5 kW/m²	22.7 m
		Minimum distance to < 10 kW/m²	27.3 m

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Calculated May 6, 2026, 6:18 pm (MDc v.4.9)

Shrubland <0-5

Minimum Distance Calculator - AS3959-2018 (Method 2)			
Inputs		Outputs	
Fire Danger Index	80	Rate of spread	4.04 km/h
Vegetation Classification	Shrubland	Flame length	9.07 m
Understorey fuel load	15 t/ha	Flame angle	62 °, 68 °, 72 °, 75 °, 76 ° & 80 °
Total fuel load	15 t/ha	Elevation of receiver	5.01 m, 5.55 m, 6.25 m, 7.12 m, 7.65 m & 12.35 m
Vegetation height	m	Fire intensity	31,357 kW/m
Effective slope	5 °	Transmissivity	0.872, 0.858, 0.836, 0.813, 0.801 & 0.74
Site slope	-5 °	Viewfactor	0.407, 0.3002, 0.2032, 0.1372, 0.1116 & 0.0301
Flame width	100 m	Minimum distance to < 40 kW/m²	11.4 m
Windspeed	45 km/h	Minimum distance to < 29 kW/m²	15.3 m
Heat of combustion	18,600 kJ/kg	Minimum distance to < 19 kW/m²	22.2 m
Flame temperature	1,200 K	Minimum distance to < 12.5 kW/m²	31.4 m
		Minimum distance to < 10 kW/m²	37.2 m

Vegetation Classification	D. SCRUB <0-5 Downslope

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Calculated May 6, 2026, 6:12 pm (MDc v.4.9)

Scrub <0-5

Minimum Distance Calculator - AS3959-2018 (Method 2)			
Inputs		Outputs	
Fire Danger Index	80	Rate of spread	5.88 km/h
Vegetation Classification	Scrub	Flame length	13.62 m
Understorey fuel load	25 t/ha	Flame angle	50 °, 59 °, 67 °, 71 °, 72 ° & 78 °
Total fuel load	25 t/ha	Elevation of receiver	6.25 m, 7.22 m, 8.26 m, 9.24 m, 9.79 m & 14.61 m
Vegetation height	m	Fire intensity	75,987 kW/m
Effective slope	5 °	Transmissivity	0.873, 0.855, 0.83, 0.805, 0.792 & 0.729
Site slope	-5 °	Viewfactor	0.6016, 0.4444, 0.2999, 0.2037, 0.1655 & 0.045
Flame width	100 m	Minimum distance to < 40 kW/m²	11.7 m
Windspeed	45 km/h	Minimum distance to < 29 kW/m²	15.7 m
Heat of combustion	18,600 kJ/kg	Minimum distance to < 19 kW/m²	22.8 m
Flame temperature	1,090 K	Minimum distance to < 12.5 kW/m²	32 m
		Minimum distance to < 10 kW/m²	37.9 m

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Calculated May 6, 2026, 6:14 pm (MDc v.4.9)

Scrub <0-5

Minimum Distance Calculator - AS3959-2018 (Method 2)			
Inputs		Outputs	
Fire Danger Index	80	Rate of spread	5.88 km/h
Vegetation Classification	Scrub	Flame length	13.62 m
Understorey fuel load	25 t/ha	Flame angle	61 °, 66 °, 71 °, 73 °, 74 ° & 79 °
Total fuel load	25 t/ha	Elevation of receiver	7.42 m, 8.17 m, 9.19 m, 10.26 m, 10.92 m & 16.56 m
Vegetation height	m	Fire intensity	75,987 kW/m
Effective slope	5 °	Transmissivity	0.858, 0.84, 0.815, 0.792, 0.78 & 0.726
Site slope	-5 °	Viewfactor	0.4166, 0.3073, 0.2083, 0.1411, 0.1146 & 0.0307
Flame width	100 m	Minimum distance to < 40 kW/m²	16.7 m
Windspeed	45 km/h	Minimum distance to < 29 kW/m²	22.3 m
Heat of combustion	18,600 kJ/kg	Minimum distance to < 19 kW/m²	31.4 m
Flame temperature	1,200 K	Minimum distance to < 12.5 kW/m²	42.9 m
		Minimum distance to < 10 kW/m²	50 m

Vegetation Classification	G. GRASSLAND <0-5 Downslope

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Calculated May 6, 2026, 6:26 pm (MDc v.4.9)

Grassland <0-5

Minimum Distance Calculator - AS3959-2018 (Method 2)			
Inputs		Outputs	
Grassland Fire Danger Index	110	Rate of spread	20.19 km/h
Vegetation Classification	Grassland	Flame length	8.16 m
Understorey fuel load	4.5 t/ha	Flame angle	51 °, 60 °, 68 °, 73 °, 75 ° & 80 °
Total fuel load	4.5 t/ha	Elevation of receiver	3.8 m, 4.38 m, 5.03 m, 5.71 m, 6.13 m & 9.9 m
Vegetation height	n/a	Fire intensity	46,945 kW/m
Effective slope	5 °	Transmissivity	0.884, 0.872, 0.854, 0.832, 0.819 & 0.748
Site slope	-5 °	Viewfactor	0.5914, 0.4357, 0.2914, 0.1969, 0.1601 & 0.0438
Flame width	100 m	Minimum distance to < 40 kW/m²	7.1 m
Windspeed	n/a	Minimum distance to < 29 kW/m²	9.6 m
Heat of combustion	18,600 kJ/kg	Minimum distance to < 19 kW/m²	14.2 m
Flame temperature	1,090 K	Minimum distance to < 12.5 kW/m²	20.7 m
		Minimum distance to < 10 kW/m²	25 m

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Calculated May 6, 2026, 6:27 pm (MDc v.4.9)

Grassland <0-5

Minimum Distance Calculator - AS3959-2018 (Method 2)			
Inputs		Outputs	
Grassland Fire Danger Index	110	Rate of spread	20.19 km/h
Vegetation Classification	Grassland	Flame length	8.16 m
Understorey fuel load	4.5 t/ha	Flame angle	62 °, 68 °, 73 °, 76 °, 77 ° & 80 °
Total fuel load	4.5 t/ha	Elevation of receiver	4.51 m, 5 m, 5.68 m, 6.48 m, 6.97 m & 11.44 m
Vegetation height	n/a	Fire intensity	46,945 kW/m
Effective slope	5 °	Transmissivity	0.876, 0.862, 0.841, 0.818, 0.806 & 0.744
Site slope	-5 °	Viewfactor	0.4055, 0.3001, 0.2011, 0.1363, 0.1109 & 0.03
Flame width	100 m	Minimum distance to < 40 kW/m²	10.3 m
Windspeed	n/a	Minimum distance to < 29 kW/m²	13.8 m
Heat of combustion	18,600 kJ/kg	Minimum distance to < 19 kW/m²	20.3 m
Flame temperature	1,200 K	Minimum distance to < 12.5 kW/m²	28.8 m
		Minimum distance to < 10 kW/m²	34.3 m

APPENDIX B: GUIDANCE – BUSHFIRE ATTACK LEVELS AND ASSET PROTECTION ZONES

B1: Understanding Bushfire Attack Level (BAL) Ratings

BUSHFIRE ATTACK LEVEL

IMPORTANT

It is not the purpose of this 'planning' BMP to derive a 'determined' BAL rating (and associated minimum APZ dimensions), that will apply to an existing or future habitable or specified building, for the purpose of establishing its bushfire resistant construction requirements in accordance with the Building Code of Australia (contained in the NCC).

However, in limited situations a 'determined' BAL can be an incidental outcome of the planning assessment.

BUSHFIRE ATTACK LEVEL (BAL)

The potential transfer (flux/flow) of radiant heat from a bushfire to a receiving object is measured in kW/m^2. The AS 3959:2018 Bushfire Attack Level (BAL) determination methodology establishes the ranges of radiant heat flux that correspond to each bushfire attack level.

The defined ranges of radiant heat transfer are titled BAL-LOW, BAL-12.5, BAL-19, BAL-29, BAL-40 and BAL-FZ.

For certain classes of building/structure the bushfire performance requirements and the associated deemed to satisfy solutions are established by the Building Code of Australia (Vol. 1 & 2 of the NCC). For most jurisdictions the relevant building classes are 1, 2, 3, 9 and associated 10a.

The assessed BAL rating that applies to a specific building/structure determines the bushfire resistant construction requirements for those works in accordance with AS 3959:2018 - *Construction of buildings in bushfire prone areas,* or for Class 1 buildings, the NASH Standard – *Steel framed construction in bushfire areas (NS 300 2021),* as the recognised deemed to satisfy solutions.

DETERMINED BAL RATINGS

A BAL can only be classed as 'determined' and therefore apply to an existing or future building/structure when:

1. The building/structure final design and position on the lot are known and the stated separation distance from classified bushfire prone vegetation exists and can justifiably be expected to remain in perpetuity; or
2. The building/structure will always remain subject to the same BAL regardless of:
    (a) The retention of all existing classified vegetation either on-site or off-site; and
    (b) Its design or position on the lot - including, as relevant and necessary, accounting for any regulatory or enforceable building setbacks from lot boundaries (e.g. R-codes and defined building envelopes).

Consequently, a BAL Certificate may be able to be issued for a BAL stated in the BMP when it can be considered 'determined'. However, this is not the typical outcome but an incidental one.

If the BMP can derive determined BAL(s), the BAL Certificate(s) required for submission with building applications could potentially be provided, using the BMP as the supporting assessment data.

INDICATIVE AND CONDITIONAL BAL RATINGS

An 'Indicative BAL' indicates the highest BAL rating that exists for the applied set of parameters that have been applied to the site's assessment. Because the potential remains for these parameters to be varied, they are unable to be considered a 'determined' BAL.

A 'Conditional BAL' establishes the BAL rating that will be considered as a 'Determined BAL' once the stated requirements (i.e. the conditions), which may require approval by the relevant authority, are implemented and subsequently confirmed as being met.

Relevant conditions that may need to be met include:

- The location of future development sites being identified accurately and/or modified; and/or
- Classified vegetation being modified or removed (after obtaining any required approvals from the relevant authority), to establish the required vegetation separation distances.

A BAL Certificate cannot be issued for an indicative or conditional BAL rating – only for a 'Determined BAL'.

BAL RATINGS FOR BUILDING VERSUS PLANNING PURPOSES – ASSESSMENT & REPORTING REQUIREMENTS ARE DIFFERENT

Building Permit Applications

The relevant requirements are established in accordance with the WA Building Act 2011 and Building Regulations 2012 which reference the application of the Building Code of Australia (within the National Construction Code).

The required BAL rating is a 'determined' BAL rating (stated on a BAL Certificate) and supported by the requisite assessment details. Typically, this will be a Bushfire Attack Level (BAL) Report produced specifically for this purpose.

The required supporting assessment information may be derived from a Bushfire Management Plan (BMP) when a 'determined' BAL can be derived for a planning proposal. This is possible when the specific conditions discussed under 'Determined BAL Ratings' above, can be met, as an incidental outcome.

Planning Proposal Applications

The relevant requirements are established in accordance with the Planning and Development Act 2005, LPS Regulations 2015, SPP 3.7 Bushfire and the associated Guidelines.

To comply with the relevant acceptable solutions contained in the Guidelines, the subject planning proposal must demonstrate that the required minimum sized asset protection zone (APZ) - subject to location constraints and allowances established by the Guidelines - can be installed surrounding a habitable or specified building.

The minimum dimensions are those that ensure the potential radiant heat impact on the relevant buildings does not exceed 29 kW/m^2 from fire in any surrounding types of classified vegetation. This is the upper limit of the range of radiant heat flux corresponding to the BAL-29 rating.

Consequently, the BAL ratings identified in a Bushfire Management Plan (BMP) only need to be 'indicative' - although 'determined' ratings may be derived as an incidental outcome when relevant conditions are met (discussed under 'Determined BAL Ratings' above).

The indicative BAL-29 dimensioned APZ is not necessarily the APZ that will be required to be implemented and maintained surrounding any subject building/structure that exists as per an approved planning proposal. Refer to Appendix B3 in this BMP for additional information.

B2: BAL Contour Map Interpretation

THE BAL CONTOUR MAP

The Bushfire Attack Level (BAL) contour map is a diagrammatic representation of the outcome of the bushfire attack level assessment that has been conducted.

The map presents six shaded radiant heat contours extending out from each area of classified vegetation. Each coloured contour represents a different BAL rating (BAL-LOW, BAL-12.5, BAL-19, BAL-29, BAL-40 and BAL-FZ) and corresponds to a set range of potential radiant heat transfer (kW/m^2), in accordance with AS 3959:2018 BAL determination methodology.

The highest BAL rating contour that an exposed element (building, person or other defined element), is partly or fully located within, is the BAL rating that will apply to that element.

The width of each BAL contour:

- Will vary dependent on the BAL rating it represents; and
- The assessed potential bushfire behaviour that considers site specific vegetation types, fuel loads, ground slopes and fire weather; and
- Represents the minimum and maximum vegetation separation distances corresponding to the BAL rating it represents.

For 'post development' BAL contour maps, the areas of classified vegetation applied to the production of the BAL contours, are those that will remain at the intended end state of the subject development once earthworks, clearing and/or landscaping and/or re-vegetation have been completed.

IMPORTANT

A BAL contour map is typically constructed for planning assessment and application purposes rather than building permit application purposes.

The BAL ratings identified from a BAL contour map will likely only be 'indicative' of what can be achieved – with planning compliance for this factor being satisfied when BAL-29 is indicated.

However, future building works require a 'determined' BAL rating for building permit applications and a BAL Certificate. The required 'determined' BAL rating is not necessarily able to be derived from the BAL contour map. There are only limited scenarios where this is possible. Refer to Appendix B1 and B3 for additional information.

Consequently, a subsequent assessment of the site data and associated report for building application purposes may be required to determine the BAL rating that is to apply for building purposes. Note: If approval from the relevant authority needs to be obtained for native vegetation modification and/or removal this also establishes that a subsequent assessment and report will be required.

B3: The Asset Protection Zone (APZ)

THE APZ – DESCRIPTION, TECHNICAL REQUIREMENTS AND DIMENSIONS

DESCRIPTION AND PURPOSE

An asset protection zone (APZ) is an area surrounding a habitable or specified building that is:

- Not vegetated; and/or
- Supports retained or planted vegetation that can be considered to present a low bushfire threat as a result of;
    - Low flammability and/or higher moisture content characteristics; and/or
    - Minimal fuel loads (either naturally or as a result of continual maintenance).

The primary objectives of establishing an APZ are:

1. To ensure a reduction in the exposure of the building/structure to the bushfire direct attack mechanisms (threats) of flame contact, radiant heat transfer and ember attack, by establishing appropriate separation distances from each identified area of classified vegetation.

   These distances are measured from the nearest part of an external wall and/or the supporting posts of building parts without external walls; and
2. To ensure a reduction in the exposure of the building/structure to bushfire indirect attack mechanisms (threats) by:
    - Preventing surface fire spreading to the building/structure;
    - Minimising the potential for tree strike that can decrease building/structure resilience to bushfire direct attack mechanisms; and
    - Limiting the potential for consequential fires to impact the building/structure by eliminating, reducing, moving away and/or shielding consequential fire fuels.

      These fuels include accumulated debris, stored combustible/flammable items and constructed combustible items. Note that consequential fire, typically ignited by embers, is the primary cause of building loss in a bushfire event; and
3. To provide a defendable space for firefighting activities.

TECHNICAL REQUIREMENTS

Established by the Guidelines

The relevant technical requirements for an APZ are established in the Planning for Bushfire Guidelines (DPLH/WAPC) (as amended), Appendix B2: Siting and design and available online at Planning WA - SPP 3.7 Bushfire

Established by the Relevant Local Government

Certain LGA may state technical requirements to be complied with that vary from and/or are additional to those established by the Guidelines.

Refer to the notice issued annually by the relevant local government under s33 of the Bushfires Act 1954 (e.g. Bushfire Risk Reduction Notice or Firebreak and Hazard Reduction Notice etc). These technical requirements may also be established by their gazetted local planning scheme. Refer to the ratepayer notice and/or the local government's website for the current version.

Information Published by the Bushfire Centre of Excellence (DFES)

The book titled Firewise Gardening in Western Australia (2024), is a good source of relevant information and is available online at https://dfes.wa.gov.au/hazard-information/bushfire/bcoe#bushfire-resources.

DIMENSIONS

The dimensions of the APZ that will be the responsibility of an Proponent to implement and/or maintain around a habitable or specified building/structure, are stated as the separation distances between these buildings and each identified area of classified vegetation. These distances will be site specific and dependant on variables which include:

- The potential bushfire behaviour in the identified vegetation which is dependent on factors including vegetation types, fuel loads, ground slopes and fire weather;
- The intended use of the site, with vulnerable uses requiring greater safety margins; and
- The constructed bushfire resistance of the subject building/structure (typically corresponding to a BAL rating or kW/m^2 level of radiant heat exposure).

For development applications, refer to the Bushfire Protection measure Implementation Checklist in Section 6 for the relevant dimensions for the subject site.

Dimensions Established by the BAL Rating of the Subject Building/Structure

These minimum separation distances, to be installed and maintained, correspond to a 'determined' BAL rating and align the building's applied level of bushfire resistant construction to its potential level of exposure to flames, radiant heat and embers from the bushfire (note: this will not account for any exposure from significant consequential fires closer to the building).

The dimensions should be stated within a Bushfire Attack Level Report (BAL Report) produced for building application purposes. They may also be identified in an associated Bushfire Management Plan (BMP) produced for planning application purposes.

Dimensions Established by the Guidelines, DPLH/WAPC for an On-site Shelter for a Vulnerable Tourism Land Use

For the stated specific use, the Guidelines specify the maximum level of radiant heat exposure allowed. Consequently, the BMP produced for planning application purposes will state the minimum distances that are to be installed and maintained.

> *Note: Other than for the above use, the Guidelines do not establish the dimensions of the APZ for other buildings/structures that must be installed. They only establish that at least a BAL-29 dimensioned APZ should be the minimum that is installed and ensures that this is possible for the subject planning proposal. Consequently, the BMP can only indicate the separation distances corresponding to different levels of radiant heat exposure. Refer also to Appendix B1 in this BMP.*

Dimensions Established by this BMP

The required dimensions may be identified in this BMP when specific increased separation distances have been applied through the application of an outcomes-based assessment that requires this as an additional protection measure.

Dimensions Established by the BCA (NCC 2022) for Certain Class 9 Vulnerable Use Buildings

These separation distances are stated in the BCA in Specification 43 as either:

- Not less than the minimum distances specified in Table S43C2; or
- Those corresponding to radiant heat flux on exposed building elements not exceeding 10kW/m^2 from a justified design bushfire analysis; or
- Those justified as an outcome of a building performance solution.

The separation distances may be included in the BMP by the bushfire practitioner as additional information to inform proponents and decision makers. They are not addressed by the Guidelines and therefore not a required part of the bushfire assessments presented within a BMP for planning application purposes.

Dimensions Established by a Local Government

To satisfy certain local government requirements, required APZ dimensions may be stated in the notice issued annually by the relevant local government under s.33 of the Bushfires Act 1954. These may be greater than the dimensions applied by the above mechanisms. A maximum APZ dimension could also be applied by the LGA.

These separation distances may be included in the BMP for informative purposes, but they are not a requirement for a BMP submitted for planning application purposes in accordance with the Guidelines.

B4: Vegetation Excluded from Classification – Ensure Continued Low Threat Status

MAINTAINING THE LOW THREAT STATUS OF EXCLUDED VEGETATION

When applying AS 3959:2018 BAL determination methodology, vegetation adjoining or adjacent to the subject site can be excluded from classification based on being a 'low bushfire threat'. To maintain this status, certain requirements must continue to be met in accordance with the below extract from AS3959:2018. Refer to the 'Classified Vegetation and Topography Map' for the relevant low threat areas associated with the subject site.

Determination of 'low threat' vegetation is based on factors such as - proximity to the subject site / small areas of vegetation / low flammability / higher moisture content / low fuel load.

Aside from a naturally occurring low fuel load, vegetation maintained in a minimal fuel condition through active management can be excluded. The associated key requisite is that the active management can be expected to continue in perpetuity, and this can be adequately justified.

Acceptable forms of justification typically involve supportable evidence or the existence of an enforceable mechanism. Examples of enforceable mechanisms include:

- Requirements established by a Section 33 (Bush Fires Act 1954) notice issued by a local government;
- An appropriate and enforceable agreement between relevant parties (which may involve additions to land titles); and
- For public open space or crown land, written evidence that the land manager e.g. local government or a State Government department, agrees to maintain the designated area of land in a low threat state in perpetuity.

2.2.3.2 *Exclusions—Low threat vegetation and non-vegetated areas*

The following vegetation shall be excluded from a BAL assessment:

(a) Vegetation of any type that is more than 100 m from the site.

(b) Single areas of vegetation less than 1 ha in area and not within 100 m of other areas of vegetation being classified vegetation.

(c) Multiple areas of vegetation less than 0.25 ha in area and not within 20 m of the site, or each other or of other areas of vegetation being classified vegetation.

(d) Strips of vegetation less than 20 m in width (measured perpendicular to the elevation exposed to the strip of vegetation) regardless of length and not within 20 m of the site or each other, or other areas of vegetation being classified vegetation.

(e) Non-vegetated areas, that is, areas permanently cleared of vegetation, including waterways, exposed beaches, roads, footpaths, buildings and rocky outcrops.

(f) Vegetation regarded as low threat due to factors such as flammability, moisture content or fuel load. This includes grassland managed in a minimal fuel condition, mangroves and other saline wetlands, maintained lawns, golf courses (such as playing areas and fairways), maintained public reserves and parklands, sporting fields, vineyards, orchards, banana plantations, market gardens (and other non-curing crops), cultivated gardens, commercial nurseries, nature strips and windbreaks.

NOTES:

1 Minimal fuel condition means there is insufficient fuel available to significantly increase the severity of the bushfire attack (recognizable as short-cropped grass for example, to a nominal height of 100 mm).

2 A windbreak is considered a single row of trees used as a screen or to reduce the effect of wind on the leeward side of the trees.

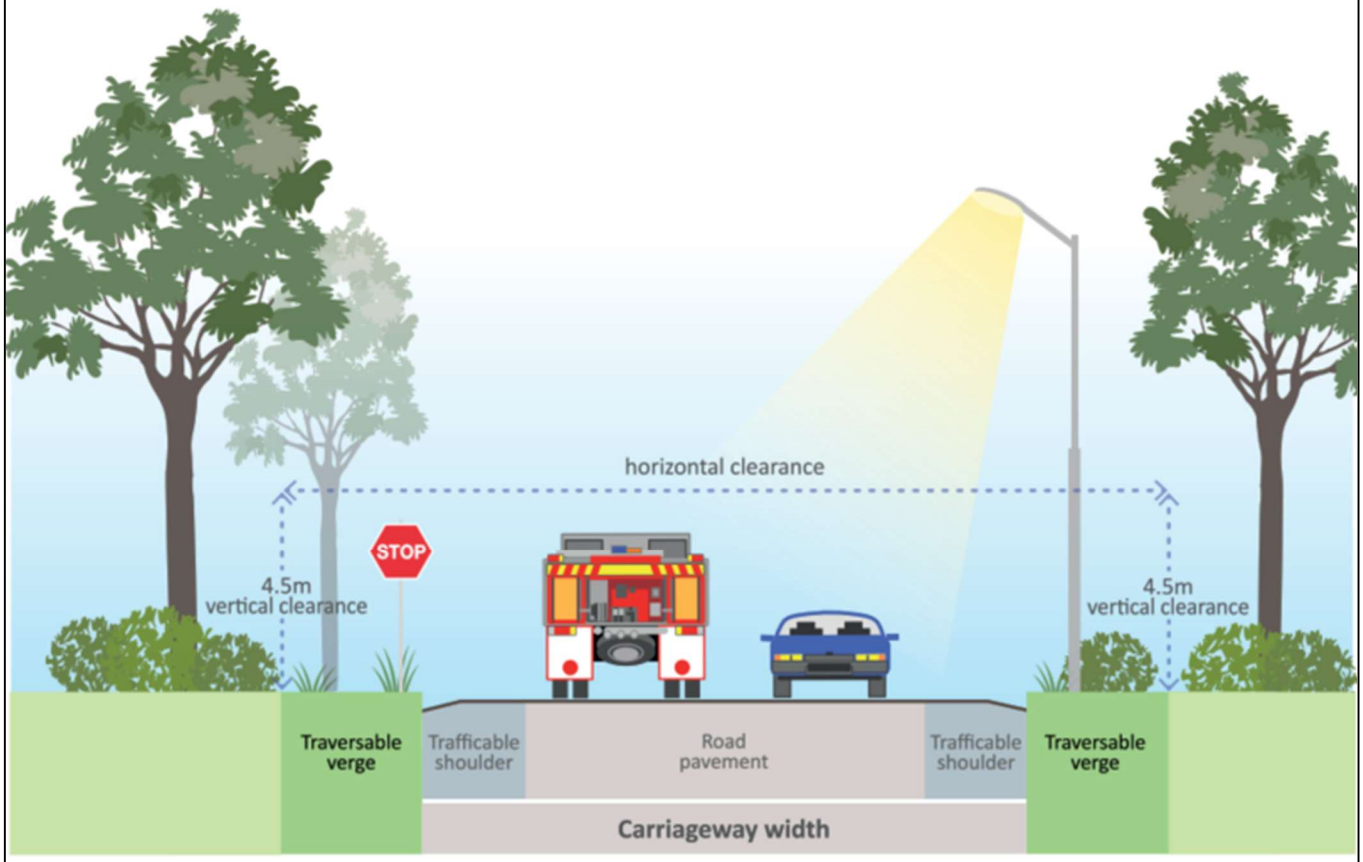
APPENDIX C: GUIDANCE - TECHNICAL REQUIREMENTS FOR VEHICULAR ACCESS

The relevant technical requirements are established in the Planning for Bushfire Guidelines (DPLH/WAPC) (as amended), Appendix B3: Vehicular access and available online at Planning WA - SPP 3.7 Bushfire

The following excerpts are presented here as a quick reference to applicable terminology and design requirements applied in the assessment against the bushfire protection criteria, Element 3: Vehicular access in this BMP.

C1: Road Component Terminology

Figure 26: Area encompassing horizontal clearance and vertical clearance



Horizontal clearance: The carriageway width (including the road pavement and trafficable shoulder) and traversable verge that provides for the movement and parking of vehicles and area required by emergency services to operate. Infrastructure and vegetation within the traversable verge should be frangible, however, non-frangible items can occur providing they do not restrict vehicular movement in the event of an emergency.

C2: Vehicular Access Technical Requirements

Table 10: Vehicular access technical requirements

	1		2		3		4		5	
TECHNICAL REQUIREMENTS	**PERIMETER ROADS**		**PUBLIC ROADS**		**EMERGENCY ACCESS WAY[3]**		**FIRE SERVICE ACCESS ROUTE[3]**		**BATTLE-AXE & PRIVATE DRIVEWAYS[1]**	
MAP OF BUSH FIRE PRONE AREAS DESIGNATION	**Area 2**	**Area 1**	**Area 2**	**Area 1**	**Area 2**	**Area 1**	**Area 2**	**Area 1**	**Area 2**	**Area 1**
Minimum horizontal clearance (metres)	12	8	See note 5		10	6	10	6	6	
Minimum vertical clearance (metres)	4.5									
Minimum weight capacity (tonnes)	15									
Maximum grade unsealed road[2]	See note 5		See note 5		1:10 (10% or 6°)					
Maximum grade sealed road[2,4]					1:7 (14.3% or 8°)					
Maximum average grade sealed road					1:10 (10% or 6°)					
Minimum inner radius of road curves (metres)					8.5					

Notes:

[1] Driveways and battle-axe legs to comply with the Residential Design Codes and Development Control Policy 2.2 Residential Subdivision where not required to comply with the widths in this Appendix or the Guidelines.

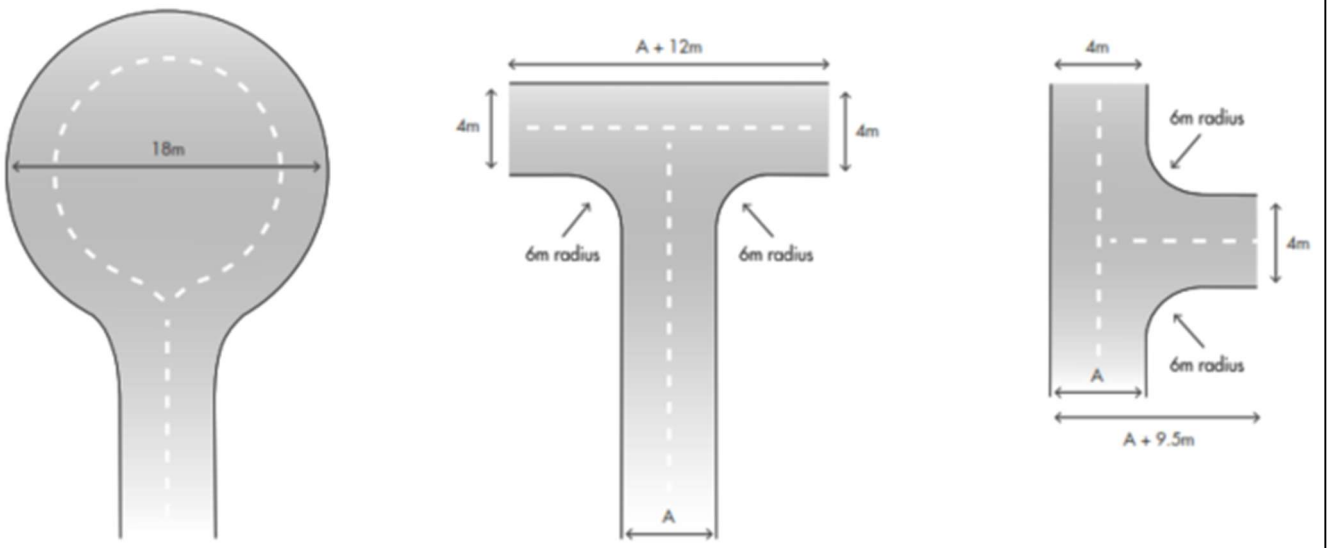
[2] Dips must have no more than a 1 in 8 (12.5% - 7.1 degrees) entry and exit angle.

[3] To have crossfalls between 3 per cent and 6 per cent.

[4] For sealed roads only the maximum grade of no more than 1 in 5 (20 per cent) (11.3 degrees) for no more than 50 metres is permissible, except for short constrictions to 3.5 metres for no more than 30 metres in length where an obstruction cannot be reasonably avoided or removed.

[5] As outlined in the Institute of **Public Works Engineering Australasia (IPWEA) subdivision guidelines, Liveable Neighbourhoods, Austroads Standards** Main Roads standard, supplement, policy or guideline and/or any applicable or relevant local government standard or policy.

Figure 30: Design requirements for a turn-around area



APPENDIX D: GUIDANCE - TECHNICAL REQUIREMENTS FOR FIREFIGHTING WATER SUPPLY

The relevant technical requirements are established in the Planning for Bushfire Guidelines (DPLH/WAPC) (as amended), Appendix B4: Water supply and available online at Planning WA - SPP 3.7 Bushfire

The information provided in this appendix is additional to that provided in the Guidelines. It includes:

- For reticulated water supply, the hydrant location specifications established by the WA Water Corporation (Design Standard DS 63), as dependant on land use type and relevant to bushfire planning assessments (highlighted). Note: the maximum distance from a hydrant to the rear of a lot/building is generally interpreted as not applicable to large lot sizes where the maximum distance becomes an impractical limitation i.e., typically rural residential areas; and
- Images of example installations of acceptable water supply tanks and outlet fittings.

D1: Hydrant Location in Reticulated Areas

Design Standard DS 63
Water Reticulation Standard

WATER CORPORATION

2.2.1.5 Appurtenances

c. Hydrants

Hydrants shall be screw-down hydrant with built-in isolation valve and installed only on DN100 or larger pipes. Hydrants shall be located:

- so that the maximum distance between a hydrant and the rear of a building envelope, (or in the absence of a building envelope the rear of the lot) shall be 120m;
- so that spacing (as measured by hose-run) between hydrants in non-residential or mixed use areas shall be maximized and no greater than 100m;
- so that spacing (as measured by hose-run)between hydrants in residential areas with lots per dwelling <10,000m^2 shall be maximized and no greater than 200m;
- so that spacing between hydrants (as measured by hose-run) in rural residential areas where minimum lots per dwelling is >10,000 m^2 (1ha) shall be maximized and no greater than 400m;
- centrally along the frontage of a lot to avoid being under driveways, unless the lot features a frontage 6m or less, in which case it shall be placed to the side opposite the driveway;
- at lots that have the widest frontage in the local area;
- where appropriate at the truncation of road junctions or intersections so that they can serve more than one street and can be readily located;
- on both sides of the major roads at staggered intervals where there are mains on both sides of the road;
- at major intersections on dual multi-lane roads, where two hydrants are to be sited on diagonally opposite corners;
- hydrants should be located at least 20m from traffic calming devices i.e. median slow points or chokers, chicanes, mini traffic circles, and **intersection 'pop-outs' to ensure traffic is not** impeded;
- in a position not less than 10m from any high voltage main electrical distribution equipment such as transformers and distribution boards, liquefied petroleum gas or other combustible storage
- directly on top of the main using a tee unless proved to be impractical

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Page 19 of 49

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D2: Firefighting Water Supply - Tank and Fittings

GOVERNMENT OF WESTERN AUSTRALIA | DFES Department of Fire & Emergency Services | Bushfire Centre of Excellence
TRAINING / KNOWLEDGE / ENGAGEMENT

Water tank connections for bushfire-prone areas (domestic and commercial)

Information Sheet, January 2025

This fact sheet provides information on how to best set up water supplies to assist firefighters on properties in bushfire-prone areas. It includes information on the siting, capacity, access and appropriate fittings needed for firefighters to access and use water supplies during an emergency.

Please note: if you are establishing water supplies to comply with planning requirements, you should read this fact sheet in conjunction with the *Planning for Bushfire Guidelines*, as well as relevant planning schemes or policies from your local government.



What fittings should I fit the water tank with?

All tanks for firefighting should be fitted with a 50 millimetres or 100 millimetres male camlock fitting. This fitting is readily available from most hardware and rural supply shops. DFES recommends a male camlock fitting, as it means there are no perishable washers or working parts to maintain.

The fitting should be controlled by a butterfly, ball or gate valve, as these can easily control flow.



Why do I need a water tank for bushfires on my property?

You may have a water tank dedicated to bushfires to make your property as resilient as possible, or it may be a formal requirement under relevant planning or building regulations.

A water tank dedicated to firefighting supports firefighters attempting to protect your property and other assets from bushfires. You should consider a dedicated water tank alongside other bushfire prevention and preparedness activities, such as managing bushfire fuels and having a bushfire plan.

Where should I site a water tank?

You should site water tanks on clear, level ground compacted to take the maximum weight of the tank when full.

The tank should also be in a low-fuel area with at least 3 metres cleared around it to prevent direct contact with flames.

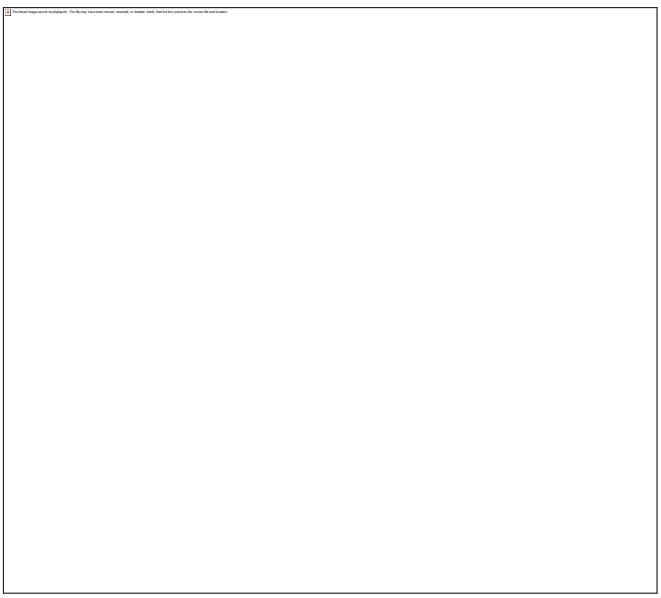
The water tank must be accessible to firefighting appliances and include a suitable area for these to turn around. You can find more information on recommended minimum standards for access in the *firebreak construction guidelines*.

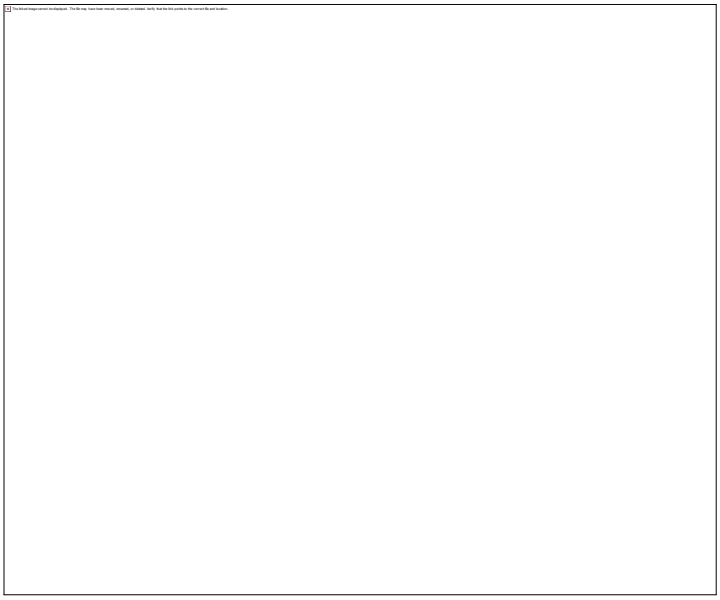
What capacity should the tank be?

The recommended minimum capacity for a firefighting water supply is 10,000 litres.

You may be using the tank for other purposes besides bushfire fighting, such as water for livestock or other rural purposes. However, it is recommended that a minimum of 10,000 litres is always available for firefighting.







Example Strategic 47,000 Litre Concrete Tank & Protected Fittings



Example 10,000 Litre Concrete Tank



Example Storz and Camlock Couplings

ATTACHMENT 1: BUSHFIRE RISK REPORT