

Bushfire Management Plan Coversheet

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

Bushfire Management Plan and Site Details

Site Address / Plan Reference: Mahala, Stages 13 and 14, Allen Road			
Suburb: Forrestdale	State: WA	P/code: 6112	
Local government area: City of Armadale			
Description of the planning proposal: Residential Development			
BMP Plan / Reference Number:		Version: Revision 2	Date of Issue: 05 March 2024
Client / Business Name: Anstey Road Developments Pty Ltd			

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


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

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

BPAD Accredited Practitioner Details and Declaration

Name Sue Brand	Accreditation Level Level 2 BPAD Practitioner	Accreditation No. 36638	Accreditation Expiry 30 April 2024
Company MBS Environmental		Contact No. 0439 435 110	

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

Signature of Practitioner		Date	05 March 2024
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**BUSHFIRE MANAGEMENT PLAN
MAHALA STAGES 13 AND 14
ALLEN ROAD FORRESTDALE**

PREPARED FOR:

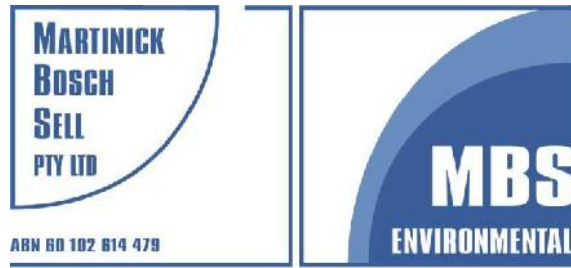
ANSTEY ROAD DEVELOPMENTS PTY LTD

MARCH 2024

PREPARED BY:

Martinick Bosch Sell Pty Ltd
4 Cook Street
West Perth WA 6005
Ph: (08) 9226 3166
Email: info@mbsenvironmental.com.au
Web: www.mbsenvironmental.com.au

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MAHALA STAGES 13 AND 14 FORRESTDALE BUSHFIRE MANAGEMENT PLAN

Distribution List:

Company	Contact Name	Copies	Date
Anstey Road Developments Pty Ltd	Jordan Williams, Senior Development Manager	[01]	05 March 2024

Document Control for Job Number: LWPMS13&14

Document Status	Prepared By	Authorised By	Date
Draft Report	Sue Brand	Matthew Todd	18 October 2023
Final Report	Sue Brand	Matthew Todd	20 October 2023
Revision 1	Sue Brand	Matthew Todd	06 November 2023
Revision 2	Sue Brand	Matthew Todd	05 March 2024

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TABLE OF CONTENTS

1.	BACKGROUND INFORMATION	1
1.1	LOCATION	1
1.2	AIMS AND OBJECTIVES	1
1.3	DOCUMENT PREPARATION	2
2.	CONSIDERATION OF BUSHFIRE THREAT	4
2.1	SITE CHARACTERISTICS.....	4
2.1.1	Regional Context.....	4
2.1.2	Vegetation	4
2.1.3	Contours and Slope.....	4
2.1.4	Land Use	4
2.1.5	Environmental Considerations.....	5
2.1.6	Landscaping	5
2.2	VEGETATION CLASSIFICATION	7
2.2.1	Patch 1: Class D Scrub	7
2.2.2	Patch 2: Class A Forest.....	8
2.2.3	Patch 3: Class G Grassland	9
2.2.4	Patch 4: Low-Threat Vegetation	10
2.2.5	Patch 5: Non-vegetated Areas.....	11
2.3	BUSHFIRE HAZARD LEVEL.....	15
2.3.1	Bushfire Hazard Assessment	15
2.3.2	Fire Danger Index.....	15
2.3.3	Potential Fire Impacts	15
2.4	BAL ASSESSMENT	17
2.4.1	Stage 13	17
2.4.2	Stage 14	17
2.5	ASSET PROTECTION ZONE.....	17
2.6	SHIELDING	18
2.7	OTHER BUSHFIRE PROTECTION MEASURES	20
2.8	IMPLEMENTATION	20
2.9	RESPONSIBILITIES	20
2.9.1	Developer Responsibilities	20
2.9.2	City of Armadale Responsibilities	20
2.9.3	Owner and/or Occupier Responsibilities.....	21
3.	COMPLIANCE AND JUSTIFICATIONS	23
3.1	SPP 3.7 OBJECTIVES AND APPLICATION OF POLICY MEASURES.....	23
3.2	BUSHFIRE PROTECTION CRITERIA.....	24
3.3	COMPLIANCE WITH RELEVANT DOCUMENTS	31
3.4	COMPLIANCE STATEMENT.....	31
4.	REFERENCES	32

TABLES

Table 1:	BAL-Analysis	15
Table 2:	Implementation Schedule	22
Table 3:	SPP 3.7 Compliance Evidence	23
Table 4:	Compliance with Bushfire Protection Criteria	25

FIGURES

Figure 1:	Location	3
Figure 2:	Current Land Use	4
Figure 3:	Landscape Masterplan	6
Figure 4:	Class D Scrub	7
Figure 5:	Class A Forest	8
Figure 6:	Class G Grassland	10
Figure 8:	Low-Threat Vegetation	11
Figure 9:	Non-vegetated Areas	12
Figure 10:	Vegetation Classification as per AS 3959:2018	13
Figure 11:	Post-development Vegetation Classification	14
Figure 12:	Pre-development Bushfire Hazard Assessment	16
Figure 13:	BAL-Contours and Ratings	19

1. BACKGROUND INFORMATION

Anstey Road Developments Pty Ltd are in the process of clearing and developing Stages 13 and 14 of the Mahala Estate in Forrestdale (the Site), with a Bushfire Management Plan required to support the subdivision application. The broad aim of the assessment process was to identify potential bushfire risks to future properties along with defining appropriate management actions when the site is developed.

The Site is located within a bushfire prone area as designated by the Fire and Emergency Services Commissioner, Office of Bushfire Risk Management (OBRM), within the Department of Fire and Emergency Services (DFES) (2021). Accordingly, there is a requirement for landowners to undertake an assessment to determine the risks and identify appropriate management strategies such that future development does not increase the inherent bushfire risk. Portions of the site that are located within 100 m of vegetation designated as being bushfire prone necessitate the need for a bushfire attack level assessment (BAL assessment) and assigning a BAL-rating that will determine appropriate construction standards as per *AS 3959:2018 Construction of Buildings in Bushfire Prone Areas*. The BAL assessment component of this document considers current and projected site conditions (i.e. vegetation classification pre and post development), along with the provisions of State Planning Policy (SPP) 3.7 *Planning in Bushfire Prone Areas* (Department of Planning (DoP), Western Australian Planning Commission (WAPC), 2015), *Guidelines for Planning in Bushfire Prone Areas* (Department of Planning, Lands and Heritage (DPLH) and the Western Australian Planning Commission (WAPC), V1.4, 2021).

1.1 LOCATION

Stages 13 and 14 of the Mahala Estate are located in Forrestdale within the City of Armadale (Figure 1), and are:

- Approximately 22 km southeast of the Perth Central Business District (CBD) within the City of Armadale.
- Approximately 4.07 ha.
- Stage 13 is a triangular shaped development area located in the southwestern portion of Allen Rd near the intersection of Armadale Road to the south. Lots 6 and 317 are located to the northeast.
- Stage 14 comprises the 15 Lot development area to the northeast of Lots 6 and 317 to the northeast.

1.2 AIMS AND OBJECTIVES

The aim of the BMP is to outline the fire management methods and requirements that will be implemented within Stages 13 and 14 of the Mahala Estate. Accordingly, broad aims include:

- Reduce the occurrence of and minimise the impact of bushfire to the life and property of future residents and the environment.
- Allow easy access of firefighters if a bushfire does occur.
- Protect the landscape within the site as far as is possible.
- Document bushfire prevention requirements of the area to which it relates.

The objectives of this BMP are to:

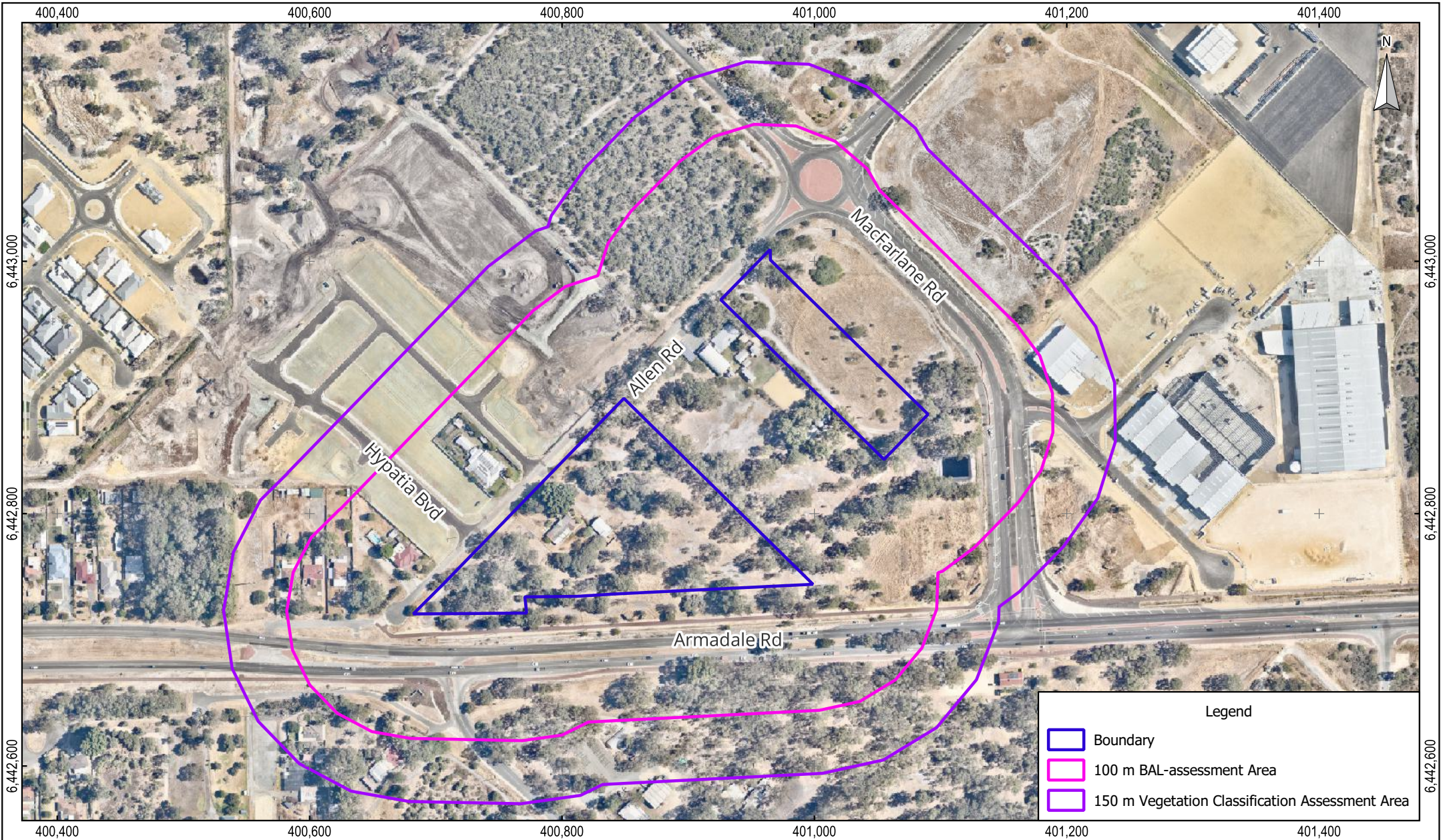
- Define land use areas and values within the subdivision, with the entire subdivision being developed as urban residential Lots in three locations either side of Allen Road, with a large patch of bushland to be retained in Lots 43 and 44 at the intersection of Allen and MacFarlane Roads.
- Define and rank fire hazard areas according to the vegetation classification and fire fuels present.
- Outline the roles and responsibilities of individuals and organisations in relation to fire management within the subdivision.

- Document fire management strategies for the subdivision, taking into consideration:
 - Vegetation to be retained in Lot 43 and grassland vegetation within Lot 6 (Figure 1).
 - The need for building construction standards where vegetated areas interface with the urban development.
 - Identify access for firefighting operations and daily maintenance in and around vegetated areas and Stages of development.
 - Define an assessment procedure that will evaluate the effectiveness and impact of existing and proposed fire prevention activities and strategies.
 - Document the performance criteria and acceptable solutions adopted for the site.

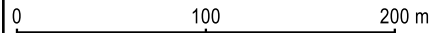
1.3 DOCUMENT PREPARATION

This document has been prepared by Sue Brand, an accredited Level 2 Bushfire Planning and Design (BPAD) practitioner with the Fire Protection Association Australia. Activities involved with the preparation process of the plan included:

- Assessing the vegetation type and class present within and adjacent to the proposed development site using descriptions provided in *AS 3959:2018 Construction of Buildings in Bushfire Prone Areas (AS 3959:2018)*.
- Assigning hazard ratings based on the vegetation types present on and offsite.
- Determining bushfire attack level (BAL) ratings and suggesting management strategies that could be implemented based on current and projected site considerations.
- Preparing this BMP.



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Mahala Stages 13 and 14
 Bushfire Management Plan
 Anstey Road Developments Pty Ltd

Figure 1

Location

Martinick Bosch Sell Pty Ltd
 4 Cook St
 West Perth WA 6005
 Australia
 t: +61 8 9226 3166
 info@mbsenvironmental.com.au
 www.mbsenvironmental.com.au



2. CONSIDERATION OF BUSHFIRE THREAT

2.1 SITE CHARACTERISTICS

2.1.1 Regional Context

Perth is located within the Swan Coastal Plain region of the Interim Biogeographical Regionalisation of Australia (IBRA). The Swan Coastal Plain comprises of two major divisions, namely the Swan Coastal Plain 1 – Dandaragan Plateau and Swan Coastal Plain 2 – Perth Coastal Plain. The Site is in the Perth subregion, which is broadly characterised as including areas of jarrah and banksia woodlands on sandy soils in a series of sand dunes, along with wetland areas, often within the interdunal swales (Mitchell, Williams, and Desmond, 2002).

2.1.2 Vegetation

Stages 13 and 14 are located on land where there is some level of vegetation present that has been the subject of previous disturbance and meets the definition of low threat vegetation as per AS 3959:2018. All vegetation within these Stages will be cleared ahead of development, while the vegetation within Lots 43 and 44 will be retained for the foreseeable future (Figure 1). A worst-case scenario approach has been adopted with respect to vegetation within Lot 6, with it being considered Class G Grassland for the assessment process associated with the BAL-assessment component of this BMP.

2.1.3 Contours and Slope

The Site and its surrounds are all upslope or flat land, and this is the slope that has been applied for the BAL assessment component of this document.

2.1.4 Land Use

Current land use within Stage 13 is used to support horse-related activities (Figure 2a). Long grass is kept slashed, with the next round of slashing to occur in coming weeks when the land dries out further after winter. Stage 14 is currently grassland that will be cleared ahead of development (Figure 2b).



Figure 2: Current Land Use

2.1.5 Environmental Considerations

The overall Mahala development site was previously zoned rural residential land, with the common use being horse-related activities similar to those currently occurring within Stage 13. These land uses mean that there were few environmental values present prior to development progressing, with the exception of the retained bushland within Lots 43 and 44 at the intersection of Allen and MacFarlane (previously Keane) Roads that will be retained in perpetuity (Figure 3).

Accordingly, within the Stage 13 and 14 boundaries, there are no:

- Bush Forever Sites.
- Wetlands or waterways.
- No known presence of threatened or priority listed flora, fauna, or ecological communities.

2.1.6 Landscaping

Clearing of most of the vegetation and landscaping will occur in POS areas 5 and 6, with the expectation that the areas will meet the definition of low threat vegetation as defined by AS 3959:2018. A copy of the Landscape Masterplan prepared by Emerge is provided as Figure 3.



Figure 3: Landscape Masterplan

2.2 VEGETATION CLASSIFICATION

Vegetation on and within 150 m of the Site was assessed during a site visit on 21 September 2023 using descriptions provided in Table 2.3 and Figure 2.4 of AS 3959:2018; each vegetation class is discussed and shown in Figure 4, Figure 5, Figure 6, Figure 7, and Figure 8. The pre-development vegetation classifications for the Site are shown in (Figure 9), with the post-development classifications shown in (Figure 10).

2.2.1 Patch 1: Class D Scrub

Class D Scrub is characterised by vegetation 2 – 4 m with a continuous canopy from ground level. This vegetation class is present in Lots 43 and 44 at the intersection of Allen and MacFarlane Roads (Figure 4). This area will be retained in perpetuity and thus represents an ongoing bushfire hazard to Lots within 100 m of its boundary.



Figure 4: Class D Scrub

2.2.2 Patch 2: Class A Forest

Class A Forest is characterised by trees to 30 m with a 30 – 70% canopy cover and may include an understorey of low trees and tall shrubs. This vegetation class is present across Armadale Rd the south (Figure 5) and is expected to be retained for the foreseeable future, thus represents an ongoing bushfire hazard to Lots facing Armadale Road.



Figure 5: Class A Forest

2.2.3 Patch 3: Class G Grassland

Class G Grassland includes all forms, including areas with the occasional tree or shrub if the overstorey canopy is less than 10%. This vegetation class is present in (Figure 6):

- Lot 6 to the northeast where a worst-case scenario approach has been adopted as there are no guarantees that the current owners will continue to maintain the area in a low threat condition. The consideration of this area as classified vegetation influences the number of Lots that will have a BAL-rating in both Stages 13 and 14.
- What will become a commercial centre adjacent to Stage 14, as well as across MacFarlane Rd to the northeast. Grassland patches across MacFarlane Rd are more than 100 m from the Site, thus will not result in an increased bushfire risk due to its presence.
- The Grassland within Stage 14 will be cleared to accommodate the development, with that in the proposed commercial centre to be slashed to a maximum of 100 mm on a regular basis and maintained in a low-fuel state to prevent temporary BAL-ratings on nearby Lots.

Patch: 4	Classification or Exclusion Clause:	Class G Grassland
		
Photo ID 5		
		
Photo ID 6		



Photo ID 7

Figure 6: Class G Grassland

2.2.4 Patch 4: Low-Threat Vegetation

Vegetation may be considered low threat due to characteristics including flammability, moisture content, or fuel load, with examples including managed parkland/reserve areas, grassland maintained in a minimal fuel load through cropping to 20 cm or less, nature strips, wind breaks, market gardens, orchards, and playing fields. These locations are subject to exclusion clause 2.2.3.2 (f). Low-threat vegetation subject to exclusion clause 2.2.3.2 (f) is present in (Figure 7):

- Rural residential properties currently present along Allen Rd and Armadale Rd, noting that regular slashing of grass occurs on Lots to keep grass down to a height of less than 100 mm, thus maintaining it in a low-fuel state.
- The Armadale Rd median strip.
- Proposed POS locations that will be landscaped and maintained in a low fuel condition.
- Other grassed areas within or in proximity to the development area that will be slashed on a regular basis and maintained in a low-fuel condition, including the proposed commercial centre adjacent to Stage 14.

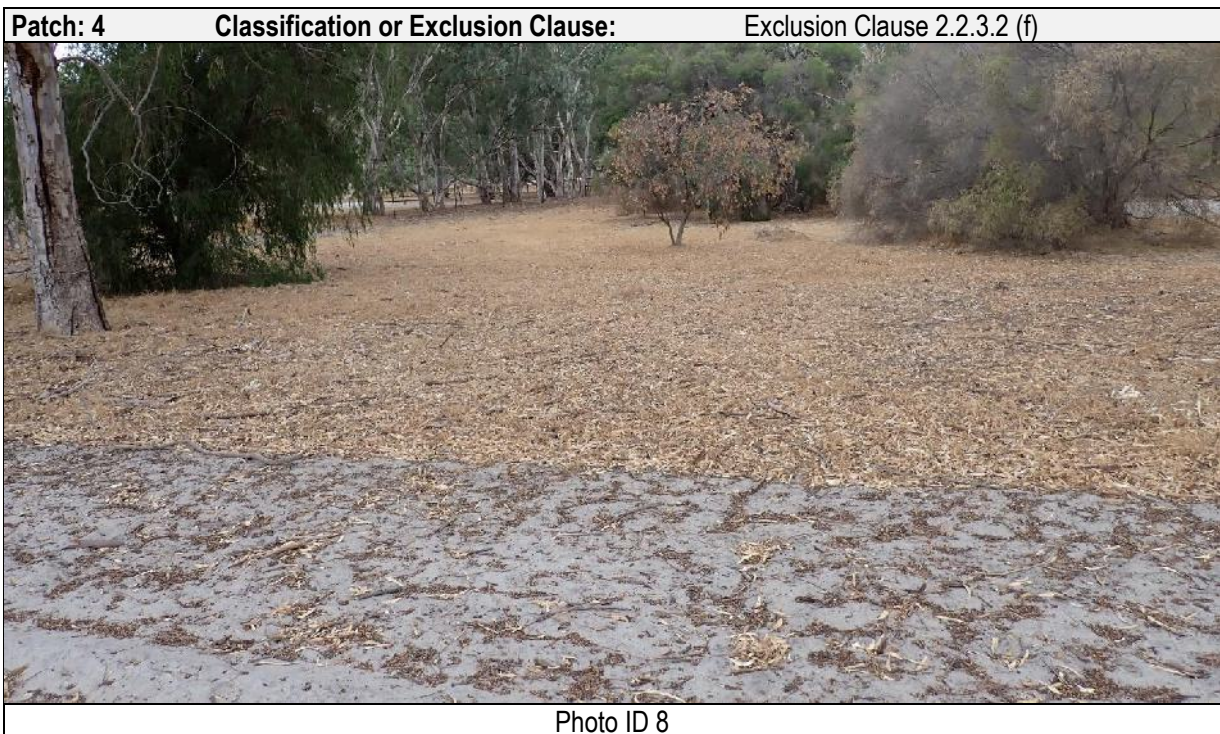




Photo ID 9

Figure 7: Low-Threat Vegetation

2.2.5 Patch 5: Non-vegetated Areas

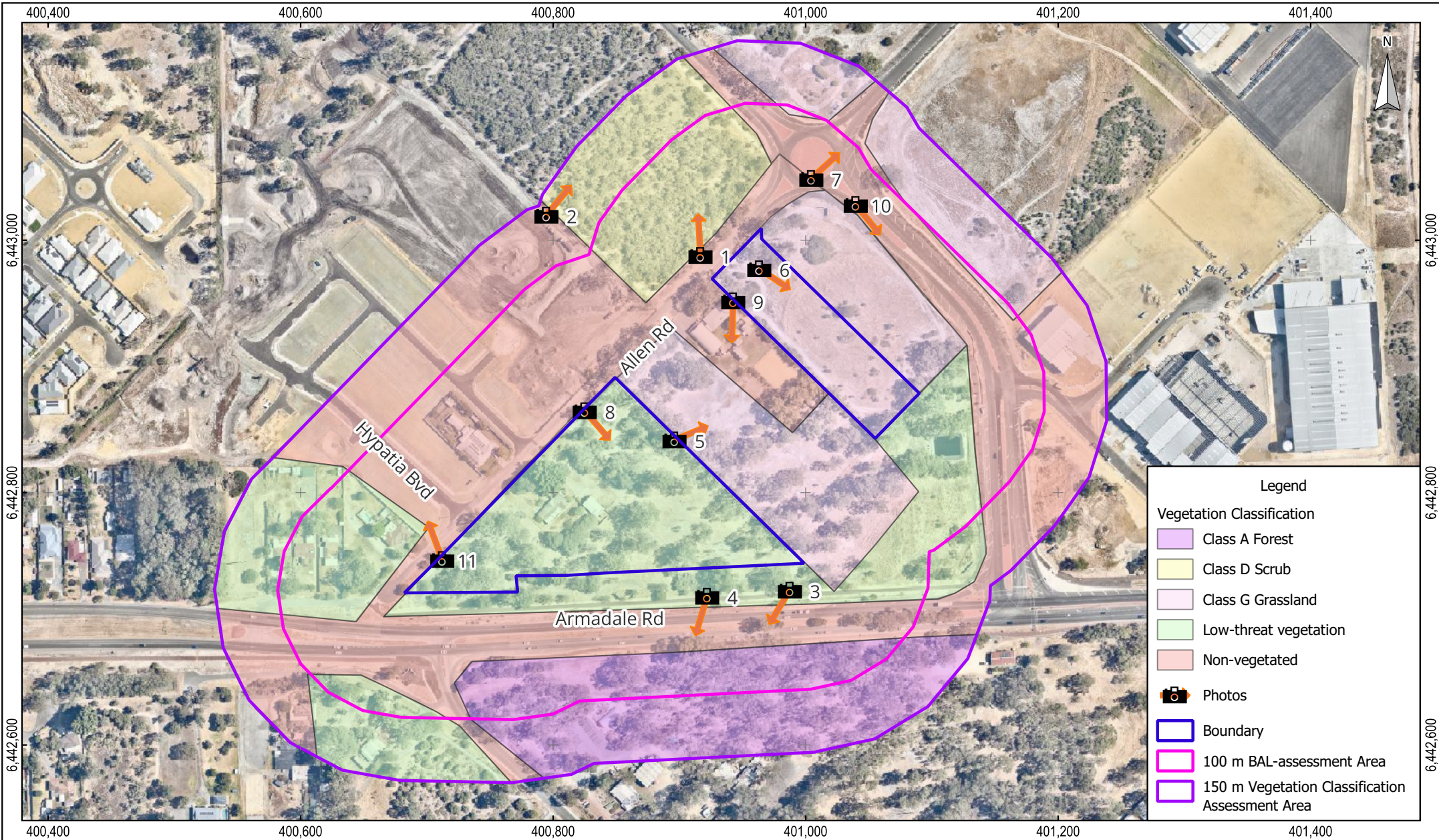
Non-vegetated areas are subject to exclusion clause 2.2.3.2 (e), with those within and close to the Site including (Figure 8):

- Roads and footpaths.
- Land cleared of vegetation.
- Existing development in preceding development stages.





Figure 8: Non-vegetated Areas



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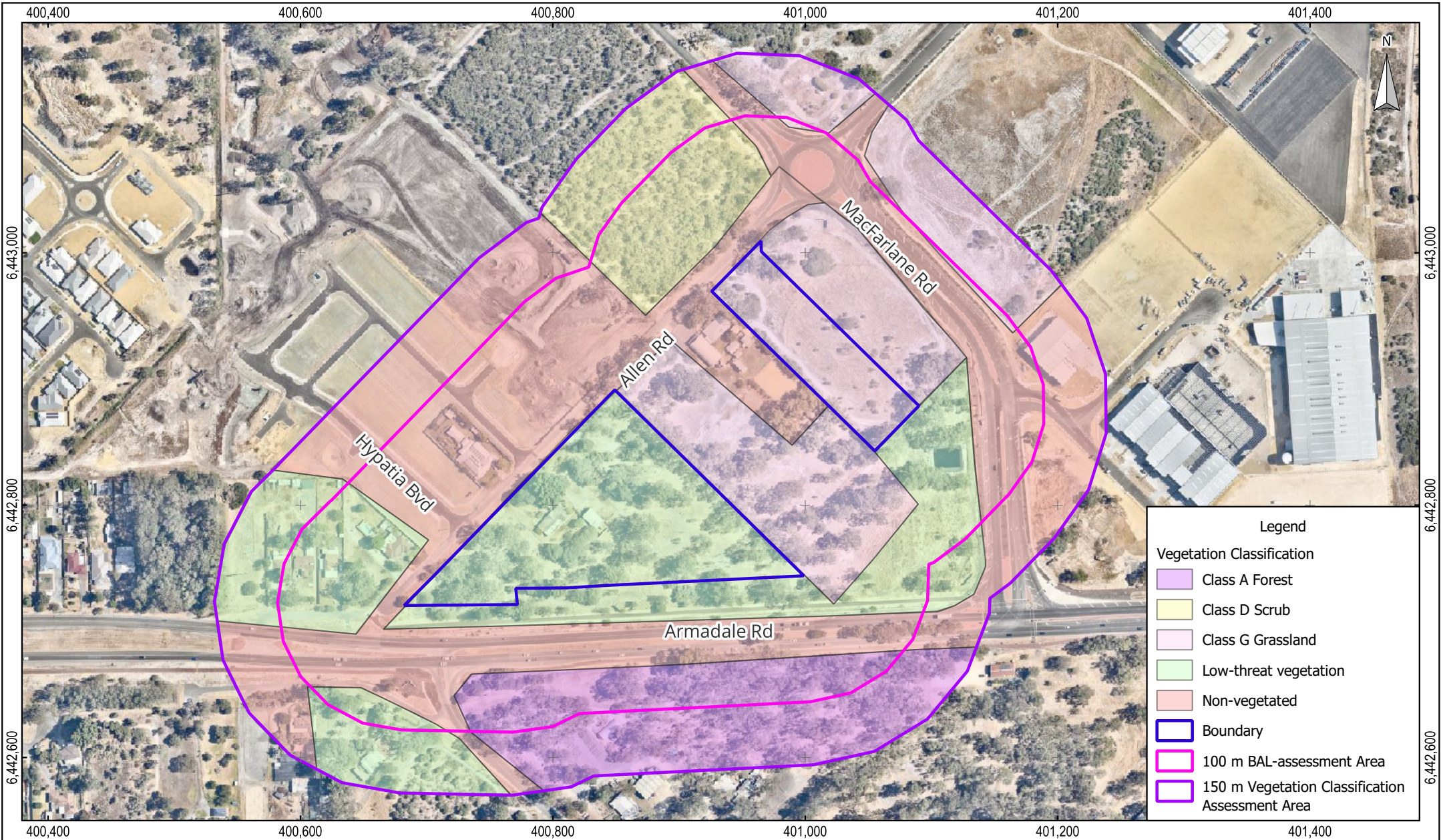
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Mahala Stages 13 and 14
 Bushfire Management Plan
 Anstey Road Developments Pty Ltd

Figure 9
Pre-development Vegetation Classification
as per AS 3959:2018

Martinick Bosch Sell Pty Ltd
 4 Cook St
 West Perth WA 6005
 Australia
 t: +61 8 9226 3166
 info@mbsenvironmental.com.au
 www.mbsenvironmental.com.au





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Figure 10
**Post-development
 Vegetation Classification**

Martinick Bosch Sell Pty Ltd
 4 Cook St
 West Perth WA 6005
 Australia
 t: +61 8 9226 3166
 info@mbsenvironmental.com.au
 www.mbsenvironmental.com.au



2.3 BUSHFIRE HAZARD LEVEL

2.3.1 Bushfire Hazard Assessment

A hazard rating (Low, Moderate, or Extreme) is assigned to vegetation according to its type. The nature of the vegetation in and around the development area means that the pre-development bushfire hazard rating ranges from Low to Extreme due to the Class D Scrub, Class A Forest, and Class B Woodland present within and in proximity to the Site (Figure 11). All locations within 100 m of these vegetation classes are assigned a Moderate hazard rating due to the increased risk in those locations, with all other locations being assigned a Low hazard rating.

2.3.2 Fire Danger Index

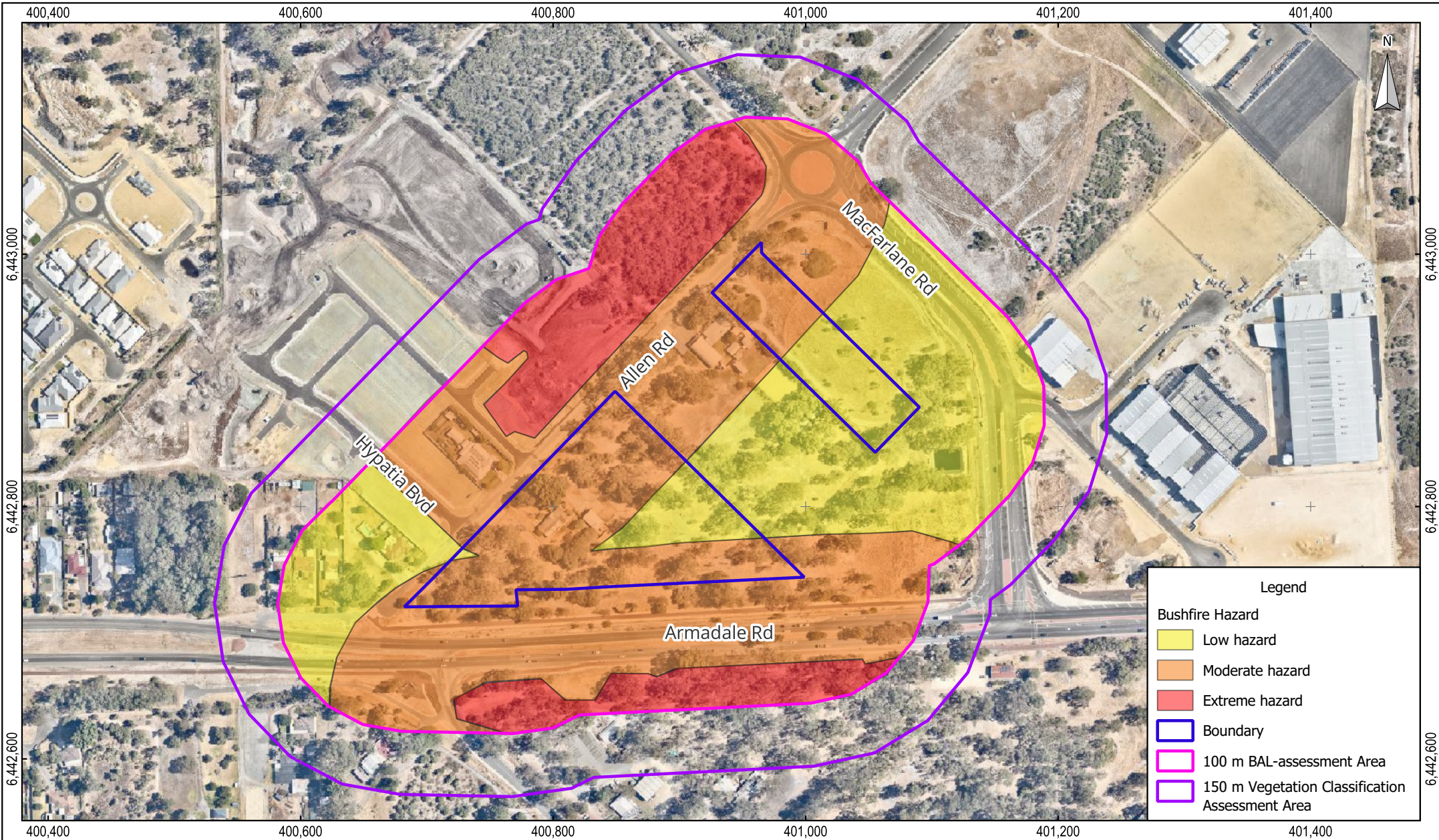
The fire danger index (FDI) for the Site is FDI 80, as documented in Table 2.4.3 of AS 3959:2018, and which is the nominated FDI for Western Australia.

2.3.3 Potential Fire Impacts

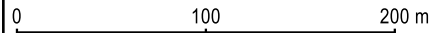
Potential fire impacts within the Site include radiant heat, smoke, and ember attack, with the BAL-analysis provided in Table 1.

Table 1: BAL-Analysis

Patch	Vegetation Class	Slope	Separation Distance (m)	BAL-rating
1	Class D Scrub	Flat	>23 m	Maximum BAL-19
2	Class A Forest	Flat	>70 m	Maximum BAL-12.5
3	Class B Woodland	Flat	Will be cleared ahead of development of Stages 8 and 10	BAL-Low
4	Class G Grassland	Flat	<6 m	BAL-FZ
		Flat	>50 m	BAL-Low
5	Low Threat Vegetation	Flat	N/A	BAL-Low
6	Non-vegetated Areas	Flat	N/A	BAL-Low



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 Original Size: A4
 Aerial Imagery: NearMap February 2024
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Mahala Stages 13 and 14
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Figure 11
**Pre-development
 Bushfire Hazard Assessment**

Martinick Bosch Sell Pty Ltd
 4 Cook St
 West Perth WA 6005
 Australia
 t: +61 8 9226 3166
 info@mbsenvironmental.com.au
 www.mbsenvironmental.com.au



2.4 BAL ASSESSMENT

The Lot layout for Stages 13 and 14 are known, so it is possible to determine BAL-ratings for each Lot and these are shown in Figure 12. Lot numbers have been assigned to most Lots within Stage 13, with a redesign of those in the vicinity of POS in Lot 8805 resulting in the creation of an additional Lot that has arbitrarily been labelled as Lot A. Lot numbers are available for all Lots in Stage 14. BAL-ratings for each stage documented in this BMP are outlined in the following Sections.

2.4.1 Stage 13

Some Lots within Stage 13 are located within 50 m of the Class G Grassland within Lot 6, 100 m of the Class D Scrub and the Class A forest vegetation to the northeast and south, with several Lots requiring a BAL-rating:

- BAL-Low: Lots 503 – 510, 519 – 523, 532.
- BAL-12.5: Lots A, 501, 502, 511 – 512, 517 – 518, 532 – 535, 540 – 542. Note that Lots 532 and 533 may be able to avoid a BAL-rating if the house design and placement is outside the BAL-12.5 (blue) contour line, meaning a BAL-Low rating may apply.
- BAL-19: Lots 513, 516, 536, 539, and 543
- No Lots will be rated BAL-29.
- No Lots will be rated BAL-40.
- Due to the proximity of the Class G Grassland in Lot 6, six Lots will be rated BAL-FZ, namely 514, 515, 537, 538, 544 and 545. The developer has committed to not developing these Lots until a maximum BAL-29 rating can be achieved.

2.4.2 Stage 14

Several Lots within Stage 14 are within 100 m of the Class D Scrub to the northwest and the Class A Forest to the south, with some Lots requiring a BAL-rating:

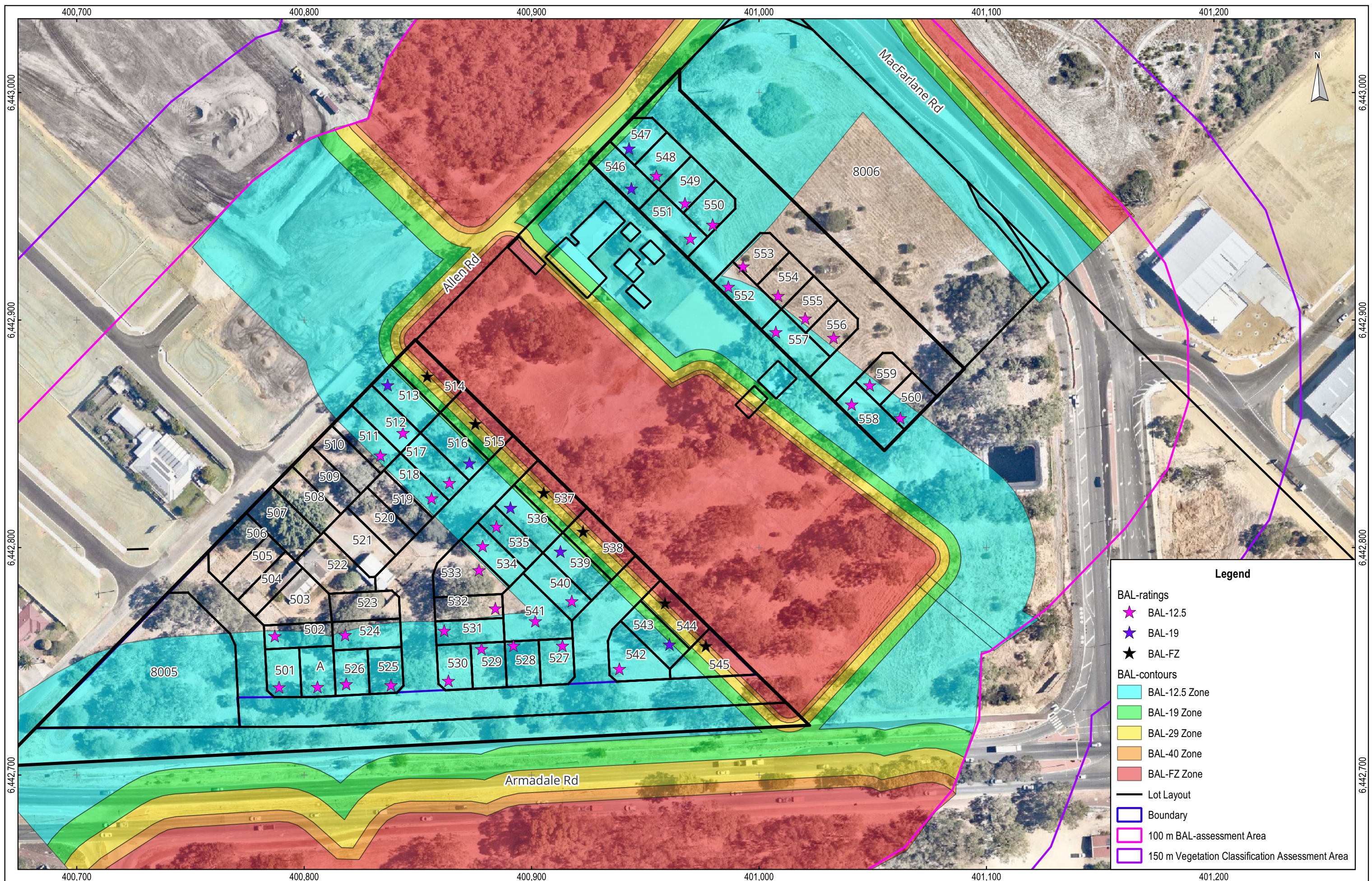
- No Lots will be rated BAL-Low.
- BAL-12.5: Lots 548 – 560.
- BAL-19: Lots 546 and 547, noting that depending on house design and placement outside the BAL-19 (green) contour line, a BAL-12.5 rating may apply.
- No Lots will be rated BAL-29.
- No Lots will be rated BAL-40 or BAL-FZ.

2.5 ASSET PROTECTION ZONE

The asset protection zone (APZ) for the Site is that area that provides the separation distance between the classified vegetation and building walls, with a preferred width of 100 m. For locations where a 100-m APZ width cannot be achieved, a reduced APZ can be implemented when a BAL-rating is determined for the building, as is the case for some of the Lots that are the subject of this BMP. The reduced APZ commences at the junction of the BAL-40 and BAL-29 zones, or the junction of the orange and yellow zones shown in Figure 12, and will extend to the building walls as that is the point where the potential radiant heat impact of a bushfire does not exceed 29 kW/m². As a suitable separation distance can be demonstrated for each of the Lots that will be created, it indicates that the bushfire risk can be managed within the subdivision area.

2.6 SHIELDING

Clause 3.5 of AS 3959:2018 allows for a reduction in the nominated construction standard for a building in bushfire prone area where the elevation is not exposed to the source of the bushfire attack, noting that the reduction in building standard cannot reduce below BAL-12.5. For Lots rated BAL-19, elevations that are not exposed to the source of the bushfire attack may be reduced to BAL-12.5.



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 Original Size: A3
 Aerial Imagery: NearMap February 2024
 Grid: GDA94 / MGA zone 50 (EPSG:28350)

0 50 100 m

Mahala Stage 13 and 14
 Bushfire Management Plan
 Anstey Road Developments Pty Ltd

Figure 12
BAL-contours and Ratings

Martnick Bosch Sell Pty Ltd
 4 Cook St
 West Perth WA 6005
 Australia
 t: +61 8 9226 3166
 info@mbsenvironmental.com.au
 www.mbsenvironmental.com.au

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2.7 OTHER BUSHFIRE PROTECTION MEASURES

No other bushfire protection measures are required for the Site other than those documented in this BMP.

2.8 IMPLEMENTATION

Implementation of this BMP will commence immediately and will be the responsibility of the Developer, Anstey Road Developments Pty Ltd, both for installation and ongoing maintenance until Lots within the Site are sold and POS areas are ceded to the City of Armadale. The Developer is also responsible for ensuring the new owner of Lots receives a copy of this BMP to support the building process.

When ownership arrangements change over time, the responsibility for the maintenance of fire management measures will devolve to the new owner or managing organisation, noting that landowners or managers are responsible for land under their direct control only. For example, Lot owners will be responsible for ensuring asset protection zones within their property are maintained. Activities that will be involved with the implementation of this plan are described in Table 2, which also includes an indication of maintenance responsibilities associated with a particular activity.

2.9 RESPONSIBILITIES

Responsibilities for bushfire preparedness and response within the development area are shared by the Developer, Anstey Road Developments Pty Ltd, the City of Armadale, and building owners/occupiers.

2.9.1 Developer Responsibilities

The Developer is responsible for implementing key portions of this BMP, including:

- Provide a copy of this BMP to owner to inform future building construction standard and approvals.
- Install and maintain firebreaks/low fuel/asset protection zones on their land.
- Arranging for a notification on titles to inform that some Lots are located within a designated bushfire prone area and subject to a BAL-rating.
- Undertaking slashing of long grass to a height of 100 mm on their land when required to ensure there are no temporary BAL-ratings on Lots within either of the Stages.
- Lots 514, 515, 537, 538, 544 and 545 will not be developed until a maximum BAL-29 rating can be achieved.

2.9.2 City of Armadale Responsibilities

It should be noted that the City of Armadale has the responsibility and powers under the Local Planning Scheme and the *Bush Fires Act 1954 (WA)* to ensure that this BMP, annual firebreak notices, any bushfire Information, and any special orders issued under the *Bush Fires Act 1954* are complied with.

The City will be responsible for:

- Providing appropriate bushfire advice in relation to firebreaks, hazard reduction, and similar.
- Ensuring appropriate information relating to bushfire prone status is included on titles.
- Ensure that buildings are constructed in accordance with the nominated BAL-rating.

2.9.3 Owner and/or Occupier Responsibilities

It is the responsibility of individual property owners building near the vegetated areas to:

- Ensure that residences are constructed in accordance with the relevant clauses of AS 3959:2018 for the confirmed BAL-rating.
- Maintain the nominated asset protection zone between the edge of the classified vegetation and building walls.
- If evaporative air conditioners are installed on dwelling(s), install ember shields.
- Respond to/comply with bushfire advice issued by the Developer, the City of Armadale or DFES.

Table 2: Implementation Schedule

Item	Activity	Responsibility	Maintenance	Responsibility
Developer Responsibilities				
1	Provide a copy of this BMP to Lot owners to inform future building approval and construction process.	Developer	Not required	N/A
2	Install and maintain firebreak/low fuel/asset protection zones on their land.	Developer	Ongoing, in accordance with City of Armadale firebreak notices	Developer or owner/occupier
3	Arranging for a notification on titles of Lots with a BAL-rating to indicate that they are located in a designated bushfire prone area.	Developer	Not required	N/A
4	Undertaking slashing of long grass to a height of 100 mm on their land when required to ensure there are no temporary BAL-ratings on Lots within either of the Stages.	Developer	Until land is no longer their responsibility through sale, development or ceding	Developer
5	Lots 514, 515, 537, 538, 544, and 545 will not be developed until a maximum BAL-29 rating will apply	Developer	Not required	N/A
City of Armadale Responsibilities				
6	Providing appropriate bushfire advice in relation to firebreaks, hazard reduction, and similar.	City of Armadale	As required	City of Armadale
7	Ensuring appropriate information relating to bushfire prone status is included on titles.	City of Armadale	Not required	N/A
8	Ensure that buildings are constructed in accordance with the nominated BAL-rating.	City of Armadale	Not required	N/A
Owner/Occupier Responsibilities				
9	Ensure that buildings constructed in accordance with the relevant clauses of AS 3959:2018 for the confirmed BAL-rating.	Owner/builder	Not required	N/A
10	Maintain the nominated asset protection zone between the edge of the classified vegetation and building walls.	Owner/occupier	Ongoing as required	Owner/occupier
11	If evaporative air conditioners are installed on dwelling(s), install ember shields.	Owner	Regular maintenance in accordance with manufacturer's instructions	Owner
12	Respond to/comply with bushfire advice issued by the Developer, the City of Armadale or DFES.	Owner/occupier	Ongoing as required	Owner/occupier

3. COMPLIANCE AND JUSTIFICATIONS

3.1 SPP 3.7 OBJECTIVES AND APPLICATION OF POLICY MEASURES

The intent of *State Planning Policy (SPP) 3.7 Planning in Bushfire Prone Areas* (Department of Planning and Western Australian Planning Commission, 2015) is to ensure that bushfire risks are considered in a timely manner and that planning documents demonstrate the appropriate application of the various policy measures. Table 3 summarises the intent and objectives of SPP 3.7 and provides evidence of how Stages 13 and 14 of the Mahala Estate complies.

Table 3: SPP 3.7 Compliance Evidence

SPP Reference	Description	Evidence of Compliance
Intent	<ul style="list-style-type: none"> Ensure that risks associated with bushfires are planned using a risk-based approach. 	<ul style="list-style-type: none"> Preparation of a BMP in accordance with SPP 3.7. Hazard assessment indicates risks associated with bushfire are manageable.
Objective 1	<ul style="list-style-type: none"> Avoid any increase in the threat of bushfire to people, property, and infrastructure. 	<ul style="list-style-type: none"> Hazard assessment indicates risks associated with bushfire are manageable. Some Lots within the Site will have a BAL-rating, with the majority being no higher than BAL-19 (Figure 12). Lots 514, 515, 537, 538, 544, and 545 will not be developed until a maximum BAL-29 rating will apply.
Objective 2	<ul style="list-style-type: none"> Reduce vulnerability to bushfire. 	<ul style="list-style-type: none"> Hazard assessment indicates risks associated with bushfire are manageable. Some Lots within the Site will have a BAL-rating, with the majority being no higher than BAL-19 (Figure 12). Lots 514, 515, 537, 538, 544, and 545 will not be developed until a maximum BAL-29 rating will apply.
Objective 3	<ul style="list-style-type: none"> Ensure that higher order strategic planning documents and proposals consider bushfire protection requirements at an early stage. 	<ul style="list-style-type: none"> The planning process has considered the risk of bushfire in an early stage. The preparation of this document has been completed to inform owners of BAL-ratings assigned to Lots ahead of sale and the later building process.
Objective 4	<ul style="list-style-type: none"> Achieve an appropriate balance between bushfire risk management and biodiversity conservation. 	<ul style="list-style-type: none"> Site environmental values have been considered during earlier stages of the planning approvals process, with the retention of native vegetation within Lots 43 and 44.

3.2 BUSHFIRE PROTECTION CRITERIA

Appendix 4 of the *Guidelines for Planning in Bushfire Prone Areas* (DPLH and WAPC, v1.4, 2021) provides details of the acceptable bushfire protection solutions that can be used to demonstrate how a location can be developed in bushfire prone areas. Table 4 demonstrates the Site's Compliance with Bushfire Protection Criteria and Figure 12 provides the Lot layout with BAL-contours and ratings for the Lots.

Table 4: Compliance with Bushfire Protection Criteria

Intent	Acceptable Solutions	Solution
Element 1: Location		
Ensure that strategic planning proposals, subdivision and development applications are located in areas with the least possible risk of bushfire to facilitate the protection of people, property and infrastructure	A1.1 Development Location	
	Bushfire hazard assessment is or will on completion be moderate or low.	<ul style="list-style-type: none"> Hazard assessment indicates risks associated with bushfire are manageable. Some Lots within the Site will have a BAL-rating, with the majority being no higher than BAL-19 (Figure 12). Lots 514, 515, 537, 538, 544, and 545 will not be developed until a maximum BAL-29 rating will apply.
	BAL-rating is BAL-29 or lower.	<ul style="list-style-type: none"> Hazard assessment indicates risks associated with bushfire are manageable. Some Lots within the Site will have a BAL-rating, with the majority being no higher than BAL-19 (Figure 12). Lots 514, 515, 537, 538, 544, and 545 will not be developed until a maximum BAL-29 rating will apply.
Element 2: Siting and Design of Development		
To ensure that the siting and design of development minimises the level of bushfire impact	A2.1 Asset Protection Zone (APZ)	
	<p>Every habitable building is surrounded by, and every proposed lot can achieve an APZ depicted on plans that meets the following:</p> <ul style="list-style-type: none"> Width — bushfire radiant heat does not exceed radiant heat of 29 kW/m² (BAL-29) as measured from any external wall or supporting post or column in all circumstances. Location — APZ contained solely within the boundaries of the Lot on which the building is situated, except in instances where the neighbouring lot(s) will be managed in a low-fuel state on an ongoing basis, in perpetuity. 	<ul style="list-style-type: none"> The APZ coincides with the boundary between BAL-40 and BAL-29 zones (Figure 12) and includes roads and cleared areas. Subdivision design ensures width is suitable to ensure radiant heat does not exceed 29 kW/m² (BAL-29) as measured from any external wall or supporting post or column in all circumstances, with the commitment that Lots that currently have a BAL-FZ rating will not be

Intent	Acceptable Solutions	Solution
	<ul style="list-style-type: none"> Management — the APZ is managed in accordance with the requirements of 'Standards for Asset Protection Zones' (Schedule 1 on page 71 of the Guidelines). 	developed until a maximum BAL-29 rating can be achieved.
Element 3: Vehicular Access		
<p>Ensure that the vehicular access serving a subdivision/ development is available and safe during a bushfire event.</p> <p>To achieve the intent, all applicable acceptable solutions must be addressed:</p> <ul style="list-style-type: none"> SP – Strategic planning proposal and structure plan where the lot layout is not known. Sb – Structure plan where the lot layout is known and subdivision application. Dd – Development application for a single dwelling, ancillary dwelling, or minor development. Do – Development application for any other development that is not a single dwelling, ancillary dwelling, or minor development. 	A3.1 Public Roads (SP Sb Do)	
	<p>Public roads are to meet the minimum technical requirements in Table 6, Column 1 on page 76 of the Guidelines.</p> <p>The trafficable (carriageway/pavement) width is to be in accordance with the relevant class of road in the Local Government Guidelines for Subdivisional Development (IPWEA Subdivision Guidelines), Liveable Neighbourhoods, Austroad standards and/or any applicable standards for the local government area.</p>	Public roads associated with these Stages will be constructed in accordance with the technical requirements outlined in Column 1 of Table 5 on page 76 of the Guidelines and be consistent with those constructed during the development of earlier subdivision stages.
	A3.2a Multiple Access Routes (SP Sb Do)	
	<p>Public road access is to be provided in two different directions to at least two different suitable destinations with an all-weather surface (two-way access).</p>	Access and egress will be available to at least two different destinations, and will include roads exiting to Allen Road, where access is available to MacFarlane Rd to the northeast, with Hypatia Bvd providing a connection through to Anstey Road to the northwest when the construction of Stages 5, 8, and 10 are completed (Figure 12).
<p>If the public road access is via a no-through road that cannot be avoided due to demonstrated site constraints, the road access is to be a maximum of 200 m from the subject lot(s) boundary to an intersection where two-way access is provided.</p>	<ul style="list-style-type: none"> Several temporary no through roads are planned to allow development to proceed until Lot 6 between Stages 13 and 14 is developed and connections between sections can be made. The maximum road access is less than 200 m in both Stage 13 and 14 (Figure 12). 	
<p>A no-through road may exceed 200 m if it is demonstrated that an alternative access way cannot be provided due to site constraints and the following requirements are met:</p> <ul style="list-style-type: none"> The no-through road travels towards a suitable destination. The balance of the no-through road that is greater than 200 m from the subject site is wholly within BAL-Low or is in a residential built-out area (Figure 23 on page 81 of the guidelines). 	N/A – the maximum road access is less than 200 m in both Stage 13 and 14.	

Intent	Acceptable Solutions	Solution
	<p>A3.2b Emergency Access Way (SP Sb Do)</p> <p>Where it is demonstrated that A3.2a cannot be achieved due to site constraints, or where an alternative design option does not exist, an emergency access way can be considered as an acceptable solution. An emergency access way is to meet all the following requirements:</p> <ul style="list-style-type: none"> • Requirements in Table 6, Column 2 on page 76 of the guidelines. • Provides a through connection to a public road. • Be no more than 500 m. • Must be signposted and if gated, gates must open the whole trafficable width and remain unlocked. 	<p>N/A — access will be the existing and planned road network.</p>
	<p>A3.3 Through-roads (SP Sb)</p> <p>All public roads should be through-roads. No-through roads should be avoided and should only be considered as an acceptable solution where:</p> <ul style="list-style-type: none"> • It is demonstrated that no alternative road layout exists due to site constraints, and • The no-through road is a maximum length of 200 m to an intersection providing two-way access unless it satisfies the exemption provisions in A3.2a. 	<ul style="list-style-type: none"> • Several temporary no-through roads are planned to allow development to proceed until Lot 6 between Stages 13 and 14 is developed and connections between sections can be made. • The maximum road access is less than 200 m in both Stage 13 and 14.
	<p>A no-through road is to meet all the following requirements:</p> <ul style="list-style-type: none"> • Requirements of a public road (Table 6, Column 1, Page 76). • Turn-around area as shown in Figure 24 on page 81 of the Guidelines. 	<p>Temporary no-through roads will be constructed in accordance with the requirements specified in the guidelines.</p>
	<p>A3.4a Perimeter Roads (SP Sb)</p> <p>A perimeter road is a public road and should be provided for greenfield or infill development where 10 or more lots are being proposed, including as part of a staged subdivision, with the aim of:</p> <ul style="list-style-type: none"> • Separating areas of classified vegetation under AS 3959 that adjoin the subject site from the proposed lots, and • Removing the need for battle-axe lots that back onto areas of classified vegetation. 	<p>Allen Road and the 13 m road reserve that connects to it is a perimeter road, as is the planned road to the northeast of Stage 14 (Figure 12).</p>

Intent	Acceptable Solutions	Solution
	A perimeter road is to meet the requirements contained in Table 6, Column 1 on page 76 of the Guidelines.	Construction of interior perimeter roads will be in accordance with the Guidelines and be consistent with those constructed in previous stages of the Mahala subdivision.
	<p>A perimeter road may not be required where:</p> <ul style="list-style-type: none"> • The adjoining classified vegetation is Class G Grassland. • Lots are zoned for rural living or equivalent. • It is demonstrated that it cannot be provided due to site constraints. • All lots have frontage to an existing public road. 	N/A — perimeter roads have been provided in the subdivision design.
	A3.4b Fire Service Access Route (SP Sb)	
	<p>Where proposed lots adjoin classified vegetation under AS 3959 (excluding Class G Grassland) and a perimeter road is not required in accordance with A3.4a, a fire service access route can be considered as an acceptable solution to provide firefighter access, where access is not available, to the classified vegetation. A fire access route is to meet all the following requirements:</p> <ul style="list-style-type: none"> • Requirements in Table 6 Column 3 on page 76 of the Guidelines. • Be through-routes with no dead-ends. • Linked to the internal road system at regular intervals, every 500 m. • Must be signposted. • No further than 500 m from a public road. • If gated, gates must open the required trafficable width and be locked by the local government and/or emergency services, if keys are provided for each gate. • Turn-around areas designed to accommodate type 3.4 fire appliances and to enable them to turn around safely every 500 m. 	N/A — fire access will be via the existing and planned road network.
	A3.5 Battle-axe Access Legs (Sb)	
	<p>Where it is demonstrated that a battle-axe access leg cannot be avoided due to site constraints, it can be considered as an acceptable solution.</p> <p>There are no battle-axe technical requirements where the point of the battle-axe access leg joins the effective area of the battle-axe lot is less than 50 m from a public road in a reticulated water area.</p>	N/A — there are no battle-axe Lots planned.

Intent	Acceptable Solutions	Solution
	<p>In circumstances where the above condition is not met, or the battle-axe lot is in a non-reticulated water area, the battle-axe access leg is to meet all the following requirements:</p> <ul style="list-style-type: none"> • Requirements in Table 6, Column 4 on page 76 of the Guidelines. • Passing bays every 200 m with a minimum length of 20 m and minimum additional trafficable width of 2 m (i.e. the combined trafficable width of the passing bay and constructed driveway to be a minimum 6 m). 	N/A — there will be no battle-axe Lots.
	<p>A3.6 Private Driveways (Dd Do)</p> <p>There are no private driveway technical requirements where the private driveway is:</p> <ul style="list-style-type: none"> • Within a lot serviced by reticulated water. • No greater than 70 m in length between the most distant external part of the development site and the public road as measured as a hose lay. • Accessed by a public road where the road speed limit is not greater than 70 km/h. 	N/A — there will be no private driveways.
	<p>In circumstances where all the above conditions are not met, or the private driveway is in a non-reticulated water area, the private driveway is to meet all the following requirements:</p> <ul style="list-style-type: none"> • Requirements in Table 6, Column 4 on page 76 of the Guidelines. • Passing bays every 200 m with a minimum length of 20 m and minimum additional trafficable width of 2 m (i.e. the combined trafficable width of the passing bay and constructed driveway to be a minimum 6 m). • Turn around areas as shown in Figure 28 on page 86 of the Guidelines and within 30 m of the habitable building. 	N/A — there will be no private driveways.
Element 4: Water		
<p>Ensure that water is available to enable people, property, and infrastructure to be defended from bushfire.</p> <p>To achieve the intent, all applicable acceptable solutions must be addressed:</p>	A4.1 Identification of Future Water Supply (SP)	
	<p>Evidence that a reticulated or sufficient non-reticulated water supply for bushfire fighting can be provided at the subdivision and/or development application stage, in accordance with the specifications of the relevant water supply authority or the requirements of Schedule 2 on Page 90 of the Guidelines.</p> <p>Where the provision of a strategic water tank(s) is required in a suitable area within a road reserve or a dedicated lot the location should be identified on the structure plan to the satisfaction of the local government.</p>	<p>The Lots are located in an area with reticulated water supply available for firefighting purposes.</p> <p>N/A — subdivision will be connected to a reticulated water supply.</p>

Intent	Acceptable Solutions	Solution
<ul style="list-style-type: none"> • SP – Strategic planning proposal and structure plan where the lot layout is not known. • Sb – Structure plan where the lot layout is known and subdivision application. • Dd – Development application for a single dwelling, ancillary dwelling, or minor development. • Do – Development application for any other development that is not a single dwelling, ancillary dwelling, or minor development. 	<p>A4.2 Provision of Water for Firefighting Purposes (Sb Dd Do)</p> <p>Where a reticulated water supply is existing or proposed, hydrant connection(s) should be provided in accordance with the specifications of the relevant water supply authority. Where these specifications cannot be met, then the following applies:</p> <ul style="list-style-type: none"> • The provision of a water tank(s) in accordance with the requirements of Schedule 2 on page 90 of the guidelines. • Where the provision of a strategic water tank(s) is applicable, then the following requirements apply: <ul style="list-style-type: none"> — Land to be ceded free of cost to the local government for the placement of the tank(s). — The lot or road reserve where the tank is to be located is identified on the plan of subdivision. — Tank capacity, construction, and fittings provided in accordance with the requirements of Schedule 2 on page 90 of the Guidelines. — A strategic water tank is to be located no more than 10 minutes from the subject site (at legal road speeds). <p>Where a subdivision includes an existing habitable building(s) that is to be retained, a water supply should be provided to this existing habitable building(s) in accordance with the requirements listed above.</p>	<p>Hydrants will be installed in accordance with Water Corporation Design Standard DS 63.</p>
Element 5: Vulnerable Tourism Land Uses		
<p>Provide for bushfire protection for tourism land uses relevant to the characteristics of the occupants and/or the location, to preserve life and reduce the impact of bushfire on property and infrastructure. All applicable acceptable solutions must be addressed.</p>	<p>Every habitable building is surrounded by Asset Protection Zone (APZ) in accordance with Element 2: Siting and Design of Development — A2.1 APZ.</p>	<p>N/A — residential subdivision</p>
	<p>Habitable buildings are sited and designed to:</p> <ul style="list-style-type: none"> • Minimise clearing of existing vegetation. • Provide hazard separation between classified vegetation and a development site that is managed in perpetuity to protect life, prevent the spread of, and manage the impacts of fire. 	<p>N/A</p>
	<p>Suitable access/egress is provided for users of tourism sites.</p>	<p>N/A</p>
	<p>Adequate water is available for firefighting purposes in the event of a bushfire.</p>	<p>N/A</p>

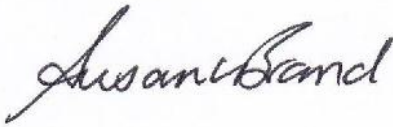
3.3 COMPLIANCE WITH RELEVANT DOCUMENTS

Sections 3.1 and 3.2 document how Stages 13 and 14 of the Mahala Estate complies with State Planning Policy 3.7 (Department of Planning and WA Planning Commission, 2015), *Guidelines for Planning in Bushfire Prone Areas* (Department of Planning, Lands and Heritage (DPLH) and the WA Planning Commission (WAPC), (V1.4, 2021).

Site owners/occupiers must comply with relevant sections of the annual firebreak notice and bushfire information prepared by the City of Armadale, such as total fire ban and hazard reduction programs.

3.4 COMPLIANCE STATEMENT

This BMP has been prepared in accordance with the requirements of *State Planning Policy 3.7 Planning in Bushfire Prone Areas* (Department of Planning and Western Australian Planning Commission, 2015) and *Guidelines for Planning in Bushfire Prone Areas* (DPLH and WAPC, V1.4, 2021). The information contained in this document represents current site conditions based on a visit to the site on 21 September 2023 and associated planning.



Signed:

Date: 05 March 2024

Accreditation Number: BPAD 36638

Accreditation Expiry Date: 30 April 2024



4. REFERENCES

Standards Australia, *AS 3959:2018, Construction of Buildings in Bushfire-Prone Areas*, Standards Australia, NSW.

Bush Fires Act 1954 (WA)

Department of Planning, Lands and Heritage (DPLH), and the Western Australian Planning Commission (WAPC), (V1.4, Dec 2021), *Guidelines for Planning in Bushfire Prone Areas*, Western Australian Planning Commission, Perth, Western Australia.

Department of Planning and Western Australian Planning Commission, (2015), *State Planning Policy 3.7 Planning in Bushfire Prone Areas*, Western Australian Planning Commission, Perth, Western Australia.

Mitchell, Williams and Desmond, (2002) *Swan Coastal Plain 2 (SWA2 – Swan Coastal Plain subregion)*, Department of Conservation and Land Management, https://www.dpaw.wa.gov.au/images/documents/about/science/projects/waaudit/swan_coastal_plain02_p606-623.pdf, accessed October 2023.