

**BAL-ASSESSMENT**

**MAHALA STAGE 3A,  
ANSTEY ROAD FORRESTDALE**

PREPARED FOR:

**ANSTEY ROAD DEVELOPMENTS PTY LTD**

MARCH 2022

**PREPARED BY:**

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# TABLE OF CONTENTS

<b>1.</b>	<b>PROPOSAL DETAILS.....</b>	<b>1</b>
1.1	LOCATION .....	1
1.2	LAND USES AND PROPOSED DEVELOPMENT .....	1
1.3	AIMS AND OBJECTIVES .....	4
<b>2.</b>	<b>ENVIRONMENTAL CONSIDERATIONS.....</b>	<b>5</b>
2.1	NATIVE VEGETATION .....	5
2.2	REVEGETATION AND LANDSCAPING .....	5
<b>3.</b>	<b>BUSHFIRE ASSESSMENT.....</b>	<b>6</b>
3.1	VEGETATION CLASSIFICATION.....	6
3.1.1	Area 1: Class G Grassland .....	6
3.1.2	Area 2: Low Threat Vegetation (Exclusion Clause 2.2.3.2) .....	6
3.1.3	Area 3: Non-vegetated Areas .....	8
3.2	EFFECTIVE SLOPE .....	10
3.3	RELEVANT FIRE DANGER INDEX .....	10
3.4	POTENTIAL FIRE IMPACTS.....	10
3.5	BUSHFIRE ATTACK LEVEL .....	10
3.5.1	Shielding.....	10
<b>4.</b>	<b>COMPLIANCE AND JUSTIFICATIONS.....</b>	<b>12</b>
4.1	SPP 3.7 OBJECTIVES AND APPLICATION OF POLICY MEASURES.....	12
4.2	BUSHFIRE PROTECTION CRITERIA.....	12
4.3	COMPLIANCE WITH RELEVANT DOCUMENTS .....	13
4.4	COMPLIANCE STATEMENT.....	14
<b>5.</b>	<b>REFERENCES .....</b>	<b>15</b>

# FIGURES

Figure 1:	Current Land Use, Mahala, Stage 3A.....	1
Figure 2:	Site Location, Mahala, Stage 3A .....	2
Figure 3:	Staging Plan, Mahala .....	3
Figure 4:	Stage 1 POS.....	5
Figure 5:	Class G Grassland .....	6
Figure 6:	Low Threat Vegetation .....	7
Figure 7:	Non-vegetated Areas.....	8
Figure 8:	Vegetation Class as per AS 3959:2018.....	9
Figure 9:	BAL-contour Diagram .....	11

# TABLES

Table 1:	BAL-Analysis .....	10
Table 2:	Evidence of Compliance with SPP 3.7 Intent and Objectives.....	12
Table 3:	Compliance with Bushfire Protection Criteria .....	13

# 1. PROPOSAL DETAILS

Martinick Bosch Sell Pty Ltd (MBS Environmental) was commissioned by Anstey Road Developments Pty Ltd to prepare this bushfire attack level (BAL) assessment report to support the planning process associated with Mahala Stage 3A, located at Anstey Road, Forrestdale (the Site, Mahala) within the City of Armadale. The site is located within a designated bushfire prone area; thus the broad aim of the assessment process was to confirm the bushfire prone status, review and confirm potential site bush fire risks, and nominate BAL-ratings for any Lot that will be located within 100 m of classified vegetation as defined by AS 3959:2018 *Construction of Buildings in Bushfire Prone Areas*.

The BAL-assessment considers current site conditions along with the provisions of *State Planning Policy (SPP) 3.7 Planning in Bushfire Prone Areas* (Department of Planning, Lands and Heritage (DPLH), and the Western Australian Planning Commission (WAPC), 2015), and the *Guidelines for Planning in Bushfire Prone Areas* (the guidelines) (DPLH, WAPC, and Department of Fire and Emergency Services (DFES), V1.3, 2017).

## 1.1 LOCATION

Stage 3A Mahala is (Figure 1, Figure 2):

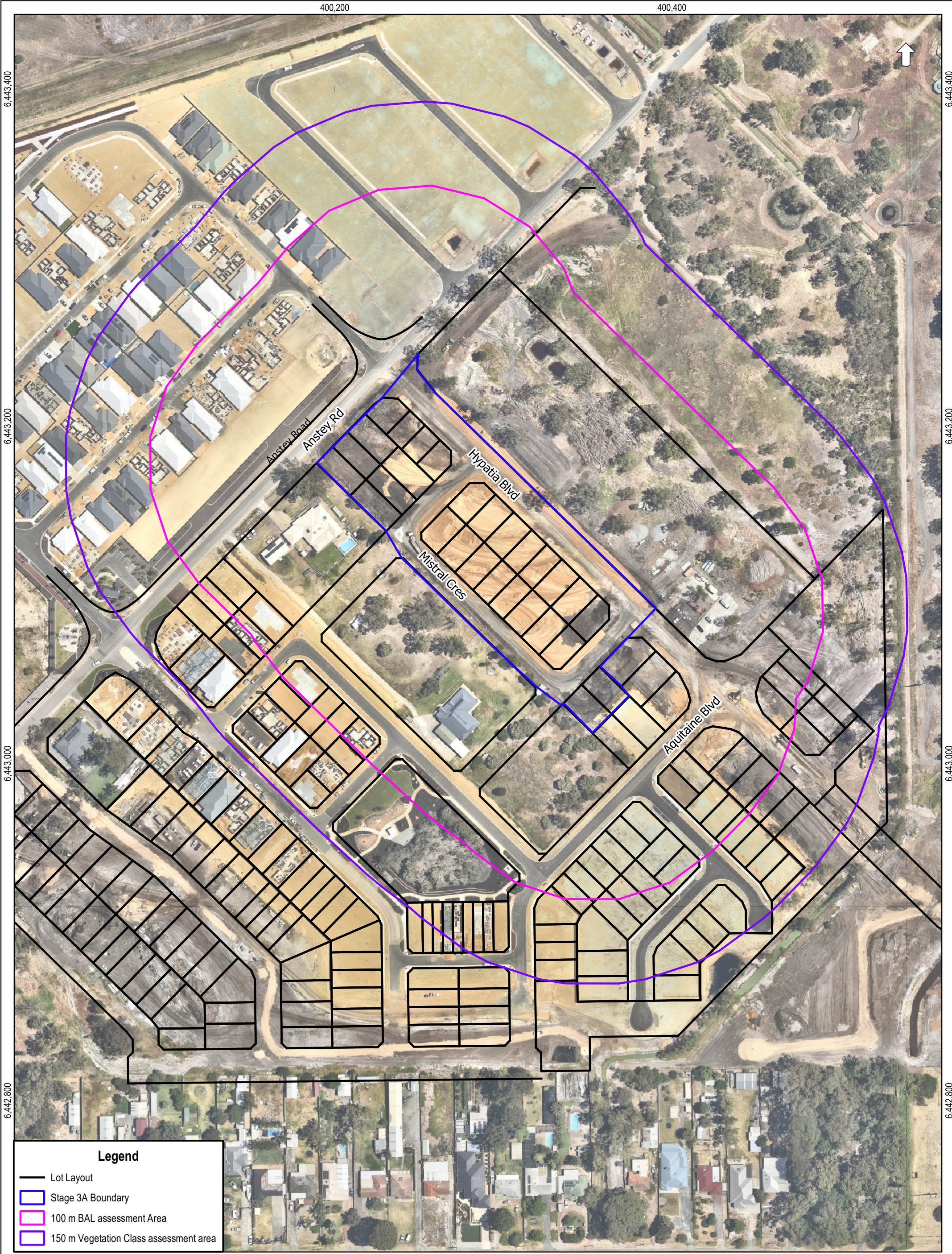
- Located approximately 22 km southeast of the Perth Central Business District within the City of Armadale.
- Approximately 2.8 ha.
- A largely linear strip of Lots oriented northwest to southeast along what will become Hypatia Blvd.
- Surrounded by future and existing development areas, most of which has been cleared to support the development process or is present as areas of managed vegetation.

## 1.2 LAND USES AND PROPOSED DEVELOPMENT

The site is currently vacant land that includes primarily cleared areas with the occasional tree. Civil engineering works commenced ahead of building construction (Figure 1, Figure 2). A site staging plan is provided in Figure 3.



**Figure 1: Current Land Use, Mahala, Stage 3A**



**Legend**

- Lot Layout
- Stage 3A Boundary
- 100 m BAL assessment Area
- 150 m Vegetation Class assessment area

Scale: 1: 2,000  
Original Size: A3  
Aerial Photo Date:  
Grid: GDA94 / MGA zone 50 (EPSG:28350)

0 25 50 m

Anstey Road Developments Pty Ltd  
BAL-Assessment - Stage 3A Mahala  
Anstey Road, Forrestdale

**Figure 2**

**Site Location, Mahala Stage 3A**

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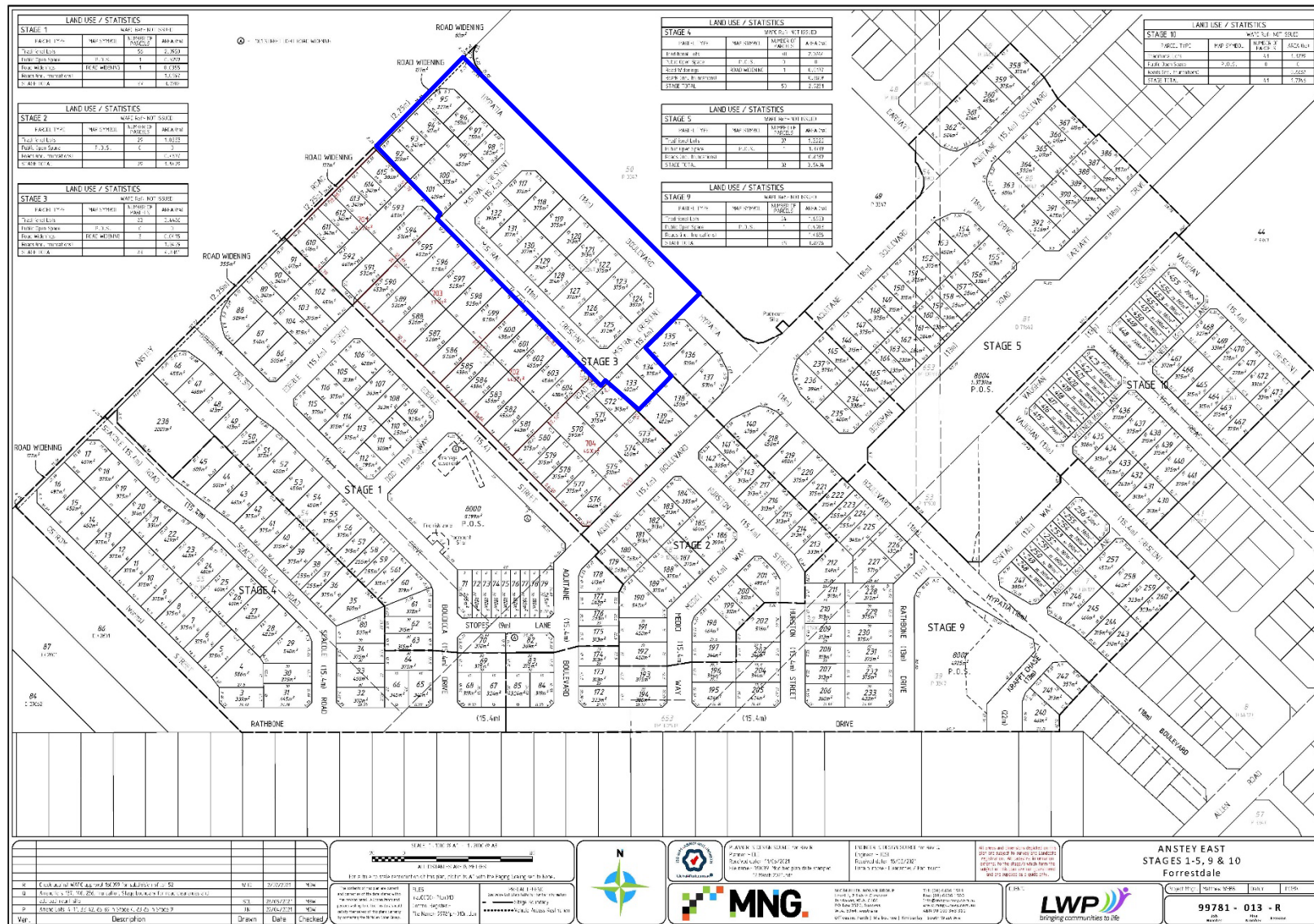


Figure 3: Staging Plan, Mahala

## 1.3 AIMS AND OBJECTIVES

The objective of the BAL-assessment process is to outline the BAL-ratings for the subdivision, the associated bushfire management methods, and any requirements that will be implemented to support the proposed development. Accordingly, broad aims include:

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

## 2. ENVIRONMENTAL CONSIDERATIONS

### 2.1 NATIVE VEGETATION

Mahala Stage 3A is in an area that was previously used for rural residential purposes; with land cleared of native vegetation and kept low for horse agistment; with some areas retaining treed vegetation and others cleared ahead of development activities. Preliminary civil engineering is currently being undertaken within Stage 3A, which has thus been cleared ahead of development with the retention of the occasional tree.

The environmental values of the broader Mahala site were considered during earlier, higher level planning phases with:

- No Bush Forever Sites within the Stage or broader development site boundary.
- No conservation category wetlands (CCW) or resource enhancement category wetlands (REW) as defined by the Geomorphic Wetlands of the Swan Coastal Plain Dataset within or in proximity to the Site.
- No threatened ecological communities and declared rare or priority listed flora and/or fauna within the Site or the broader development area.

### 2.2 REVEGETATION AND LANDSCAPING

Stage 3A is a distinct stage of the broader Mahala subdivision, with no vegetation to be retained; thus there will be no revegetation within the Stage boundary. The designated public open space (POS) area to the southwest of the site has been landscaped with the patch of retained vegetation meeting the definition of low-threat vegetation as per AS 3959:2018 and subject to exclusion clause 2.2.3.2 (f) (Figure 4). The POS area to be created as part of Stage 5 that will extend from Hypatia Blvd to Keane Road will be landscaped at a future point in time.



Figure 4: Stage 1 POS

### 3. BUSHFIRE ASSESSMENT

#### 3.1 VEGETATION CLASSIFICATION

All vegetation within 150 m of the proposed Lots was classified in accordance with Clause 2.2.3 of AS 3959:2018 *Construction of Buildings in Bushfire-prone Areas*. Each distinguishable area of vegetation with the potential to determine the BAL-rating is discussed in Section 3.1.1 and shown in Figure 5 through to Figure 8.

##### 3.1.1 Area 1: Class G Grassland

Area 1 is Class G Grassland, which is described as all forms including situations with the occasional shrub or tree. This vegetation class is present in private property to the north of what will become the school site (Figure 5). The Grassland is more than 50 m from the Stage 3A boundary thus will not influence BAL-ratings within the Site.



Figure 5: Class G Grassland

##### 3.1.2 Area 2: Low Threat Vegetation (Exclusion Clause 2.2.3.2)

Area 3 is low threat vegetation as defined in Clause 2.2.3.2 of AS 3959:2018 and which do not influence BAL-ratings within the Site. Clause 2.2.3.2 (f) relates to areas of vegetation that are low threat due to flammability, moisture, content, or fuel load. This exclusion clause is relevant to:

- The Stage 1 POS area (Photo ID 3) that has been landscaped with a small patch of retained vegetation of less than 1 ha in area.

- The area where the northeastern portion of Stage 3A will be constructed that has been cleared of most the trees such that area meets the low fuel load definition (Photo ID 4, Figure 6).
- Small patches of grassland less than 0.25 ha located in privately owned Lots that to the southwest of Stage 3A (Figure 8).
- An additional area of vegetation less than 1 ha that is approximately 145 m to the southeast of Stage 3A that is subject to Exclusion Clause 2.2.3.2 (b) (Figure 8).

Area	2	Classification or Exclusion Clause	Low-threat Vegetation – Exclusion Clause 2.2.3.2 (f)
 <p>UTM: 50H 400250mE 6442992mN Elevation: 26.77±2 m Accuracy: 3.3 m Azimuth: 183° (S) Pitch: -3.3° (-4.7°) Time: 11-01-2022 16:00:39</p> <p>Powered by AngleCam</p>			
Photo ID: 2			
 <p>UTM: 50H 400260mE 6443207mN Elevation: 26.97±2 m Accuracy: 10.8 m Azimuth: 40° (NE) Pitch: -2.1° (-2.4°) Time: 11-01-2022 16:16:39</p> <p>Powered by AngleCam</p>			
Photo ID: 3			

**Figure 6: Low Threat Vegetation**

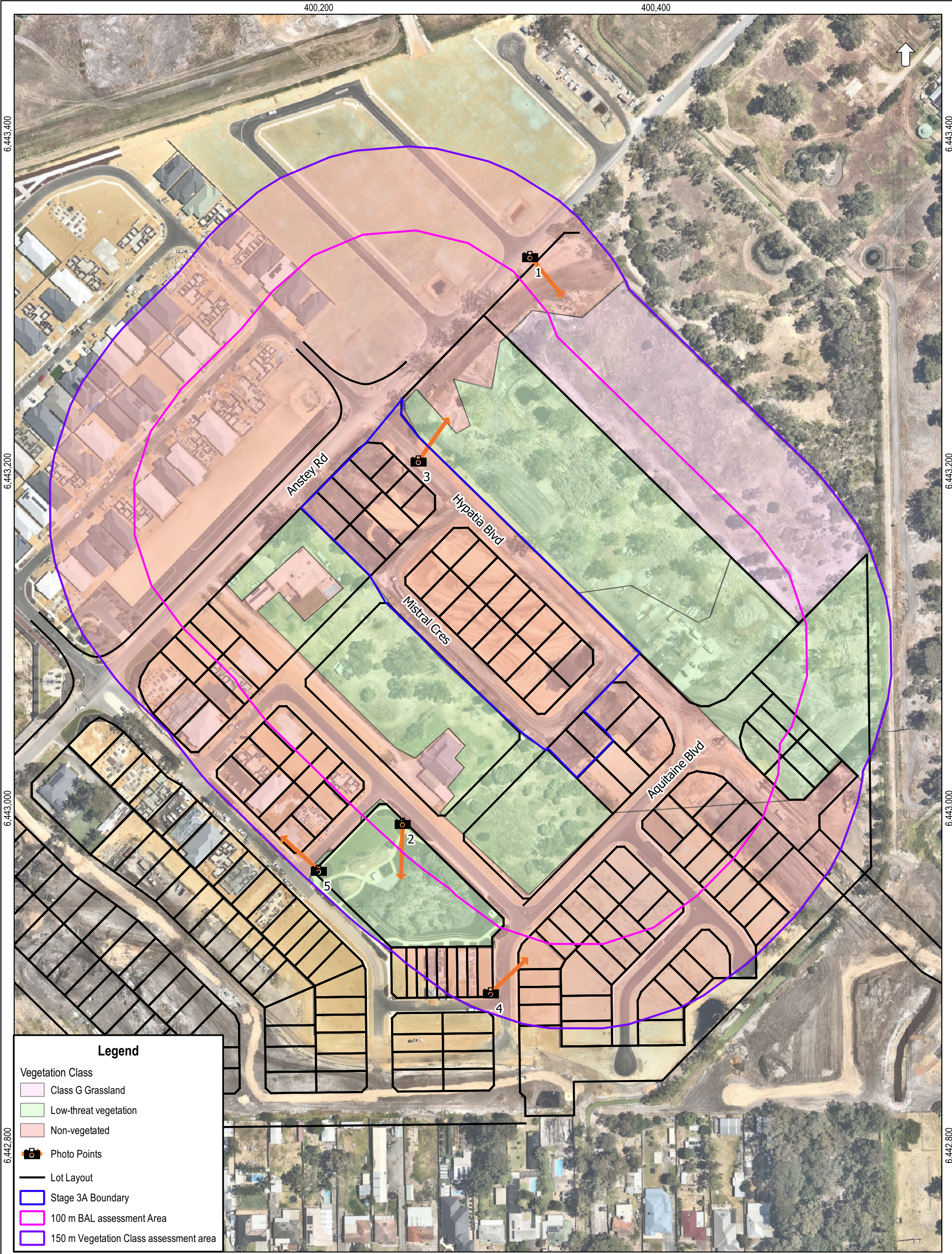
### 3.1.3 Area 3: Non-vegetated Areas

Non-vegetated areas are present in the form of cleared areas associated with (Figure 7):

- Current land use within the broader development site in the form of areas cleared and preliminary civil engineering works being carried out.
- The presence of roads and other assets within and in proximity to the site (Photo ID 4).
- Existing development in nearby areas, including previously developed stages to the east and southeast (Photo ID 5) as well as the Solaris subdivision being developed by others across Ansteys Road to the northwest.



**Figure 7: Non-vegetated Areas**



### Legend

#### Vegetation Class

- Class G Grassland
- Low-threat vegetation
- Non-vegetated

Photo Points

Lot Layout

Stage 3A Boundary

100 m BAL assessment Area

150 m Vegetation Class assessment area

Scale: 1: 2,000  
Original Size: A3  
Aerial Photo Date:  
Grid: GDA94 / MGA zone 50 (EPSG:28350)

0 25 50 m

Anstey Road Developments Pty Ltd  
BAL-Assessment, Stage 3A, Mahala  
Anstey Road, Forrestdale

Figure 8

Vegetation Class as per AS 3959:2018

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### 3.2 EFFECTIVE SLOPE

Mahala Stage 3A is located on flat land, thus for the purposes of the BAL-assessment the slope that will apply for the BAL-assessment process is upslope or flat land.

### 3.3 RELEVANT FIRE DANGER INDEX

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

### 3.4 POTENTIAL FIRE IMPACTS

The potential fire impacts to the Lots in this Stage include smoke and ember attack, with the BAL-analysis for each vegetated area summarised in Table 1.

**Table 1: BAL-Analysis**

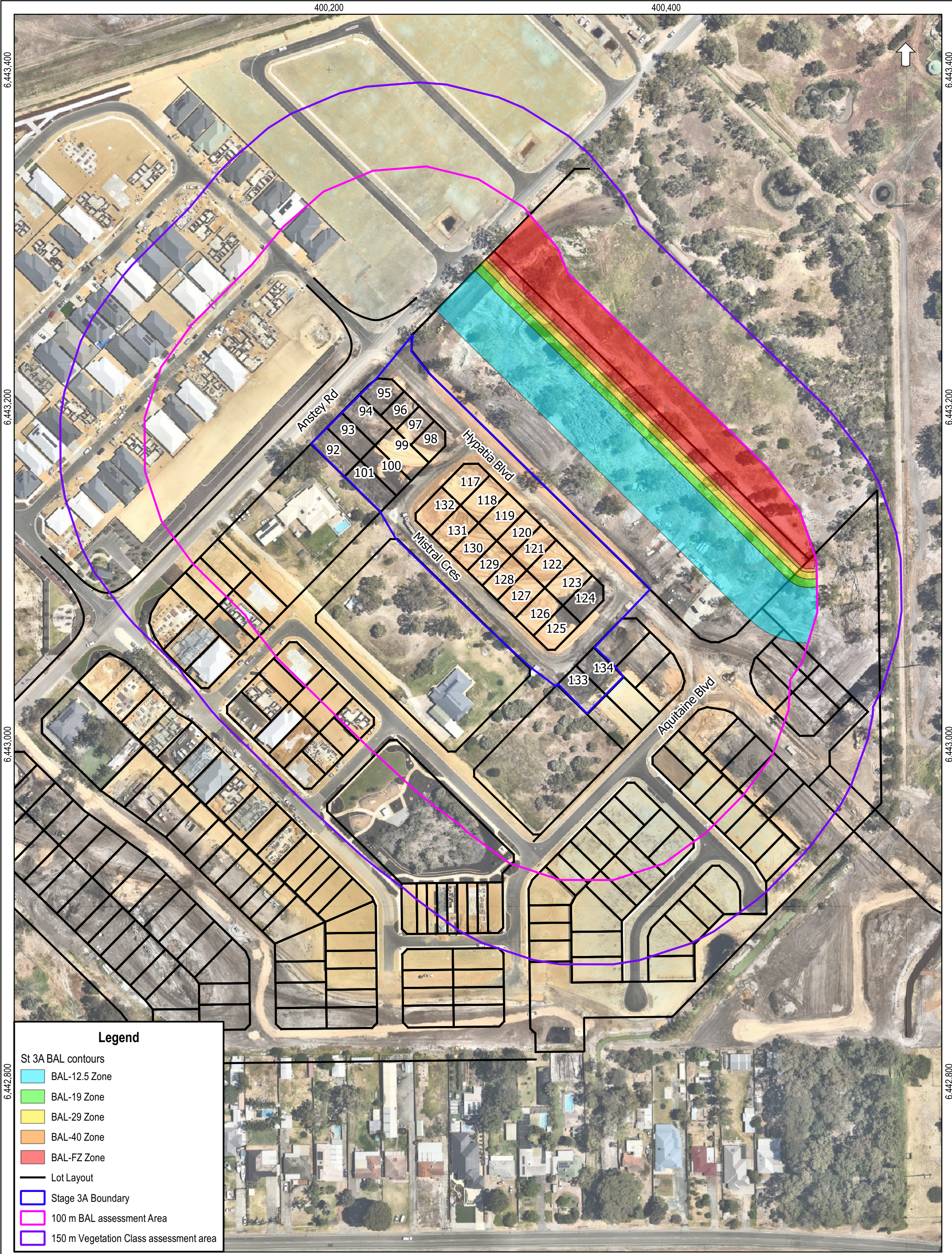
Area	Vegetation Classification	Effective Slope	Separation Distance (m)	Maximum BAL-rating
1	Class G Grassland	Flat land	> 50	BAL-Low
2	Low-threat Vegetation		N/A	BAL-Low
3	Non-vegetated Areas		N/A	BAL-Low
Highest BAL-rating				BAL-Low

### 3.5 BUSHFIRE ATTACK LEVEL

For buildings located within bushfire prone areas, an ideal hazard separation zone of at least 100 m between vegetation and building walls that includes a 20 m asset protection zone is preferred. Where that is not possible, the requirements of AS 3959:2018 *Construction of Buildings in Bushfire Prone Areas* can be applied as an acceptable solution. For Stage 3A, no BAL-rating will apply to any Lot as the Class G Grassland to the northeast is more than 50 m from the boundary and there is no other classified vegetation within 100 m of the Site (Figure 9).

#### 3.5.1 Shielding

The shielding provisions outlined in clause 3.5 of AS 3959:2018 will not apply to this stage of the development as no Lot has a BAL-rating.



**Legend**

- St 3A BAL contours
- BAL-12.5 Zone
- BAL-19 Zone
- BAL-29 Zone
- BAL-40 Zone
- BAL-FZ Zone
- Lot Layout
- Stage 3A Boundary
- 100 m BAL assessment Area
- 150 m Vegetation Class assessment area

Scale: 1: 2,000  
Original Size: A3  
Aerial Photo Date:  
Grid: GDA94 / MGA zone 50 (EPSG:28350)  
0 25 50 m

Anstey Road Developments Pty Ltd  
BAL-Assessment, Stage 3A, Mahala  
Anstey Road, Forrestdale

**Figure 9**  
**BAL-contours**  
**Stage 3A, Mahala**

## 4. COMPLIANCE AND JUSTIFICATIONS

### 4.1 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 2 summarises the intent and objectives of SPP 3.7 and provides evidence of how Stage 2 Mahala complies.

**Table 2: Evidence of Compliance with SPP 3.7 Intent and Objectives**

SPP Reference	Description	Evidence of Compliance
Intent	<ul style="list-style-type: none"> <li>Ensure that risks associated with bushfires are planned using a risk-based approach.</li> </ul>	<ul style="list-style-type: none"> <li>Preparation of a BAL-assessment report in accordance with SPP 3.7.</li> <li>Hazard assessment indicates risks associated with bushland are manageable.</li> </ul>
Objective 1	<ul style="list-style-type: none"> <li>Avoid any increase in the threat of bushfire to people, property and infrastructure.</li> </ul>	<ul style="list-style-type: none"> <li>Hazard assessment indicates risks associated with bushland are manageable.</li> <li>All Lots within Stage 3A are rated BAL-Low.</li> </ul>
Objective 2	<ul style="list-style-type: none"> <li>Reduce vulnerability to bushfire.</li> </ul>	<ul style="list-style-type: none"> <li>Hazard assessment indicates risks associated with bushland are manageable.</li> <li>All Lots within Stage 3A are rated BAL-Low.</li> </ul>
Objective 3	<ul style="list-style-type: none"> <li>Ensure that higher order strategic planning documents and proposals consider bushfire protection requirements at an early stage.</li> </ul>	<ul style="list-style-type: none"> <li>Planning within the area is well progressed, with Stages 1 and 2 constructed and sales progressing.</li> <li>Consideration of bushfire protection requirements were documented in the original Bushfire Management Plan (BMP) prepared by Bushfire Safety Consulting in 2020.</li> </ul>
Objective 4	<ul style="list-style-type: none"> <li>Achieve an appropriate balance between bushfire risk management and biodiversity conservation.</li> </ul>	<ul style="list-style-type: none"> <li>Site environmental values have been considered during the early planning approvals process, with the presence of a reserve that retains some native vegetation in Stage 1.</li> </ul>

### 4.2 BUSHFIRE PROTECTION CRITERIA

Table 3 demonstrates the Site's Compliance with Bushfire Protection Criteria, with all Lots being rated BAL-Low as they are located more than 50 m from the Class G Grassland to the northeast, with no other classified vegetation present within 100 m of the Site boundary (Figure 8).

**Table 3: Compliance with Bushfire Protection Criteria**

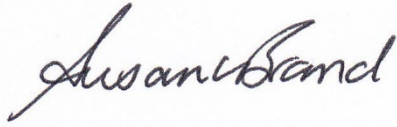
Intent	Performance Principle	Stage 3A Mahala Solution
<b>Element 1: Location</b>		
Ensure subdivision and development applications are located in areas with the least possible risk of bushfire.	<ul style="list-style-type: none"> <li>Bushfire hazard assessment is or will on completion be moderate or low.</li> <li>BAL-rating is BAL-29 or lower.</li> </ul>	<ul style="list-style-type: none"> <li>The subdivision is in an area where the bushfire hazard level is manageable.</li> <li>All Lots within Stage 3A are rated BAL-Low.</li> </ul>
<b>Element 2: Siting and Design of Development</b>		
Siting and design of development minimises the level of bushfire impact.	<ul style="list-style-type: none"> <li>Siting and design of development is appropriate to the level of bushfire threat and minimises risk to people, property and infrastructure.</li> </ul>	<ul style="list-style-type: none"> <li>Bushfire hazard assessment manageable.</li> <li>No battle-axe blocks or cul-de-sacs are planned.</li> <li>The subdivision is in an area where the bushfire hazard level is Low.</li> <li>All Lots within Stage 3A are rated BAL-Low.</li> </ul>
<b>Element 3: Vehicular Access</b>		
Vehicular access servicing a subdivision is available and safe during a bushfire event.	<ul style="list-style-type: none"> <li>Internal layout, design and construction of public and private vehicular access and egress in the subdivision allow emergency and other vehicles to move easily, and safely at all times.</li> </ul>	<ul style="list-style-type: none"> <li>Access will be via the current and planned road network, with Hypatia Blvd and Boudicca Blvd providing access to Anstey Rd.</li> </ul>
<b>Element 4: Water</b>		
Water is available to the subdivision, development or land use to enable people, property and infrastructure to be defended from bushfire.	<ul style="list-style-type: none"> <li>Subdivision is provided with a permanent and secure water supply that is sufficient for firefighting purposes.</li> </ul>	<ul style="list-style-type: none"> <li>The site will be connected to scheme water, i.e., located within a reticulated area, with hydrants compliant with Water Corporation design standards.</li> </ul>

## 4.3 COMPLIANCE WITH RELEVANT DOCUMENTS

Sections 4.1 and 4.2 demonstrate how the site complies with SPP 3.7 (DPLH *et al*, 2015) and *Guidelines for Planning in Bushfire Prone Areas V1.3* (DPLH *et al*, 2017). Lot owners must comply with relevant sections of the annual firebreak notice and bushfire information prepared by the City of Armadale, such as total fire bans and hazard reduction programs.

## 4.4 COMPLIANCE STATEMENT

This BAL-assessment report has been prepared in accordance with the requirements of SPP 3.7 *Planning in Bushfire Prone Areas* (Department of Planning and Western Australian Planning Commission, 2015) and *Guidelines for Planning in Bushfire Prone Areas* (Department of Planning, Department of Fire and Emergency Services and Western Australian Planning Commission, V1.3 2017). The BAL-assessment was undertaken in accordance with the simple procedure (Method 1) of AS 3959:2018. Information provided in this document is correct as of 10 March 2022.



Signed:

Date: 10 March 2022

Accreditation Number: 36638

Accreditation Expiry Date: 30 April 2022



## 5. REFERENCES

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

Bushfire Safety Consulting, (2020), *Bushfire Management Plan – Subdivision Stages 1-4, Lots 50, 51, 53, 55 & 58 Anstey Road, Forrestdale*, unpublished report prepared for LWP Property Group.

Department of Planning, Department of Fire and Emergency Services, and the Western Australian Planning Commission, (2017), *Guidelines for Planning in Bushfire Prone Areas - V1.3*, 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.