

BAL-ASSESSMENT

MAHALA STAGE 5, ANSTEY ROAD FORRESTDAL

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

MBS
ENVIRONMENTAL



environmental and geoscience consultants

MAHALA STAGE 5 BAL-ASSESSMENT

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Anstey Road Developments Pty Ltd	Jordan Williams, Senior Development Manager	[01]	19 March 2024

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1. PROPOSAL DETAILS

MBS Environmental (MBS) was commissioned by Anstey Road Developments Pty Ltd to prepare this bushfire attack level (BAL) assessment report to support the development of 43 residential Lots in Stage 5 of the Mahala Estate, Anstey Road, Forrestdale (the Site, Stage 5) within the City of Armadale. The Site is located within a designated bushfire prone area. Therefore, 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 (AS 3959:2018)*. This document updates the BAL-assessment report prepared by MBS Environmental (2023) to account for the increased clearing and current site conditions as they relate to Stage 5.

The BAL-assessment process 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 *Guidelines for Planning in Bushfire Prone Areas (the Guidelines)* (Department of Planning, Lands and Heritage and the Western Australian Planning Commission, V1.4, 2021).

1.1 LOCATION

Stage 5 Mahala is:

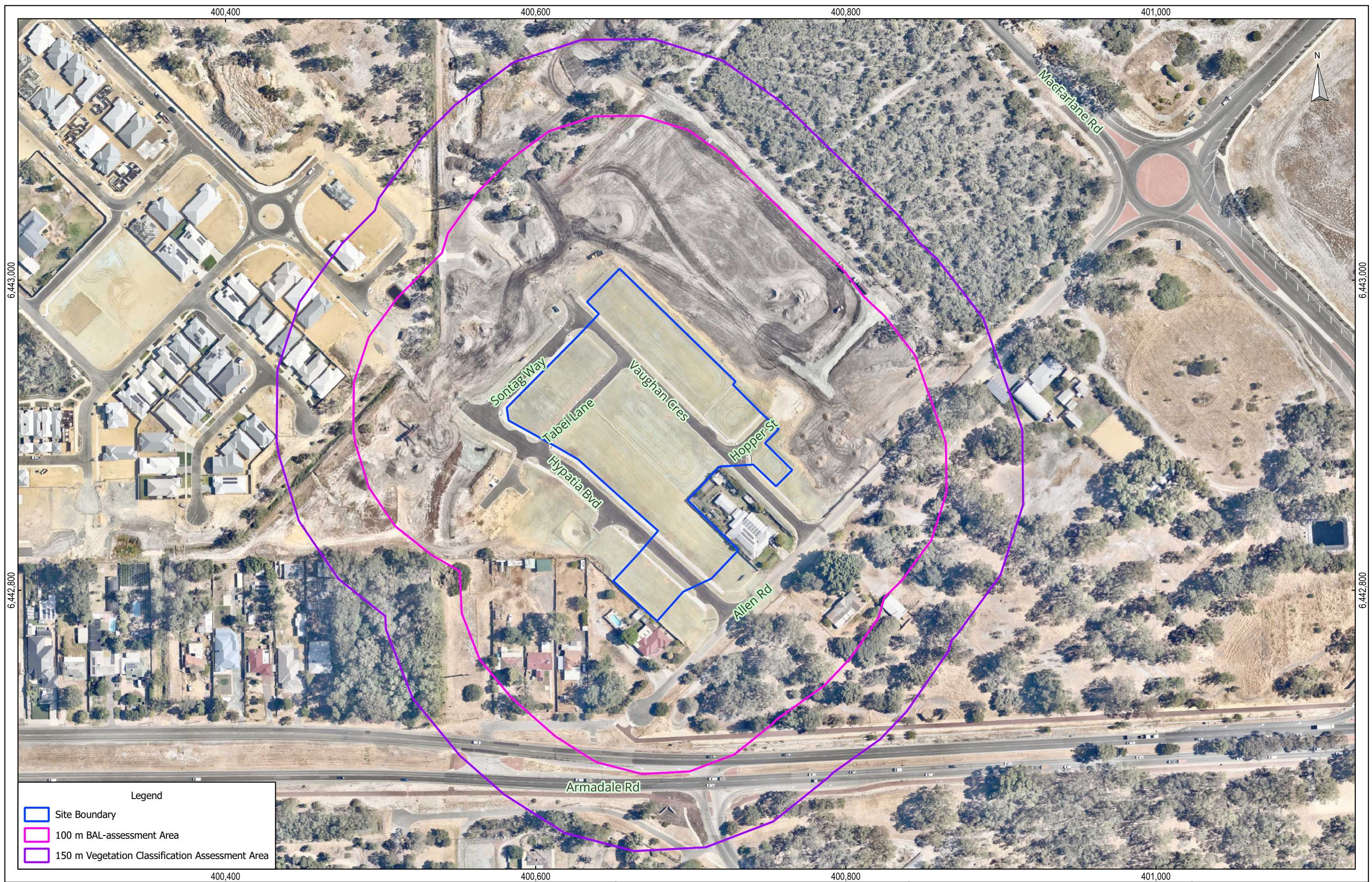
- Located approximately 22 km southeast of the Perth Central Business District within the City of Armadale.
- 2.4 ha (approx.) in area.
- Bounded by existing rural residential Lots to the southeast and southwest, cleared areas currently being developed to the west and northwest, future public open space (POS) to the northwest, and cleared land in what will become Stages 8 and 10 to the northeast.

1.2 LAND USES AND PROPOSED DEVELOPMENT

The site is currently vacant land that has been cleared with civil engineering works completed ahead of building construction (Figure 1, Figure 2). A site staging plan is provided in Figure 3.



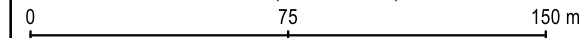
Figure 1: Current Land Use, Mahala, Stage 5



Legend

- ▭ Site Boundary
- ▭ 100 m BAL-assessment Area
- ▭ 150 m Vegetation Classification Assessment Area

Scale: 1: 2,200
 Original Size: A3
 Aerial Imagery: NearMap April 2023
 Grid: GDA94 / MGA zone 50 (EPSG:28350)



Stage 5 Mahala
 BAL-assessment
 Anstey Road Developments

Figure 2

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



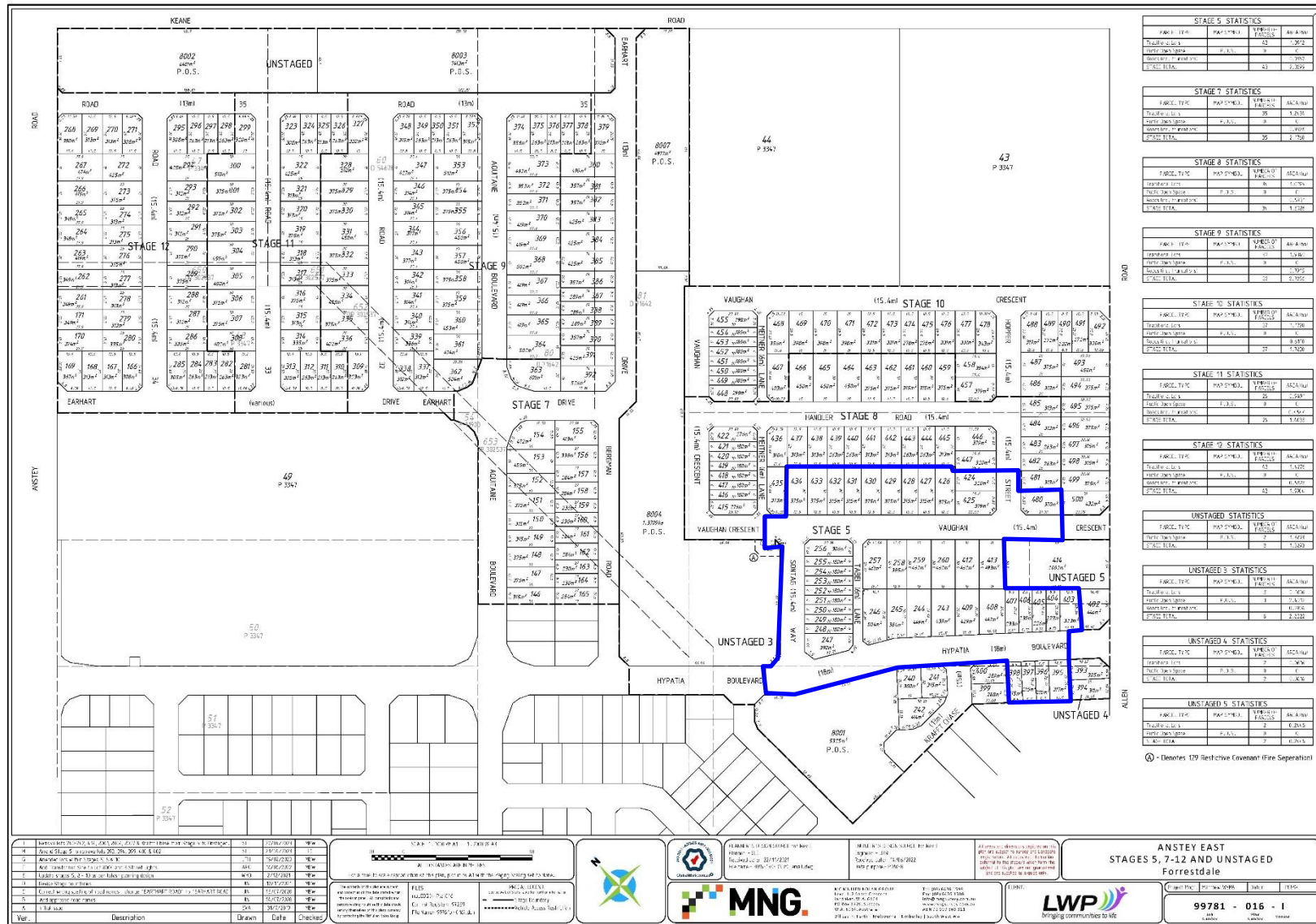


Figure 3: Staging Plan, Mahala

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 bushfire to the life and property of future building occupants and the environment.
- Allow easy access for 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.

2. ENVIRONMENTAL CONSIDERATIONS

2.1 NATIVE VEGETATION

Mahala Stage 5 is in an area that has previously been used for rural residential purposes with land cleared of native vegetation. Some Lots within the surrounding area retains treed vegetation that are considered Class G Grassland or low threat vegetation due to its small area (subject to exclusion clause 2.2.3.2 (b) of AS 3959:2018) or are actively managed by owners (subject to exclusion clause 2.2.3.2 (f)). Environmental values of the broader Mahala site have been 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 the Site.
- No Threatened Ecological Communities (TEC), Declared Rare or Priority Listed flora and fauna within the Site or broader development area.

2.2 REVEGETATION AND LANDSCAPING

Stage 5 is a distinct stage of the broader Mahala subdivision. Areas of POS are planned to the southwest adjacent to the sewer pump station, across Sontag Way to the northwest, and a linear POS that will extend from Hypatia Blvd in the northwest through to MacFarlane Rd to the northeast. The City of Armadale has required that the creek line be considered a living stream, noting that earlier planning approvals has considered this area as low threat vegetation with no impact on Stage 5.

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 and shown in Figure 4, Figure 5, Figure 6, and Figure 7, with the overall pre-development vegetation class shown in Figure 8.

3.1.1 Patch 1: Class D Scrub

Patch 1 is Class D Scrub is characterised by shrubs 2 – 4 m with a continuous canopy from ground level, noting that the occasional taller tree may also be present. This vegetation class is present to the northeast of what will become Stage 10 in two vegetated Lots that will be retained into the future the medium to longer term (Figure 4). As this vegetation is more than 100 m from the Stage 5 boundary, it will not represent an ongoing bushfire risk nor contribute to BAL-ratings within the Site.

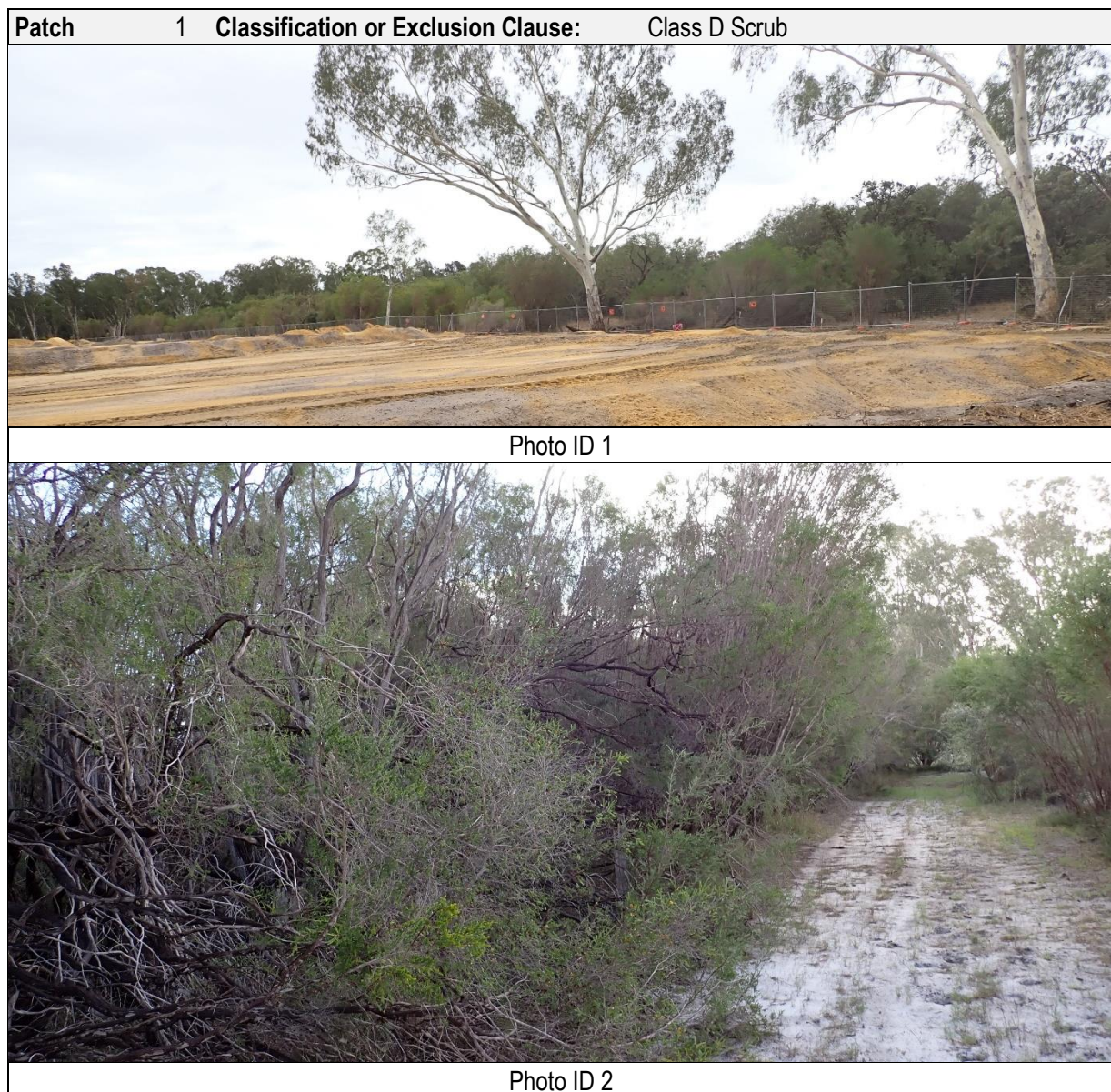


Figure 4: Class D Scrub

3.1.2 Patch 2: Class G Grassland

Patch 2 is Class G Grassland that is present across Allen Rd to the southeast (Figure 5), noting that while it shows signs of ongoing management, a worst-case scenario approach has been adopted as the future ongoing management by others cannot be guaranteed. As this vegetation is more than 50 m from the Stage 5 boundary, it will not contribute to BAL-ratings within the Site.



Figure 5: Class G Grassland

3.1.3 Patch 3: Low Threat Vegetation

Low threat vegetation is characterised as such based on its moisture content, fuel load and/or flammability. Examples of low threat vegetation includes grassland managed in minimal fuel condition, maintained lawns and public reserves, cultivated gardens and nature strips. These forms of low threat vegetation are subject to exclusion clause 2.2.3.2 (f) of AS 3959:2018. Other forms of low threat vegetation include areas less than 1 ha that are not located within 100 m of other areas of vegetation being classified and are subject to exclusion clause 2.2.3.2 (b).

Patch 3 is low threat vegetation in various forms, including (Figure 6):

- Maintained lawns and surrounds in rural residential Lots.
- Small patches of vegetation that are less than 1 ha and not located within 100 m of other vegetation being classified, including the patch located at the southern end of Allen Road.



Figure 6: Low-Threat Vegetation

3.1.4 Patch 4: 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 cleared areas, including those where civil engineering works are complete.
- The presence of roads, buildings, and other assets within and in proximity to the site.
- Areas cleared ahead of future engineering works in what will become Stages 8 and 10 to the northeast.

Patch 4 **Classification or Exclusion Clause:** Non-vegetated areas — Exclusion clause 2.2.3.2 (e)

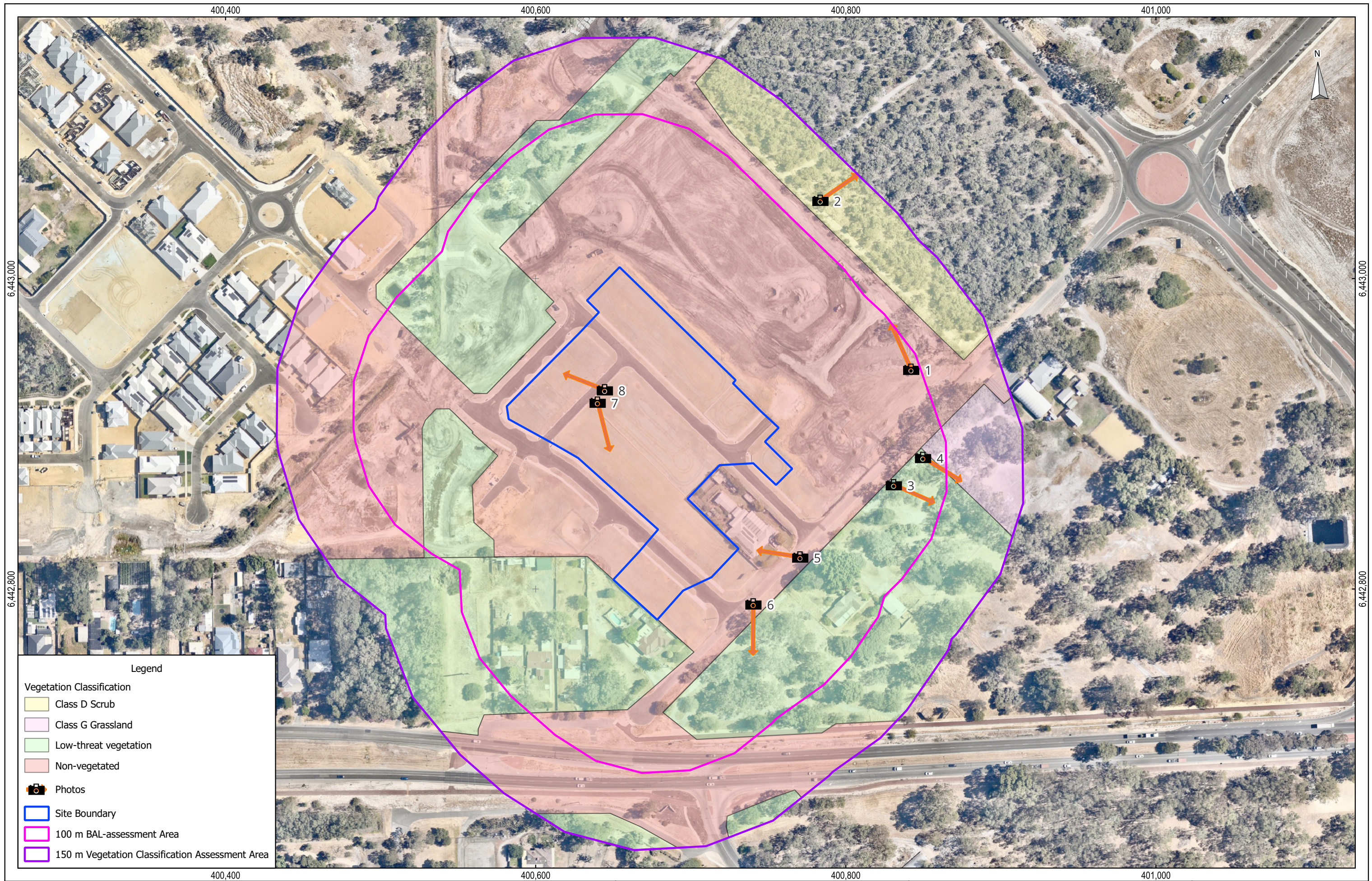


Photo ID 7



Photo ID 8

Figure 7: Non-vegetated Areas



Legend

Vegetation Classification

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

Other Symbols

- Photos
- Site Boundary
- 100 m BAL-assessment Area
- 150 m Vegetation Classification Assessment Area

Scale: 1: 2,200
 Original Size: A3
 Aerial Imagery: NearMap April 2023
 Grid: GDA94 / MGA zone 50 (EPSG:28350)

0 75 150 m

Stage 5 Mahala
 BAL-assessment
 Anstey Road Developments

Figure 8
Vegetation Classification as per AS 3959:2018

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



3.2 EFFECTIVE SLOPE

Mahala Stage 5 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

Patch	Vegetation Classification	Effective Slope	Separation Distance (m)	Maximum BAL-rating
1	Class D Scrub	Flat land	> 100	BAL-Low
2	Class G Grassland	Flat land	> 50	BAL-Low
3	Low-threat Vegetation	Flat land	N/A	BAL-Low
4	Non-vegetated Areas	Flat land	N/A	BAL-Low

3.5 BUSHFIRE ATTACK LEVEL

For buildings 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. As the clearing of the vegetation that was present in what will become Stages 8 and 10 has occurred, there is no classified vegetation within 100 m of Stage 5. Accordingly, all Lots within Stage 5 are rated BAL-Low and no BAL-contour diagram has been provided.

3.6 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. As all Lots within Stage 5 are rated BAL-Low, no Lots will have a BAL-rating.

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 5 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"> Ensure that risks associated with bushfires are planned using a risk-based approach. 	<ul style="list-style-type: none"> Preparation of a BAL-assessment report in accordance with SPP 3.7. All Lots within Stage 5 are rated BAL-Low as they are located more than 100 m from classified vegetation.
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"> There is no increase in the threat of bushfire to people, property, and infrastructure as all Lots within Stage 5 are located more than 100 m from classified vegetation.
Objective 2	<ul style="list-style-type: none"> Reduce vulnerability to bushfire. 	<ul style="list-style-type: none"> There is no increase in the threat of bushfire to people, property, and infrastructure as all Lots within Stage 5 are located more than 100 m from classified vegetation.
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"> Planning within the area is well progressed, with other nearby Stages constructed and sales progressing. Consideration of bushfire protection requirements were documented in the original Bushfire Management Plan (BMP) prepared by Bushfire Safety Consulting in 2020.
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 the early planning approvals process, with the presence of a reserve that retains some native vegetation in the POS northwest of Sontag Way and linear POS that will extend from Hypatia Blvd through to MacFarlane Rd.

4.2 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 3 demonstrates the Site's Compliance with Bushfire Protection Criteria.

Table 3: Compliance with Bushfire Protection Criteria


Intent	Performance Principle	Stage 5 Mahala Solution
Element 1: Location		
Ensure subdivision and development applications are located in areas with the least possible risk of bushfire	<ul style="list-style-type: none"> Bushfire hazard assessment is or will on completion be moderate or low. BAL-rating is BAL-29 or lower. 	<ul style="list-style-type: none"> The subdivision is in an area where the bushfire hazard level is manageable. As no Lot is located within 100 m of classified vegetation; all are rated BAL-Low.
Element 2: Siting and Design of Development		
Siting and design of development minimises the level of bushfire impact	<ul style="list-style-type: none"> Siting and design of development is appropriate to the level of bushfire threat and minimises risk to people, property, and infrastructure. 	<ul style="list-style-type: none"> As no Lot is located within 100 m of classified vegetation; all are rated BAL-Low. No battle-axe blocks or cul-de-sacs are present.
Element 3: Vehicular Access		
Vehicular access servicing a subdivision is available and safe during a bushfire event	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Access will be via the current and planned road network. Access to Anstey Rd will be available via Hypatia Blvd or to Allen Rd via Hypatia Blvd and Vaughan Cres and then to MacFarlane and Armadale Rds.
Element 4: Water		
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"> Subdivision is provided with a permanent and secure water supply that is sufficient for firefighting purposes. 	<ul style="list-style-type: none"> The site is connected to scheme water, i.e. located within a reticulated area with hydrants compliant with Water Corporation design standards.
Element 5: Vulnerable Tourism Land Uses		
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.	<ul style="list-style-type: none"> Varies according to the type of tourism use, and will include: <ul style="list-style-type: none"> Suitable siting of dwellings with appropriate hazard separation from classified vegetation. Adequate vehicular access and egress in the event of a fire location. Has a permanent water supply available for firefighting purposes. 	<ul style="list-style-type: none"> Not applicable — Stage 5 Mahala is a residential development.

4.3 COMPLIANCE WITH RELEVANT DOCUMENTS

Sections 4.1 and 4.2 demonstrate that the site complies with SPP 3.7 (DPLH *et al*, 2015) and *Guidelines for Planning in Bushfire Prone Areas V1.4* (WAPC and DPLH, 2021). 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* (DPLH and WAPC, V1.4, 2021). 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 19 March 2024.

Signed: 
Date: 19 March 2024
Accreditation Number: 36638
Accreditation Expiry Date: 30 April 2024



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

MBS Environmental, (2023), *BAL-Assessment, Mahala Stage 5, Anstey Road Forrestdale*, unpublished report prepared for Anstey Road Developments Pty Ltd.