

**BUSHFIRE MANAGEMENT PLAN
STAGES 5, 6, AND 7
MELROS BEACH ESTATE, DAWESVILLE**

PREPARED FOR:

WATERMARK ENTERPRISES PTY LTD

AUGUST 2023

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STAGES 5, 6, AND 7 MELROS BEACH BUSHFIRE MANAGEMENT PLAN

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1. BACKGROUND INFORMATION

Watermark Enterprises Pty Ltd are in the process of clearing and developing Stages 5, 6, and 7 of the Melros Beach Estate in Dawesville (the Site), with a Bushfire Management Plan required to support a subdivision application. The broad aim of the assessment process was to identify potential bushfire risks to future properties along with 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 (2021). Accordingly, there is a requirement for landowners to undertake an assessment to determine the risks and identify appropriate management strategies such that the 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

The Melros Beach Estate is located in Dawesville within the City of Mandurah and is (Figure 1):

- Approximately 80 km southwest of the Perth Central Business District (CBD) and 15 km southwest of Mandurah.
- Approximately 9.8 ha.

Stage 5 is bounded by Anaconda Loop to the north, Dandaragan Drive to the east, Stage 6 to the south, and a patch of retained bushland and Polo Way to the west.

Stage 6 is bounded by Stage 5 and a patch of retained bushland to the north, Dandaragan Drive to the east, Bailey Bvd to the south, and a second patch of retained bushland to the west.

Stage 7 is bounded by Karnak Way and retained bushland to the north, a second patch of retained bushland to the east, Bailey Bvd to the south, and previous stages to the west.

1.2 AIMS AND OBJECTIVES

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

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

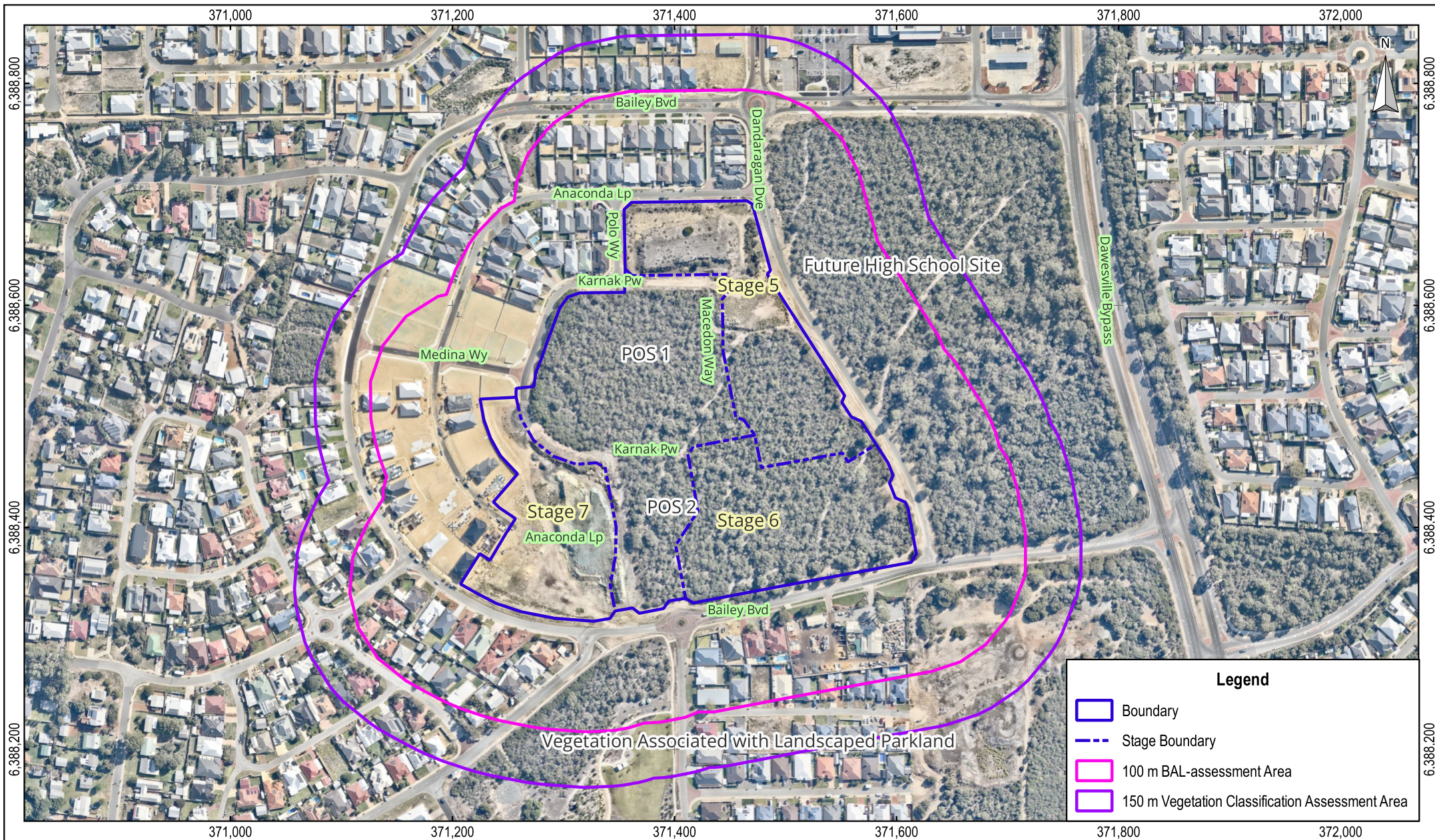
The objectives of this BMP are to:

- Define land use areas and values within the subdivision, with the entire subdivision being developed as urban residential Lots except for those patches of bushland that will be retained as areas of public open space (POS) within the development boundary.
- Define and rank fire hazard areas according to the vegetation type 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 patches east of Dandaragan Drive, with the central and southern POS areas, along with retained patches south of Bailey Bvd (Figure 1).
 - The need for building construction standards where vegetated areas interface with the urban development.
 - Identify access for fire-fighting 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 plan preparation process 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*.
- 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.



Scale: 1: 4,536
 Original Size: A4
 Aerial Imagery: NearMap April 2023
 Grid: GDA94 / MGA zone 50 (EPSG:28350)
 0 100 200 m

Bushfire Management Plan
 Stages 5, 6, and 7 Melros Beach
 Watermark Enterprises Pty Ltd

Figure 1

Location

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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 located 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 5 and 6 are currently being cleared of retained vegetation, with clearing within Stage 7 undertaken as previous stages to the west were developed. Vegetation has been retained in two POS areas west of Stages 5 and 6; these have been arbitrarily labelled POS 1 and 2 for convenience. Vegetation currently remaining within a large patch west of Dandaragan Drive (Figure 1) will be cleared at some future point to accommodate a high school. A smaller patch of vegetation south of Bailey Bvd has been retained in association with a landscaped parkland area, with an additional patch that is undergoing some clearing also present south of Bailey Bvd towards the Dawesville Bypass and west of existing development (Figure 1).

2.1.3 Contours and Slope

The Site and retained vegetation are upslope or flat land with respect to Stages 5, 6, and 7, 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 the subdivision is either cleared, in the process of being cleared, or vegetated (Figure 2).



Figure 2: Current Land Use

2.1.5 Environmental Considerations

Environmental values have been considered during the preliminary approvals process, with patches of vegetation dominated by *Banksia* species retained within POS areas 1 and 2, along with the POS area located south of Bailey Bvd that also includes a patch of retained bushland consistent with that present within the Site boundary. The patch across Dandaragan Drive to the east is expected to be retained for some time into the future.

Within the Site boundary, there are no:

- Bush Forever Sites.
- Wetlands or waterways.

The presence of bushland dominated by *Banksia* species may provide foraging habitat for conservation significant Black Cockatoo species.

2.1.6 Landscaping

No landscaping is expected within POS areas 1 and 2, with bushland being retained to the fence line.

2.2 VEGETATION CLASSIFICATION

Vegetation on and within 150 m of the Site was assessed during a site visit on 16 August 2023 using descriptions provided in Table 2.3 and Figure 2.4 of AS 3959:2018; each vegetation class is discussed. The pre-development vegetation classifications for the Site are shown in (Figure 6), with the post-development classifications shown in (Figure 7).

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 (Figure 3):

- POS area 1 west of Stage 5 and north of Stage 6 and 7 (Photo ID 1).
- POS area 2 west of Stage 6 and east of Stage 7 (Photo ID 2).
- Retained vegetation across Dandaragan Drive east of Stages 5 and 6 (Photo ID 3).
- Retained vegetation in the POS area to the south across Bailey Bvd (Photo ID 4).
- Retained vegetation that is undergoing some clearing east of existing development to the south of Stage 6 that is more than 100 m from the Site boundary.



Patch: 1	Classification or Exclusion Clause:	Class D Scrub
		
Photo ID 1 – POS Area 1		
		
Photo ID 2 – POS Area 2		



Photo ID 3 – Dandaragan Drive



Photo ID 4 – Bailey Bvd POS Area

Figure 3: Class D Scrub

2.2.2 Patch 2: 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:

- The landscaped portion of the POS located south of Bailey Bvd (Photo ID 5).
- A small patch of retained vegetation located on Bailey Bvd west of Medina Ave that is more than 100 m from the Site (Exclusion Clause 2.2.3.2 (b), Photo ID 6).
- Landscaped areas along Bailey Bvd south of Stage 6.
- A landscaped POS area to the north that extends from Bailey Bvd through to Anaconda Loop created during previous development stages.



Figure 4: Low-Threat Vegetation

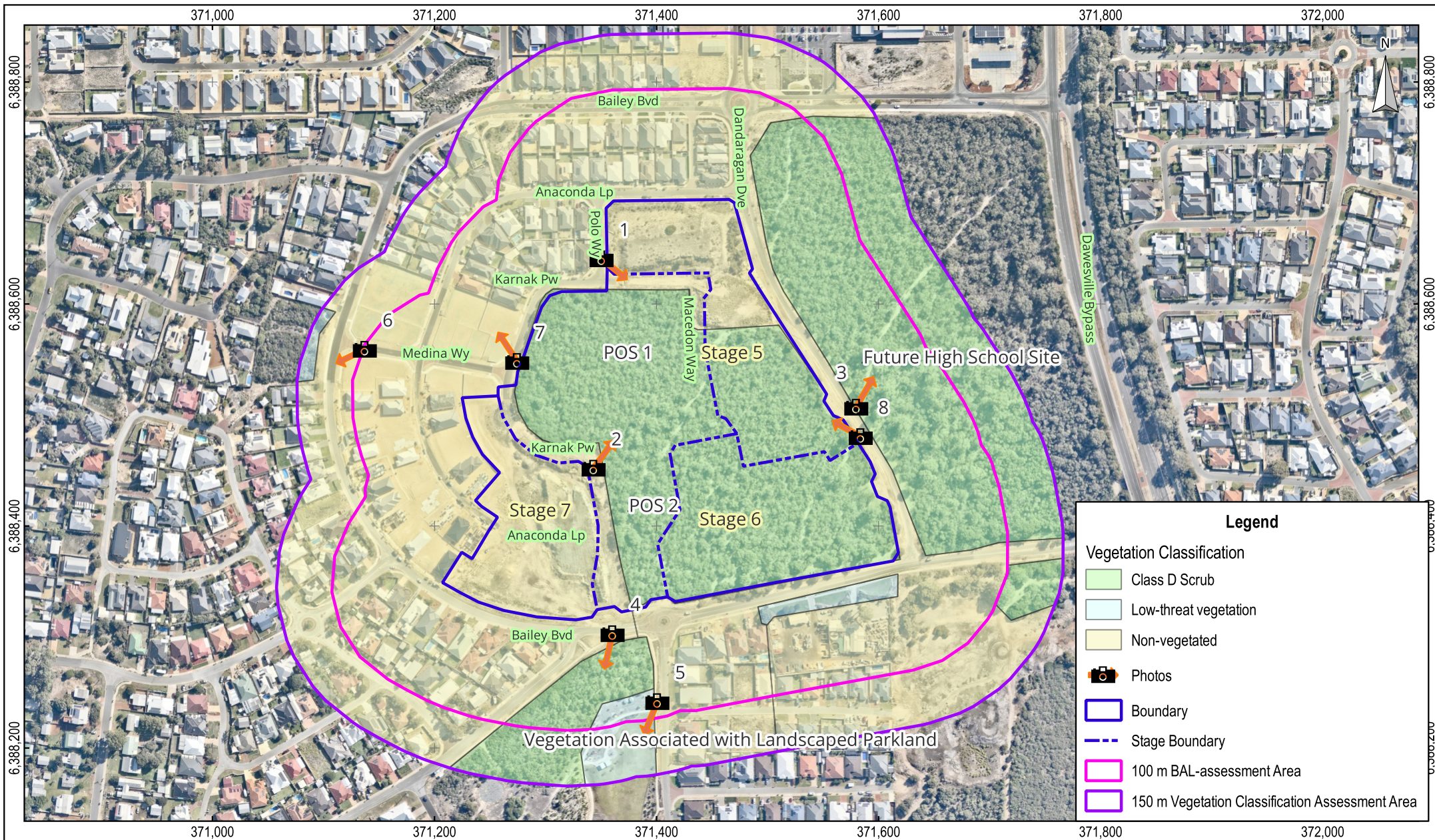
2.2.3 Patch 3: Non-vegetated Areas

Non-vegetated areas are subject to exclusion clause 2.2.3.2 (e), with those within and close to the Site including (Figure 5):

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



Figure 5: Non-vegetated Areas



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0 100 200 m

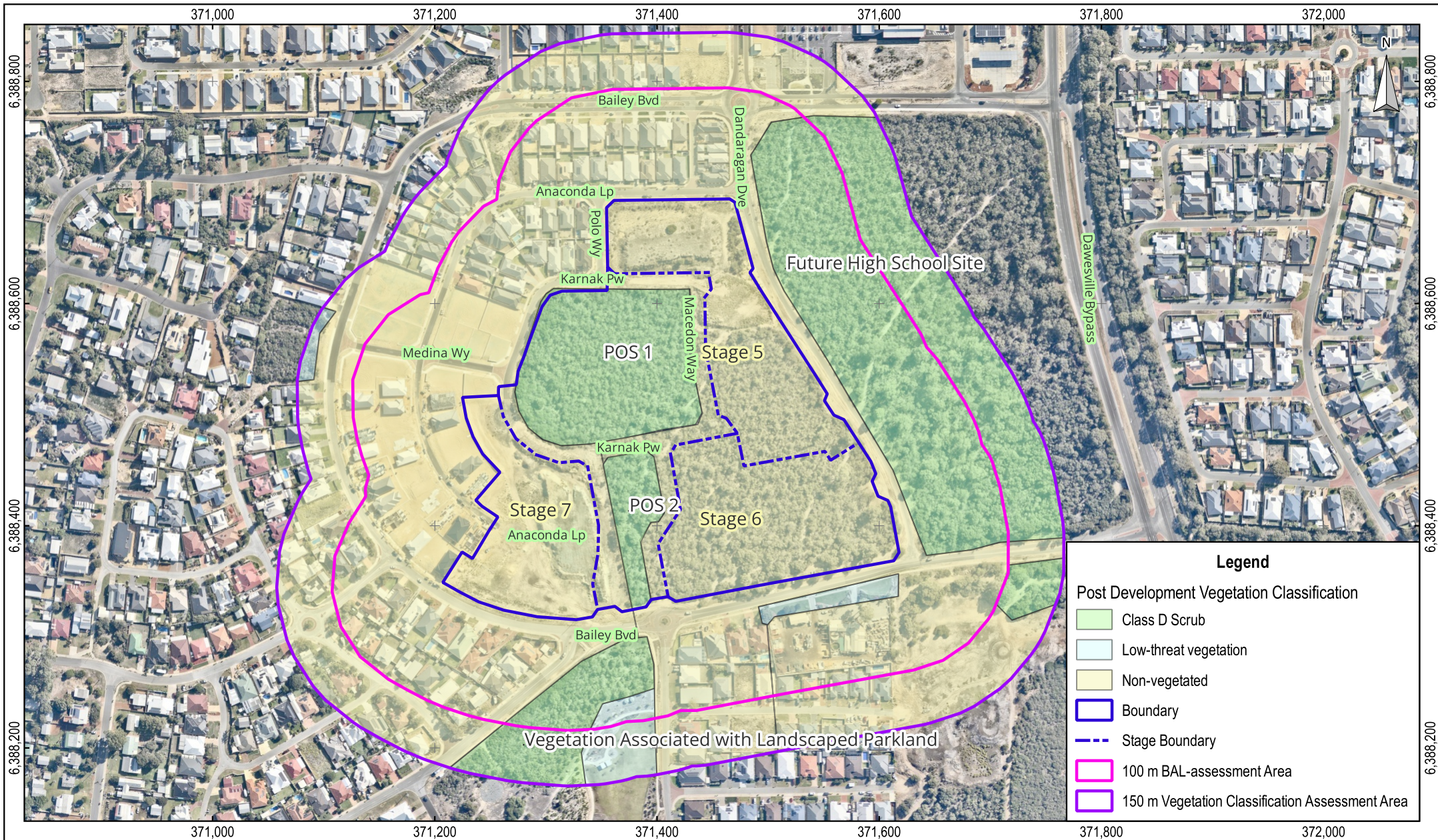
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Figure 6

**Vegetation Classification
 as per AS 3959:2018**

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Bushfire Management Plan
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Figure 7
Post Development Vegetation
Classification
as per AS 3959:2018

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2.3 BUSHFIRE HAZARD LEVEL

2.3.1 Bushfire Hazard Assessment

Depending on the vegetation type, a hazard rating of low, moderate, or extreme is assigned. The nature of the vegetation in and around the development area means that the pre-development bushfire hazard rating ranges from Moderate to Extreme due to the Class D Scrub present within and in proximity to the Site (Figure 8). All locations within 100 m of the Class D Scrub are assigned a Moderate hazard rating due to the increased risk in those locations, with no location within 100 m the vegetation being assigned a Low hazard rating.

2.3.2 Fire Danger Index

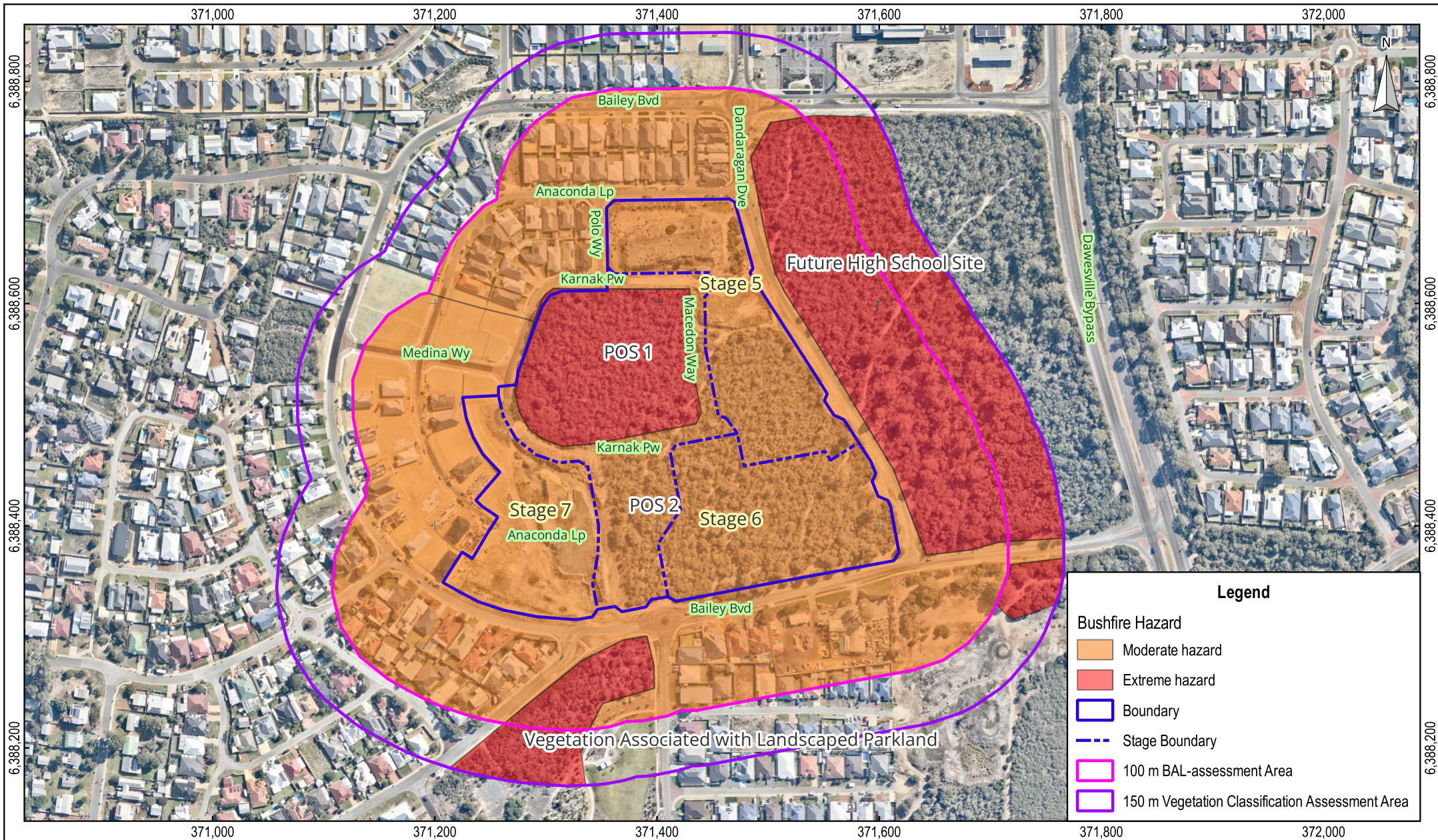
The fire danger index (FDI) for the Site is FDI 80, as documented in Table 2.4.3 of AS 3959:2018, and which is the nominated FDI for Western Australia.

2.3.3 Potential Fire Impacts

Potential fire impacts within the Site include 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	15–40	BAL-29 – BAL-12.5
2	Low Threat Vegetation	Flat	N/A	BAL-Low
3	Non-vegetated Areas	Flat	N/A	BAL-Low



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 Grid: GDA94 / MGA zone 50 (EPSG:28350)
 0 100 200 m

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Figure 8

Pre-development Bushfire Hazard

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2.4 BAL ASSESSMENT

The Lot layout for the Site is known, so it is possible to determine BAL ratings for each Stage and these are shown in Figure 9. Note that Lot numbers have been assigned to Stage 5 Lots, with temporary Lot numbers provided for Stages 6 and 7 until final Lot numbers are assigned. BAL-ratings for each stage documented in this BMP are outlined in the following Sections, noting that there may be scope to adjust some ratings to a lower level due to the large Lot sizes, combined with house design and placement on Lots.

2.4.1 Stage 5

Some Lots within Stage 5 front classified vegetation to the east and west, with all Lots requiring a BAL rating:

- BAL-12.5:
 - Lots 256 – 262, 292, 310, 311, 315 – 319, noting that the building in Lot 315 will need to avoid the green contour in the northeastern portion.
- BAL-19:
 - Lots 287 – 291 with the application of a 4-m setback from the front Lot boundary; if the buildings are located closer to Karnak Way, a BAL-29 rating will apply.
 - Lots 296, 304 – 309 with the application of a 5-m setback from the front Lot boundary; if the buildings are located closer to Macedon Way, a BAL-29 rating will apply.
 - Lots 254, 255, 293, 297 – 303, 314 .
- No Lots will be rated BAL-29 unless they are built closer to either Karnak or Macedon Ways, or Dandaragan Drive, as per the above.
- Not Lots will be rated BAL-Low, BAL-40 or BAL-FZ.

2.4.2 Stage 6

Several Lots within Stage 6 front classified vegetation to the north, east, south, and west, with all Lots requiring a BAL rating:

- BAL-Low: Lots 62 and 75.
- BAL-12.5:
 - Lots 34, 43 – 49, 57 – 61, 63 – 66, 71 – 74, 76 – 80.
- BAL-19:
 - Lots 50 – 53 with the application of a 5-m setback from the front Lot boundary; if the buildings are located closer to front of the Lot, a BAL-29 rating will apply.
 - Lots 56, 81, and 82 with the application of a 4.5-m setback from the front Lot boundary, if the building is located closer to front of the Lot, a BAL-29 rating will apply.
 - Lots 41, 42, and 67 – 70.
- BAL-29: Lots 54 and 55.
- Not Lots will be rated BAL-40 or BAL-FZ.

2.4.3 Stage 7

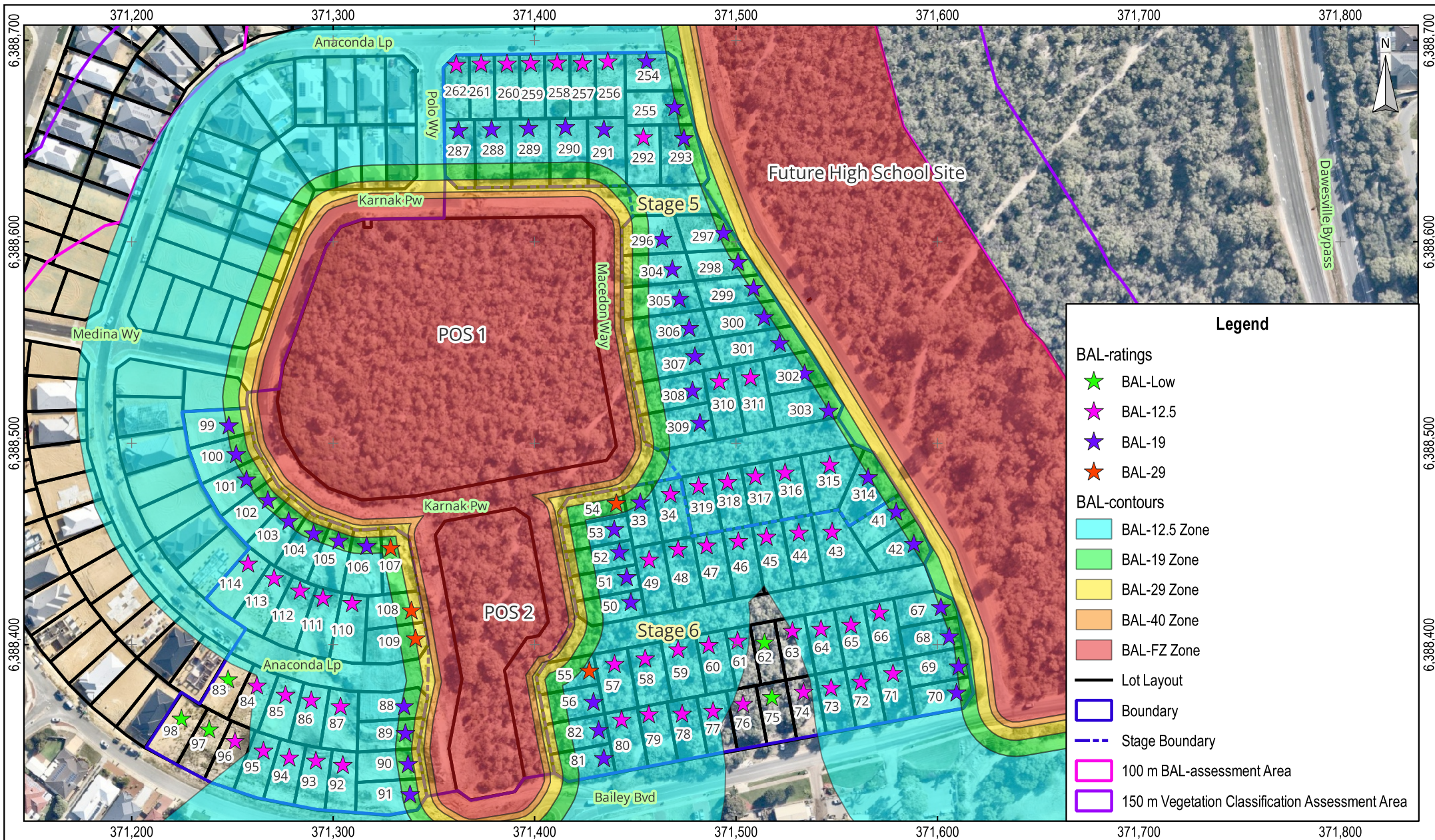
Some Lots within Stage 7 front classification to the north, east, and south, with several requiring a BAL rating:

- BAL-Low:

- Lot 83 with the application of a 5-m setback from the front Lot boundary; if the building is placed closer to Anaconda Loop, a BAL-12.5 rating will apply.
- Lots 97 and 98.
- BAL-12.5: Lots 84 – 87, 92 – 96, 110 – 114.
- BAL-19:
 - Lots 88 – 91 with the application of a 4.5-m setback from the front Lot boundary; if the buildings are located closer to front of the Lot, a BAL-29 rating will apply.
 - Lots 99 – 106 with the application of a 4-m setback from the front Lot boundary, if the buildings are located closer to the front of the Lot, a BAL-29 rating will apply.
- BAL-29: Lots 107 – 109.
- Not 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 9, 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.



Scale: 1: 2,500
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0 100 200 m

Bushfire Management Plan
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Figure 9

BAL-contours and Ratings

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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-29 or BAL-19, elevations that are not exposed to the source of the bushfire attack may be reduced to BAL-12.5.

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, Watermark Enterprises Pty Ltd, both for installation and ongoing maintenance until Lots within the Site are sold and POS areas are ceded to the City of Mandurah. The Developer is also responsible for ensuring the new owner of the site 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, Watermark Enterprises Pty Ltd, the City of Mandurah, 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 firebreak/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.

2.9.2 City of Mandurah Responsibilities

It should be noted that the City of Mandurah 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 Mandurah 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 Mandurah firebreak notices	Developer or owner/occupier as appropriate
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
City of Mandurah Responsibilities				
4	Providing appropriate bushfire advice in relation to firebreaks, hazard reduction, and similar.	City of Mandurah	As required	City of Mandurah
5	Ensuring appropriate information relating to bushfire prone status is included on titles.	City of Mandurah	Not required	N/A
6	Ensure that buildings are constructed in accordance with the nominated BAL rating.	City of Mandurah	Not required	N/A
Owner/Occupier Responsibilities				
7	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
8	Maintain the nominated asset protection zone between the edge of the classified vegetation and building walls.	Owner/occupier	Ongoing as required	Owner/occupier
9	If evaporative air conditioners are installed on dwelling(s), install ember shields.	Owner	Regular maintenance in accordance with manufacturer's instructions	Owner
10	Respond to/comply with bushfire advice issued by the developer, the City of Mandurah 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 5 – 7 of the Melros Beach 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 none higher than BAL-29 (Figure 9).
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 none higher than BAL-29 (Figure 9).
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 POS areas 1 and 2, in the POS to the south of Bailey Bvd.

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 9 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"> The subdivision is in an area where the bushfire hazard level is manageable. Some Lots within the Site will have a BAL rating, with none higher than BAL-29 (Figure 9).
	BAL rating is BAL-29 or lower.	<ul style="list-style-type: none"> Bushfire hazard assessment indicates manageable bushfire risk. Some Lots within the Site will have a BAL rating, with none higher than BAL-29 (Figure 9).
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. Management — the APZ is managed in accordance with the requirements of 'Standards for Asset Protection Zones' (Schedule 1 on page 71 of the Guidelines). 	<ul style="list-style-type: none"> The APZ coincides with the boundary between BAL-40 and BAL-29 zones (Figure 9) 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. Some Lots within the Site will have a BAL rating, with none higher than BAL-29 (Figure 9).

Intent	Acceptable Solutions	Solution
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)	
	Public roads are to meet the minimum technical requirements in Table 6, Column 1 on page 76 of the Guidelines.	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.
	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.	
	A3.2a Multiple Access Routes (SP Sb Do)	
	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).	Access and egress is available to at least two different destinations, with several north/south and east/west access options via the current and planned road network (Figure 9).
	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.	N/A —all roads are through roads.
	<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 — all roads are through roads.
	A3.2b Emergency Access Way (SP Sb Do)	
	<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. 	N/A — access will be the existing and planned road network.

Intent	Acceptable Solutions	Solution
	<ul style="list-style-type: none"> Must be signposted and if gated, gates must open the whole trafficable width and remain unlocked. 	
	A3.3 Through-roads (SP Sb)	
	<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. 	N/A — all roads are through roads.
	<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. 	N/A — all roads are through roads.
	A3.4a Perimeter Roads (SP Sb)	
	<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. 	Perimeter roads include Karnak Pw, Dandaragan Drive, and roads to be constructed during civil engineering works associated with the development of Stages 5, 6 and 7 (Figure 9).
	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 Dandaragan Drive and Karnak Pw that were constructed previously.
	<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.

Intent	Acceptable Solutions	Solution
	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.
	<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.

Intent	Acceptable Solutions	Solution
	A3.6 Private Driveways (Dd Do)	
	There are no private driveway technical requirements where the private driveway is: <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.
	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: <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> <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 	A4.1 Identification of Future Water Supply (SP)	
	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.	The Lots are located in an area with reticulated water supply available for firefighting purposes.
	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.	N/A — subdivision will be connected to a reticulated water supply.
	A4.2 Provision of Water for Firefighting Purposes (Sb Dd Do)	
	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: <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. 	Hydrants will be installed in accordance with Water Corporation Design Standard DS 63.

Intent	Acceptable Solutions	Solution
<p>dwelling, or minor development.</p> <ul style="list-style-type: none"> Do – Development application for any other development that is not a single dwelling, ancillary dwelling, or minor development. 	<ul style="list-style-type: none"> 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>	
Element 5: Vulnerable Tourism Land Uses		
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.	Every habitable building is surrounded by Asset Protection Zone (APZ) in accordance with Element 2: Siting and Design of Development — A2.1 APZ.	N/A
	<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. 	N/A
	Suitable access/egress is provided for users of tourism sites.	N/A
	Adequate water is available for firefighting purposes in the event of a bushfire.	N/A

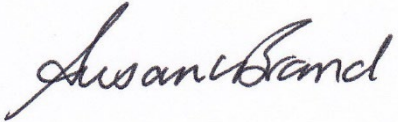
3.3 COMPLIANCE WITH RELEVANT DOCUMENTS

Sections 3.1 and 3.2 document how Stages 5 – 7 of the Melros Beach 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 Mandurah, 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 16 August 2023 and associated planning.

Signed: 

Date: 28 August 2023

Accreditation Number: BPAD 36638

Accreditation Expiry Date: 30 April 2024



4. REFERENCES

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

Bushfires 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 August 2021.