

BUSHFIRE MANAGEMENT PLAN

STAGE 9, VERTEX ESTATE YANCHEP

PREPARED FOR:

PRIME WEST (YANCHEP BEACH RD) PTY LTD

MARCH 2025

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environmental and geoscience consultants

STAGE 9, VERTEX ESTATE BUSHFIRE MANAGEMENT PLAN

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Satterley Property Group	Luke Oliver, Senior Development Manager	[01]	07 March 2025

Document Control for Job Number: LWPVS9BAL

Document Status	Prepared By	Authorised By	Date
Draft Report	Sue Brand	Matthew Todd	21 December 2023
Final Report	Sue Brand	Matthew Todd	09 January 2024
Revision 1	Sue Brand	Matthew Todd	10 June 2024
Revision 2	Sue Brand	Matthew Todd	11 July 2024
Revision 3	Sue Brand	Matthew Todd	24 July 2024
Revision 4	Sue Brand	Sue Brand	07 March 2025

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1. BACKGROUND INFORMATION

Satterley Property Group are in the process of progressing development at the Vertex Estate (the Site, Stage 9) in Yanchep on behalf of Primewest (Yanchep Beach Road) Pty Ltd, and commissioned Martinick Bosch Sell Pty Ltd (MBS Environmental, MBS) to prepare a bushfire management Plan to support the planning approvals process associated with Stage 9. The broad aim of the assessment process was to identify potential bushfire risks to future properties and their management 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), 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 (classified vegetation) 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 (AS 3959:2018)*. The BAL-assessment component of this document considers current site conditions along with the provisions of State Planning Policy (SPP) 3.7 *Planning in Bushfire Prone Areas* (Department of Planning and the Western Australian Planning Commission (WAPC), 2015) and *Guidelines for Planning in Bushfire Prone Areas (the Guidelines)* (Department of Planning, Lands and Heritage (DPLH) and the Western Australian Planning Commission (WAPC), V1.4_0, 2021).

1.1 LOCATION

The overall development site is located approximately 50 km northwest of the Perth Central Business District. Stage 9 extends from the Yanchep railway reserve and associated infrastructure that is currently under construction to the west to housing located along Moorpark Ave in the east, with Stages 5 and 6 located to the south, and vegetated areas in private ownership to the north (Figure 1).

1.2 AIMS AND OBJECTIVES

The aim of the BMP is to outline the bushfire management methods and requirements that will be implemented within Stage 9 of the Vertex 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:

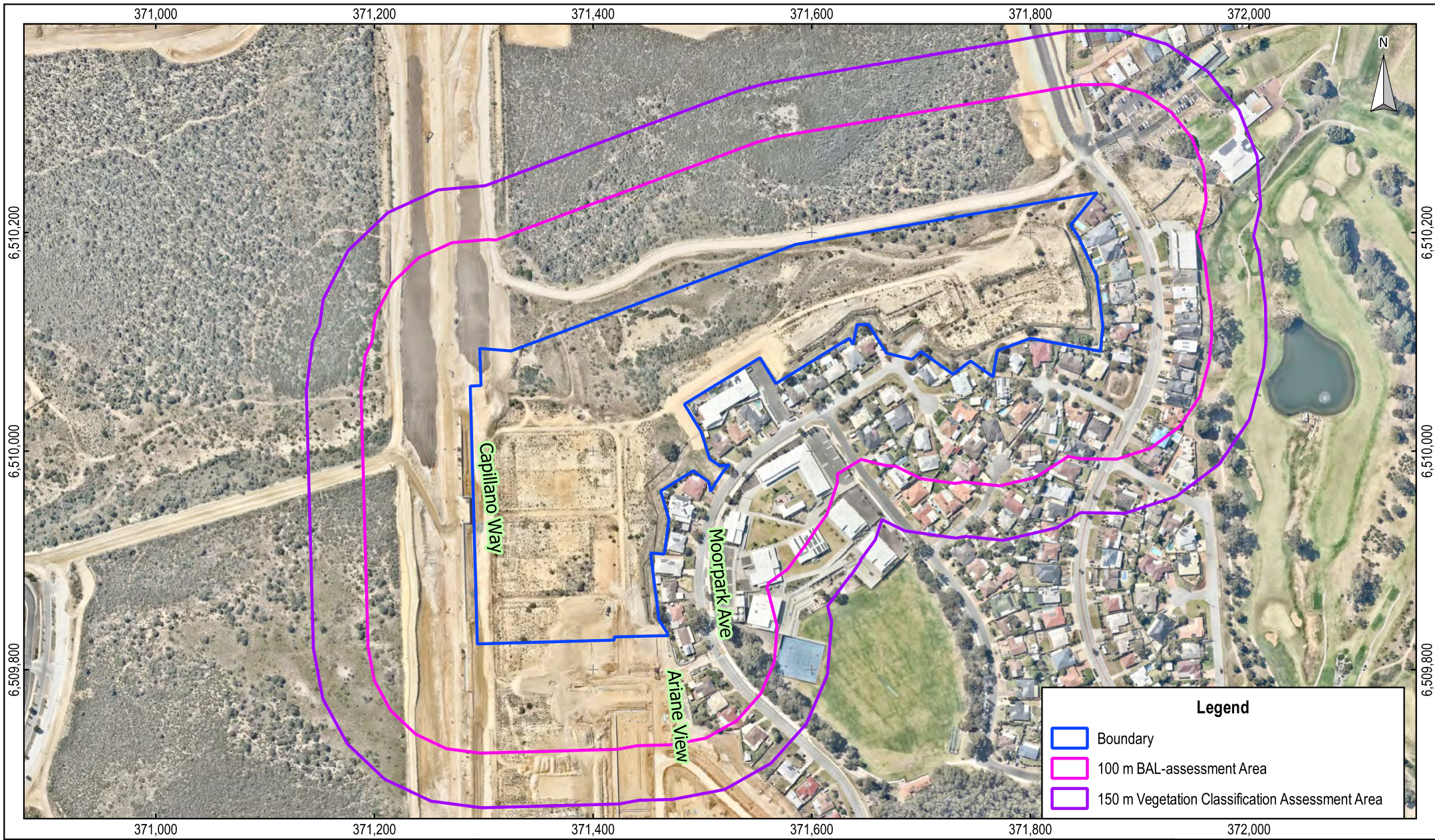
- Define land use areas and values within the subdivision, with the entire subdivision being developed as urban residential Lots except for the planned Strategic Open Space (SOS) area in the northeastern portion of the Site.
- Define and rank bushfire hazard areas according to the vegetation type and fire fuels present.
- Outline the roles and responsibilities of individuals and organisations in relation to bushfire management within the subdivision.
- Document fire management strategies for the subdivision, taking into consideration:
 - Vegetation to be retained in off-site locations to the west and north of the Site.

- The need for building construction standards where vegetated areas interface with the urban development.
- The provision of access for firefighting operations and daily maintenance in and around vegetated areas and stages of development.
- The application of an assessment procedure that will evaluate the effectiveness and impact of existing and proposed fire prevention activities and strategies.
- Documentation of 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 of the BMP included:

- Assessing the vegetation type and class present within and adjacent to the proposed development site using descriptions provided in *AS 3959:2018*.
- Assigning hazard ratings based on the vegetation types present on and offsite as per the Guidelines.
- Determining bushfire attack level (BAL) ratings and suggesting management strategies that could be implemented based on current and projected site considerations.
- Documenting outcomes of the assessment process in this BMP.



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Bushfire Management Plan
Stage 9 Vertex Estate, Yanchep
Primewest

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 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

The majority of Stage 9 has been cleared, with some patchy vegetation remaining in the northern portion of the Site. All native vegetation has been cleared from Stages 5 to 8 to the south and within the Yanchep railway reserve. A large patch of native vegetation is currently present in land in private ownership to the north, with vegetated areas also present to the west of the Yanchep railway reserve, with both expected to be retained for some time into the future.

2.1.3 Land Use

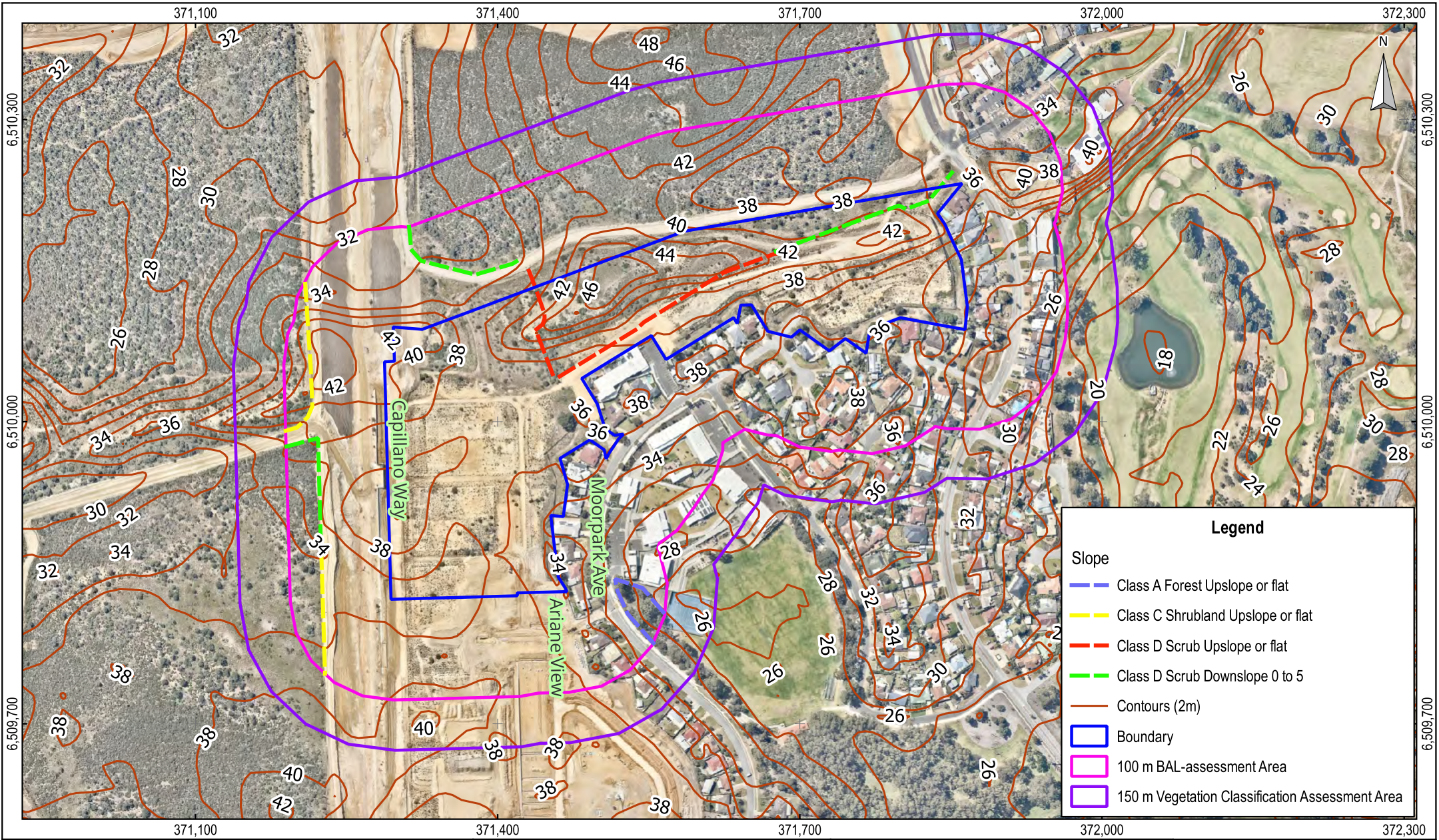
The current land use is a combination of cleared areas with some patchy shrubs and weeds, particularly in the northern portion of the site (Figure 2).



Figure 2: Current Land Use

2.1.4 Contours and Slope

The southern portion of Stage 9 is located on flat land with civil engineering works progressing. The northern portion of the Site rises towards the north (Upslope), then drops off towards the vegetated land owned by others (Downslope 0 to 5°). The Perth – Yanchep railway line is located at a lower level than the Vertex Site, with vegetation further west of the railway line including upslope and downslope areas. Site contours and slope are provided in Figure 3.



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0 100 200 m

Bushfire Management Plan
 Stage 9 Vertex Estate, Yanchep
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Figure 3
Contours and Slope

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2.1.5 Environmental Considerations

Environmental considerations at the Vertex Site have been considered during previous planning phases. Accordingly, there are none of the following within Stage 9:

- Bush Forever sites.
- Wetland areas.
- Threatened or priority listed flora or fauna populations.
- Threatened or priority listed ecological communities.

2.1.6 Landscaping and Revegetation

Landscaping and revegetation will occur in the SOS area planned for the northern portion of Stage 9, with landscaping plans to be confirmed (Figure 1). The extent of landscaping and revegetation has been informed by the **earthwork's** strategy prepared earlier this year and this BMP. At present, it has been assumed that SOS will be restored to Class D Scrub in the north with some patches of Low Threat vegetation to provide a suitable separation distance/asset protection zone (APZ) between northern Lots and potential vegetated areas, with a 2.1 m strip of low threat vegetation provided at the southern extent of the Class D Scrub to ensure the BAL-40 zone does not extend into the front of Lots across the road. POS/drainage areas will be created in Lots 8010, 8005, and 8007 (Figure 11). These will be created and maintained as low threat vegetation on an ongoing basis.

2.2 VEGETATION CLASSIFICATION

Vegetation on and within 150 m of the Site was assessed using descriptions provided in Table 2.3 and Figure 2.4 of AS 3959:2018 during several site visits since 2018, with the most recent on 02 April 2024. Each vegetation class is discussed and shown in Figure 4, Figure 5, Figure 6, Figure 7, Figure 8, and Figure 9, with the pre-development vegetation classifications shown in Figure 10.

2.2.1 Patch 1: Class A Forest

Class A Forest is characterised by trees 10 to 30 m high with a 30% – 70% canopy cover and may include an understorey of low trees or shrubs. One small patch of Class A Forest is located a minimum of 50 m to the east of Stage 9 around the perimeter of the school oval in Moorpark Avenue (Figure 4), noting that this patch is connected to another patch associated with St Andrews Park to the southeast. This vegetation is expected to be retained on an ongoing basis and will represent an ongoing bushfire risk to the Vertex subdivision, and the southeastern portion of Stage 9.



Figure 4: Class A Forest

2.2.2 Patch 2: Class C Shrubland

Class C Shrubland is characterised by shrubs less than 2 m high with a continuous canopy from ground level. Two patches of this vegetation class are present in vegetated areas across the Perth – Yanchep railway line construction site (Figure 5). It is expected that this vegetation will be retained for the foreseeable future and represent an ongoing bushfire risk to the Site. A small patch of this vegetation class is present within the Site due to regrowth after initial clearing, with a small portion to the west that will be cleared to accommodate the development process. The remainder along with the SOS area, except for the designated low threat vegetation, will be restored to Class D Scrub, thus will also represent an ongoing bushfire risk to western and northern Lots within Stage 9.



Figure 5: Class C Shrubland

2.2.3 Patch 3: Class D Scrub

Class D Scrub is characterised by shrubs from 2 to 4 m high with a canopy cover greater than 30% and continuous foliage from ground level. A patch of this vegetation class is present across the Perth – Yanchep railway access route to the north (Figure 6), with another patch inferred from aerial imagery across the railway line construction site to the west. It is expected that this vegetation class will be retained for the foreseeable future and represents an on-going bushfire risk to the subdivision. The western Patch will contribute to BAL-ratings to Lots in proximity to the railway line. The SOS will be restored to Class D Scrub except for two areas of Low Threat vegetation that will ensure a suitable separation distance is provided between the Class D Scrub and Lots where there is no perimeter road between the Lot and vegetation and one that will ensure the BAL-40 contour does not encroach in the front of the northern Lots. At maturity, this Patch of Class D Scrub will provide an ongoing risk to Lots in proximity to the SOS and is the main determinant of BAL-ratings within Stage 9.



Figure 6: Class D Scrub

2.2.4 Patch 4: Class G Grassland

Class G Grassland is characterised by low shrubs and grasses up 50 cm in an unmanaged state. Patches of this vegetation class is present within the Stage 9 boundary after several years patchy weedy regrowth on the predominantly clay soils of this Site (Figure 7) and will be removed to accommodate the planned residential development. Small patches are also present to the north of the proposed development area, across the Perth-Yanchep rail construction site entry to the northeast (expected to be retained), and within what will become the SOS area (will be cleared when the area is revegetated).



Figure 7: Class G Grassland

2.2.5 Patch 5: Low Threat Vegetation

Clause 2.2.3.2 of AS 3959:2018 outlines various exclusion clauses for low threat vegetation and non-vegetated areas. Exclusion clause 2.2.3.2 (f) applies to vegetation that is characterised by factors such as flammability, moisture content, or fuel load. This vegetation class includes grassland managed in a minimal fuel condition, maintained lawns, playing fields, golf courses (fairways and playing areas), maintained public reserves, parklands, vineyards, orchards, nature strips, windbreaks, and cultivated gardens. This vegetation class is present in the primary school playing fields along Moorpark Ave and the Sun City Country Club to the east. Low threat vegetation will be created in the POS area to the south in Stage 5, as well as in portions of the SOS that will be created in the northern portion of Stage 9, as indicated in Section 2.1.6.



Figure 8: Low Threat Vegetation

2.2.6 Patch 6: Non-vegetated Areas

Non-vegetated areas are subject to exclusion clause 2.2.3.2 (e) of AS 3959:2018. Within Stage 9, non-vegetated areas include (Figure 9):

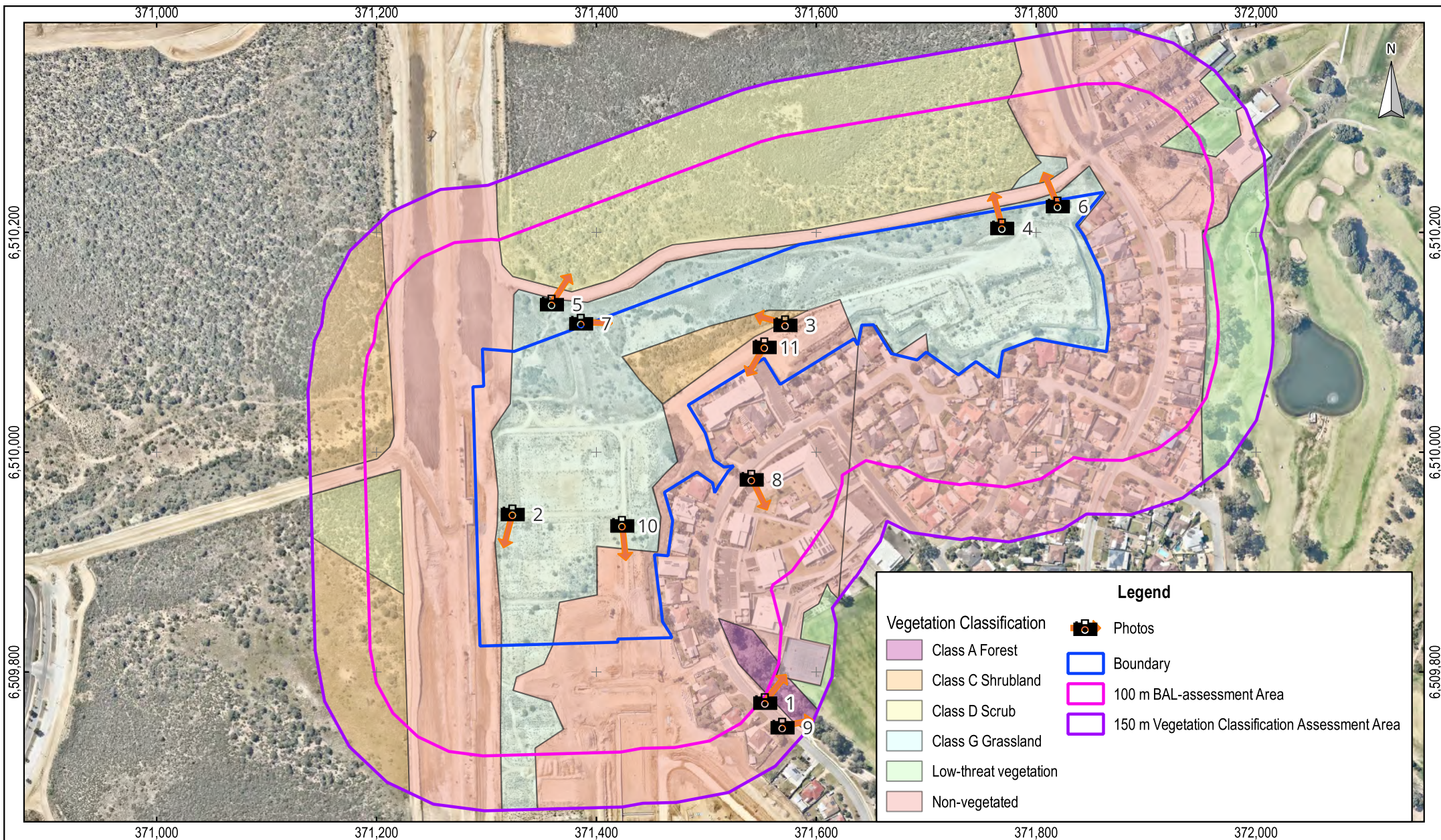
- Development in previous Stages of the Vertex subdivision, including roads under construction and other locations where civil engineering works are progressing to the south.
- Cleared areas within Stages 5 – 8 where vegetative regrowth is minimal, including the asset protection zone around the childcare centre at Lot 121 Moorpark Ave.
- The Perth – Yanchep railway construction site to the west.
- Existing residential development to the east along Moorpark Ave and beyond.



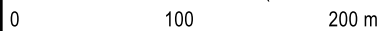
Figure 9: Non-vegetated Areas

2.2.7 Post-development Vegetation Classification

As development proceeds, clearing of the Class G Grassland within Stage 9 will occur, as will those patches in the SOS that will be created within the Stage removing the threat from this vegetation class within the Site. It is expected that the small patch of Class G Grassland across the Perth – Yanchep railway access way will be retained for some time into the future. It is expected that Class D Scrub will be restored in most of the SOS except for small patches of low threat vegetation that will ensure a suitable separation distance is maintained between Lots and classified vegetation and that the BAL-40 contour will not encroach into the front of the northern Lots (Section 2.1.6). The restoration of classified vegetation will increase the bushfire risk within the vicinity of the SOS area on an ongoing basis and has been considered during the assessment process undertaken during preparation of this BMP. The Post-development vegetation classification is provided in Figure 11.



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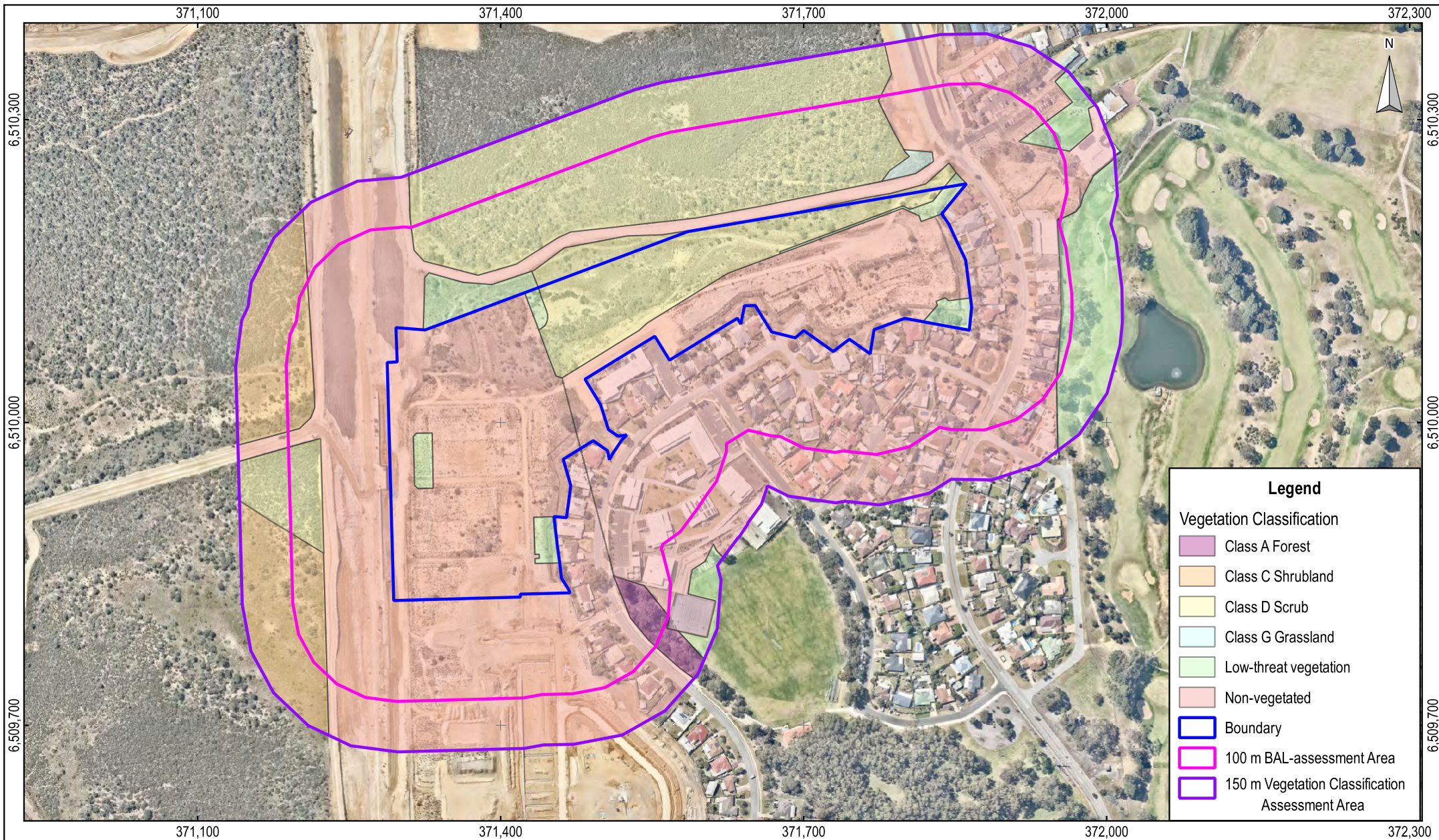


**Bushfire Management Plan
 Stage 9 Vertex Estate. Yanchep
 Primewest**

**Figure 10
 Pre-development
 Vegetation Classification
 as per AS 3959:2018**

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0 100 200 m

Bushfire Management Plan
 Stage 9 Vertex Estate, Yancheop
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Figure 11
Post-development
Vegetation Classification

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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 Low to Extreme due to the presence of Class A Forest, Class C Shrubland and Class D Scrub within 100 m of the Site (Figure 12). All locations within 100 m of vegetation with a Moderate or Extreme hazard are shown as having a Moderate bushfire hazard due to the increased risks associated with their presence. Other locations within and in proximity to the Site will have a low hazard rating.

2.3.2 Fire Danger Index

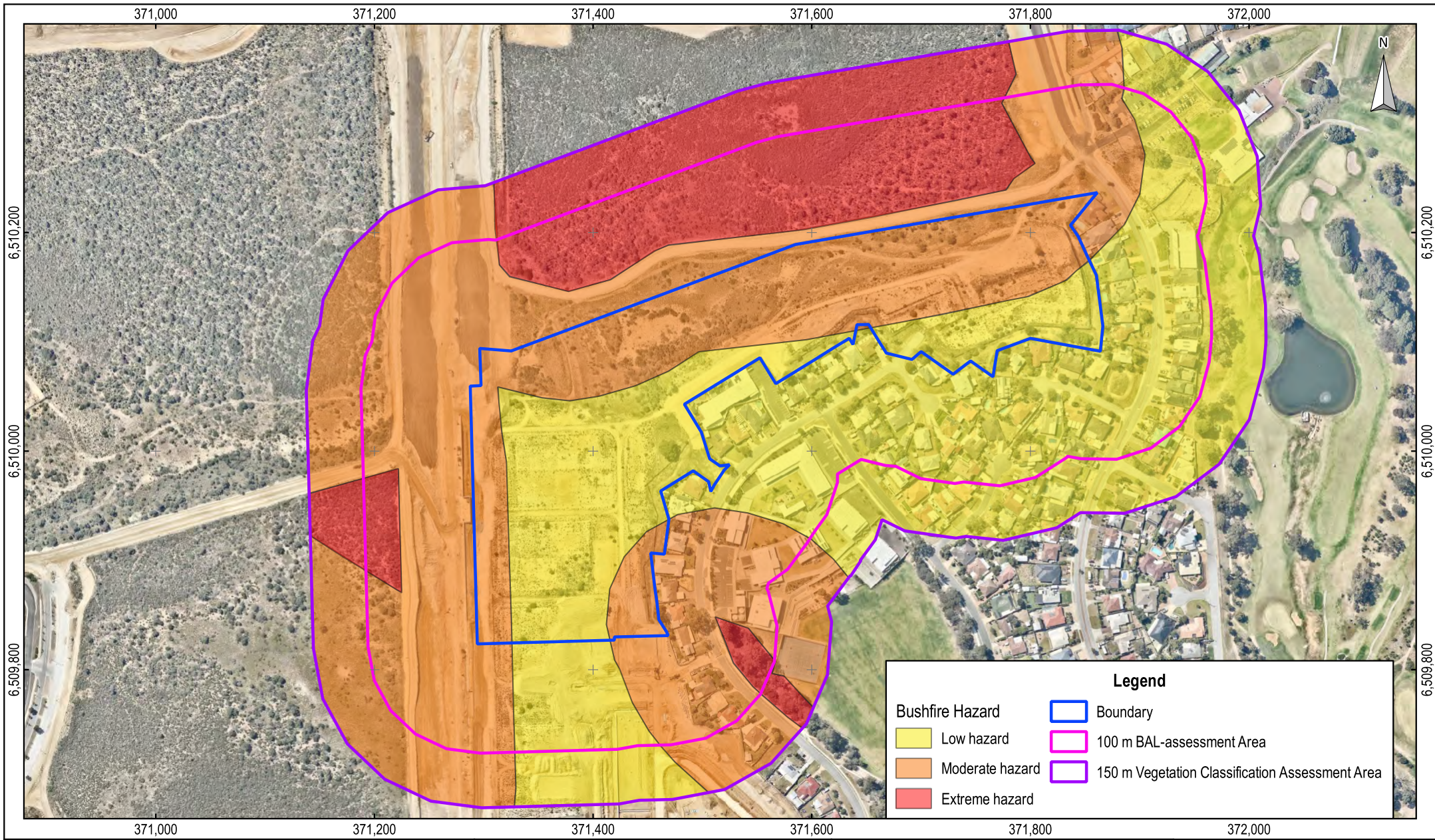
The fire danger index (FDI) for the Site is FDI 80, as documented in Table 2.5 of AS 3959:2018, and which is the nominated FDI for Western Australia.

2.3.3 Potential Fire Impacts

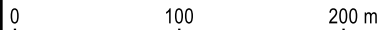
Potential fire impacts within the Site include smoke and ember attack as the classified vegetation that poses the greatest risk to the Site will be the restoration of the SOS to the north with Class D Scrub when it reaches maturity, along with the Class A Forest that is located more than 50 m to the east. The Class C Shrubland and Class D Scrub located more than 90 m to the west of the Perth – Yanchep railway construction zone will also pose some risk to the westerly Lots. The BAL-analysis for the Site is provided in Table 1.

Table 1: BAL-analysis

Patch	Vegetation Class	Slope	Separation Distance (m)	BAL-rating
1	Class A Forest	Downslope 0 - 5°	> 50	BAL-12.5
2	Class C Shrubland	Upslope or Flat	> 90	BAL-12.5
3	Class D Scrub	Upslope or Flat	> 13 to 90	BAL-29 to BAL-12.5
		Downslope 0 – 5°	> 15 to 90	BAL-29 to BAL-12.5
4	Class G Grassland	Upslope or Flat	> 30	BAL-12.5
5	Low Threat Vegetation	N/A	N/A	N/A
6	Non-vegetated areas	N/A	N/A	N/A



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Bushfire Management Plan
 Stage 9 Vertex Estate, Yanchep
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Figure 12

Bushfire Hazard Assessment

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2.4 BAL-ASSESSMENT

Based on the presence of the Class A Forest, Class C Shrubland and the Class D Scrub that is located within less than 100 m of the Site to the west, north, and the east, most Lots in proximity to the eastern and western boundaries of Stage 9 will require a BAL-rating, with none higher than BAL-29 required (Figure 13).

In assigning the BAL-ratings for the subdivision, the following should be noted:

- BAL-ratings are based on the post-development vegetation classification (Figure 11). If there is a change in vegetation coverage within the Site, the expected clearing does not occur, or a greater area is revegetated than anticipated then there may be a need to review and update the assigned BAL-ratings.
- BAL-ratings have been assigned as a precautionary measure based on the highest BAL-contour extending into the Lot with no provision being made to the potential for R-code building setbacks or the placement of buildings to avoid construction within a particular contour that may reduce an assigned BAL-rating to the next lower BAL-rating. This will need to be checked by a Bushfire Consultant to confirm that outcome.
- Note also that Lot numbers indicated in this document may change.

The following Lots will be rated BAL-Low: 480, 481, 483 – 486, 500 – 503, 533 – 537, 704 – 715, 767, and 768.

The following Lots will be rated BAL-12.5: 466, 487 – 491, 496 – 499, 504 – 506, 531, 532, 625, 626, 636 - 649, 661 – 671, 700 – 703, 749 – 754, 761 – 766, 769 – 773 and 1001.

The following Lots will be rated BAL-19: 492, 635, 650, and 755.

The following Lots will be rated BAL-29: 627 – 634, 651 – 660, 673, and 756 - 760.

No Lots will be rated BAL40, or BAL-FZ.

2.4.1 Asset Protection Zone

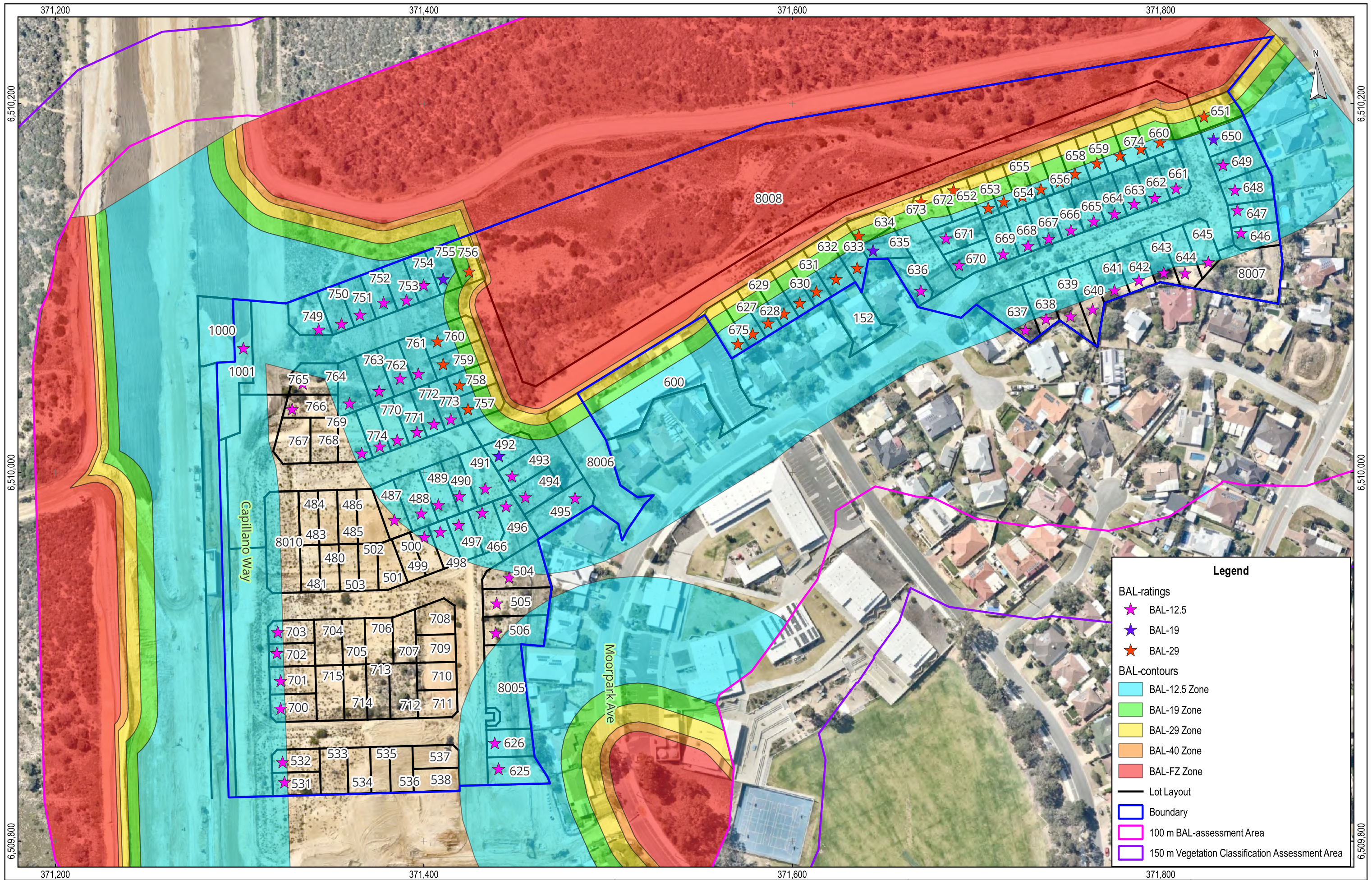
The asset protection zone (APZ) for the Site is that area that provides the separation distance between the classified vegetation and building walls. It commences at the junction of the BAL-40 and BAL-29 zones, or the junction of the orange and yellow zones in Figure 13, and will extend to the building walls as that is the point where the potential radiant heat impact of a bushfire does not exceed 29 kW/m². As the maximum BAL-rating assigned within Stage 9 is BAL-29, it also demonstrates that the bushfire risks on site can be managed.

2.4.2 Shielding

The shielding provisions of AS 3959:2018 allow for the application of the next lower BAL-rating for elevations of buildings that are not exposed to the source of the bushfire attack, however, it cannot be reduced lower than BAL-12.5. For Lots rated BAL-29 or BAL-19 in the vicinity of the Class D Scrub that will be restored in the SOS area along with that which is present to the north of the Site, the shielding provisions of Clause 3.5 of AS 3959:2018 may be applicable.

2.4.3 Other Bushfire Protection Measures

As well as the assigning of BAL-ratings for Lots located within 100 m of classified vegetation, an APZ clearing of the grassy/weedy regrowth and shrubs within what will become the SOS will be required and maintained on an ongoing basis for a minimum distance of 13 m from some Lots to prevent the assigning of either a temporary BAL-rating or a BAL-40 or BAL-FZ rating; it is expected that these locations will be managed as low threat vegetation in the longer term through landscaping (Figure 11, Figure 13). In addition, the extent of restoration of Class D Scrub within the downslope portion of the SOS to the northeast has been setback from the SOS boundary by 2.1 m to ensure the BAL-40 zone does not extend into Lots 90 - 101 (Figure 11, Figure 13); this area will be maintained as low threat.



Scale: 1: 1,850
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0 50 100 m

Bushfire Management Plan
 Stage 9, Vertex Estate, Yanchep
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Figure 13

BAL-contours and Ratings

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2.5 IMPLEMENTATION

Implementation of this BMP will commence immediately and will be the responsibility of the Developer, Satterley Property Group on behalf of Prime West (Yanchep Beach Rd) Pty Ltd, both for installation and ongoing maintenance until the various Lots are sold and the SOS area is ceded to the City of Wanneroo. The Developer is also responsible for ensuring the new owner of the site receives a copy of this BMP during the sale 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 outlined in Table 2, which also includes an indication of maintenance responsibilities associated with a particular activity.

Table 2: Implementation Schedule

Item	Activity	Responsibility	Maintenance	Responsibility
1	Proposed building is constructed in accordance with assigned BAL-rating.	Builder/Owner	N/A	N/A
2	Clearing of grassy/weedy regrowth and shrubs within what will become the SOS to ensure a suitable separation distance is provided between Los 72 to 79, and 101 to avoid a BAL-40 or BAL-FZ BAL-rating on the Lot.	Developer	As required	Developer, City of Wanneroo
3	Landscaping/revegetation plans are reviewed for bushfire implications prior to being approved by the City of Wanneroo.	Developer	As required	Developer, City of Wanneroo
4	Hydrant requirements will be in accordance with the Water Corporation Design Standard 63 for hydrants: <ul style="list-style-type: none"> • Installation of markings to indicate the presence of hydrants, including: <ul style="list-style-type: none"> — A blue 'cats eye' reflective indicator in the centre line of the road. — A small blue 'H' painted on the curbing. — A white and red stripe around the pole nearest to the hydrant. • Clearance on the placement of hydrants will be required from Department of Fire and Emergency Services (DFES) and the Water Corporation. • Hydrants will need to be clearly identifiable, with markings installed by the developer prior to sign off. 	Developer	N/A	N/A
5	Install and maintain firebreak/low fuel zones and comply with the City of Wanneroo annual fire break notice.	Developer or owner/occupier	As required, in accordance with City of Wanneroo annual firebreak notice.	Developer or landowner
6	Ensure a Section 165 Notification is lodged on the titles of Lots with a BAL-rating of BAL-12.5 or higher.	Developer, City of Wanneroo	N/A	N/A
7	All roads, including the perimeter road, are constructed to the standards specified in Appendix 4 Element 3 Table 6 Column 1 on page 76 of the Guidelines.	Developer	As required	City of Wanneroo
8	Two access/egress options are available to all Lots with the subdivision.	Developer	As required, after subdivision completion.	City of Wanneroo
9	Maintain the APZ areas within the SOS until ceded to the City of Wanneroo	Developer	Ongoing after ceding to the City.	City of Wanneroo

2.6 RESPONSIBILITIES

Responsibilities for bushfire preparedness and response within the development area are shared by the City of Wanneroo, the Developer, and building owners/occupiers.

2.6.1 Developer Responsibilities

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

- Providing appropriate information, including a copy of this BMP, to potential Site purchasers.
- Clearing of grassy/weedy regrowth and shrubs within what will become the SOS to ensure a suitable separation distance is provided between Lots 72 to 79, and 101 to avoid a BAL-40 or BAL-FZ BAL-rating on the Lot.
- Landscaping/revegetation plans are reviewed for bushfire implications prior to being approved by the City of Wanneroo
- Ensuring two access/egress options are available to the occupiers of all Lots in the event of a bushfire.
- Arrange for the Section 165 notification on the titles of Lots with a BAL-12.5 or higher rating.
- Roads and hydrants are installed in accordance with relevant guidelines.
- Ensure firebreaks/low fuel zones are installed around the perimeter of the subdivision in accordance with the City of Wanneroo annual firebreak notice.

2.6.2 City of Wanneroo Responsibilities

It should be noted that the City of Wanneroo has the responsibility and powers under the Town Planning Scheme and the *Bush Fires Act 1954* (WA) to ensure that this BMP, City of Wanneroo 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:

- Maintaining APZ zones within the SOS in a low-fuel state.
- Providing appropriate advice in relation to City requirements for firebreaks, hazard reduction, and any other fire management aspects it requires landowners to comply with to the Developer and property owners as required.
- Ensuring appropriate information is included on the title indicating the requirement to comply with this BMP.

2.6.3 Owner and/or Occupier Responsibilities

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

- Ensure that the proposed building is constructed in accordance with the requirements of relevant sections of AS 3959:2018 for the assigned BAL rating.
- Where required, maintain the required asset protection zone.
- Include ember shields to evaporative air conditioners if installed.
- Inform DFES as soon as practicable after a fire is noticed within nearby bushland.
- Respond to advice from the City of Wanneroo, DFES, and/or the Developer in relation to maintaining properties in a manner that will reduce potential damage from ember attack.

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 the proposed development of Stage 9 in the Vertex Estate, Yanchep 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 (Figure 12) 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. The preservation of life and the management of bushfire impact are paramount 	<ul style="list-style-type: none"> Hazard assessment (Figure 12) indicates risks associated with bushfire are manageable. Lots within 100 m of classified vegetation have been assigned a BAL-rating, with none higher than BAL-29 (Figure 13).
Objective 2	<ul style="list-style-type: none"> Reduce vulnerability to bushfire through the identification and consideration of bushfire risks in decision-making at all stages of the planning and development process. 	<ul style="list-style-type: none"> Hazard assessment (Figure 12) indicates risks associated with bushfire are manageable. Lots within 100 m of classified vegetation have been assigned a BAL-rating, with none higher than BAL-29 (Figure 13).
Objective 3	<ul style="list-style-type: none"> Ensure that higher order strategic planning proposals subdivision and development applications take into account bushfire protection requirements and include specified bushfire protection measures. 	<ul style="list-style-type: none"> Stage 9 is the last Stage to be developed. The planning process considered bushfire risk in earlier phases of the planning approvals process, along with previous bushfire management plans and BAL-assessments prepared by others.
Objective 4	<ul style="list-style-type: none"> Achieve an appropriate balance between bushfire risk management measures and, biodiversity conservation environmental protection and biodiversity management and landscape amenity, with consideration of the potential impacts of climate change. 	<ul style="list-style-type: none"> Site environmental values have been considered during earlier stages of the planning approvals process, with provision for restoration of native vegetation with the SOS.

3.2 BUSHFIRE PROTECTION CRITERIA

Appendix 4 of the *Guidelines for Planning in Bushfire Prone Areas* (DPLH and WAPC, v1.4_0, 2021) provide 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 provides evidence of how Stage 9 complies with the bushfire protection criteria.

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 (Figure 12). Lots within 100 m of classified vegetation have been assigned a BAL-rating, with none higher than BAL-29.
	BAL-rating is BAL-29 or lower.	<ul style="list-style-type: none"> Bushfire hazard assessment indicates manageable bushfire risk (Figure 12). Lots within 100 m of classified vegetation have been assigned a BAL-rating, with none higher than BAL-29 (Figure 13).
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 13) and includes a perimeter road around most of the SOS. 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. Ongoing management of the APZ within property boundaries will devolve to the Lot owner after the sale of the property. Ongoing management of APZ within the SOS will be the responsibility of the developer and devolve to the City of Wanneroo after ceding.

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> <p>SP – Strategic planning proposal and structure plan where the lot layout is not known.</p> <p>Sb – Structure plan where the lot layout is known and subdivision application.</p> <p>Dd – Development application for a single dwelling, ancillary dwelling, or minor development.</p> <p>Do – Development application for any other development that is not a single dwelling, ancillary dwelling, or minor development.</p>	<p>A3.1 Public Roads (SP Sb Do)</p> <ul style="list-style-type: none"> Public roads are to meet the minimum technical requirements in Table 6, Column 1 on page 76 of the Guidelines. 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 will be constructed in accordance with the technical requirements outlined in Column 1 of Table 5 on page 76 of the Guidelines.</p>	
	<p>A3.2a Multiple Access Routes (SP Sb Do)</p>		<p>Several access/egress roads will be constructed that will connect to Moorpark Ave to the south as well as to Capilano Drive to the west and Ariane View to the south in previous Stages of the Vertex development (Figure 13).</p>
	<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>	<p>N/A – all roads are through roads</p>	
	<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>	<p>N/A</p>	
	<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). 	<p>N/A</p>	
	<p>A3.2b Emergency Access Way (SP Sb Do)</p>		<p>N/A – access will be via the existing and planned road network.</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. 			

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. 	All public roads will be 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
	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. 	<ul style="list-style-type: none"> A perimeter road is provided along the western boundary of the development that provides separation between vegetation to the west of the Perth – Yanchep railway line, with a perimeter road provided between the majority of the Class D Scrub vegetation within the northern portion of the Site (Figure 13). Site constraints in the form of land in private ownership and land to be revegetated within the SOS impact on the provision of a perimeter road around all the Class D Scrub.
	A perimeter road is to meet the requirements contained in Table 6, Column 1 on page 76 of the Guidelines.	The perimeter road will be constructed in accordance with the requirements outlined in Column 1 of Table 6 on page 76 of the Guidelines.
	<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

Intent	Acceptable Solutions	Solution
	<p>A3.4b Fire Service Access Route (SP Sb)</p> <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
	<p>A3.5 Battle-axe Access Legs (Sb)</p> <ul style="list-style-type: none"> • 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. • 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. 	N/A
	<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 two metres (i.e., the combined trafficable width of the passing bay and constructed driveway to be a minimum six metres). 	N/A
	<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. 	N/A

Intent	Acceptable Solutions	Solution
	<ul style="list-style-type: none"> Accessed by a public road where the road speed limit is not greater than 70 km/h. <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 two metres (i.e. the combined trafficable width of the passing bay and constructed driveway to be a minimum six metres). Turn around areas as shown in Figure 28 on page 86 of the Guidelines and within 30 m of the habitable building. 	N/A
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> <p>SP – Strategic planning proposal and structure plan where the lot layout is not known.</p> <p>Sb – Structure plan where the lot layout is known and subdivision application.</p> <p>Dd – Development application for a single dwelling, ancillary dwelling, or minor development.</p> <p>Do – Development application for any other development that is not a single dwelling, ancillary dwelling, or minor development.</p>	<p>A4.1 Identification of Future Water Supply (SP)</p> <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>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. 	<p>The subdivision will be connected to a reticulated water supply and will comply with Water Corporation specifications for hydrants.</p> <p>N/A</p> <p>Hydrants will be installed in accordance with Water Corporation requirements.</p>

Intent	Acceptable Solutions	Solution
	<ul style="list-style-type: none"> — 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). • 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. 	
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 Asset Protection Zone.	N/A – subdivision is a residential subdivision.
	Habitable buildings are sited and designed to: <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 demonstrate how the subdivision of Stage 9 in the Vertex Estate in Yanchep complies with State Planning Policy 3.7 (Department of Planning and WA Planning Commission, 2015) and *Guidelines for Planning in Bushfire Prone Areas* (Department of Planning and WA Planning Commission, V1.4_0, 2021). Site owners/occupiers must comply with relevant sections of the annual firebreak notice and bushfire information prepared by the City of Wanneroo, 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* (Department of Planning and WA Planning Commission, V1.4_0, 2021). The information contained in this document represents current site conditions based on the most recent visit to the site in October 2023 and associated planning.

Signed: 

Date: 07 March 2025

Accreditation Number: BPAD 36638

Accreditation Expiry Date: 30 April 2025



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 Western Australian Planning Commission (WAPC), (V1.4_0, 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.

Office of Bushfire Risk Management, (2021), *Map of Bushfire Prone Areas*, accessed October 2023 via: <https://maps.slip.wa.gov.au/landgate/bushfireprone/>.