

Bushfire Management Plan Coversheet

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

Bushfire Management Plan and Site Details

Site Address / Plan Reference: Part Lot 9068, Agora, Trinity Estate			
Suburb: Alkimos	State: WA	P/code: 6038	
Local government area: City of Wanneroo			
Description of the planning proposal: Development of 18 residential Lots			
BMP Plan / Reference Number:	Version: Final	Date of Issue: 21 June 2023	
Client / Business Name: Northern Corridor Developments Ltd			

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

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

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

BPAD Accredited Practitioner Details and Declaration

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

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

Signature of Practitioner

S Brand

Date

21 June 2023

BUSHFIRE MANAGEMENT PLAN
PART LOT 9068
TRINITY ESTATE, ALKIMOS

PREPARED FOR:

NORTHERN CORRIDOR DEVELOPMENTS LTD

JUNE 2023

PREPARED BY:

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MBS
ENVIRONMENTAL



environmental and geoscience consultants

PART LOT 9068 BUSHFIRE MANAGEMENT PLAN

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Document Status	Prepared By	Authorised By	Date
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Final Report	Sue Brand	Matthew Todd	21 June 2023

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1. BACKGROUND INFORMATION

Northern Corridor Developments Ltd commissioned Martinick Bosch Sell Pty Ltd (MBS Environmental, MBS) to prepare a Bushfire Management Plan (BMP) to support a subdivision application for 18 Lots that will be constructed within a portion of Agora subdivision within Lot 9068 in Alkimos that reflects current site design and conditions. 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 and the Western Australian Planning Commission (WAPC), 2015) and *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 Agora, Trinity subdivision is located within a portion of Lot 9068 Howden Pde, Alkimos, within the City of Wanneroo (CoW, the City). The Lots are bounded by Kane Loop, existing residential development, and cleared, vacant land to the west; the Mitchell Fwy extension in the final stages of construction to the east, Romeo Rd which is in the final stages of construction to the north, and a local reserve to the south (Figure 1). Arbitrary Lot numbers from A – R have been assigned to the Lots to facilitate discussion.

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 Site. 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:

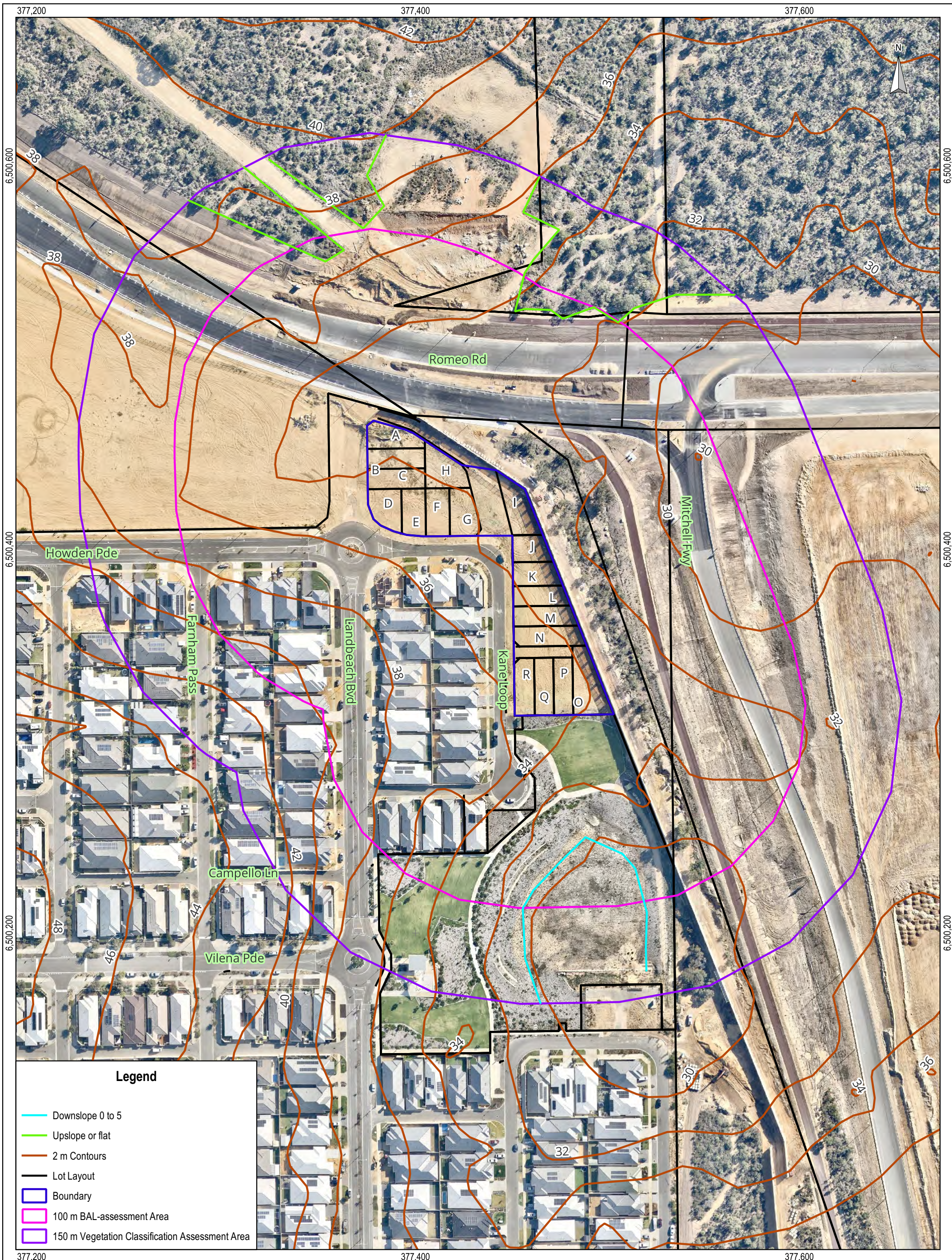
- Define land use areas and values within the subdivision, with the four stages being developed as urban residential Lots except for locations designated public open space (POS).
- Define and rank fire hazard areas according to the vegetation type and fire fuels present.
- Outline the roles and responsibilities 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 areas of public open space (POS) to the south and north across Romeo Rd.

- 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) contours and ratings, along with suggesting management strategies that could be implemented based on current and projected site considerations.
- Preparing this BMP.



Scale: 1: 1,750
 Original Size: A3
 Aerial Imagery: Nearmap April 2023
 Grid: GDA94 / MGA zone 50 (EPSG:28350)

0 25 50 m

Bushfire Management Plan
 Agora, Trinity, Group Housing Sites
 Northern Corridor Developments Pty Ltd

Figure 1

Location, Slope and Contours

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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 Lots are located within a portion of Lot 9068 are cleared of vegetation, as is the land to the west and north of Howden Pde (Figure 1). The native vegetation that is within 100 m of the Site is present across Romeo Rd to the north and in the reserve to the south (Figure 1).

2.1.3 Contours and Slope

As Agora is inland from the coast and civil engineering has occurred, the Site is flat land. The clearing of bushland to the north across Romeo Rd along with associated engineering means that the surrounding land to the north, west, and east is flat or upslope. The local reserve slopes gently downwards to the south, thus this location will be downslope 0 – 5°. Locations to the east, west and north are all flat land, thus the vegetation across Romeo Rd to the north is upslope or flat land. (Figure 1).

2.1.4 Land Uses

The Lots are cleared of all vegetation, with civil engineering works largely complete (Figure 2).



Figure 2: Current Land Use

2.1.5 Environmental Considerations

The cleared nature of the Site (Figure 1, Figure 2) means that within the Site boundary there are no:

- Bush Forever Sites.
- Wetlands or waterways.
- Conservation significant flora, fauna, or ecological communities.

2.1.6 Landscaping

No landscaping is planned for the Lots, with previous landscaping having occurred in the local reserve to the south. The landscaping intent was to create a managed, low threat buffer between the drainage basin and developed areas. Landscaping within the drainage basin included species that are typical of Banksia Woodlands mixed with lower growing shrubs. Tree planting is 150 trees/ha and are mixed through irrigated (managed) areas and those that are not irrigated (the drainage basin). Review of the typical growing height of the species planted into the drainage basin indicates that many grow to 2 m, with the mixes also including several that grow to 2 – 4 m. Planting of the drainage basin has occurred and for the BAL-assessment process, it will be assessed as being Class D Scrub at maturity due to the present of those species that grow to 2 - 4 m and the presence of the occasional taller tree.

2.2 VEGETATION CLASSIFICATION

Vegetation within 150 m of the Site was assessed during the site visit on 24 May 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 3, Figure 4, Figure 5, Figure 6, and collectively in Figure 7. As the post-development classifications are the same as those for the pre-development situation, they are not shown separately.

2.2.1 Patch 1: Class D Scrub

Class D Scrub is characterised by shrubs from 2 – 4 m with a continuous canopy from ground level; this vegetation class may include the occasional taller tree. A patch of Class D Scrub is present across Romeo Road to the northeast (Figure 3). As this vegetation will be retained for some time, it represents an ongoing bushfire hazard to the Lots for at least the short term. It has been inferred that the drainage basin to the south of the Site will become Class D at maturity and will represent an ongoing risk.





Photo ID 2



Photo ID 3 – future Class D Scrub

Figure 3: Class D Scrub

2.2.2 Patch 2: Class B Woodland

Class B Woodland is characterised by trees 10 – 30 m with 10 – 30% foliage cover, often over a grassy or low understorey (Figure 4). This vegetation class is present across Romeo Rd to the northwest in land that is in the ownership of the WA Land Authority with the planned land use being the construction of planned infrastructure associated with the extension of the Joondalup rail line through to Alkimos, Eglinton, and Yanchep. Accordingly, it is expected that the vegetation present at this location will be cleared at some point and the associated bushfire risk removed. However, in the short term, its presence is within 100 m from the Site boundary presents a moderate bushfire risk until the vegetation is cleared.



Figure 4: Class B Woodland

2.2.3 Patch 3: 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 POS area to the south of the Lots. It includes a grassed area surrounding the drainage basin to the south (Figure 5). A second patch of low threat vegetation that will function as a nature strip associated with the Mitchell Fwy is present behind the masonry wall to the east of the Lots (Figure 5).





Photo ID 6

Figure 5: Low Threat Vegetation

2.2.4 Patch 4: 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 6):

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

Patch: 4	Classification or Exclusion Clause:	Exclusion Clause 2.2.3.2 (e)
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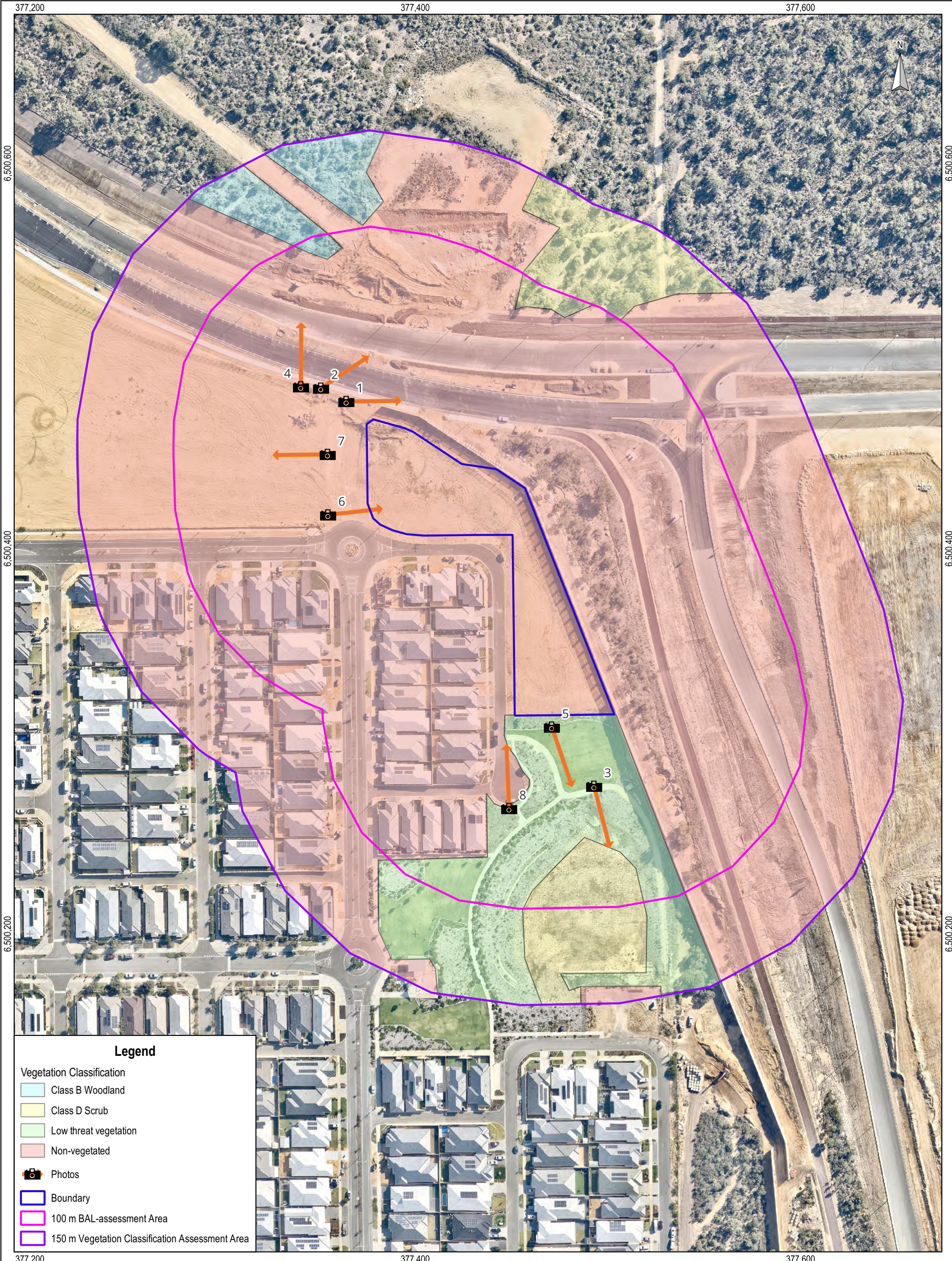


Photo ID 7



Photo ID 8

Figure 6: Non-vegetated Areas



377,200
6,500,600
6,500,400
6,500,200

377,400
377,600

377,600
6,500,600
6,500,400
6,500,200



Legend

- Vegetation Classification
- Class B Woodland
- Class D Scrub
- Low threat vegetation
- Non-vegetated
- Photos
- Boundary
- 100 m BAL-assessment Area
- 150 m Vegetation Classification Assessment Area

Scale: 1: 1,750
Original Size: A3
Aerial Imagery: Nearmap April 2023
Grid: GDA94 / MGA zone 50 (EPSG:28350)

Bushfire Management Plan
Agora, Trinity, Group Housing Sites
Northern Corridor Developments Pty Ltd

Figure 7
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 Low to Extreme due to the presence of the Class B Woodland and Class D Scrub across Romeo Rd to the north and the Class D Scrub in the south. Both the Class B Woodland and the Class D Scrub have an extreme bushfire hazard, with locations within 100 m of those vegetation classes having a Moderate bushfire hazard and the remainder of the assessment area having a Low bushfire hazard rating (Figure 8).

2.3.2 Fire Danger Index

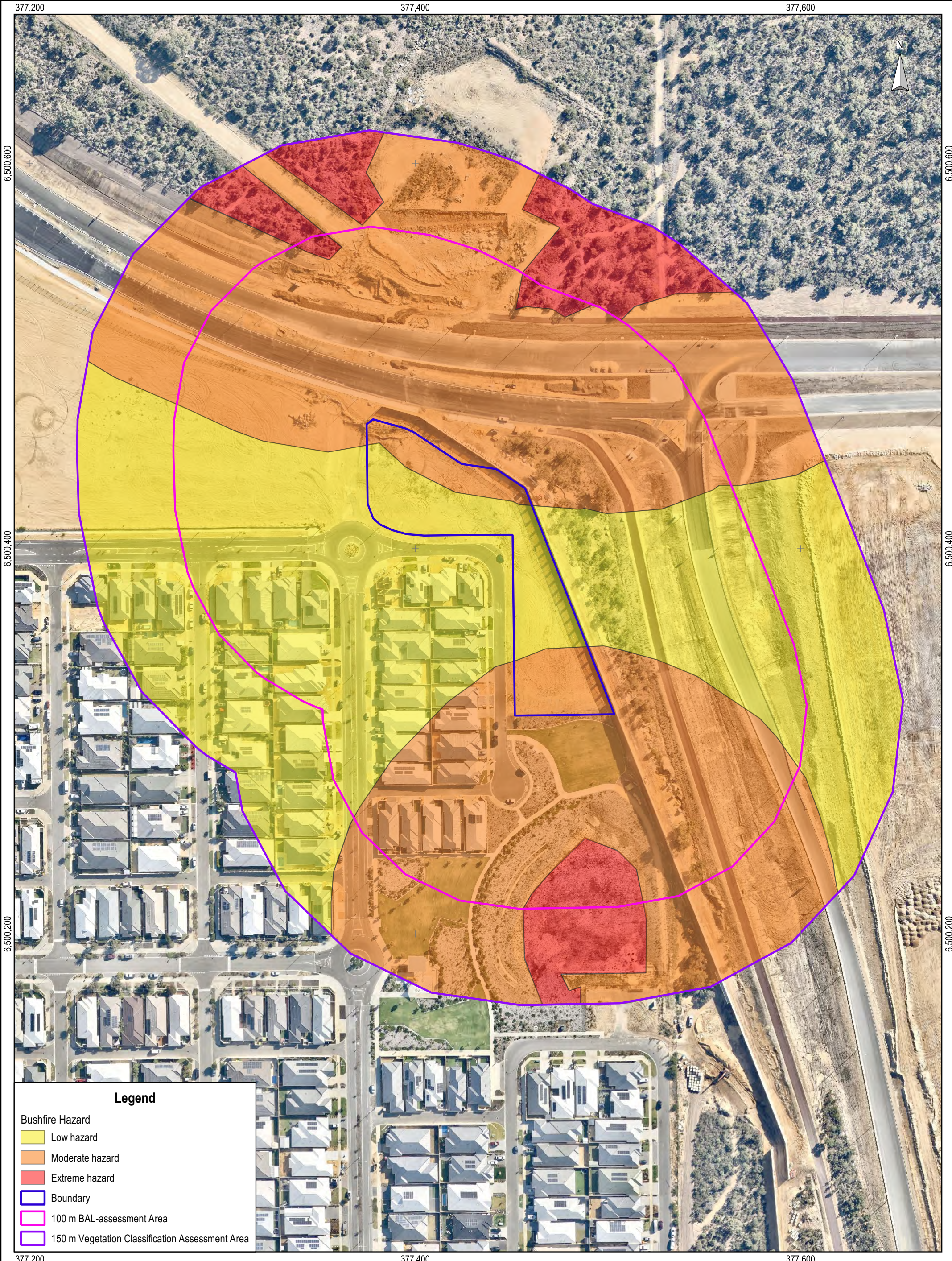
The fire danger index (FDI) for the Site is FDI 80, as documented in Table 2.4.3 of AS 3959:2018, and which is the nominated FDI for Western Australia.

2.3.3 Potential Fire Impacts

Potential fire impacts within the Site include smoke and ember attack. Analysis of the vegetation classification, slope, and separation distance to identify the highest BAL-rating is provided in Table 1.

Table 1: BAL-analysis

Patch	Vegetation Class	Slope	Separation Distance (m)	BAL-rating
1	Class D Scrub	Upslope	> 90 m	BAL-12.5
	Class D Scrub	Downslope 0 - 5°	> 60 m	BAL-12.5
2	Class B Woodland	Upslope	> 90 m	BAL-12.5
3	Low Threat Vegetation	N/A	N/A	BAL-Low
4	Non-vegetated Areas	N/A	N/A	BAL-Low



Scale: 1: 1,750
 Original Size: A3
 Aerial Imagery: Nearmap April 2023
 Grid: GDA94 / MGA zone 50 (EPSG:28350)

0 25 50 m

Bushfire Management Plan
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Figure 8
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 (Figure 9):

- Lots A, B, C, G, H, I, O, P, Q and R will be rated BAL-12.5.
- Lot F is rated BAL-Low if the placement of the residence is not located within the blue contour line at the rear of the Lot; a 1.5 m setback from the rear Lot boundary will be sufficient for that to occur. If the building encroaches into the blue contour area, a BAL-12.5 rating will apply.
- Lots D, E, J, K, L, M, and N will be rated BAL-Low.

2.5 ASSET PROTECTION ZONE

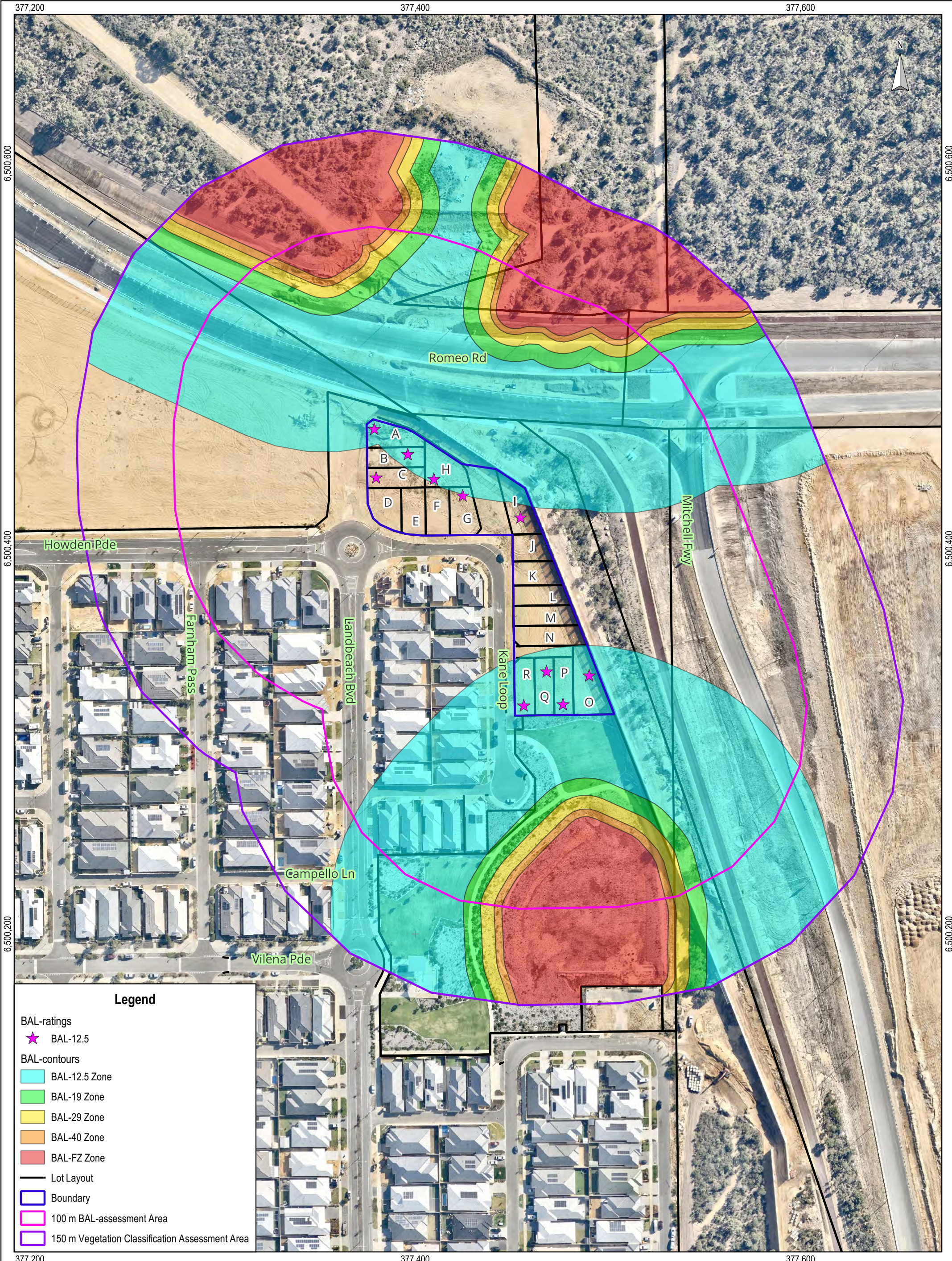
The asset protection zone (APZ) for the Site is that area that provides the separation distance between the classified vegetation and building walls, with a preferred width of 100 m. For locations where that APZ width cannot be achieved, a reduced APZ can be implemented when a BAL-rating is determined for the building, as is the case for some of the Lots that will be created. The reduced APZ commences at the junction of the BAL-40 and BAL-29 zones, or the junction of the orange and yellow zones 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.

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. As no Lot has a BAL-rating higher than BAL-12.5, the shielding provisions of Clause 3.5 will not apply.

2.7 OTHER BUSHFIRE PROTECTION MEASURES

No other bushfire protection measures are required for the Site.



Scale: 1: 1,750
 Original Size: A3
 Aerial Imagery: Nearmap April 2023
 Grid: GDA94 / MGA zone 50 (EPSG:28350)

Bushfire Management Plan
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Figure 9
BAL-contours and Ratings

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2.8 IMPLEMENTATION

Implementation of this BMP will commence immediately and will be the responsibility of the Developer, Northern Corridor Developments Ltd, both for installation and ongoing maintenance until Lots are sold. The Developer is also responsible for ensuring the new owner of each of the Lots, receives a copy of this BMP.

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 , which also includes an indication of maintenance responsibilities associated with a particular activity.

Table 2: Implementation Schedule

Item	Activity	Responsibility	Maintenance	Responsibility
Developer Responsibilities				
1	Provide a copy of this BMP to owner/developer of BAL-contours 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 or owner/occupier as appropriate	Ongoing, in accordance with Shire of Broome firebreak notices	Developer or owner/occupier as appropriate
3	Arranging for a notification on titles to inform that the Lots are in a designated bushfire prone area.	Developer	Not required	N/A
City of Wanneroo Responsibilities				
4	Providing appropriate bushfire advice in relation to firebreaks, hazard reduction, and similar	CoW	As required	CoW
5	Ensuring appropriate information relating to bushfire prone status is included on titles	CoW	Not required	N/A
6	Ensure that buildings are constructed in accordance with the nominated BAL-rating	CoW	Not required	N/A
Owner/Occupier Responsibilities				
7	Ensure that they are 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 Wanneroo or DFES.	Owner/occupier	Ongoing as required	Owner/occupier

2.9 RESPONSIBILITIES

Responsibilities for bushfire preparedness and response within the development area are shared by the Developer, Northern Corridor Developments Ltd, the City of Wanneroo, 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/developer 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 the Lots are within a designated bushfire prone area.

2.9.2 City of Wanneroo Responsibilities

It should be noted that the City of Wanneroo 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 they 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 Wanneroo or DFES.

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 the Lots will comply.

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-12.5 (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-12.5 (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 development of the subdivision is well progressed, with the current stages being among the last to be developed. Various bushfire management plans have been prepared by others for earlier stages of the broader Trinity development, including those prepared by Bushfire Safety Consulting in 2020 and 2021.
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. The City of Wanneroo issued a Development Approval for Vegetation Clearing for the development site in 2019 (refer Appendix 7 in Bushfire Safety Consulting, 2021).

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.
	BAL-rating is BAL-29 or lower.	<ul style="list-style-type: none"> Bushfire hazard assessment indicates manageable bushfire risk. Some Lots will have a BAL-rating, with none higher than BAL-12.5 (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 will have a BAL-rating, with none higher than BAL-12.5 (Figure 9).
Element 3: Vehicular Access		
Ensure that the vehicular access serving a subdivision/ development is available and safe during a bushfire event.	<p>A3.1 Public Roads (SP Sb Do)</p> <p>Public roads are to meet the minimum technical requirements in Table 6, Column 1 on page 76 of the Guidelines.</p> <p>The trafficable (carriageway/pavement) width is to be in accordance with the relevant class of road in the Local Government Guidelines for Subdivisional Development (IPWEA Subdivision Guidelines), Liveable Neighbourhoods, Austroad standards and/or any applicable standards for the local government area.</p>	Public roads associated with this stage will be constructed in accordance with the technical requirements outlined in Column 1 of Table 5 on page 76 of the Guidelines.

Intent	Acceptable Solutions	Solution
<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>A3.2a Multiple Access Routes (SP Sb Do)</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>Access and egress is available to at least two different destinations, with Howden Pde, Kane Loop, and Landbeach Bvd providing egress options to the south and west.</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>The location of some Lots immediately adjacent to the masonry wall that acts as a noise and visual barrier between the Site and the Mitchell Fwy means that there will be one access way that is a no-through road; its length is approximately 33 m and is best described as a private driveway rather than a road.</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 — all roads are through roads, southern accessway is a private driveway rather than a road.</p>
	<p>A3.2b Emergency Access Way (SP Sb Do)</p>	
	<p>Where it is demonstrated that A3.2a cannot be achieved due to site constraints, or where an alternative design option does not exist, an emergency access way can be considered as an acceptable solution. An emergency access way is to meet all the following requirements:</p> <ul style="list-style-type: none"> • Requirements in Table 6, Column 2 on page 76 of the guidelines. • Provides a through connection to a public road. • Be no more than 500 m. • Must be signposted and if gated, gates must open the whole trafficable width and remain unlocked. 	<p>N/A — access will be the existing and planned road network.</p>
	<p>A3.3 Through-roads (SP Sb)</p>	
	<p>All public roads should be through-roads. No-through roads should be avoided and should only be considered as an acceptable solution where:</p> <ul style="list-style-type: none"> • It is demonstrated that no alternative road layout exists due to site constraints, and • The no-through road is a maximum length of 200 m to an intersection providing two-way access unless it satisfies the exemption provisions in A3.2a. 	<p>The location of some Lots immediately adjacent to the masonry wall that acts as a noise and visual barrier between the Site and the Mitchell Fwy means that there will be one access way that is a private driveway of approximately 33 m.</p>

Intent	Acceptable Solutions	Solution
	<p>A no-through road is to meet all the following requirements:</p> <ul style="list-style-type: none"> • Requirements of a public road (Table 6, Column 1, Page 76). • Turn-around area as shown in Figure 24 on page 81 of the Guidelines. 	<p>N/A — all roads are through roads.</p>
	<p>A3.4a Perimeter Roads (SP Sb)</p>	
	<p>A perimeter road is a public road and should be provided for greenfield or infill development where 10 or more lots are being proposed, including as part of a staged subdivision, with the aim of:</p> <ul style="list-style-type: none"> • Separating areas of classified vegetation under AS 3959 that adjoin the subject site from the proposed lots, and • Removing the need for battle-axe lots that back onto areas of classified vegetation. 	<p>A perimeter road will be present around Lots located to the northwest; the nature of the location and design of the southern Lots mean that a perimeter road is not possible .</p>
	<p>A perimeter road is to the meet the requirements contained in Table 6, Column 1 on page 76 of the Guidelines.</p>	<p>Construction of the perimeter road around the northwestern Lots will be in accordance with the Guidelines.</p>
	<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. 	<p>N/A – site constraints mean that a perimeter road cannot be provided around the southern Lots.</p>
	<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. 	<p>N/A — fire access will be via the existing and planned road network.</p>

Intent	Acceptable Solutions	Solution
	<p><u>A3.5 Battle-axe Access Legs (Sb)</u></p>	
	<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>	<p>One battle-axe Lot is planned in the southern Lots. It is immediately adjacent to the masonry wall that acts as a noise and visual barrier to the Mitchell Fwy. The Lot will be accessed by a private driveway that is less than 33 m, thus has no technical requirements specified in the Guidelines.</p>
	<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). 	<p>N/A — planned battle-axe Lot is located in reticulated water supply area with the access leg less than 33 m.</p>
	<p><u>A3.6 Private Driveways (Dd Do)</u></p>	
	<p>There are no private driveway technical requirements where the private driveway is:</p> <ul style="list-style-type: none"> • Within a lot serviced by reticulated water. • No greater than 70 m in length between the most distant external part of the development site and the public road as measured as a hose lay. • Accessed by a public road where the road speed limit is not greater than 70 km/h. 	<p>One private access way is planned for the southern Lots due to site constraints. It is located within an area serviced by reticulated water, and is accessed by a public road where the speed limit is less than 70 km/h.</p> <p>Accordingly, there are no technical requirements that need to be met.</p>
	<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. 	<p>N/A – refer above</p>

Intent	Acceptable Solutions	Solution
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>The Lots are located in an area with reticulated water supply available for firefighting purposes.</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>N/A — subdivision will be connected to a reticulated water supply.</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. — Tank capacity, construction, and fittings provided in accordance with the requirements of Schedule 2 on page 90 of the Guidelines. — A strategic water tank is to be located no more than 10 minutes from the subject site (at legal road speeds). <p>Where a subdivision includes an existing habitable building(s) that is to be retained, a water supply should be provided to this existing habitable building(s) in accordance with the requirements listed above.</p>	<p>Hydrants will be installed in accordance with Water Corporation Design Standard DS 63.</p>

Intent	Acceptable Solutions	Solution
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 — 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 that the development of the Lots comply with State Planning Policy 3.7 (Department of Planning and WA Planning Commission, 2015) and the *Guidelines for Planning in Bushfire Prone Areas* (Department of Planning, Department of Fire and Emergency Services and WA Planning Commission, V1.4, 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 the Western Australian Planning Commission, V1.4, 2021). The information contained in this document represents current site conditions based on a visit to the site on 25 May 2023 and associated planning.

Signed: 

Date: 21 June 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.

Bushfire Safety Consulting, (2021, V3) *Bushfire Management Plan – Proposed Subdivision Aura Western Village, Lot 9058 Marmion Ave, Alkimos*, unpublished report prepared for Northern Corridor Developments Ltd.

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Department of Planning, Department of Fire and Emergency Services, Western Australian Planning Commission, (V1.3, Dec 2017), *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.

Water Corporation, (2021), *Design Standard DS 63 – Water Reticulation Standards Design and Construction Requirements for Water Reticulation Systems up to DN250*, accessed April 2023 via: <https://pw-cdn.watercorporation.com.au/-/media/WaterCorp/Documents/About-us/Suppliers-and-contractors/Resources/Design-standards/DS63-Water-Reticulation-Pipelines-DN250-and-Smaller.pdf?la=en&rev=fae19a82f6834cf9ba6a5b7fedc1c00&hash=68936ABF801F36596F06B84F5E73B80A>.