

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: Stages 41 - 44 Catalina Green Estate

Suburb: Clarkson

State: WA

P/code: 6030

Local government area: City of Wanneroo

Description of the planning proposal: Residential Subdivision

BMP Plan / Reference Number:

Version: Final

Date of Issue: 9/06/2023

Client / Business Name: Satterley Property Group

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	Accreditation Level	Accreditation No.	Accreditation Expiry
Sue Brand	Level 2	36338	30 April 2024
Company	Contact No.		
MBS Environmental	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

Sue Brand

Date 9/06/2023

**BUSHFIRE MANAGEMENT PLAN
STAGES 41 – 44
CATALINA GREEN, CLARKSON**

PREPARED FOR:

SATTERLEY PROPERTY GROUP

JUNE 2023

PREPARED BY:

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STAGES 41 - 44 CATALINA ESTATE BUSHFIRE MANAGEMENT PLAN

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Document Control for Job Number: SPGCECBMP

Document Status	Prepared By	Authorised By	Date
Draft Report	Sue Brand	Matthew Todd	08 June 2023
Final Report	Sue Brand	Matthew Todd	09 June 2023

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- Purchasers of Lots in designated bushfire prone areas.

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1. BACKGROUND INFORMATION

Satterley Property Group are in the process of developing Stages 41 to 44 of the Catalina Green Estate (the Site, Lot 9040) as a residential subdivision of Lot 9040 Neerabup Road, Clarkson, within the City of Wanneroo on behalf of the Tamala Park Regional Council (TPRC). Martinick Bosch Sell Pty Ltd (MBS Environmental, MBS) was engaged to prepare a bushfire management plan (BMP) to support the planning approvals process. The broad aim of the assessment process was to identify potential bushfire risks to future properties along with 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), 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 Site is located on Connolly Drive in Clarkson within the City of Wanneroo and is bounded by Expedition Drive and development in previous stages of the subdivision to the north, a portion of Neerabup National Park and the Mitchell Fwy to the east, remnant bushland to the south, the Tamala Park Landfill site to the southwest, and existing and planned development to the west (Figure 1).

1.2 AIMS AND OBJECTIVES

The aim of the BMP is to outline the fire management methods and requirements that will be implemented within Stages 41 – 44 of the Catalina Estate, with broad aims including:

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

The objectives of this BMP are to:

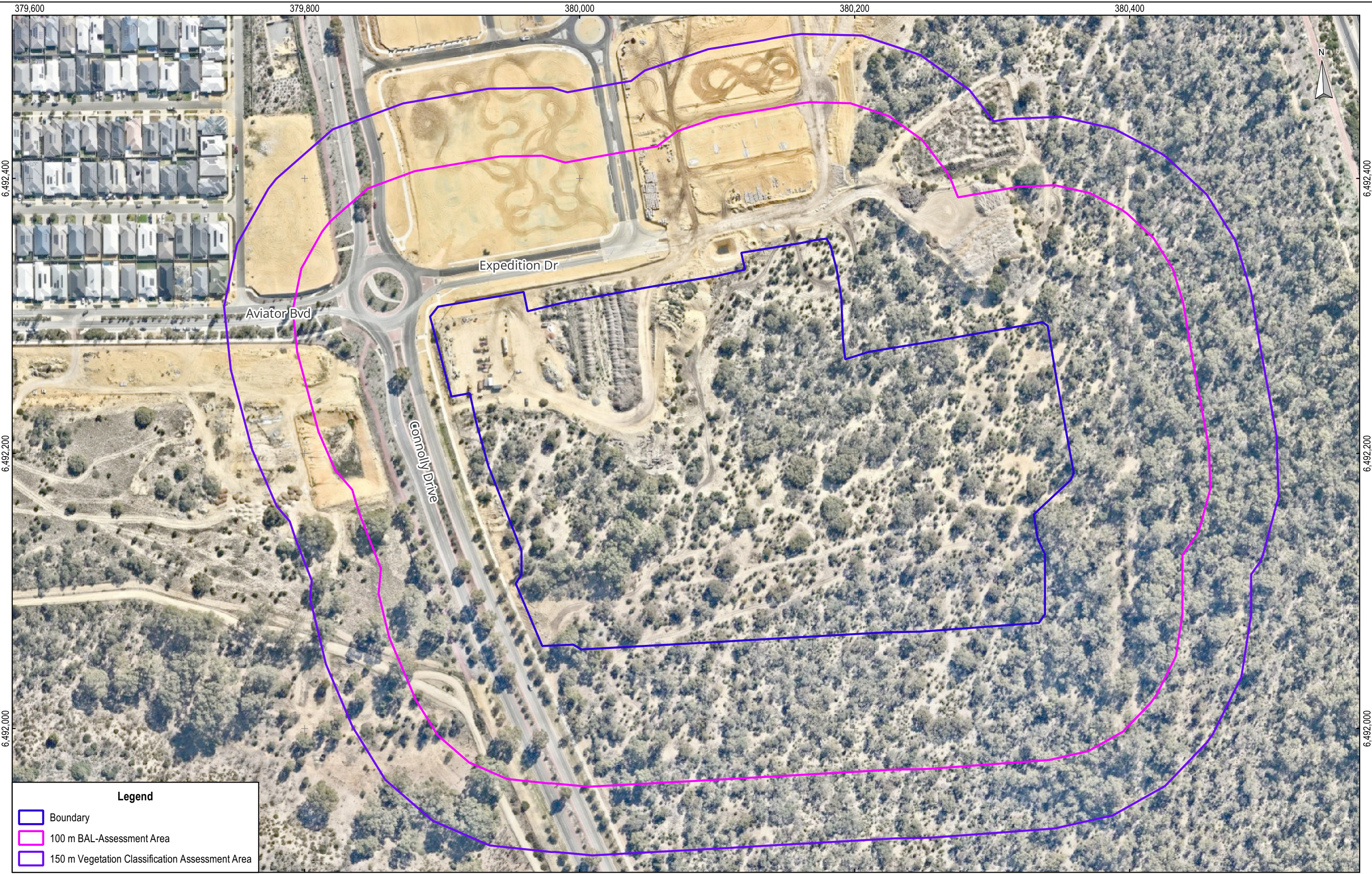
- Define land use areas and values within the subdivision, with the entire subdivision being developed as urban residential Lots except for the landscape protection area and various locations designation public open space (POS).
- Define and rank fire hazard areas according to the vegetation type and 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 Neerabup National Park to the east.
- The need for building construction standards where vegetated areas interface with the urban development.
- Identify access for fire-fighting operations and daily maintenance in and around vegetated areas and stages of development.
- Define an assessment procedure that will evaluate the effectiveness and impact of existing and proposed fire prevention activities and strategies.
- Document the performance criteria and acceptable solutions adopted for the site.

1.3 DOCUMENT PREPARATION

This document has been prepared by Sue Brand, an accredited Level 2 Bushfire Planning and Design (BPAD) practitioner with the Fire Protection Association Australia. Activities involved with the plan preparation process included:

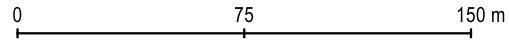
- Assessing the vegetation type and class present within and adjacent to the proposed development site using descriptions provided in *AS 3959:2018 Construction of Buildings in Bushfire Prone Areas*.
- Assigning hazard ratings based on the vegetation types present on and offsite.
- Determining bushfire attack level (BAL) ratings and suggesting management strategies that could be implemented based on current and projected site considerations.
- Preparing this BMP.



Legend

- Boundary
- 100 m BAL-Assessment Area
- 150 m Vegetation Classification Assessment Area

Scale: 1: 2,500
Original Size: A3
Imagery: Nearmap April 2023
Grid: GDA94 / MGA zone 50 (EPSG:28350)



Bushfire Management Plan,
Catalina Green, Staes 41 - 44
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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

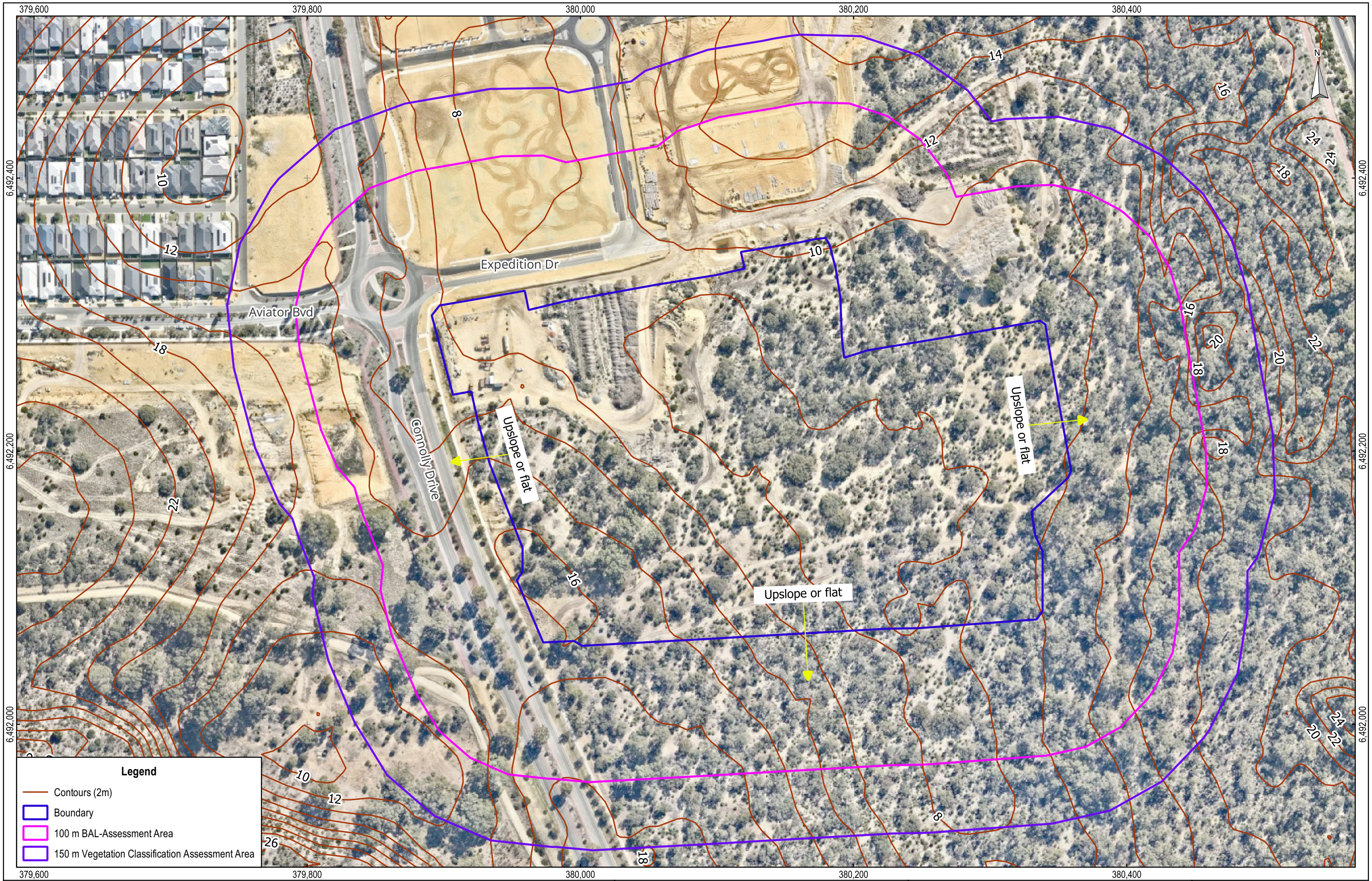
The development area is currently remnant vegetation showing some signs of past disturbance. It is vegetated with woodland vegetation dominated by Banksia and Jarrah over an understorey of Grass Trees and other smaller shrubs; thus, heights range from 2 – approximately 15 m (Figure 2). The vegetation present on the site is consistent with that in land managed by the Western Australian Planning Commission (Neerabup National Park) to the east and remnant bushland present in land owned by others to the south. Some of this vegetation will be cleared to accommodate the subdivision, with some being retained in the WAPC land and the Bush Forever Site.



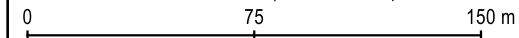
Figure 2: Site Vegetation

2.1.3 Contours and Slope

Stages 41 – 44 are located on the Swan Coastal Plain with its various dune systems, including the Spearwood Dune System. The Site ranges from a low of 8 m Australian Height Datum (AHD) in the central portion, rising to 16 m AHD towards the southwest and 10 m AHD to the east. Beyond the Site boundary, the land rises to 22 m AHD within the Neerabup National Park near the Mitchell Fwy to the east and to 26 m AHD to the west in land across Connolly Drive. The topography of the Site indicates that for the purposes of the BAL-assessment process and preparation of the BMP, vegetation that will be retained to the east and west of the site will be upslope or flat land (Figure 3).



Scale: 1: 2,500
Original Size: A3
Imagery: Nearmap April 2023
Grid: GDA94 / MGA zone 50 (EPSG:28350)



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Figure 3

Contours and Slope

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2.1.4 Land Use

As per Section 2.1.2, the current Site land use is remnant bushland vegetation, the majority of which will be cleared to accommodate the subdivision.

2.1.5 Environmental Considerations

Environmental factors were considered during the earliest planning phases, including the preparation of the *Tamala Park Agreed Local Structure Plan No. 79* that was approved by the Western Australian Planning Commission on 13 April 2011, with *Amendment No. 5 Grove Precinct of LSP 79* dated June 2020 including the relocation of strategic public open space (POS) to enable the retention of a larger area of significant vegetation (CDP Town Planning and Urban Design, 2020).

The project was referred to the then Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC), (now the Department of Climate Change, Energy, the Environment and Water — DCCEEW) for assessment in 2010 for impacts to black cockatoo species, with the original approval issued by DSEWPaC on 10 August 2011. Several variations to the approval conditions have been issued, with the most recent being issued by the then Department of the Environment and Energy on 05 October 2018. Several of the variations have related to adjusting the location of smaller patches of black cockatoo habitat and consolidating them into larger areas. Eco Logical (2018) prepared a *Clearing and Revegetation Management Plan — Catalina Residential Development* that documents how clearing at the site will be managed, including delineating areas where no clearing will occur; including a large patch of vegetation east of Stage 44 and east and south of what is projected to become Stage 46 at some future stage (Figure 4). The retention of vegetation in this area will represent an ongoing bushfire risk to Stage 44.

2.1.6 Landscaping

One area of public open space and drainage will be created within Stage 42, and another to the northeast of Stage 41 and north of Stage 44 (Figure 4). These locations will be maintained in a manner that meets the definition of low threat vegetation as per AS 3959:2018; landscaping plans will be formulated at a later date.

LEGEND

TAMALA PARK ESTATE BOUNDARY

TITLED LOTS

APPROVED LOTS (NOT YET TITLED)

UNAPPROVED LOTS

TAMALA PARK REFUSE FACILITY BUFFER

ESTATE LAYOUT & STAGING PLAN

Catalina Estate, TAMALA PARK

Aerial supplied by:
Aerial Date Stamp:
Survey supplied by: MNG
Plan Number: NPS1059 - 023
Revision Number: A
Drawn By: JP
Client: Tamala Park Regional Council

Scale: 1:8000 @A3 Date Issued: 15.03.2023 ©Niche Planning Studio

DISCLAIMER:
Town Planning compliance is subject to approval from the Tamala Park Regional Council and a suitable town planner will need to be appointed.
All Dimensions, Areas and Calculations are subject to Detailed Survey and Design before Town Planning Permit application.
BUILT Form is illustrative only and subject to Architectural Design and approval from an RAA qualified architect. This plan has been prepared for illustrative purposes only and should not be used as a means to judge any properties value or yield potential.

2.2 VEGETATION CLASSIFICATION

Vegetation on and 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 and shown in Figure 5, Figure 6, and Figure 7. The pre-development vegetation classifications for the Site are shown in Figure 8, with the post-development classifications shown in Figure 9.

2.2.1 Patch 1: Class B Woodland

Class B Woodland is characterised by trees to 30 m with a 10 – 30% canopy cover, dominated by Eucalyptus, Banksia, and Grasstrees (Figure 5). Much of this vegetation class will be cleared to accommodate the subdivision, however, some will be retained in the Conservation POS area to the west and south of what is projected to become Stage 46 at some future time. This vegetation class is also present to the south of the Catalina Estate in land owned by others; it will also represent an ongoing risk into the future (Figure 5).



Figure 5: Class B Woodland

2.2.2 Patch 2: Class G Grassland

Class G Grassland includes all forms such as pasture and croplands; it also includes areas with the occasional tree and shrub where the overstorey canopy cover is less than 10%. This vegetation class is present across Connolly Drive to the southwest within the Tamala Park landfill site (Figure 6). For BAL-assessment purposes, Class G Grassland is considered for 50 m rather than the 100 m of other vegetation classes. As the Grassland to the west is more than 70 m from the western boundary of the Site, it will have no influence on BAL-ratings for Stages 41 – 44.

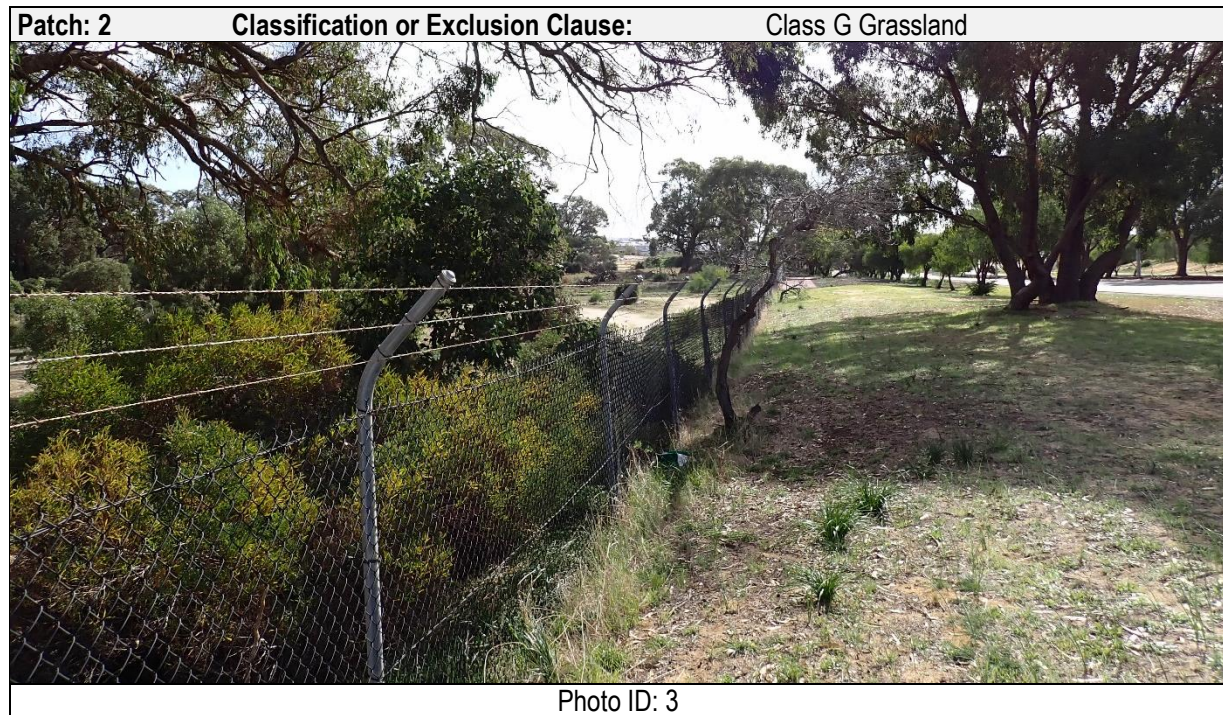


Figure 6: Class G Grassland

2.2.3 Patch 3: Non-vegetated Areas

The following locations are subject to exclusion clause 2.2.3.2 (e) of AS 3959:2018: non-vegetated areas devoid of vegetation, Lots where engineering activities are underway, construction has commenced or is complete, along with roads, and footpaths (Figure 7).

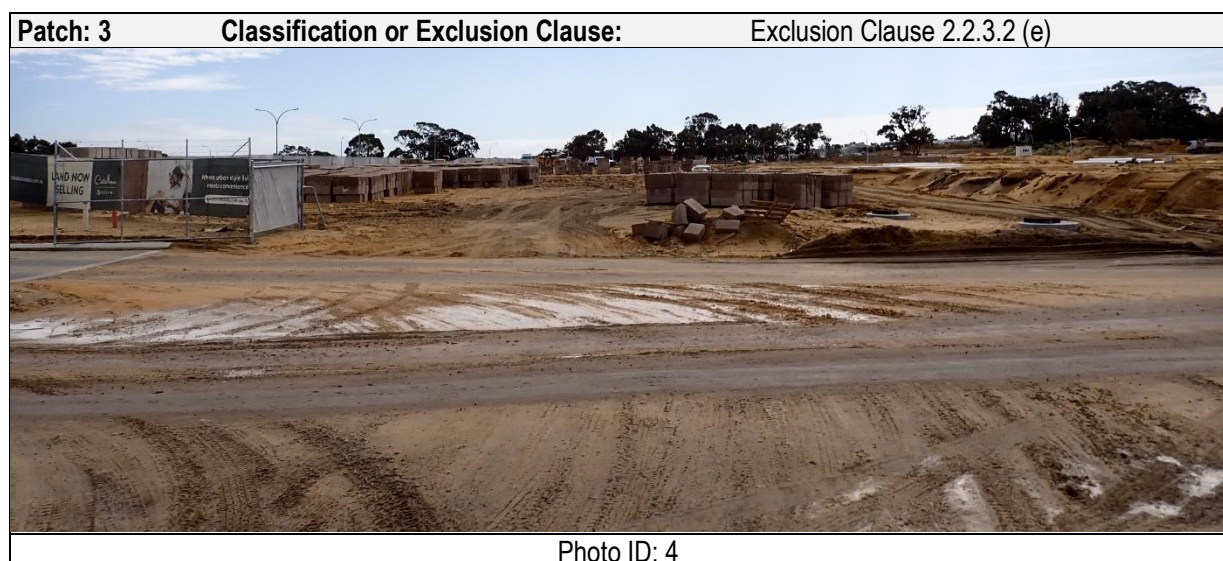
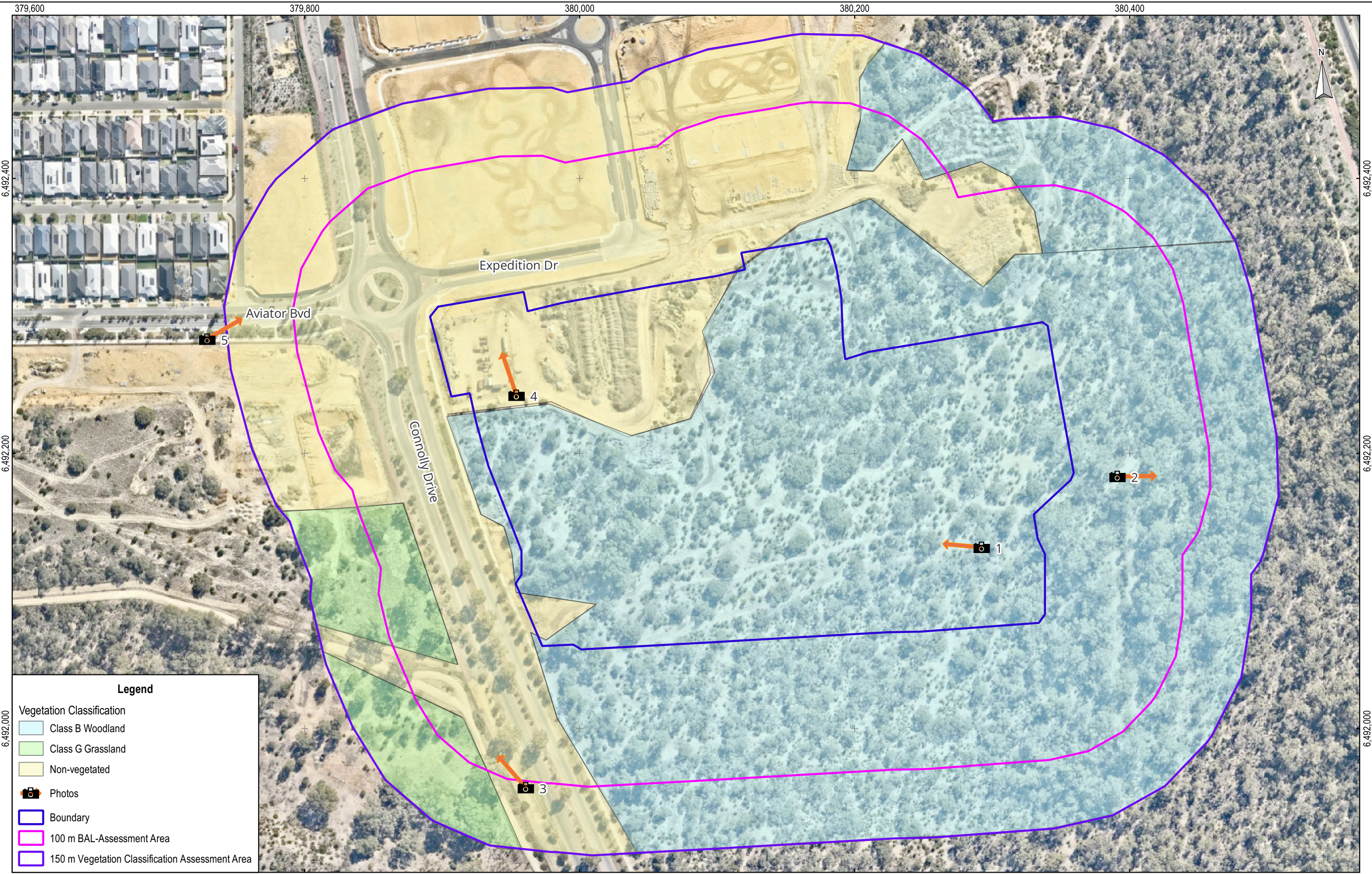




Photo ID: 5

Figure 7: Non-vegetated Areas



Scale: 1: 2,500
Original Size: A3
Imagery: Nearmap April 2023
Grid: GDA94 / MGA zone 50 (EPSG:28350)

0 75 150 m

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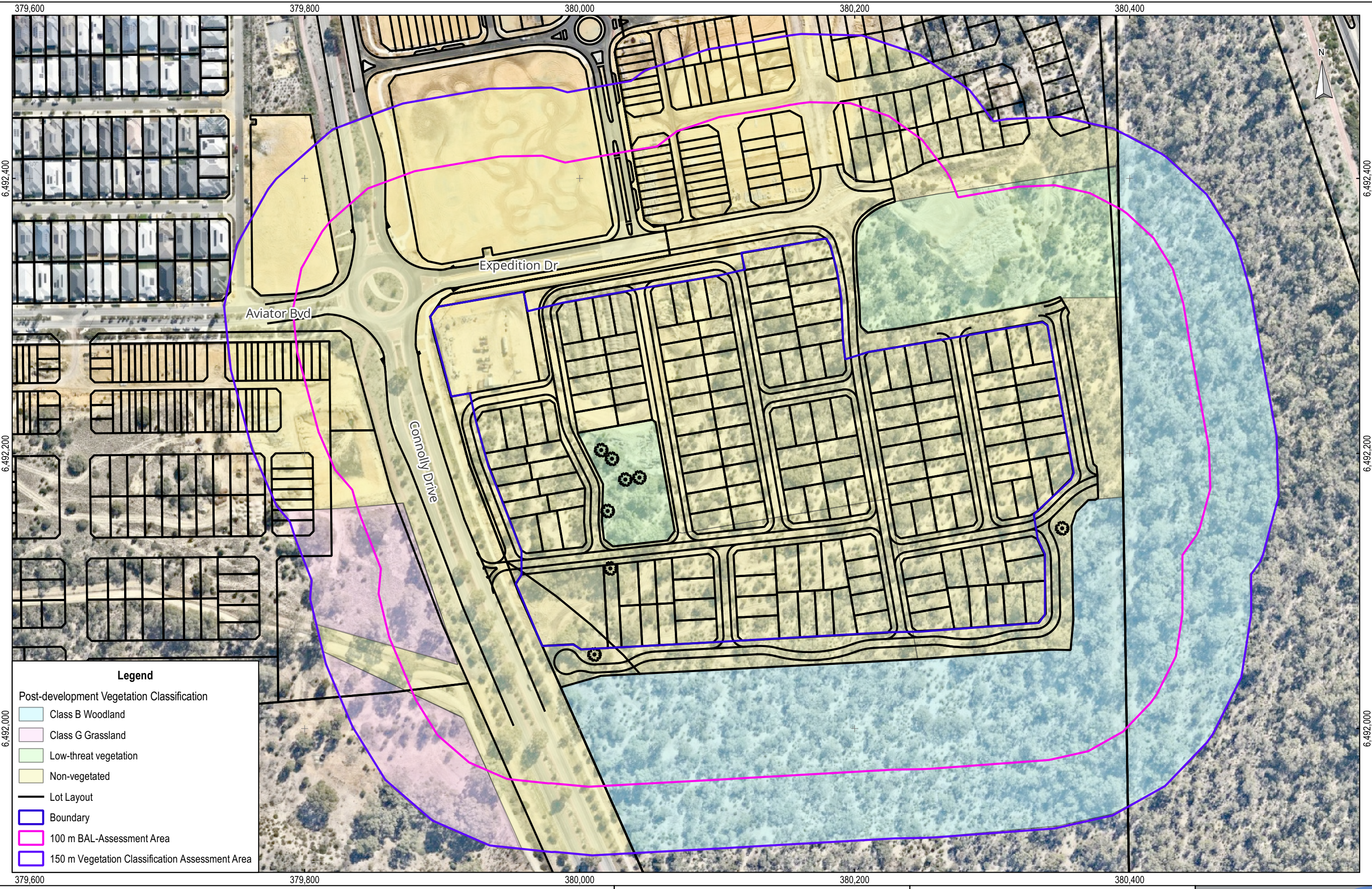
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Figure 8

Vegetation Classification as per AS 3959:2018

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Legend

- Post-development Vegetation Classification
- Class B Woodland
 - Class G Grassland
 - Low-threat vegetation
 - Non-vegetated
- Lot Layout
- Boundary
- 100 m BAL-Assessment Area
- 150 m Vegetation Classification Assessment Area

Scale: 1: 2,500
Original Size: A3
Imagery: Nearmap April 2023
Grid: GDA94 / MGA zone 50 (EPSG:28350)

0 75 150 m

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Figure 9

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

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2.3 BUSHFIRE HAZARD LEVEL

2.3.1 Bushfire Hazard Assessment

Bushfire hazard ratings are assigned according to the classification of vegetation in the area, with possible hazard ratings being low, moderate, or extreme. The nature of the vegetation in and around the development area means that the pre-development bushfire hazard rating ranges from Moderate to Extreme due to the presence of the Class B Woodland (Figure 10), noting that all locations within 100 m of classified vegetation with an Extreme Hazard assessment will have a Moderate Hazard rating due to the increased risk in those areas. Other locations that are within 150 m of the Site will have a low hazard rating.

2.3.2 Fire Danger Index

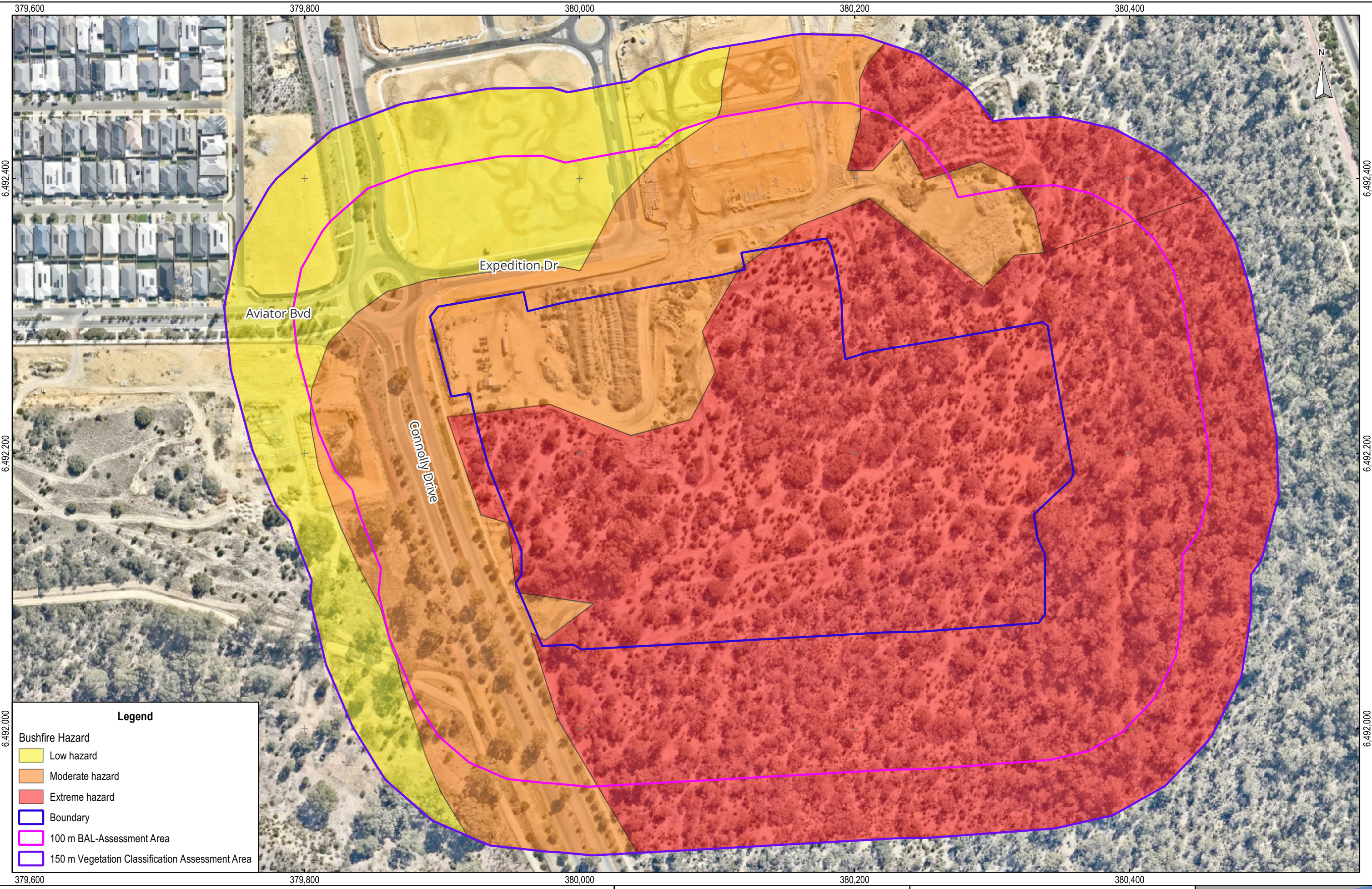
The fire danger index (FDI) for the Site is FDI 80, as documented in Table 2.4.3 of AS 3959:2018, and which is the nominated FDI for Western Australia.

2.3.3 Potential Fire Impacts

Potential fire impacts within the Site include smoke and ember attack; outcomes of the assessment process are provided in Table 1.

Table 1: BAL-analysis

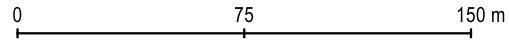
Patch	Vegetation Class	Slope	Separation Distance (m)	BAL-rating
1	Class B Woodland	Upslope or flat	20 – 29	BAL-19
			29 – 100	BAL-12.5
2	Class G Grassland	Upslope or flat	> 70	BAL-Low
3	Non-vegetated	N/A	N/A	N/A



Legend

- Bushfire Hazard
- Low hazard
 - Moderate hazard
 - Extreme hazard
- Boundary
- 100 m BAL-Assessment Area
- 150 m Vegetation Classification Assessment Area

Scale: 1: 2,500
Original Size: A3
Imagery: Nearmap April 2023
Grid: GDA94 / MGA zone 50 (EPSG:28350)



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Figure 10

Bushfire Hazard

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2.4 BAL-ASSESSMENT

The BAL-assessment process has considered the projected post-development classified vegetation that will remain after clearing occurs to accommodate the development. With vegetation expected to remain within Neerabup National Park to the east and the biodiversity conservation area to the east, and land in private ownership to the south meaning an ongoing bushfire risk for the medium to longer term, several Lots will be assigned a BAL-rating as they will be located within 100 m of those locations (Figure 11). Note that BAL-ratings have been determined based on the distance from the edge of the classified vegetation to the Lot boundary as house designs and placement on Lots are not known. Building setbacks from a particular boundary may enable a lower BAL-rating than that currently assigned in this document, such as those for Lots 10, 145 and 146.

The following BAL-ratings have been assigned based on currently available information with none higher than BAL-19 and which is an acceptable solution:

- **BAL-19:** Lots 8 – 10, 40, 41, 48 – 53, 58 – 63, and 157 – 160.
- **BAL-12.5:** Lots 1 – 7, 11 – 19, 25 – 31, 42 – 47, 54 – 57, 64 – 69, 145, 146, 151 – 156.
- **BAL-Low:** Lots 20 – 24, 32 – 39, 70 – 144, 147 – 150.

2.4.1 Asset Protection Zone

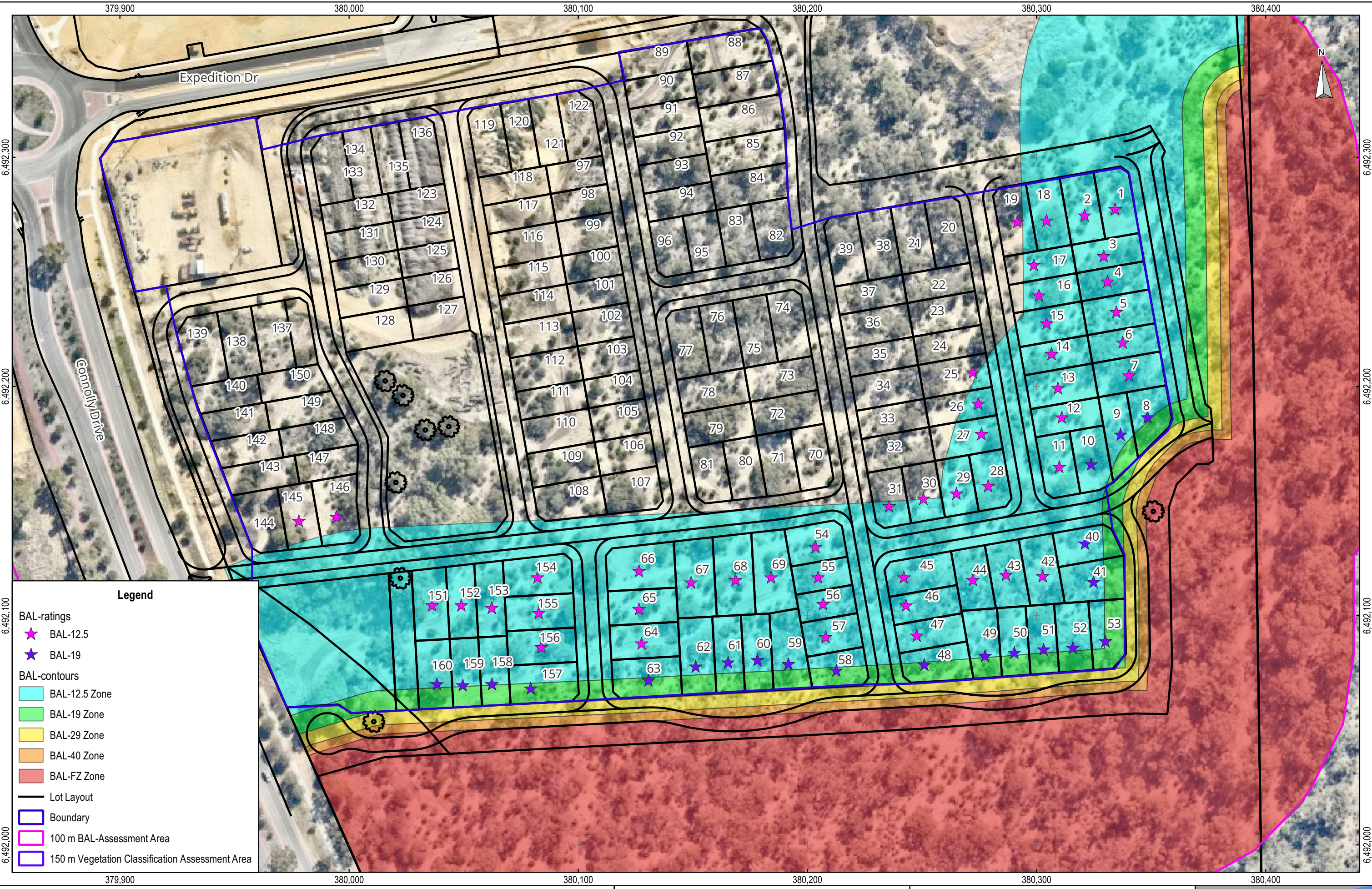
The asset protection zone for the Site is that area that provides the separation distance between the classified vegetation and building walls. It commences at the junction of the BAL-40 and BAL-29 zones, or the junction of the orange and yellow zones in Figure 11, and will extend to the building walls as that is the point where the potential radiant heat impact of a bushfire does not exceed 29 kW/m²; this point also demonstrates that bushfire risks on site can be managed.

2.4.2 Shielding

The shielding provisions of Clause 3.5 in AS 3959:2018 indicate that where a building elevation is not exposed to the bushfire source, that elevation can be constructed to the next lower BAL-rating, noting that it cannot be lower than BAL-12.5, will apply to the wall including openings but will not apply to subfloors or roofs. As the maximum BAL-rating will be BAL-19, the provisions of this clause will be applicable to rear and potentially side elevations of the buildings according to their orientation to the retained vegetation and thus the bushfire source.

2.4.3 Other Bushfire Protection Measures

No other bushfire protection measures will be required for Stages 41 – 44 of the Catalina Green Estate.



2.5 IMPLEMENTATION

Implementation of this BMP will commence immediately and will be the responsibility of the Developer, Satterley Property Group, both for installation and ongoing maintenance until Lots are sold and POS areas are ceded to the City of Wanneroo. The Developer is also responsible for ensuring that Lot purchasers receive 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 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	Developer/builder	Not applicable	
2	Where appropriate, establish POS areas that are to be maintained in a low-fire fuel state as per Exclusion Clause 2.2.3.2 (f) of AS 3959:2018 and Schedule 1 of the Guidelines for Planning in Bushfire Prone Areas.	Developer	POS areas will be maintained in a low threat state on an ongoing basis by the Developer until they are ceded to the City of Wanneroo.	Developer until ceded to the City of Wanneroo
3	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	As required until the Developer is no longer responsible for the site.	Developer
4	Install and maintain firebreak/low fuel zones around the various development stages to minimise the potential for temporary BAL-ratings on Lots, including the clearing of grassland to the south, southeast and southwest of Stage 10 for 50 m to prevent the assigning of temporary BAL-ratings on Lots.	Developer	Checking of firebreaks on a regular basis, in accordance with City of Wanneroo requirements, noting that the City may initiate inspections to ensure compliance.	Developer
5	If required, undertake slashing of any long grass or other low vegetation to 50 mm and other weed control to reduce fuel load within the proposed POS.	Developer	At least annually prior to summer, and at other times if warranted	Developer
6	Assess fire management implications of proposed revegetation and landscaping plans.	Developer	As required during the design phase.	Developer
7	Comply with the City's annual fire hazard reduction notice.	Owner/occupier as appropriate	As required during the design phase	Developer

2.6 RESPONSIBILITIES

Responsibilities for bushfire preparedness and response within the development area are shared by the Satterley Property Group (the Developer), the City of Wanneroo, 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 purchasers or occupiers of Lots.
- Undertaking a review of this BMP when the design or other aspects materially change the bushfire risk to proposed Lots.
- Arranging for appropriate information relating to BAL-ratings of 12.5 or higher to be included on titles of Lots.
- Complying with the requirements of City of Wanneroo annual firebreak notices.

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, annual firebreak notices, any bushfire Information, and any Special orders issued under the *Bush Fires Act* 1954 are complied with.

The City of Wanneroo will be responsible for:

- 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 BAL rating assigned to their Lot.
- 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, 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 Stages 41 – 44 of the Catalina Green Estate complies.

Table 3: SPP 3.7 Compliance Evidence

SPP Reference	Description	Evidence of Compliance
Intent	<ul style="list-style-type: none"> Ensure that risks associated with bushfires are planned using a risk-based approach. 	<ul style="list-style-type: none"> Preparation of a BMP in accordance with SPP 3.7. Hazard assessment indicates risks associated with bushfire are manageable (Figure 10).
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. Several Lots will be assigned a BAL-rating, with none higher than BAL-19 expected (Figure 11).
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. Several Lots will be assigned a BAL-rating, with none higher than BAL-19 expected (Figure 11).
Objective 3	<ul style="list-style-type: none"> Ensure that higher order strategic planning documents and proposals consider bushfire protection requirements at an early stage. 	<ul style="list-style-type: none"> The planning process has considered the risk of bushfire in an early stage, with the development of Stages 41 – 44 occurring more than 10 years after preliminary planning approvals were issued (Section 2.1.5).
Objective 4	<ul style="list-style-type: none"> Achieve an appropriate balance between bushfire risk management and biodiversity conservation. 	<ul style="list-style-type: none"> Site environmental values have been considered during earlier stages of the planning approvals process, with the development of Stages 41 – 44 occurring more than 10 years after preliminary environmental approvals were issued (Section 2.1.5).

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 3 demonstrates the Site's Compliance with Bushfire Protection Criteria; Figure 11 provides the Lot layout, along with assigned BAL-ratings.

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. Several Lots will be assigned a BAL-rating, with none higher than BAL-19 expected (Figure 11).
	BAL-rating is BAL-29 or lower.	<ul style="list-style-type: none"> Bushfire hazard assessment indicates manageable bushfire risk. Several Lots will be assigned a BAL-rating, with none higher than BAL-19 expected (Figure 11).
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 11) 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.

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>	A3.1 Public Roads (SP Sb Do)	
	Public roads are to meet the minimum technical requirements in Table 6, Column 1 on page 76 of the Guidelines. 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.	Public roads will be constructed in accordance with the technical requirements outlined in Column 1 of Table 5 on page 76 of the Guidelines.
	A3.2a Multiple Access Routes (SP Sb Do)	
	Public road access is to be provided in two different directions to at least two different suitable destinations with an all-weather surface (two-way access).	The subdivision design includes several access/egress options away from bushfires that might occur within the Neerabup Regional Park and bushland in private property to the south (Figure 11).
	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.	A cul-de-sac is planned for the east-west road along the southern boundary of the Catalina Green development area due to Connolly Drive being a dual carriageway that includes a vegetated island of approximately 8 m combined with a left in/left out access road approximately 50 m to the north (Figure 11).
	<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). 	The planned cul-de-sac is approximately 130 m long at its maximum, and 70 m from the western boundary of Lot 160 to the nearest intersection (Figure 11).

Intent	Acceptable Solutions	Solution
	A3.2b Emergency Access Way (SP Sb Do)	
	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: <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. 	Not applicable – access will be via the planned internal road network.
	A3.3 Through-roads (SP Sb)	
	All public roads should be through-roads. No-through roads should be avoided and should only be considered as an acceptable solution where: <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. 	<ul style="list-style-type: none"> As per 3.2a – a cul-de-sac along the southern site boundary represents the best option due to constraints associated with the configuration of Connolly Drive. The length of the cul-de-sac to the nearest intersection is around 130 m, and approximately 70 m from the western boundary of Lot 160 to that intersection.
	A no-through road is to meet all the following requirements: <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. 	The cul-de-sac will be constructed in accordance with the requirements for public roads as per the technical requirements outlined in Column 1 of Table 6 on page 76 of the Guidelines, and the turn around area as per Figure 24 on page 81 of the Guidelines.
	A3.4a Perimeter Roads (SP Sb)	
	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: <ul style="list-style-type: none"> Separating areas of classified vegetation under AS 3959 that adjoin the subject site from the proposed lots, and 	<ul style="list-style-type: none"> A perimeter road is provided around Stages 41 – 44 and contributes to the separation distance between the subdivision and the classified vegetation, and thus why the maximum expected BAL-rating is BAL-19 (Figure 11).

Intent	Acceptable Solutions	Solution
	<ul style="list-style-type: none"> Removing the need for battle-axe lots that back onto areas of classified vegetation. 	<ul style="list-style-type: none"> No battle-axe Lots are expected within the Site (Figure 11).
	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 for public roads as per the technical 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. 	Not applicable – a perimeter road has been provided.
	A3.4b Fire Service Access Route (SP Sb)	
	<p>Where proposed lots adjoin classified vegetation under AS 3959 (excluding Class G Grassland) and a perimeter road is not required in accordance with A3.4a, a fire service access route can be considered as an acceptable solution to provide firefighter access, where access is not available, to the classified vegetation. A fire access route is to meet all the following requirements:</p> <ul style="list-style-type: none"> Requirements in Table 6 Column 3 on page 76 of the Guidelines. Be through-routes with no dead-ends. Linked to the internal road system at regular intervals, every 500 m. Must be signposted. No further than 500 m from a public road. If gated, gates must open the required trafficable width and be locked by the local government and/or emergency services, if keys are provided for each gate. Turn-around areas designed to accommodate type 3.4 fire appliances and to enable them to turn around safely every 500 m. 	Not applicable – access will be via the planned internal road layout.

Intent	Acceptable Solutions	Solution
	A3.5 Battle-axe Access Legs (Sb)	
	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.	Not applicable – no battle-axe Lots are planned (Figure 11).
	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: <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). 	Not applicable – no battle-axe Lots are planned.
	A3.6 Private Driveways (Dd Do)	
	There are no private driveway technical requirements where the private driveway is: <ul style="list-style-type: none"> Within a lot serviced by reticulated water. No greater than 70 m in length between the most distant external part of the development site and the public road as measured as a hose lay. Accessed by a public road where the road speed limit is not greater than 70 km/h. 	Not applicable – no private driveways are required (Figure 11).
	In circumstances where all the above conditions are not met, or the private driveway is in a non-reticulated water area, the private driveway is to meet all the following requirements: <ul style="list-style-type: none"> Requirements in Table 6, Column 4 on page 76 of the Guidelines. Passing bays every 200 m with a minimum length of 20 m and minimum additional trafficable width of two metres (i.e. the combined 	Not applicable – no private driveways are required.

Intent	Acceptable Solutions	Solution
	<p>trafficable width of the passing bay and constructed driveway to be a minimum six metres).</p> <ul style="list-style-type: none"> Turn around areas as shown in Figure 28 on page 86 of the Guidelines and within 30 m of the habitable building. 	
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>	A4.1 Identification of Future Water Supply (SP)	
	Evidence that a reticulated or sufficient non-reticulated water supply for bushfire fighting can be provided at the subdivision and/or development application stage, in accordance with the specifications of the relevant water supply authority or the requirements of Schedule 2 on Page 90 of the Guidelines.	The subdivision will be connected to a reticulated water supply and will comply with Water Corporation specifications.
	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.	Not applicable – subdivision will be connected to a reticulated water supply.
	A4.2 Provision of Water for Firefighting Purposes (Sb Dd Do)	
	<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. 	Hydrants will be installed in accordance with Water Corporation requirements.

Intent	Acceptable Solutions	Solution
	<p>— A strategic water tank is to be located no more than 10 minutes from the subject site (at legal road speeds).</p> <p>Where a subdivision includes an existing habitable building(s) that is to be retained, a water supply should be provided to this existing habitable building(s) in accordance with the requirements listed above.</p>	
Element 5: Vulnerable Tourism Land Uses		
Provide for bushfire protection for tourism land uses relevant to the characteristics of the occupants and/or the location, to preserve life and reduce the impact of bushfire on property and infrastructure. All applicable acceptable solutions must be addressed.	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. 	Not applicable — subdivision is a residential subdivision.
	Suitable access/egress is provided for users of tourism sites.	Not applicable — subdivision is a residential subdivision.
	Adequate water is available for firefighting purposes in the event of a bushfire.	Not applicable — subdivision is a residential subdivision.

3.3 COMPLIANCE WITH RELEVANT DOCUMENTS

Sections 3.1 and 3.2 demonstrate how the proposed development of Stages 41 – 44 Catalina Green 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, Lands and Heritage, and the Western Australian 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, Lands and Heritage, 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 24 May 2023 and associated planning.

Signed: 

Date: 09 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.

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