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: Lot 9501 Hammon Rd and Gaebler Rd		
Suburb: Hammond Park	**State:** WA	**P/code:**
Local government area: City of Cockburn		
Description of the planning proposal: Development Application		
BMP Plan / Reference Number: 230492	**Version:** v1.1	**Date of Issue:** 31/10/2023
Client / Business Name: Broad Vision Projects Pty 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)?	☐	☒
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)?	☐	☒
Is the proposal any of the following special development types (see SPP 3.7 for definitions)?		
Unavoidable development (in BAL-40 or BAL-FZ)	☐	☒
Strategic planning proposal (including rezoning applications)	☐	☒
Minor development (in BAL-40 or BAL-FZ)	☐	☒
High risk land-use	☐	☒
Vulnerable land-use	☐	☒

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
Kathy Nastov	Level 3	BPAD27794	01/08/2023
Company Bushfire Prone Planning		**Contact No.** 64771144	

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

Signature of Practitioner  31/10/2023

BUSHFIRE PRONE PLANNING

Bushfire Management Plan (BMP)



- *Assessment of potential bushfire impact*
- *Assessment of the development's ability to acceptably mitigate bushfire risk through application of required and/or additional bushfire protection measures*
- *Creation of responsibilities to implement and maintain protection measures*

Produced to meet the relevant requirements of STATE PLANNING POLICY 3.7 Planning in Bushfire Prone Areas & associated Guidelines.

Lot 9501 Hammond Road & Gaebler Road, Hammond Park

City of Cockburn

Development Application

31 October 2023

Job Reference No: 230492

BPP GROUP PTY LTD T/A BUSHFIRE PRONE PLANNING

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BMP (Master) Template v9.1		

DISTRIBUTION					
Destination		Version	No. Copies	Hard Copy	Electronic Copy
Person	Email				
John DelDosso	John.deldosso@cygnetwest.com	1.0	1	☐	☒

Limitations: *The protection measures contained in this Bushfire Management Plan are minimum requirements and they do not guarantee that buildings or infrastructure will not be damaged in a bushfire, persons injured, or fatalities occur either on the subject site or off the site while evacuating. This is substantially due to the unpredictable nature and behaviour of fire and fire weather conditions. Additionally, the correct implementation of the recommended protection measures will depend upon, among other things, the ongoing actions of the landowners and/or operators over which Bushfire Prone Planning has no control.*

All surveys, forecasts, projections and recommendations made in this report associated with the proposed development are made in good faith based on information available to Bushfire Prone Planning at the time. All maps included herein are indicative in nature and are not to be used for accurate calculations.

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SUMMARY STATEMENTS

THIS DOCUMENT – STATEMENT OF PURPOSE

The Bushfire Management Plan (BMP)

The BMP sets out the required package of bushfire protection measures to lessen the risks associated with a bushfire event. It establishes the responsibilities to implement and maintain these measures.

The BMP also identifies the potential for any negative impact on any environmental, biodiversity and conservation values that may result from the application of bushfire protection measures or that may limit their implementation.

Risks Associated with Bushfire Events

The relevant risks are the potential for loss of life, injury, or destroyed or damaged assets which results in personal loss and economic loss. For a given site, the level of that risk to persons and assets (the exposed elements) is a function of the potential threat levels generated by the bushfire hazard, and the level of exposure and vulnerability of the at risk elements to the threats.

Bushfire Protection Measures

The required package of protection measures is established by *State Planning Policy 3.7 Planning in Bushfire Prone Areas (SPP 3.7)*, its associated *Guidelines* and any other relevant guidelines or position statements published by the Department of Planning, Lands and Heritage. These measures are limited to those considered by the WA planning authorities as necessary to be addressed for the purpose of land use planning. They do not encompass all available bushfire protection measures as many are not directly relevant to the planning approval stage. For example:

- Protection measures to reduce the vulnerability of buildings to bushfire threats is primarily dealt with at the building application stage. They are implemented through the process of applying the Building Code of Australia in accordance with WA building legislation and the application of construction requirements based on a building's level of exposure - determined as a Bushfire Attack Level (BAL) rating); or
- Protection measures to reduce the threat levels of consequential fire (ignited by bushfire and involving combustible materials surrounding and within buildings) and measures to reduce the exposure and vulnerability of elements at risk exposed to consequential fire, are not specifically considered.

The package of required bushfire protection measures established by the Guidelines includes:

- The requirements of the bushfire protection criteria which consist of:
    - Element 1: Location (addresses threat levels).
    - Element 2: Siting and Design of Development (addresses exposure levels of buildings).
    - Element 3: Vehicular Access (addresses exposure and vulnerability levels of persons).
    - Element 4: Water (addresses vulnerability levels of buildings).
    - Element 5: Vulnerable Tourism Land Uses (addresses exposure and vulnerability as per Elements 1-4 but in use specific ways and with additional considerations of persons exposure and vulnerability).
- The requirement to develop Bushfire Emergency Plans / Information for 'vulnerable' land uses for persons to prepare, respond and recover from a bushfire event (this addresses vulnerability levels).
- The requirement to assess bushfire risk and incorporate relevant protection measures into the site emergency plans for 'high risk' land uses (this addresses threat, exposure and vulnerability levels).

Compliance of the Proposed Development or Use with SPP 3.7 Requirements

The BMP assesses the capacity of the proposed development or use to implement and maintain the required 'acceptable' solutions and any additionally recommended bushfire protection measures - or its capacity to satisfy the policy intent through the justified application of additional bushfire protection measures as supportable 'alternative' solutions.

THE PROPOSED DEVELOPMENT/USE – BUSHFIRE PLANNING COMPLIANCE SUMMARY		
Environmental Considerations		**Assessment Outcome**
Will identified environmental, biodiversity and conservation values limit the full application of the required bushfire protection measures?		No
Will identified environmental, biodiversity and conservation values need to be managed in the implementation and maintenance of the bushfire protection measures - but not limit their application?		No
Required Bushfire Protection Measures The Acceptable Solutions of the Bushfire Protection Criteria (Guidelines)		**Assessment Outcome**
Element	The Acceptable Solutions	
1: Location	A1.1 Development location	Fully Compliant
2: Siting and Design of Development	A2.1 Asset Protection Zone (APZ)	Fully Compliant
3: Vehicular Access	A3.1 Public roads	Fully Compliant
	A3.2a Multiple access routes	Fully Compliant
	A3.2b Emergency access way	N/A
	A3.3 Through-roads	N/A
	A3.4a Perimeter roads	N/A
	A3.4b Fire service access route	N/A
	A3.5 Battle-axe legs	N/A
	A3.6 Private driveways	Fully Compliant
4: Water	A4.1 Identification of future water supply	N/A
	A4.2 Provision of water for firefighting purposes	Fully Compliant

1 PROPOSAL DETAILS AND THE BUSHFIRE MANAGEMENT PLAN

1.1 The Proposed Development/Use Details, Plans and Maps

Planning Stage:	Development Application
The stated bushfire planning land use for which additional assessments and documents are required, will apply.	N/A
Subject lot/site total area:	14,488m^2
Number of additional lots being created:	N/A
Description of the proposed development/use:	
This Bushfire Management Plan has been prepared to accompany the development application for Lot 9501 Hammond Road & Gaebler Road in Hammond Park, within the City of Cockburn. The proposal is to develop a multi-use commercial site that incorporates a 7-Eleven Store, Starbucks Restaurant, KFC Restaurant, McDonalds Restaurant, car wash and Medical Centre. These buildings are classified as Class 6 (shops, restaurants, cafes) and Class 9a (Health Care buildings). The development site is within a designated bushfire prone area and the Proposal requires the application of State Planning Policy No. 3.7: Planning in Bushfire Prone Areas (SPP 3.7). The assessed bushfire risk is considered to be manageable and will be achieved by the identified stakeholders implementing and maintaining the bushfire risk management measures that are presented in this Plan. The Proposal, as set out in this Plan, has addressed all applicable legislation, policy, standards and guidelines including the four elements of the Bushfire Protection Criteria of location, siting and design, vehicular access and firefighting water supply. A number of reports and plans have been produced that assist to inform this document from a bushfire perspective. These includes an Environmental report, Wetland Buffer Assessment and Landscaping plan. The recommendations of these reports in respect to bushfire mitigation includes: a) A 15m wetland buffer is required. The installation of a fence is recommended by the Consultant between the commercial development and the wetland, this also reduces the ability of people walking through the wetland. From a bushfire perspective, consideration would need to be given to installation of gates for fire fighting access in an emergency. A BAL Contour map was completed in July 2023, demonstrating the achievable BAL ratings for each building in relationship to the onsite and offsite vegetation. It is acknowledged that onsite vegetation will be removed for the construction project, subject to approval under the Commonwealth EPBC Act.	
Development and management of potential bushfire hazard issues:	
For this Proposal, it is acknowledged that some onsite vegetation will be removed or modified for the construction project. As per the BAL Contour map (Fig 3.2) all buildings can achieve a maximum of BAL – 29 radiant heat impacts (except the car wash which is not a habitable building). The Forest and Scrub vegetation (onsite and offsite) poses the greatest risk to the development project. To the west of the development site is the Harry Waring Marsupial Reserve and to the east of the construction area it is assumed that the existing Forest and Scrub vegetation will remain. This vegetation is extremely flammable and ongoing management of fire breaks as per the City's Firebreak Order will be required to mitigate the risks. To the north of the development site is a School and further afield to the east, south and north are residential areas. It is assumed that managed grounds and gardens within these areas will continue to be maintained.	



SITE PLAN
SCALE: 1 : 500

SITE CRITERIA

LOT 1

1. Site Area		**2,378m²**
2. Landscaping		
a. Required Soft L/S	**10% Of Site**	**238m²**
OR	**5% + Verge**	**119m²**
b. Provided		
i. Soft		267m²
ii. Hard		85m²
	Total	**352m²**
3. Floor Area (GFA)		
a. Convenience Store		**192m²**
4. Carparking		**Carbays**
a. Cars Required	192m² @ 1/15m²	13
	1 Per Employee	2
	Total	**15**
b. Cars Provided		
i. On Grade		9
ii. Fuel Canopy		8
	Total	**17**

LOT 2

1. Site Area		**1,696m²**
2. Landscaping		
a. Required Soft L/S	**10% Of Site**	**170m²**
OR	**5% + Verge**	**85m²**
b. Provided		
i. Soft		204m²
ii. Hard		207m²
	Total	**411m²**
3. Floor Area (GFA)		
a. Fast Food		**245m²**
4. Carparking		**Carbays**
a. Cars Required	245m² @ 1/15m²	**17**
b. Cars Provided		
i. On Grade		14
ii. Drive Thru'		10
	Total	**24**

LOT 3

1. Site Area		**3,259m²**
2. Landscaping		
a. Required Soft L/S	**10% Of Site**	**326m²**
OR	**5% + Verge**	**163m²**
b. Provided		
i. Soft		354m²
ii. Hard		519m²
	Total	**873m²**
3. Floor Area (GFA)		
a. Medical Centre		**640m²**
4. Carparking		**Carbays**
a. Cars Required	10 Practitioner @ 5 Per	**50**
b. Cars Provided		
i. On Grade		**47**

LOT 4

1. Site Area		**2,702m²**
2. Landscaping		
a. Required Soft L/S	**10% Of Site**	**270m²**
OR	**5% + Verge**	**135m²**
b. Provided		
i. Soft		302m²
ii. Hard		166m²
	Total	**468m²**
3. Floor Area (GFA)		
a. Fast Food		**450m²**
4. Carparking		**Carbays**
a. Cars Required	450m² @ 1/15m²	**30**
b. Cars Provided		
i. On Grade		25
ii. Drive Thru'		12
	Total	**37**

LOT 5

1. Site Area		**4,453m²**
2. Landscaping		
a. Required Soft L/S	**10% Of Site**	**445m²**
OR	**5% + Verge**	**223m²**
b. Provided		
i. Soft		694m²
ii. Hard		225m²
	Total	**919m²**
3. Floor Area (GFA)		
a. Fast Food		**270m²**
4. Carparking		**Carbays**
a. Cars Required	270m² @ 1/15m²	**18**
b. Cars Provided		
i. On Grade		25
ii. Drive Thru'		10
	Total	**35**

Landscaping
A. Hard Landscaping
Defined as paved walkways either open or covered.
B.Soft Landscaping
Defined as vegetative landscaping.

Gross Floor Area : GFA
A. All Floor Areas on this plan are shown as GROSS FLOOR AREA. Unless otherwise noted as Nett Floor Area
B. Definition of Gross Floor Area is defined as:
i/ GROSS FLOOR AREA OF TENANCY:
Gross Floor Area of an individual Tenancy is defined as the area contained between the centre line of common tenancy walls and the outside edge of external walls.
ii/ GROSS FLOOR AREA OF A BUILDING:
Gross Floor Area of a Building is defined as the total area contained between the outside edge of external walls

COMPOSITE SITE CRITERIA

1. Site Area		
a. Lot 1		2,378m²
b. Lot 2		1,696m²
c. Lot 3		3,259m²
d. Lot 4		2,702m²
e. Lot 5		4,453m²
	Total	**14,488m²**
2. Landscaping		
a. Provided		
i.Soft		1,821m²
ii. Hard		1,202m²
	Total	**3,023m²**
3. Floor Area (GFA)		
a. Convenience Store		192m²
b. Food Restuarant		965m²
c. Medical Centre		640m²
	Total	**1,797m²**
4. Carparking		
a. Required		**Carbays**
Convenience Store	192m² @ 1/15m²	13
	1 Per Employee	2
Food Restuarant	965m² @ 1/15m²	65
Medical Centre	10 Prac @ 5 Per	50
	Total	**130**
b. Cars Provided		
i. On Grade		121
ii. Drive Thru'		32
iii. Fuel Canopy		8
	Total	**161**

meyer shircore architects

PROPOSED MIXED USE DEVELOPMENT

LOCATION : LOT 9501 CNR GAEBLER ROAD & HAMMOND ROAD, HAMMOND PARK

FOR : BROAD VISION PROJECTS

Member Australian Institute of Architects

0 5 10 15 20 25 50

DATE: SEP 2023
REVISION: SK009
SHEET: 4
SCALE: 1 : 500 @B1

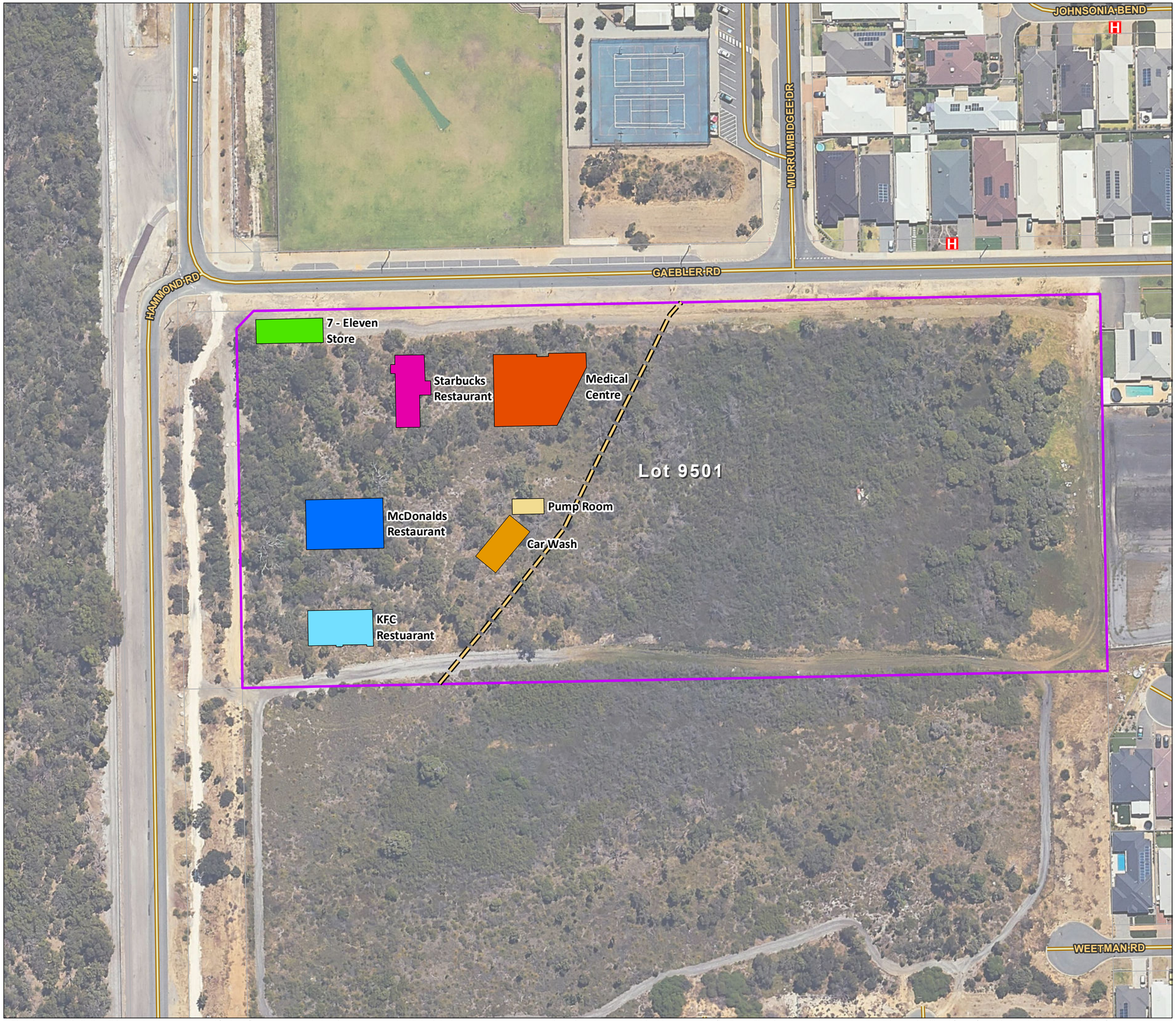
PROJECT NUMBER **22-9101**

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PO Box 1294 Subiaco WA 6904
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Figure 1.2

Proposed Development

Lot : 9501 on Plan 405176 , Area : 38,193 sq m
Hammond Road and Gaeblar Road
HAMMOND PARK
CITY OF COCKBURN



------ **LEGEND** ------

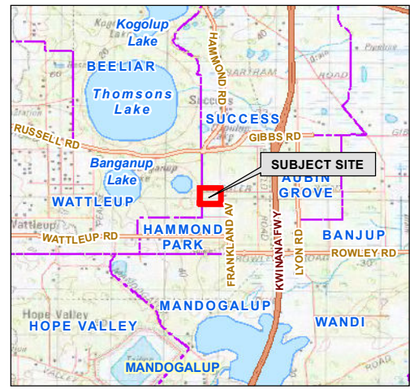
- Subject Site
- Cadastral
- Hydrant
- Firebreaks

Buildings

- 7 - Eleven Store
- Car Wash
- KFC Restuarant
- McDonalds Restaurant
- Medical Centre
- Pump Room
- Starbucks Restaurant

0 20 40 60 80
Metres

------ **LOCALITY** ------



Aerial Imagery : Landgate/SLIP
Image Date : Feb 2023

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator Units: Metre
Map compiled by: Ian Ross 31/10/2023
Map updated by: Ian 31/10/2023
A3 Scale 1:1,250

BUSHFIRE PRONE PLANNING

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Map Document Path / Name: K:\Projects\Jobs 2023\230492 - Lot 9501 Hammond Road & Gaebler Road Hammond Park (BMP DA)\Mapping\MXD\230492 Fig1-2_DEV_ L9501 Hammond Rd.mxd

Figure 1.3

Location Plan

Lot 9501
Hammond Road and Gaeblar Road
HAMMOND PARK
CITY OF COCKBURN

------ LEGEND ------

- Subject Site
- Local Government Authority
- Locality / Suburb
- Bush Fire Brigade
- Career Fire & Rescue Service

Reserves

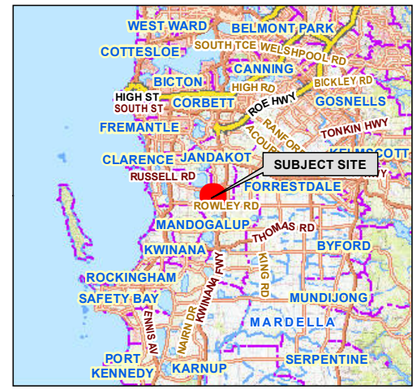
- Reserves

Legislated Lands and Waters

- Crown Freehold - DBCA Managed
- Nature Reserve
- Conservation Park
- Bush Forever

0 500 1,000 1,500 2,000
Metres

------ LOCALITY ------



Aerial Imagery : Landgate/SLIP
Image Date : Feb 2023

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator Units: Metre
Map compiled by: Ian Ross 7/09/2023
Map updated by: Ian Ross 7/09/2023
A3 Scale 1:35,000

BUSHFIRE PRONE PLANNING

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Map Document Path / Name: K:\Projects\Jobs 2023\230492 - Lot 9501 Hammond Road & Gaebler Road Hammond Park (BMP DA)\Mapping\MXD\230492 Fig1-3_LOC_L9501 Hammond Rd.mxd

WHERE SPP 3.7 AND THE GUIDELINES ARE TO APPLY – DESIGNATED BUSHFIRE PRONE AREAS

All higher order strategic planning documents, strategic planning proposals, subdivisions and development applications located in designated bushfire prone areas need to address SPP 3.7 and its supporting Guidelines. This also applies where an area is not yet designated as bushfire prone but is proposed to be developed in a way that introduces a bushfire hazard.

For development applications where only part of a lot is designated as bushfire prone and the proposed development footprint is wholly outside of the designated area, the development application will not need to address SPP 3.7 or the Guidelines. (Guidelines DPLH 2021 v1.4, s1.2).

For subdivision applications, if all the proposed lots have a BAL-LOW indicated, a BMP is not required. (Guidelines DPLH 2021 v1.4, s5.3.1).

Figure 1.4

Bushfire Prone Area

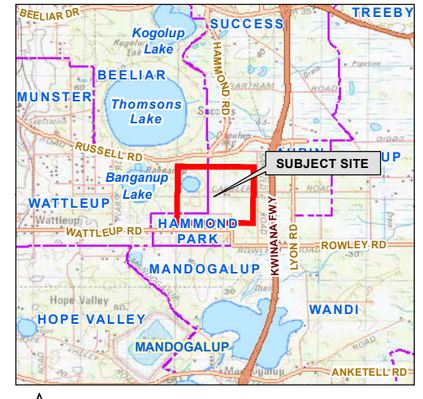
Lot : 9501 on Plan 405176 , Area : 38,193 sq m
Hammond Road and Gaeblar Road
HAMMOND PARK
CITY OF COCKBURN

SUBJECT SITE
7 - Eleven Store
Starbucks Restaurant
Medical Centre
Pump Room
McDonalds Restaurant
Car Wash
KFC Restuarant

BURDEKIN VSTA
MURRUMBIDGEE DR
NAMOI ST
HUNTER WAY
CONDAMINE APP
RUSH LANE
JUNCEA WAY
COOLI ST
BARWON TURN
HAMMOND RD
EUCALYPTUS DR
MACQUARIE BVD
PLUMWOOD RISE
SNOWGUM AV
CARIDEAN WAY
LORNE AV
STAATEN ST
MOONAH WAY
FLAMETREE BEND
LINDLEY LANE
BOTANY PDE
DIANELLA RD
IRONBARK TCE
BANBAR LANE
BAUMEA TURN
LOMANDRA WAY
MIRBELIA ST
JOHNSONIA BEND
SCAEVOLA GRN
SOLLYA LANE
COSTATA GTE
FEATHERFLOWER RD
TWIG ST
GAEBLER RD
STRONG LANE
CORRINGE ST
SPRATLEY ST
WILLIS TCE
LEY LANE
COAD LANE
NEILSON ST
ODAM ST
TIMMS LANE
INVERSON BVD
ATKINS PDE
BOSWORTH RD
MILAN CT
WEETMAN RD
SERVENTY CR
SECRETAN WAY
IRVINE PDE
ALBEROD ST
BELLINGHAM RD
PACKER RISE
MCINTOSH ST
LEPLEY LANE
BLACKSTOCK ST
BEAL LANE
PIESLEY ST
RIBE LANE
COUSINS ST
OAKES WAY
WOODROWAY
FRANKLAND AV
MARQUIS ST
BONSAI LANE
DESIREE ST
AGATA LANE
FRAGRANT ST
TERAMO ST
PAVAROTTI VSTA
CARUSO LANE
BONNOTTE ST
EMBLEM WAY
MITTA ST
DIMAGO VSTA
ANYA LANE
WHADJUK DR
HIBISCUS ST
CANARY DR
MCPHEE RD
JACARANDA RD
RAPHANUS WAY
PARADOXARD
NETTUP ST
NALEY LANE
CORBITT LANE
RONAN LANE
RALPH LANE
DICKERSON LOOP
BAXTERI WAY

0 50 100 150 200
Metres

LOCALITY



Aerial Imagery : Landgate/SLIP
Image Date : Feb 2023

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator Units: Metre
Map compiled by: Ian Ross 31/10/2023
Map updated by: Ian 31/10/2023
A3 Scale 1:5,000

BUSHFIRE PRONE PLANNING

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Map Document Path / Name: K:\Projects\Jobs 2023\230492 - Lot 9501 Hammond Road & Gaebler Road Hammond Park (BMP DA)\Mapping\MXD\230492 Fig1-4_BPA_L9501 Hammond Rd.mxd

1.2 The Bushfire Management Plan (BMP)

1.2.1 Commissioning and Purpose

Landowner / proponent:	Nikola Stojanovic
Bushfire Prone Planning commissioned to produce the BMP by:	Build Plus Group
Purpose of the BMP:	To apply the requirements established by State Planning Policy 3.7: Planning in Bushfire Prone Areas (SPP 3.7) and accompany the development application.
BMP to be submitted to:	City of Cockburn

1.2.2 Other Relevant Documentation - Existing or Concurrently Developed

This section identifies any known assessments, reports or plans that have been conducted and prepared previously, or are being prepared concurrently, and are relevant to the subject site and the proposal/application. They potentially have implications for the assessment of bushfire threats and the implementation of the protection measures that are dealt with in the Bushfire Management Plan.

Table 1.1: Existing or concurrently developed relevant documentation.

RELEVANT DOCUMENTS			
Existing Document	Relevant to the Proposal and the BMP	Copy Provided by Proponent / Developer	Title
Structure Plan	No	N/A	
Bushfire Management Plan	No	N/A	
Bushfire Emergency Plan or Information	No	N/A	
Bushfire Emergency Plan Supporting Information	No	N/A	
Bushfire Risk – Assessment and Management Report	Yes	Yes	230492- Lot 9501 Hammond Road & Gaebler Road Hammond Park (BAL Contour) report
Environmental Asset or Vegetation Survey	Yes	Yes	Banksia Woodland Tec and Black Cockatoo Habitat Assessment, June 2023
Landscaping (Revegetation) Plan	Yes	Yes	Wetland Buffer Assessment, October 2022
DPLH BMP Guidance 'Regions & Uses'	No	N/A	

2 ENVIRONMENTAL CONSERVATION (DESKTOP ASSESSMENT)

Important: *This 'desktop' assessment must not be considered as a replacement for a full Environmental Impact Assessment. It is a summary of potential environmental values at the subject site, inferred from information contained in listed datasets and/or reports, which are only current to the date of last modification.*

These data sources must be considered indicative where the subject site has not previously received a site-specific environmental assessment by an appropriate professional.

Many bushfire prone areas also have high biodiversity values. Consideration of environmental priorities within the boundaries of the land being developed can avoid excessive or unnecessary modification or clearing of vegetation. Approval processes (and exemptions) apply at both Commonwealth and State levels.

Any 'modification' or 'clearing' of vegetation to reduce bushfire risk is considered 'clearing' under the ***Environmental Protection Act 1986*** (EP Act) and requires a clearing permit under the ***Environmental Protection (Clearing of Native Vegetation) Regulations 2004*** (Clearing Regulations) – unless for an exempt purpose.

Clearing native vegetation is an offence, unless done under a clearing permit or the clearing is for an exempt purpose. Exemptions are contained in the EP Act or are prescribed in the Clearing Regulations (note: these do not apply in environmentally sensitive areas).

The ***Department of Water and Environmental Regulation*** (DWER) is responsible for issuing 'clearing' permits and the framework for the regulation of clearing. Approvals under other legislation, from other agencies, may also be required, dependent on the type of flora or fauna present.

Local Planning Policy or Local Biodiversity Strategy: Natural areas that are not protected by the above Act and Regulations (or any other National or State Acts) may be protected by a local planning policy or local biodiversity strategy. Permission from the local government will be required for any modification or removal of native vegetation in these Local Natural Areas (LNA's). Refer to the relevant local government for detail.

For further Information refer to Guidelines v1.4, the Bushfire and Vegetation Factsheet - WAPC, Dec 2021 and https://www.der.wa.gov.au/our-work/clearing-permits

2.1 Existing Vegetation on Private Land

2.1.1 Declared Environmentally Sensitive Areas (ESA)

Table 2.1: Identification of relevant ESA.

IDENTIFICATION OF ESA							
ESA Class	Relevant to Proposal	Influence on Bushfire Threat Levels and / or Application of Bushfire Protection Measures	Relevant Dataset	Information Source(s) Applied to Identification of Relevant Vegetation			Further Action Required
				Dataset	Landowner or Developer	Environmental Asset or Vegetation Survey	
Wetlands and their 50m Buffer (Ramsar, conservation category and nationally important)	Yes	Yes-Significant	DBCA-010 and 011, 019, 040, 043, 044	☒	☒	☒	Confirm with relevant agency
Bush Forever	Yes	Yes-Significant	DPLH-022, SPP 2.8	☒	☐	☐	Confirm with relevant agency

Threatened and Priority Flora + 50m Continuous Buffer	Yes	Yes-Significant	DBCA-036	Restricted Scale of Data Available (security)	☒	☒	Confirm with relevant agency
Threatened Ecological Community	Yes	Yes-Significant	DBCA-038		☒	☒	Data not available - confirm with relevant agency
Heritage Areas National / World	No	No	Relevant register or mapping	☒	☐	☐	N/A
Environmental Protection (Western Swamp Tortoise) Policy 2002	No	No	DWER-062	☒	☐	☐	N/A

DESCRIPTION OF THE IDENTIFIED AREA(S) OF VEGETATION

There are two geomorphic wetland systems adjacent to the development site. The Dampland Wetland system is to the east and south of the development site is a smaller area of Dryland Wetland System. The Wetland Buffer Assessment Report recommends a 15m wetland buffer with the installation of a fence between the commercial development and the wetland. This reduces the ability of people walking through the wetland. Consideration would need to be given to installation of gates for fire fighting access in an emergency.

The Harry Waring Marsupial Reserve is a Bush Forever Site. Further consultation may be required to ensure that any risks to this area are mitigated.

2.2 Post Development Vegetation - Planned Landscaping and/or Re-vegetation

Table 2.2: Identification of land subject to planned vegetation modification.

AREAS OF LAND PLANNED FOR RE-VEGETATION OR LANDSCAPING			
Land with Environmental, Biodiversity, Conservation and Social Values	Relevant to Proposal	Planned Vegetation Modification	Description
Riparian Zones	No	N/A	
Foreshore Areas	No	N/A	-
Wetland Buffers	Yes	Landscape	A Landscape Plan has been developed for the project, and a physical barrier (fence) is proposed
Legislated Lands	No	N/A	-
Public Open Space	No	N/A	-
Road Verges	Yes	Landscape	Road verges are incorporated into the Landscape Plan

2.3 Identified Requirement for Onsite Vegetation Modification or Removal

IDENTIFICATION OF POTENTIAL NATIVE VEGETATION MODIFICATION OR REMOVAL	
Has a requirement to modify or remove native vegetation to establish the required bushfire protection measures on the subject site been identified?	Yes
Is evidence provided (from relevant agencies, the environmental or planning consultant and/or the local government), that the required modification or removal of the vegetation can be achieved?	Yes
Comments: Refer to the Environmental Report.	

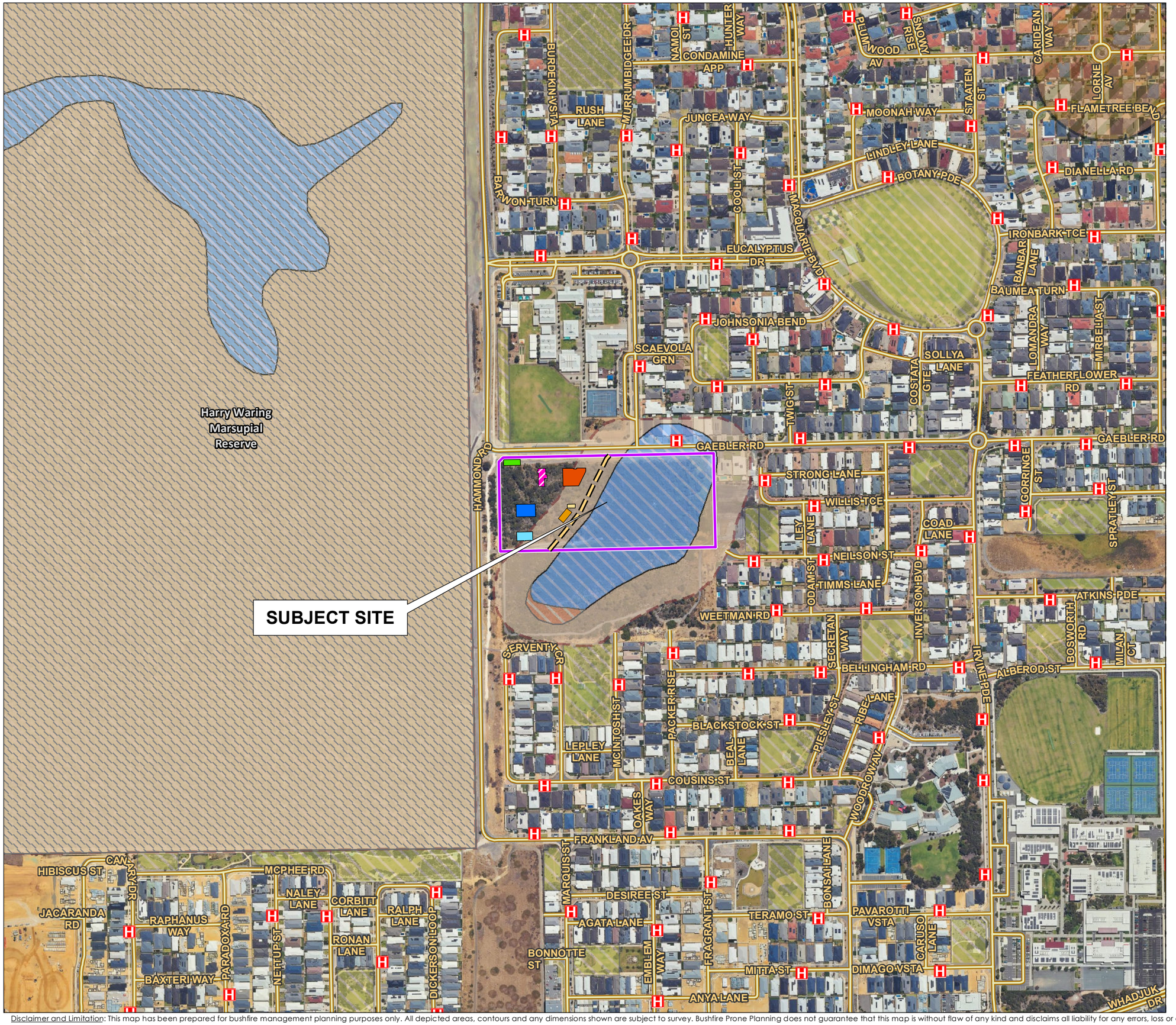
2.4 Cultural Heritage

IDENTIFIED AREAS OF LAND HERITAGE VALUE		
Land with Heritage Value	Relevant to Proposal	Description and Potential Impact on Implementation of Bushfire Protection Measures
Aboriginal Heritage Places (DPLH)	No	
National Heritage List (Dept. of Agriculture, water and the Environment)	No	
Comments: N/A		

Figure 2.1

Environmental Considerations

Lot : 9501 on Plan 405176 , Area : 38,193 sq m
Hammond Road and Gaeblar Road
HAMMOND PARK
CITY OF COCKBURN



------ LEGEND ------

- Subject Site
- Hydrant
- Firebreaks

Buildings

- 7 - Eleven Store
- Car Wash
- KFC Restuarant
- McDonalds Restaurant
- Medical Centre
- Pump Room
- Starbucks Restaurant

Reserves

- Reserves

Legislated Lands and Waters

- Nature Reserve
- Bush Forever
- Aboriginal Heritage Place DPLH_001

Geomorphic Wetlands

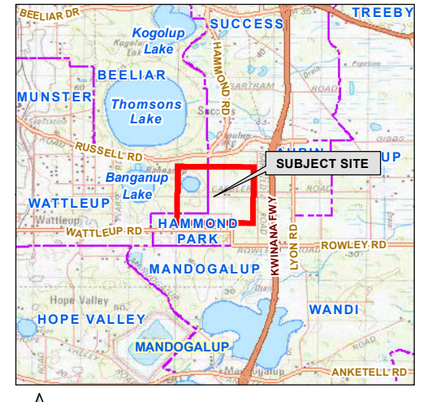
- Dampland
- Dryland

Clearing Regulations

- Clearing Regulations

0 50 100 150 200
Metres

------ LOCALITY ------



Aerial Imagery : Landgate/SLIP
Image Date : Feb 2023

Coordinate System: GDA 1994 MGA Zone 50
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3 BUSHFIRE ATTACK LEVEL (BAL) ASSESSMENT

BUSHFIRE ATTACK LEVELS (BAL) - UNDERSTANDING THE RESULTS

The transfer (flux/flow) of radiant heat from the bushfire to a receiving object is measured in kW/m^2. The AS 3959:2018 BAL determination methodology establishes the ranges of radiant heat flux that correspond to each bushfire attack level. These are identified as BAL-LOW, BAL-12.5, BAL-19, BAL-29, BAL-40 and BAL-FZ.

The bushfire performance requirements for certain classes of buildings are established by the Building Code of Australia (Vol. 1 & 2 of the NCC). The BAL will establish the bushfire resistant construction requirements that are to apply in accordance with AS 3959:2018 - Construction *of buildings in bushfire prone areas* and the NASH Standard – *Steel framed construction in bushfire areas (NS 300 2021),* whose solutions are deemed to satisfy the NCC bushfire performance requirements.

DETERMINED BAL RATINGS

A BAL Certificate can be issued for a determined BAL. A BAL can only be classed as 'determined' for an existing or future building/structure when:

1. It's final design and position on the lot are known and the stated separation distance from classified bushfire prone vegetation exists and can justifiably be expected to remain in perpetuity; or

2. It will always remain subject to the same BAL regardless of its design or position on the lot after accounting for any regulatory or enforceable building setbacks from lot boundaries as relevant and necessary (e.g., R-codes, restrictive covenants, defined building envelopes) or the retention of any existing classified vegetation either onsite or offsite.

If the BMP derives determined BAL(s), the BAL Certificate(s) required for submission with building applications can be provided, using the BMP as the assessment evidence.

INDICATIVE BAL RATINGS

A BAL Certificate cannot be issued for an indicative BAL. A BAL will be classed as 'indicative' for an existing or future building/structure when the required conditions to derive a determined BAL are not met.

This class of BAL rating indicates what BAL(s) could be achieved and the conditions that need to be met are stated.

Converting the indicative BAL into a determined BAL is conditional upon the currently unconfirmed variable(s) being confirmed by a subsequent assessment and evidential documentation. These variables will include the future building(s) location(s) being established (or changed) and/or classified vegetation being modified or removed to establish the necessary vegetation separation distance. This may also be dependent on receiving approval from the relevant authority for that modification/removal.

BAL RATING APPLICATION – PLANNING APPROVAL VERSUS BUILDING APPROVAL

1. **Planning Approval**: SPP.3.7 establishes that where BAL- LOW to BAL-29 will apply to relevant future construction (or existing structures for proposed uses), the proposed development may be considered for approval (dependent on the other requirements of the relevant policy measures being met). That is, BAL40 or BAL-FZ are not acceptable on planning grounds (except for certain limited exceptions).

   Because planning is looking forward at what can be achieved, as well as looking at what may currently exist, both determined and indicative BAL ratings are acceptable assessment outcomes on which planning decisions can be made (including conditional approvals).

2. **Building Approval:** The Building Code of Australia (Vol. 1 & 2 of the NCC) establishes that relevant buildings in bushfire prone areas must be constructed to the bushfire resistant requirements corresponding to the BAL rating that is to apply to that building. Consequently, a determined BAL rating and the BAL Certificate is required for a building permit to be issued - an indicative BAL rating is not acceptable.

3.1.1 BAL Determination Method(s) Applied and the Location of Data and Results

Procedure Method (AS 3959:2018)	Applied to the BAL Assessment	Location of the Site Assessment Data			Location of the Results
		Site Assessment Map	Calculation Input Variables		Assessed Bushfire Attack Levels and/or Radiant Heat Levels
			Summary Data	Detailed Data with Explanatory and Supporting Information	
Method 1 (Simplified)	Yes	Figure 3.1	Table 1	Appendix A1	Section 2.1.1 BAL Contour Map
Method 2 (Detailed)	No	N/A	N/A	N/A	N/A

3.2 BAL Assessment Summary (Contour Map Format)

INTERPRETATION OF THE BAL CONTOUR MAP

The BAL contour map is a diagrammatic representation of the results of the bushfire attack level assessment.

The map presents different coloured contours extending out from the areas of classified vegetation. Each contour represents a set range of radiant heat flux that potentially will transfer to an exposed element (building, person or other defined element), when it is located within that contour.

Each of the set ranges of radiant heat flux corresponds to a different BAL rating as defined by the AS 3959:2018 BAL determination methodology.

The width of each shaded BAL contour will vary dependant on both the BAL rating and the relevant parameters (calculation inputs) for the subject site. Their width represents the minimum and maximum vegetation separation distances that correspond to each BAL rating (refer to the relevant table below for these distances).

The areas of classified vegetation to be considered in developing the BAL contours, are those that will remain at the intended end state of the subject development once earthworks, clearing and/or landscaping and re-vegetation have been completed. Variations to this statement that may apply include:

- Both pre and post development BAL contour maps are produced; and/or
- Each stage of a development is assessed independently.

3.2.1 BAL Ratings Derived from the Contour Map

Table 2.1: Indicative and determined BAL(s) for future buildings/structures on the proposed lots.

BUSHFIRE ATTACK LEVEL FOR FUTURE BUILDINGS / STRUCTURES ON STATED LOT [1]		
Lot No.9501	Future Buildings / Structure	
	Indicative BAL [2]	Determined BAL [2]
7-Eleven and Medical Centre	BAL-19	Not Determined
KFC Restaurant	BAL-29	Not Determined
McDonalds and Starbucks Restaurants	BAL-12.5	Not Determined
*Car wash (not habitable)	BAL – FZ	Not Determined
[1] The assessment data used to derive the BAL ratings is sourced from Table 1 and Figure 2. Refer to the start of Section 3 for an explanation of indicative versus determined BAL ratings.		

The car wash is a non-habitable structure and therefore BAL ratings are not applicable.

Figure 3.1

Classified Vegetation & Topography (Existing)

Lot : 9501 on Plan 405176, Area : 38,193 sq m
Hammond Road and Gaeblar Road
HAMMOND PARK
CITY OF COCKBURN

HAMMOND RD
MURRUMBIDGEE DR
SCAEVOLA GRN
JOHNSONA BEND
GAEBLER RD

AREA 1
Class (A) Forest
Effective Slope 0°

AREA 4
Excluded

AREA 1
Class (A) Forest
Effective Slope 0°

AREA 2
Class (D) Scrub
Effective Slope 0°

AREA 1
Class (A) Forest
Effective Slope 0°

Lot 9501

AREA 2
Class (D) Scrub
Effective Slope 0°

AREA 3
Class (C) Shrubland
Effective Slope 0°

AREA 1
Class (A) Forest
Effective Slope 0°

AREA 2
Class (D) Scrub
Effective Slope 0°

AREA 3
Class (C) Shrubland
Effective Slope 0°

AREA 4
Excluded

1 2 3 4 5 6 7 8 9 10 11 12

------ LEGEND ------

- Subject Site
- Cadastral
- Hydrants
- Photo & Direction

Buildings

- 7 - Eleven Store
- KFC Restuarant
- McDonalds Restaurant
- Medical Centre
- Pump Room
- Starbucks Restaurant
- 150m Assessment Area
- 100m Assessment Area

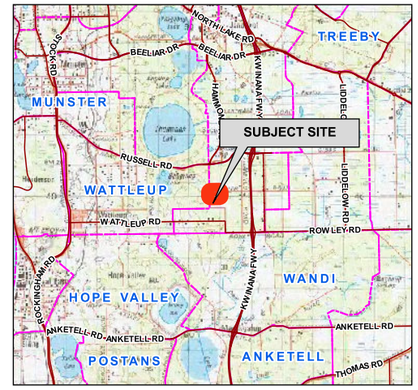
Classified Vegetation Slope Range

- Class A - Forest
- Class C - Shrubland
- Class D - Scrub
- Class G - Grassland
- Exclusion 2.2.3.2
- Elevation Contours

0 20 40 60 80

Metres

------ LOCALITY ------



AERIAL IMAGERY: Landgate/SLIP

N

BUSHFIRE PRONE PLANNING

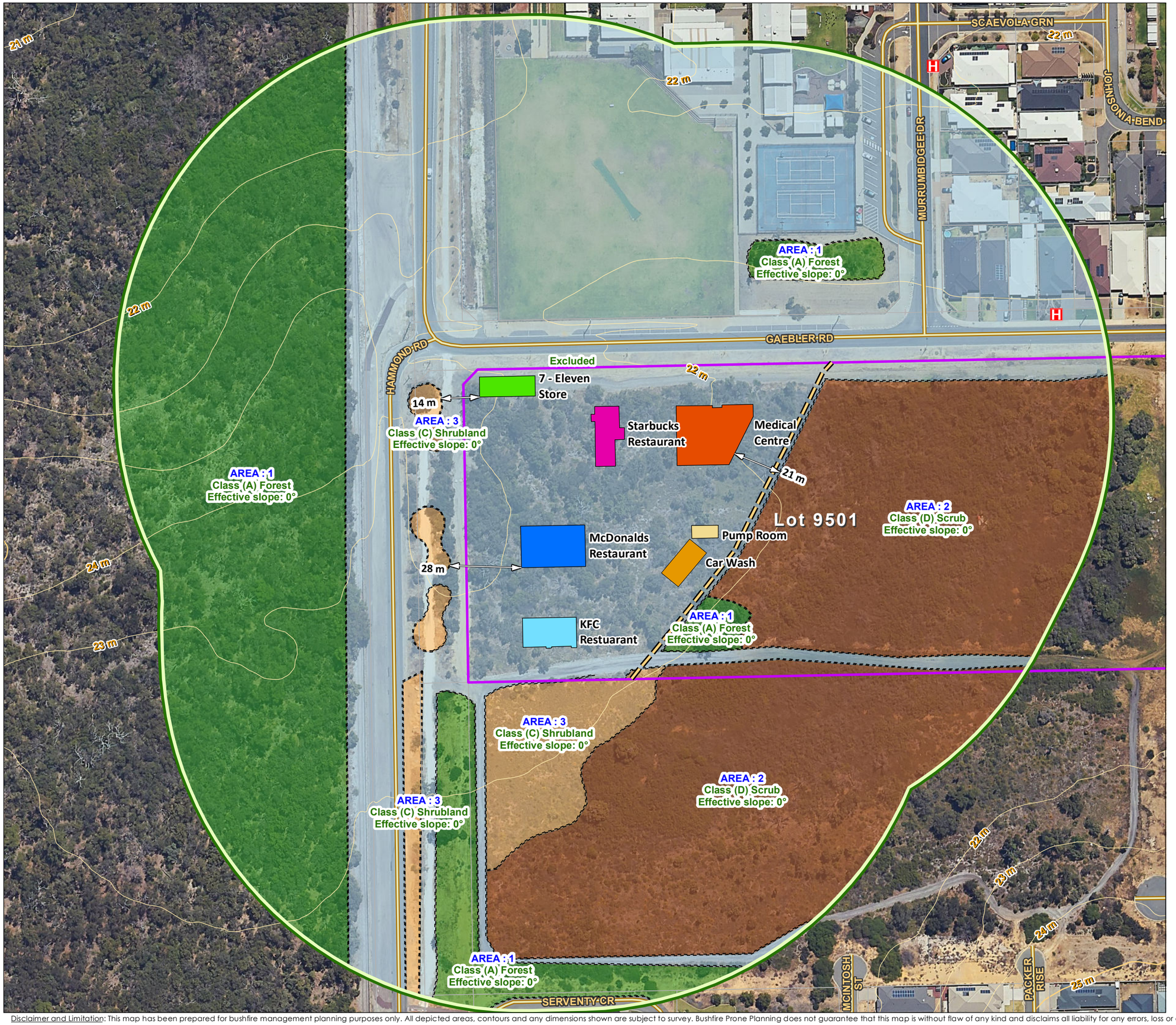
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Map by: GF, IR 08-09-2023
SCALE (A3): 1 : 1500

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Figure 3.1.1

Classified Vegetation & Topography (Post Development)

Lot : 9501 on Plan 405176 , Area : 38,193 sq m
Hammond Road and Gaeblar Road
HAMMOND PARK
CITY OF COCKBURN



------ **LEGEND** ------

- Subject Site
- Cadastral
- Hydrant
- Firebreaks

Buildings

- 7 - Eleven Store
- Car Wash
- KFC Restuarant
- McDonalds Restaurant
- Medical Centre
- Pump Room
- Starbucks Restaurant

150m Vegetation Assessment Area

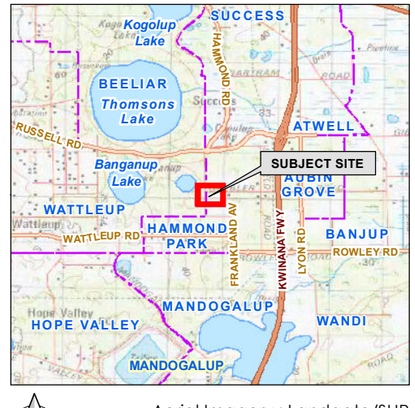
- 150m from Subject Site

Classified Vegetation

- Class (A) Forest
- Class (C) Shrubland
- Class (D) Scrub
- Excluded 2.2.3.2
- Vegetation Distance

0 20 40 60 80
Metres

------ **LOCALITY** ------



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Figure 3.2

BAL Contour Map

Lot : 9501 on Plan 405176 , Area : 38,193 sq m
Hammond Road and Gaeblar Road
HAMMOND PARK
CITY OF COCKBURN



------ **LEGEND** ------

- Subject Site
- Cadastral
- Hydrant
- Firebreaks

Buildings

- 7 - Eleven Store
- Car Wash
- KFC Restuarant
- McDonalds Restaurant
- Medical Centre
- Pump Room
- Starbucks Restaurant

100m Vegetation Assessment Area

- 100m from Subject Site
- Vegatation Edge and Area

Bushfire Attack Levels

- BAL-FZ
- BAL-40
- BAL-29
- BAL-19
- BAL-12.5

0 20 40 60 80
Metres

------ **LOCALITY** ------



Aerial Imagery : Landgate/SLIP
Image Date : Feb 2023

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3.2.4 Site Assessment Data Applied to Construction of the BAL Contour Map(s)

RELEVANT CLASSIFIED VEGETATION	
Identification of Classified Vegetation that is Relevant to the Production of the BAL Contour Map(s)	Relevant Map
All identified areas of classified vegetation that exist at the time of the site assessment – both within the subject site (onsite) and external to the subject site (offsite) will be the relevant vegetation.	Figure 3.1
All identified areas of classified vegetation that exist at the time of the site assessment – both within the subject site (onsite) and external to the subject site (offsite) will be the relevant vegetation for the preparation of the BAL contour map.	Figure 3.2
Supporting Assessment Details: None Required.	

Table 2.1.1: The calculation inputs applied to determining the site specific separation distances corresponding to levels of potential radiant heat transfer (including BAL's).

SUMMARY OF CALCULATION INPUT VARIABLES APPLIED TO THE DETERMINATION OF SEPARATION DISTANCES CORRESPONDING TO RADIANT HEAT LEVELS [1]													
Applied BAL Determination Method		METHOD 1 - SIMPLIFIED PROCEDURE (AS 3959:2018 CLAUSE 2.2)											
The Calculation Variables Corresponding to the BAL Determination Method Applied													
Methods 1 and 2		Method 1	Method 2										
Vegetation Classification		FDI	Effective Slope		Site Slope	FFDI or GFDI	Flame Temp.	Elevation of Receiver	Flame Width	Fireline Intensity	Flame Length	Modified View Factor	
			Applied Range	Measured									
Area	Class		degree range	degrees	degrees		K	metres	metres	kW/m	metres	% Reduction	
1	(A) Forest	80	Upslope or flat 0	-									
2	(D) Scrub	80	Upslope or flat 0	-									
3	(C) Shrubland	80	Upslope or flat 0	-									
4	Excluded cl 2.2.3.2(e & f)	80	N/A	-									

[1] All data and information supporting the determination of the classifications and values stated in this table and any associated justification, is presented in Appendix A.

Where the values are stated as 'default' these are either the values stated in AS 3959:2018, Table B1 or the values calculated as intermediate or final outputs through application of the equations of the AS 3959:2018 BAL determination methodology. They are not values derived by the assessor.

4 IDENTIFICATION OF BUSHFIRE HAZARD ISSUES

The Guidelines for Planning in Bushfire Prone Areas (WAPC 2021 v1.4), Appendix 5, establish that the application of this section of the BMP is intended to support ***strategic planning*** proposals. At the strategic planning stage there will typically be insufficient proposed development detail to enable all required assessments, including the assessment against the bushfire protection criteria.

Strategic Planning Proposals

If the proposed development is at this stage of planning, this section of the BMP will identify:

- Issues associated with the level of the threats presented by any identified bushfire hazard;
- Issues associated with the ability to implement sufficient and effective bushfire protection measures to reduce the exposure and vulnerability levels (of elements exposed to the hazard threats), to a tolerable or acceptable level; and
- Issues that will need to be considered at subsequent planning stages.

Other Planning Proposals

For all other planning stages the following issues are addressed in other sections of this BMP:

- environmental, biodiversity and conservation values;
- The bushfire threats – with the focus on flame contact and radiant heat; and
- The ability of the proposed development to apply the required bushfire protection measures thereby enabling it to be considered for planning approval.

These section include:

- Section 2 – Environmental Conservation;
- Section 3 – Potential Bushfire Impact; and
- Section 5 – Assessment Against the Bushfire Protection Criteria. Including the guidance provided by the *Position Statement: 'Planning in bushfire prone areas – Demonstrating Element 1: Location and Element 2'*.

Is the proposed development a strategic planning proposal?	No

5 ASSESSMENT AGAINST THE BUSHFIRE PROTECTION CRITERIA (GUIDELINES V1.4)

5.1 Bushfire Protection Criteria Elements Applicable to the Proposed Development/Use

APPLICATION OF THE CRITERIA, ACCEPTABLE SOLUTIONS AND PERFORMANCE ASSESSMENT

The criteria are divided into five elements – location, siting and design, vehicular access, water and vulnerable tourism land uses. Each element has an intent outlining the desired outcome for the element and reflects identified planning and policy requirements in respect of each issue.

The example acceptable solutions (bushfire protection measures) provide one way of meeting the element's intent. Compliance automatically achieves the element's intent and provides a straightforward pathway for assessment and approval.

Where the acceptable solutions cannot be met, the ability to develop design responses (as alternative solutions that meet bushfire performance requirements) is an alternative pathway that is provided by addressing the applicable performance principles (as general statements of how best to achieve the intent of the element).

A merit based assessment is established by the SPP 3.7 and the Guidelines as an additional alternative pathway along with the ability of using discretion in making approval decisions (sections 2.5, 2.6 and 2.7). This is formally applied to certain development (minor and unavoidable – sections 5.4.1 and 5.7). Relevant decisions by the State Administrative Tribunal have also supported this approach more generally.

Elements 1 – 4 should be applied for all strategic planning proposals, subdivision or development applications, except for vulnerable tourism land uses which should refer to Element 5. Element 5 incorporates the bushfire protection criteria in Elements 1 – 4 but caters them specifically to tourism land uses. (Guidelines DPLH 2021v1.4)

The Bushfire Protection Criteria	Applicable to the Proposed Development/Use
Element 1: Location	Yes
Element 2: Siting and Design	Yes
Element 3: Vehicular Access	Yes
Element 4: Water	Yes
Element 5: Vulnerable Tourism Land Uses	No

5.2 Local Government Variations to Apply

Local governments may add to or modify the acceptable solutions to recognise special local or regional circumstances (e.g., topography / vegetation / climate). These are to be endorsed by both the WAPC and DFES before they can be considered in planning assessments. (Guidelines DPLH 2021v1.4).

Do endorsed regional or local variations to the acceptable solutions apply to the assessments against the Bushfire Protection Criteria for the proposed development /use?	None known or identified

5.3 Assessment Statements for Element 1: Location

LOCATION	
Element Intent	To 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.
Proposed Development/Use – Relevant Planning Stage	(Do) Development application other than for a single dwelling, ancillary dwelling or minor development
Element Compliance Statement	The proposed development/use achieves the intent of this element by being fully compliant with all applicable acceptable solutions.
Pathway Applied to Provide an Alternative Solution	N/A

Acceptable Solutions - Assessment Statements

All details of acceptable solution requirements are established in the Guidelines for Planning in Bushfire Prone Areas, DPLH v1.4 (Guidelines) and apply the guidance established by the Position Statement: 'Planning in bushfire prone areas – Demonstrating Element 1: Location and Element 2: Siting and design' (WAPC Nov 2019) and the 'Bushfire Management Plan Guidance for the Dampier Peninsula' (WA Department of Planning, Lands and Heritage, 2021 Rev B) as relevant. These documents are available at https://www.wa.gov.au/government/document-collections/state-planning-policy-37-planning-bushfire-prone-areas.

Solution Component Check Box Legend	☑ Relevant & met	☒ Relevant & not met	⃠ Not relevant

A1.1 Development location	**Applicable:** Yes	**Compliant:** Yes

ASSESSMENT AGAINST THE REQUIREMENTS ESTABLISHED BY THE GUIDELINES

☑ ☐ ☐ The development application is located in an area that is or will, on completion, be subject to either a moderate or low bushfire hazard level, or BAL-29 or below.

Supporting Assessment Details:

Onsite vegetation can be modified or removed, subject to approval because of the Environmental Report recommending a Referral under the Commonwealth EPBC Act.

Onsite vegetation is predominantly classified as Forest and Scrub. Offsite vegetation is a mix of Forest, Scrub and Shrub. Primary vegetation includes Eucalypt, Banksia and Melaleuca.

A Landscape Plan has been developed, which outlines a range of plants that are hardy, Black Cockatoo foraging vegetation, and water tolerant.

ASSESSMENTS APPLYING THE GUIDANCE ESTABLISHED BY THE WAPC ELEMENT 1 & 2 POSITION STATEMENT (2019)

"Consideration should be given to the site context where 'area' is the land both within and adjoining the subject site. The hazards remaining within the site should not be considered in isolation of the hazards adjoining the site, as the potential impact of a bushfire will be dependent on the wider risk context, including how a bushfire could affect the site and the conditions for a bushfire to occur within the site."

Strategic Planning Proposals: Consider the threat levels from any vegetation adjoining and within the subject site for which the potential intensity of a bushfire in that vegetation would result in it being classified as an Extreme Bushfire Hazard Level (BHL). Identify any proposed design strategies to reduce these threats.

Structure Plans (lot layout known) and Subdivision Applications: As for strategic planning proposals but within the subject site the relevant threat levels to consider are the radiant heat levels represented by BAL-FZ and BAL-40 ratings.
The planning proposal is a development application, consequently the referenced position statement is not applicable to the Element 1 assessment.

5.4 Assessment Statements for Element 2: Siting and Design

SITING AND DESIGN OF DEVELOPMENT	
Element Intent	To ensure that the siting and design of development minimises the level of bushfire impact. (BPP Note: not building/construction design)
Proposed Development/Use – Relevant Planning Stage	(Do) Development application other than for a single dwelling, ancillary dwelling or minor development
Element Compliance Statement	The proposed development/use achieves the intent of this element by being fully compliant with all applicable acceptable solutions.
Pathway Applied to Provide an Alternative Solution	N/A

Acceptable Solutions - Assessment Statements

All details of acceptable solution requirements are established in the Guidelines for Planning in Bushfire Prone Areas, DPLH v1.4 (Guidelines) and apply the guidance established by the Position Statement: 'Planning in bushfire prone areas – Demonstrating Element 1: Location and Element 2: Siting and design' (WAPC Nov 2019) and the 'Bushfire Management Plan Guidance for the Dampier Peninsula' (WA Department of Planning, Lands and Heritage, 2021 Rev B) as relevant. These documents are available at https://www.wa.gov.au/government/document-collections/state-planning-policy-37-planning-bushfire-prone-areas.

Solution Component Check Box Legend	☑ Relevant & met	☒ Relevant & not met	⃠ Not relevant

A2.1 Asset Protection Zone (APZ)	**Applicable**: Yes	**Compliant**: Yes

APZ DIMENSIONS – DIFFERENCES IN REQUIREMENTS FOR PLANNING ASSESSMENTS COMPARED TO IMPLEMENTATION

A key required bushfire protection measure is to reduce the exposure of buildings/infrastructure (as exposed vulnerable elements at risk), to the direct bushfire threats of flame contact, radiant heat and embers and the indirect threat of consequential fires that result from the subsequent ignition of other combustible materials that may be constructed, stored or accumulate in the area surrounding these structures. This reduces the associated risks of damage or loss.

This is achieved by separating buildings (and consequential fire fuels as necessary) from areas of classified bushfire prone vegetation. This area of separation surrounding buildings is identified as the Asset Protection Zone (APZ) and consists of no vegetation and/or low threat vegetation or vegetation continually managed to a minimal fuel condition. The required separation distances will vary according to the site specific conditions and local government requirements.

The APZ dimensions stated and/or illustrated in this Report can vary dependent on the purpose for which they are being identified.

> *Note: Appendix B 'Onsite Vegetation Management' provides further information regarding the different APZ dimensions that can be referenced, their purpose and the specifications of the APZ that are to be established and maintained on the subject lot.*

THE 'PLANNING BAL-29' APZ DIMENSIONS

Purpose: To provide evidence of the development or use proposal's ability to achieve minimum vegetation separation distances. To achieve 'acceptable solution' planning approval for this factor, it must be demonstrated that the minimum separation distances corresponding to a maximum level of radiant transfer to a building of 29 kW/m^2, either exist or can be implemented (with certain exceptions). These separation distances are the 'Planning BAL-29' APZ dimensions.

The 'Planning BAL-29' APZ is not necessarily the size of the APZ that must be physically implemented and maintained by a landowner. Rather, its sole purpose is to identify if an acceptable solution for planning approval can be met.

THE 'REQUIRED' APZ DIMENSIONS

Purpose: Establishes the dimensions of the APZ to be physically implemented by the landowner on their lot: These will be the minimum required separation distances from the subject building(s) to surrounding bushfire prone vegetation (identified by type and associated ground slope). These are established by:

A. The 'BAL Rating APZ' of the subject building(s) when distances are greater than 'B' below (except when 'B' establishes a maximum distance); or

B. The 'Local Government' APZ' derived from the Firebreak/Hazard Reduction Notice when distances are greater than 'A' above, other than when a maximum distance is established, in which case this will apply; or

C. A combination of 'A' and 'B'.

> *Within this Report/Plan it is the **'Planning BAL-29' APZ** that will be identified on maps, diagrams and in tables as necessary – unless otherwise stated.*
>
> *The **'Required' APZ** dimension information will be presented in Appendix B1.1 and on the Property Bushfire Management Statement, when required to be included for a development application.*

ASSESSMENT AGAINST THE REQUIREMENTS ESTABLISHED BY THE GUIDELINES

☑ ☐ ☐	**APZ Width:** The proposed (or a future) habitable building(s) on the lot(s) of the proposed development - or an existing building for a proposed change of use – can be (or is) located within the developable portion of the lot and be surrounded by a 'Planning BAL-29' APZ of the required dimensions (measured from any external wall or supporting post or column to the edge of the classified vegetation), that will ensure their exposure to the potential radiant heat impact of a bushfire does not exceed 29 kW/m^2.
☐ ☐ ⊘	**Restriction on Building Location:** It has been identified that the current developable portion of a lot(s) provides for the proposed future (or a future) building/structure location that will result in that building/structure being subject to a BA-40 or BAL-FZ rating. Consequently, it may be considered necessary to impose the condition that a restrictive covenant to the benefit of the local government pursuant to section 129BA of the Transfer of Land Act 1893, is to be placed on the certificate(s) of title of the proposed lot(s) advising of the existence of a restriction on the use of that portion of land (refer to Code F3 of Model Subdivision Conditions Schedule, WAPC June 2021 and Guidelines s5.3.2).
☑ ☐ ☐	**APZ Location:** The required dimensions for a 'Planning BAL-29' APZ can be contained solely within the boundaries of the lot(s) on which the proposed (or a future) habitable building(s) - or an existing building(s) for a proposed change of use – is situated.
☐ ☐ ⊘	**APZ Location:** The required dimensions for a 'Planning BAL-29' APZ can be partly established within the boundaries of the lot(s) on which the proposed (or a future) habitable building(s) - or an existing building(s) for a proposed change of use – is situated. The balance of the APZ would exist on adjoining land that satisfies the exclusion requirements of AS 3959:2018 cl 2.2.3.2 for non-vegetated areas and/or low threat vegetation and/or vegetation managed in a minimal fuel condition.
☐ ☐ ⊘	**APZ Location:** It can be justified that any adjoining (offsite) land forming part of a 'Planning BAL-29' APZ will: • If non-vegetated, remain in this condition in perpetuity; and/or • If vegetated, be low threat vegetation or vegetation managed in a minimal fuel condition in perpetuity.
☐ ☐ ⊘	**APZ Management:** The area of land (within each lot boundary), that is to make up the required 'Landowner' APZ dimensions (refer to Appendix B, Part B1), can and will be managed in accordance with

	the requirements of the Guidelines Schedule 1 'Standards for Asset Protection Zones' (refer to Appendix B).
☐ ☐ ⊘	**Subdivision Staging:** There are undeveloped future stages of subdivision, containing bushfire prone vegetation, that have been taken into consideration for their potentially 'temporary' impact on the ability to establish a 'Planning BAL-29' APZ on adjoining developed lots. A staging plan is developed to manage this.
☑ ☐ ☐	**Firebreak/Hazard Reduction Notice:** Any additional requirements established by the relevant local government's annual notice to install firebreaks and manage fuel loads (issued under s33 of the Bushfires Act 1954), can and will be complied with.
Supporting Assessment Details: The development has the ability to establish the APZ dimensions as illustrated in Figure 3.2 with exception of the car wash which is not a habitable building. Onsite native vegetation will be required to be modified and/or removed, for which the appropriate authority will be required (refer to Appendix A of this BMP). A Landscaping Plan has been developed for the site.	
ASSESSMENTS APPLYING THE GUIDANCE ESTABLISHED BY THE WAPC ELEMENT 1 & 2 POSITION STATEMENT (2019)	
Strategic Planning Proposals: "At this planning level there may not be enough detail to demonstrate compliance with this element. The decision-maker may consider this element is satisfied where A1.1 is met." **Structure Plans (lot layout known) and Subdivision Applications: "**Provided that Element 1 is satisfied, the decision-maker may consider approving lot(s) containing BAL-40 or BAL-FZ under the following scenarios.	
The planning proposal is a development application, consequently the referenced position statement is not applicable to the proposed development.	

5.5 Assessment Statements for Element 3: Vehicular Access

VEHICULAR ACCESS	
Element Intent	To ensure that the vehicular access serving a subdivision/development is available and safe during a bushfire event.
Proposed Development/Use – Relevant Planning Stage	(Do) Development application other than for a single dwelling, ancillary dwelling or minor development
Element Compliance Statement	The proposed development/use achieves the intent of this element by being fully compliant with all applicable acceptable solutions.
Pathway Applied to Provide an Alternative Solution	N/A

Acceptable Solutions - Assessment Statements

All details of acceptable solution requirements are established in the Guidelines for Planning in Bushfire Prone Areas, DPLH v1.4 (Guidelines) and apply the guidance established by the Position Statement: 'Planning in bushfire prone areas – Demonstrating Element 1: Location and Element 2: Siting and design' (WAPC Nov 2019) and the 'Bushfire Management Plan Guidance for the Dampier Peninsula' (WA Department of Planning, Lands and Heritage, 2021 Rev B) as relevant. These documents are available at https://www.wa.gov.au/government/document-collections/state-planning-policy-37-planning-bushfire-prone-areas.

The technical construction requirements for access types and components, and for each firefighting water supply component, are also presented in Appendices 2 and 3. The local government will advise the proponent where different requirements are to apply and when any additional specifications such as those for signage and gates are to apply (these are included in the relevant appendix if requested by the local government).

Solution Component Check Box Legend ☑ Relevant & met ☒ Relevant & not met ⊘ Not relevant

A3.1 Public roads	**Applicable**: Yes	**Compliant**: Yes

☑ ☐ ☐ The technical construction requirements of vertical clearance and weight capacity (Guidelines, Table 6) can and will be complied with (Refer also to Appendix C in this BMP).

☑ ☐ ☐ All other applicable technical requirements of trafficable width, gradients and curves, are required to be in "accordance with the class of road as specified in the IPWEA Subdivision Guidelines, Liveable Neighbourhoods, Ausroad Standards and/or any applicable standard in the local government area" (Guidelines, Table 6 and E3.1. Refer also to Appendix C in this BMP).

The assessment conducted for the bushfire management plan indicates that it is likely that the proposed development can and will comply with the requirements.

However, the applicable class of road, the associated technical requirements and subsequent proposal compliance, will need to be confirmed with the relevant local government and/or Main Roads WA.

☑ ☐ ☐ A traversable verge is available adjacent to classified vegetation (Guidelines, E3.1), as recommended.

Supporting Assessment Details: Hammond Road and Gaebler Road are both public roads. Hammond Road connects to the Freeway network via Russell Road and Rowley Road.

A3.2a Multiple access routes	**Applicable**: Yes	**Compliant**: Yes

☑ ☐ ☐ For each lot, two-way public road access is provided in two different directions to at least two different suitable destinations with an all-weather surface.

☐ ☐ ⊘	The two-way access is available at an intersection no greater than 200m from the relevant boundary of each lot, via a no-through road.
☐ ☐ ⊘	The two-way access is not available at an intersection within 200m from the relevant boundary of each lot. However, the available no-through road satisfies the established exemption for the length limitation in every case. These requirements are: • Demonstration of no alternative access (refer to A3.3 below); • The no-through road travels towards a suitable destination; and • The balance of the no-through road that is greater than 200m from the relevant lot boundary is within a residential built-out area or is potentially subject to radiant heat levels from adjacent bushfire prone vegetation that correspond to the BAL-LOW rating (<12.5 kW/m^2).
Supporting Assessment Details: Both Hammond Road and Gaebler Road are two way access, and travel in two different directions (Rockingham and Cockburn) with an all-weather surface.	

A3.2b Emergency access way	**Applicable**: No	**Compliant**: N/A
☐ ☐ ⊘	The proposed or existing EAW provides a through connection to a public road.	
☐ ☐ ⊘	The proposed or existing EAW is less than 500m in length and will be signposted and gated (remaining unlocked) to the specifications stated in the Guidelines and/or required by the relevant local government.	
☐ ☐ ⊘	The technical construction requirements for widths, clearances, capacity, gradients and curves (Guidelines, Table 6 and E3.2b. Refer also to Appendix C in this BMP), can and will be complied with.	
Supporting Assessment Details: Not applicable. Public Roads and Multiple access routes are both compliant.		

A3.3 Through-roads	**Applicable**: No	**Compliant**: N/A
☐ ☐ ⊘	A no-through public road is necessary as no alternative road layout exists due to site constraints.	
☐ ☐ ⊘	The no-through public road length does not exceed the established maximum of 200m to an intersection providing two-way access (Guidelines, E3.3).	
☐ ☐ ⊘	The no-through public road exceeds 200m but satisfies the exemption provisions of A3.2a as demonstrated in A3.2a above.	
☐ ☐ ⊘	The public road technical construction requirements (Guidelines, Table 6 and E3.1. Refer also to Appendix C in this BMP), can and will be complied with as established in A3.1 above.	
☐ ☐ ⊘	The turnaround area requirements (Guidelines, Figure 24) can and will be complied with.	
Supporting Assessment Details: Not applicable		

A3.4a Perimeter roads	Applicable:	No	Compliant:	N/A
☐ ☐ ⊘	The proposed greenfield or infill development consists of 10 or more lots (including those that are part of a staged subdivision) and therefore should have a perimeter road. This is planned to be installed.			
☐ ☐ ⊘	The proposed greenfield or infill development consists of 10 or more lots (including those that are part of a staged subdivision). However, it is not required on the established basis of: • The vegetation adjoining the proposed lots is classified Class G Grassland; • Lots are zoned rural living or equivalent; • It is demonstrated that it cannot be provided due to site constraints; or • All lots have existing frontage to a public road.			
☐ ☐ ⊘	The technical construction requirements of widths, clearances, capacity, gradients and curves (Guidelines, Table 6 and E3.4a) can and will be complied with.			
Supporting Assessment Details: Not applicable				
A3.4b Fire service access route	**Applicable:**	No	**Compliant:**	N/A
☐ ☐ ⊘	The FSAR can be installed as a through-route with no dead ends, linked to the internal road system every 500m and is no further than 500m from a public road.			
☐ ☐ ⊘	The technical construction requirements of widths, clearances, capacity, gradients and curves (Guidelines, Table 6 and E3.4b. Refer also to Appendix C in this BMP), can and will be complied with.			
☐ ☐ ⊘	The FSAR can and will be signposted. Where gates are required by the relevant local government, the specifications can be complied with.			
☐ ☐ ⊘	Turnaround areas (to accommodate type 3.4 fire appliances) can and will be installed every 500m on the FSAR.			
Supporting Assessment Details: Not applicable				
A3.5 Battle-axe access legs	**Applicable:**	No	**Compliant:**	N/A
☐ ☐ ⊘	A battle-axe leg cannot be avoided due to site constraints.			
☐ ☐ ⊘	The proposed development is in a reticulated area and the battle-axe access leg length from a public road is no greater than 50m. No technical requirements need to be met.			
☐ ☐ ⊘	The proposed development is not in a reticulated area. The technical construction requirements for widths, clearances, capacity, gradients and curves (Guidelines, Table 6 and E3.5. Refer also to Appendix C in this BMP), can and will be complied with.			
☐ ☐ ⊘	Passing bays can and will be installed every 200m with a minimum length of 20m and a minimum additional trafficable width of 2m.			
Supporting Assessment Details: Not applicable				

A3.6 Private driveways	Applicable: Yes	Compliant: Yes
☐ ☐ ⊘	The private driveway to the most distant external part of the development site is within a lot serviced by reticulated water, is accessed via a public road with a speed limit of 70 km/hr or less and has a length is no greater than 70m (measured as a hose lay). No technical requirements need to be met.	
☑ ☐ ☐	The technical construction requirements for widths, clearances, capacity, gradients and curves (Guidelines, Table 6 and E3.6. Refer also to Appendix C in this BMP), can and will be complied with.	
☑ ☐ ☐	Passing bays can and will be installed every 200m with a minimum length of 20m and a minimum additional trafficable width of 2m.	
☑ ☐ ☐	The turnaround area requirements (Guidelines, Figure 28, and within 30m of the habitable building) can and will be complied with.	
Supporting Assessment Details: There are two access/egress points from both Hammond Road and Gaebler Road (four in total). Each driveway has two way traffic. The only one way driveways are around the Hospitality venues with drive through options. The technical requirements can be met for each driveway.		

5.6 Assessment Statements for Element 4: Water

FIREFIGHTING WATER	
Element Intent	To ensure water is available to enable people, property and infrastructure to be defended from bushfire.
Proposed Development/Use – Relevant Planning Stage	(Do) Development application other than for a single dwelling, ancillary dwelling or minor development
Element Compliance Statement	The proposed development/use achieves the intent of this element by being fully compliant with all applicable acceptable solutions.
Pathway Applied to Provide an Alternative Solution	N/A

Acceptable Solutions - Assessment Statements

All details of acceptable solution requirements are established in the Guidelines for Planning in Bushfire Prone Areas, DPLH v1.4 (Guidelines) and apply the guidance established by the Position Statement: 'Planning in bushfire prone areas – Demonstrating Element 1: Location and Element 2: Siting and design' (WAPC Nov 2019) and the 'Bushfire Management Plan Guidance for the Dampier Peninsula' (WA Department of Planning, Lands and Heritage, 2021 Rev B) as relevant. These documents are available at https://www.wa.gov.au/government/document-collections/state-planning-policy-37-planning-bushfire-prone-areas.

The technical construction requirements for access types and components, and for each firefighting water supply component, are also presented in Appendices 2 and 3. The local government will advise the proponent where different requirements are to apply and when any additional specifications such as those for signage and gates are to apply (these are included in the relevant appendix if requested by the local government).

Solution Component Check Box Legend ☑ Relevant & met ☒ Relevant & not met ⃠ Not relevant

A4.1 Identification of future firefighting water supply	**Applicable**: No	**Compliant**: N/A

☐ ☐ ⃠ It can be demonstrated that reticulated or sufficient non-reticulated water for firefighting 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.

Supporting Assessment Details: Not applicable

A4.2 Provision of water for firefighting purposes	**Applicable**: Yes	**Compliant**: Yes

☐ ☐ ⃠ A reticulated water supply is available to the proposed development. The existing hydrant connection(s) are provided in accordance with the specifications of the relevant water supply authority.

☑ ☐ ☐ A reticulated water supply will be available to the proposed development. Hydrant connection(s) can and will be provided in accordance with the specifications of the relevant water supply authority.

☐ ☐ ⃠ A static water supply (tank) for firefighting purposes will be installed on the lot that is additional to any water supply that is required for drinking and other domestic purposes.

☐ ☐ ⃠ A strategic water supply (tank or tanks) for firefighting purposes will be installed within or adjacent to the proposed development that is additional to any water supply that is required for drinking and other domestic purposes. The required land will be ceded free of cost to the local government and the lot or road reserve where the tank is to be located will be identified on the plan of subdivision.

☐ ☐ ⊘	The strategic static water supply (tank or tanks) will be located no more than 10 minutes travel time from a subject site (at legal road speeds).
☐ ☐ ⊘	The technical requirements (location, number of tanks, volumes, design, construction materials, pipes and fittings), as established by the Guidelines (A4.2, E4 and Schedule 2) and/or the relevant local government, can and will be complied with.
Supporting Assessment Details: Hydrant connections will be required in accordance with the specifications of the relevant water supply authority. Refer to information contained in Appendix D for the firefighting water supply specifications and technical requirements.	

6. RESPONSIBILITIES FOR IMPLEMENTATION AND MANAGEMENT OF THE BUSHFIRE PROTECTION MEASURES

6.1 Developer/Landowner Responsibilities – Prior to Building

DEVELOPER/LANDOWNER RESPONSIBILITIES – PRIOR TO BUILDING	
No.	Implementation Actions
1	Complete management of onsite vegetation to achieve a maximum BAL-29 rating (excluding the car wash). Permission is required to remove vegetation.
2	The local government may condition a development application approval with a requirement for the landowner/proponent to register a notification onto the certificate of title and deposited plan (with the required wording stated by the local government). This will be done pursuant to *Section 70A Transfer of Land Act 1893 (as amended) as per 'Factors affecting use and enjoyment of land, notification on title'*. This is to notify owners and prospective purchasers of the land that: 1. The land is in a designated bushfire prone area as designated by an Order made by the Fire and Emergency Services Commissioner; 2. The land is subject to a Bushfire Management Plan that establishes certain protection measures to manage bushfire risk that are to be implemented and continue to be applied at the owners cost; and That additional planning and building requirements may apply to development on this land.
3	Prior to relevant building work, inform the builder of the existence of this approved Bushfire Management Plan (BMP). The plan identifies that the development site is within a designated bushfire prone area and states the indicative (or determined) BAL rating(s) that may (or will) be applied to buildings/structures. A BAL assessment report may be required to confirm determined ratings and will be required when ratings are indicative. BAL certificates will need to be issued to accompany building applications. The BMP may also establish, as an additional bushfire protection measure, that construction requirements to be applied will be those corresponding to a specified higher BAL rating. Compliance with the Building Code of Australia (Volumes 1 and 2 of the National Construction Code), will require certain bushfire resistant construction requirements be applied to residential buildings in bushfire prone areas (i.e., Class 1, 2 and 3 and associated Class 10a buildings and decks). Other classes of buildings may also be required to comply with construction when established by the relevant authority or if identified as an additional bushfire protection measure within the BMP. The deemed to satisfy solutions that will meet the relevant bushfire performance requirements are found in AS 3959 – Construction of Building in Bushfire Prone Areas (as amended) and the NASH Standard - Steel Framed Construction in Bushfire Areas (as amended).

6.2 Developer/Landowner Responsibilities – Prior to Opening

DEVELOPER/LANDOWNER RESPONSIBILITIES – PRIOR TO OPENING	
No.	Implementation Actions
1	Construct the private driveways to comply with the technical requirements referenced in the BMP.
2	Install the reticulated firefighting water supply and hydrants to comply with the technical requirements referenced in the BMP and in consultation with the regulatory water supply authority.
3	Re-landscape the site as per the Landscape Plan. Ensure reticulation system is installed and areas are in accordance with the APZ specifications.
4	Prior to occupancy/operation establish the 'Required' Asset Protection Zone (APZ) around habitable buildings (and other structures as required) to satisfy: • The minimum required dimensions established in Appendix B1; and • The standards established by the Guidelines DPLH, 2021 v1.4, Schedule 1, or as varied by the local government through their annually issued firebreak / hazard reduction notice when the variations have been endorsed by the WAPC and DFES as per s4.5.3 of the Guidelines. If native vegetation is required to be modified or removed, ensure that approval has been received from the relevant authority (refer to the applicable local government for advice).

6.2 Landowner/Occupier Responsibilities – Ongoing Management

LANDOWNER/OCCUPIER – ONGOING MANAGEMENT	
No.	Management Actions
1	Maintain the Asset Protection Zone (APZ) around buildings, water tanks (and other structures as required) to satisfy: • The dimension requirements established by the assessed site-specific conditions and the building's determined BAL rating, or the dimensions established by the annually issued local government Firebreak Notice – whichever is greater [refer to Section 5.4 of this BMP – including the notes 'What Sized APZ is to be Installed on the Lot']; and • The standards established by the Guidelines DPLH, 2021 v1.4, Schedule 1, or as varied by the local government through their annually issued Firebreak Notice.
2	The subject site is to be compliant with current version of the City of Cockburn's Fire Break Compliance Notice issued under s33 of the Bushfires Act 1954. This may include specifications for asset protection zones that differ from Schedule 1 in the Guidelines DPLH, 2021 v1.4, with the intent to better satisfy local conditions. [Refer to Section 5.3 and the information presented in Appendix B).
3	Maintain vehicular access routes within the lot to comply with the technical requirements referenced in the BMP and the relevant local government's annual firebreak / hazard reduction notice.

APPENDIX A: SUBJECT SITE BAL ASSESSMENT INFORMATION AND ADDITIONAL DATA

Assessed Site Inputs Common to the Method 1 and Method 2 Procedures

A1.1: FIRE DANGER INDICES (FDI/FDI/GFDI)

When using Method 1 the relevant FDI value required to be applied for each state and region is established by AS 3959:2018, Table 2.1. Each FDI value applied in Tables 2.4 – 2.7 represents both the Forest Fire Danger Index (FFDI) and a deemed equivalent for the Grassland Fire Danger Index (GFDI), as per Table B2 in Appendix B. When using Method 2, the relevant FFDI and GFDI are applied.

The values may be able to be refined within a jurisdiction, where sufficient climatological data is available and in consultation with the relevant authority.

Relevant Jurisdiction:	WA	Region:	Whole State	Method 1	Applied FDI:	80
				Method 2	Applied FFDI:	80
					Applied GFDI:	N/A

Site Assessment Details - Explanation & Justification: Method 2 FFDI is to be applied Area 1 Woodland.

A1.2: VEGETATION ASSESSMENT AND CLASSIFICATION

Vegetation Types and Classification

In accordance with AS 3959:2018 clauses 2.2.3 and C2.2.3.1, all vegetation types within 100 metres of the 'site' (defined as "the part of the allotment of land on which a building stands or is to be erected"), are identified and classified. Any vegetation more than 100 metres from the site that has influenced the classification of vegetation within 100 metres of the site, is identified and noted. The maximum excess distance is established by AS 3959: 2018 cl 2.2.3.2 and is an additional 100 metres.

Classification is also guided by the Visual Guide for Bushfire Risk Assessment in WA (WA Department of Planning February 2016) and any relevant FPA Australia practice notes.

Modified Vegetation

The vegetation types have been assessed as they will be in their natural mature states, rather than what might be observed on the day. Vegetation destroyed or damaged by a bushfire or other natural disaster has been assessed on its expected re-generated mature state. Modified areas of vegetation can be excluded from classification if maintained in a permanently low threat, minimal fuel condition, satisfying AS 3959:2018 s2.2.3.2(f), and there is sufficient justification to reasonable expect that this modified state will exist in perpetuity.

The Influence of Ground Slope

Where significant variation in effective slope exists under a consistent vegetation type, these will be delineated as separate vegetation areas to account for the difference in potential bushfire behaviour, in accordance with AS 3959:2018 clauses 2.2.5 and C2.2.5.

THE INFLUENCE OF VEGETATION GREATER THAN 100 METRES FROM THE SUBJECT SITE	
Vegetation area(s) within 100m of the site whose classification has been influenced by the existence of bushfire prone vegetation from 100m – 200m from the site:	No

VEGETATION AREA 1						
Classification	A. FOREST					
Types Identified	Open forest A-03					
Exclusion Clause	N/A					
Effective Slope	Measured	flat 0 degrees	Applied Range (Method 1)	Upslope or flat 0 degrees		
Foliage Cover (all layers)	30-70%	Shrub/Heath Height	>2m	Tree Height	8-12m	
Dominant & Sub-Dominant Layers (species as relevant)	Mixed banksia species and sheoak. Native remnant vegetation (Photo 1,2 and 4) that were once part of a larger reserve (Photo 3).					
Understorey:	Scattered grass trees and tall invasive grasses.					
Additional Justification:	Not Required.					
Post Development Assumptions:	N/A					



PHOTO ID: 1



PHOTO ID: 2



PHOTO ID: 3



PHOTO ID: 4

VEGETATION AREA 2						
Classification	D. SCRUB					
Types Identified	Open scrub D-14					
Exclusion Clause	N/A					
Effective Slope	Measured	flat 0 degrees	Applied Range (Method 1)	Upslope or flat 0 degrees		
Foliage Cover (all layers)	30-70%	Shrub/Heath Height	>2m	Tree Height	N/A	
Dominant & Sub-Dominant Layers (species as relevant)	Mixed native shrubs including melaleuca as part of a wetland.					
Understorey:	Invasive weeds, sedges and native herbs					
Additional Justification:	Not Required.					
Post Development Assumptions:	N/A					



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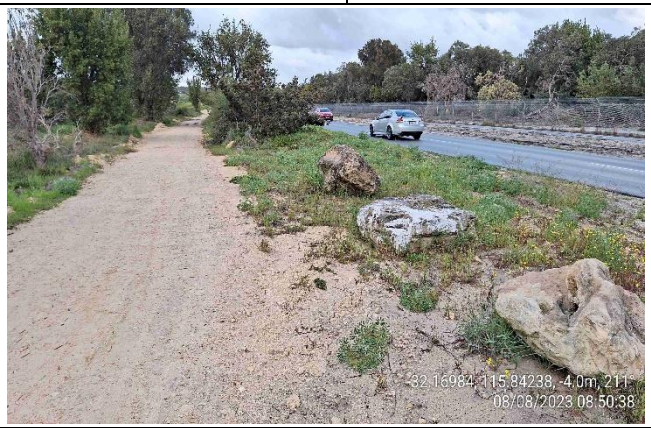


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VEGETATION AREA 3						
Classification	C. SHRUBLAND					
Types Identified	Open heath C-11					
Exclusion Clause	N/A					
Effective Slope	Measured	flat 0 degrees		Applied Range (Method 1)	Upslope or flat 0 degrees	
Foliage Cover (all layers)	10-30%	Shrub/Heath Height	1-2m	Tree Height	N/A	
Dominant & Sub-Dominant Layers (species as relevant)	Mixed shrubs species including grass trees					
Understorey:	Dense invasive grasses growing near a wetland area.					
Additional Justification:	Not Required.					
Post Development Assumptions:	N/A					



PHOTO ID: 8



PHOTO ID: 9



PHOTO ID: 10

VEGETATION AREA 4	
Classification	N/A
Exclusion Clause	2.2.3.2 (e) Non-vegetated areas and (f) Low threat vegetation - minimal fuel condition.
Additional Justification:	Areas include managed verges and a football oval as part of a nearby school.
Post Development Assumptions:	Areas to remain managed in perpetuity.



PHOTO ID: 11



PHOTO ID: 12

A1.3: SEPARATION DISTANCE

Measuring

The separation distance is the distance in the horizontal plane between the receiver (building/structure or area of land being considered) and the edge of the classified vegetation (AS 3959:2018, clause 2.2.4)

The relevant parts of a building/structure from which the measurement is taken is the nearest part of an external wall or where a wall does not exist, the supporting posts or columns. Certain parts of buildings are excluded including eaves and roof overhangs.

The edge of the vegetation, for forests and woodlands, will be determined by the unmanaged understorey rather than either the canopy (drip line) or the trunk (AS 3959:2018, clause C2.2.5).

Measured Separation Distance as a Calculation Input

If a separation distance can be measured because the location of the building/structure relative to the edge of the relevant classified vegetation is known, this figure can be entered into the BAL calculation. The result is a determined BAL rating.

Assumed Separation Distance as a Calculation Input

When the building/structure location within the lot is not known, an assumed building location may be applied that would establish the closest positioning of the building/structure relative to the relevant area of vegetation.

The assumed location would be based on a factor that puts a restriction on a building location such as:

- An established setback from the boundary of a lot, such as a residential design code setback or a restrictive covenant; or
- Within an established building envelope.

The resultant BAL rating would be indicative and require later confirmation of the building/structure actual location relative to the vegetation to establish the determined BAL rating.

Separation Distance as a Calculation Output

With the necessary site specific assessment inputs and using the AS 3959:2018 bushfire modelling equations, the range of separation distances that will correspond to each BAL rating (each of which represents a range of radiant heat flux), can be calculated.

This has application for bushfire planning scenarios such as:

- When the separation distance cannot be measured because the exact location of the exposed element (i.e., the building, structure or area), relative to classified vegetation, is yet to be determined.

  In this scenario, the required information is the identification of building locations onsite that will correspond to each BAL rating. That is, indicative BAL ratings can be derived for a variety of potential building/structure locations; or

- The separation distance is known for a given building, structure or area (and a determined BAL rating can be derived), but additional information is required regarding the exposure levels (to the transfer of radiant heat from a bushfire), of buildings or persons, that will exist at different points within the subject site.

The calculated range of separation distances corresponding to each BAL rating can be presented in a table and/or illustrated as a BAL Contour Map – whichever is determined to best fit the purpose of the assessment.

For additional information refer to the information boxes in Section 3 'Bushfire Attack Levels (BAL) - Understanding the Results and Section 3.2. 'Interpretation of the BAL Contour Map'.

SITE ASSESSMENT DETAILS - EXPLANATION & JUSTIFICATION

Measured and assumed separation distances determined from the site assessment are recorded in Section 3, Fig 3.2.

APPENDIX B: ONSITE VEGETATION MANAGEMENT - THE APZ

THE ASSET PROTECTION ZONE (APZ)

This is an area surrounding a habitable building containing either no fire fuels and/or low threat fire fuels that are maintained in a minimal fuel condition. The primary objectives include:

- To ensure the building is sufficiently separated from the bushfire hazard to limit the impact of its direct attack mechanisms. That is, the dimensions of the APZ will, for most site scenarios, remove the potential for direct flame contact on the building, reduce the level of radiant heat to which the building is exposed and ensure some reduction in the level of ember attack (with the level of reduction being dependent on the vegetation types of present);
- To ensure any vegetation retained within the APZ presents low threat levels and prevents surface fire spreading to the building;
- To ensure other combustible materials that can result in consequential fire (typically ignited by embers) within both the APZ and parts of the building, are eliminated, minimised and/or appropriately located or protected. The explanatory notes in the Guidelines provide some guidance for achieving this objective and other sources are available. This is a primary cause of building loss in past bushfire events; and
- Provide a defendable space for firefighting activities.

B1: The Dimensions and Location of the APZ to be Established and Maintained

THE APZ DIMENSIONS

The determined BAL rating of the relevant building/structure will establish the corresponding bushfire construction requirements that are to apply. The minimum required APZ dimensions must be those that will ensure the retention of the determined BAL rating. This ensures that the potential radiant heat exposure of the building/structure will be limited to the level that the applied construction requirements are designed to resist.

The size of the APZ that is to be established and maintained surrounding the subject building/structure, will be the largest that is defined by either:

- The dimensions corresponding to the determined BAL rating stated on the BAL Certificate and which accounts for the specific site conditions; or
- The dimensions established by the relevant local government's annual firebreak notice as can be issued under s33 of the Bushfires Act 1954. This may state a required single minimum dimension for an APZ surrounding a building, or a dimension that varies with slope of the land under the different areas of bushfire prone vegetation that impact the building. Check the notice annually for revisions to requirements.

THE APZ LOCATION

The APZ should be contained solely within the boundaries of the lot, except in instances where the neighbouring lot(s) or adjacent public land is non-vegetated or will be maintained to a low-fuel state in perpetuity, and this can be justified. Where possible, planning for siting and design of development should incorporate elements that include non-vegetated areas (e.g., roads / parking / drainage / water body) and/or formally managed areas of vegetation (public open space / recreation areas / services installed in a common section of land), as either part of the required APZ dimensions for each lot or to additionally increase separation distances to reduce exposure further.

THE APZ DIMENSIONS REQUIRED TO BE IMPLEMENTED BY THE LANDOWNER

DETERMINATION OF THE 'REQUIRED' APZ DIMENSIONS TO BE IMPLEMENTED AND MAINTAINED BY LANDOWNER WITHIN THEIR LOT									
Relevant Buildings(s)	Vegetation Classification [Refer to Figure 2]		Minimum Required Separation Distances from Building to Vegetation (metres)						
			Established by the 'BAL Rating' APZ Dimension					Established by the "Local Government' APZ Dimension	The 'Required' APZ Dimensions [see note]
			Determined Radiant Heat Impact	Stated 'Indicative' or 'Conditional' BAL				Firebreak / Hazard Reduction Notice	
	Area	Class		BAL-29	BAL-19	BAL-12.5	BAL-LOW		
Starbucks Restaurant and McDonalds Restaurant	1	(A) Forest	N/A	21	31	42	100	No Notice Exists	The lot boundary shall be the APZ
	2	(D) Scrub		13	19	27	100		
	3	(C) Shrubland		9	13	19	100		
	4	Excluded cl 2.2.3.2(e & f)		N/A	N/A	N/A	N/A		
Medical Centre and 7-Eleven	1	(A) Forest	N/A	21	31	42	100	No Notice Exists	The lot boundary shall be the APZ
	2	(D) Scrub		13	19	27	100		
	3	(C) Shrubland		9	13	19	100		
	4	Excluded cl 2.2.3.2(e & f)		N/A	N/A	N/A	N/A		
KFC Restaurant	1	(A) Forest	N/A	21	31	42	100	No Notice Exists	The lot boundary shall be the APZ
	2	(D) Scrub		13	19	27	100		
	3	(C) Shrubland		9	13	19	100		
	4	Excluded cl 2.2.3.2(e & f)		N/A	N/A	N/A	N/A		

Car wash (not habitable building)	1	(A) Forest	N/A	21	31	42	100	No Notice Exists	The lot boundary shall be the APZ
	2	(D) Scrub		13	19	27	100		
	3	(C) Shrubland		9	13	19	100		
	4	Excluded cl 2.2.3.2(e & f)		N/A	N/A	N/A	N/A		
Note: The 'Required' APZ Dimension corresponding to each area of vegetation is the greater of the 'BAL Rating' or the 'Firebreak/Hazard Reduction Notice' APZ dimensions - unless a local government maximum distance is to apply (as a consequence of their environmental considerations). The area of the APZ will also be limited to the subject lot boundary unless otherwise justified in this Report/Plan. Final determination of the dimensions will require that any indicative or conditional BAL becomes a 'Determined' BAL.									
Comments: All vegetation within the lot boundary shall remain managed in perpetuity.									

B2: The Standards for the APZ as Established by the Guidelines (DPLH, v1.4)

Within the Guidelines (source: https://www.wa.gov.au/government/document-collections/state-planning-policy-37-planning-bushfire-prone-areas), the management Standards are established by:

- Schedule 1: Standards for Asset Protection Zones (see extract below) established by the Guidelines; and
- The associated explanatory notes (Guidelines E2) that address (a) managing an asset protection zone (APZ) to a low threat state (b) landscaping and design of an asset protection zone and (c) plant flammability.

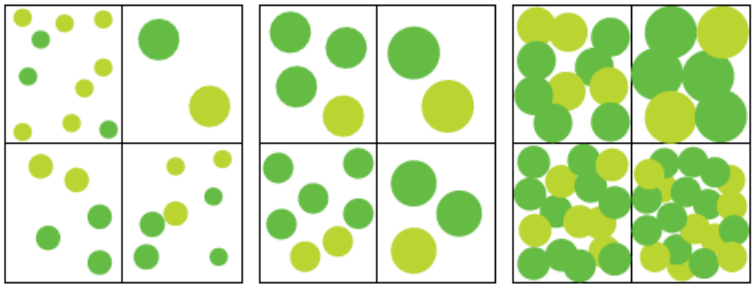


ELEMENT 2: SITING AND DESIGN OF DEVELOPMENT

SCHEDULE 1: STANDARDS FOR ASSET PROTECTION ZONES

OBJECT	REQUIREMENT
Fences within the APZ	• Should be constructed from non-combustible materials (for example, iron, brick, limestone, metal post and wire, or bushfire-resisting timber referenced in Appendix F of AS 3959).
Fine fuel load (Combustible, dead vegetation matter <6 millimetres in thickness)	• Should be managed and removed on a regular basis to maintain a low threat state. • Should be maintained at <2 tonnes per hectare (on average). • Mulches should be non-combustible such as stone, gravel or crushed mineral earth or wood mulch >6 millimetres in thickness.
Trees* (>6 metres in height)	• Trunks at maturity should be a minimum distance of six metres from all elevations of the building. • Branches at maturity should not touch or overhang a building or powerline. • Lower branches and loose bark should be removed to a height of two metres above the ground and/or surface vegetation. • Canopy cover within the APZ should be <15 per cent of the total APZ area. • Tree canopies at maturity should be at least five metres apart to avoid forming a continuous canopy. Stands of existing mature trees with interlocking canopies may be treated as an individual canopy provided that the total canopy cover within the APZ will not exceed 15 per cent and are not connected to the tree canopy outside the APZ.

Figure 19: Tree canopy cover – ranging from 15 to 70 per cent at maturity



Shrub* and scrub* (0.5 metres to six metres in height). Shrub and scrub >6 metres in height are to be treated as trees.	• Should not be located under trees or within three metres of buildings. • Should not be planted in clumps >5 square metres in area. • Clumps should be separated from each other and any exposed window or door by at least 10 metres.
Ground covers* (<0.5 metres in height. Ground covers >0.5 metres in height are to be treated as shrubs)	• Can be planted under trees but must be maintained to remove dead plant material, as prescribed in 'Fine fuel load' above. • Can be located within two metres of a structure, but three metres from windows or doors if >100 millimetres in height.
Grass	• Grass should be maintained at a height of 100 millimetres or less, at all times. • Wherever possible, perennial grasses should be used and well-hydrated with regular application of wetting agents and efficient irrigation.
Defendable space	• Within three metres of each wall or supporting post of a habitable building, the area is kept free from vegetation, but can include ground covers, grass and non-combustible mulches as prescribed above.
LP Gas Cylinders	• Should be located on the side of a building furthest from the likely direction of a bushfire or on the side of a building where surrounding classified vegetation is upslope, at least one metre from vulnerable parts of a building. • The pressure relief valve should point away from the house. • No flammable material within six metres from the front of the valve. • Must sit on a firm, level and non-combustible base and be secured to a solid structure.

** Plant flammability, landscaping design and maintenance should be considered – refer to explanatory notes*

B3: The Standards for the APZ as Established by the Local Government

Refer to the Firebreak Notice issued annually (under s33 of the Bushfires Act 1954) by the relevant local government. It may state Standards that vary from those established by the Guidelines and that have been endorsed by the WAPC and DFES as per Section 4.5.3 of the Guidelines.

A copy of the relevant annual notice is not included here as they are subject to being reviewed and modified prior to issuing each year. Refer to ratepayers notices and/or the local government's website for the current version.

B4: Maintaining Low Threat and Non-Vegetated Areas Excluded from Classification

AS 3959 establishes the methodology for determining a bushfire attack level (BAL). The methodology includes the classification of the subject site's surrounding vegetation according to their 'type' and the application of the corresponding bushfire behaviour models to determine the BAL. Certain vegetation can be considered as low threat and excluded from classification. Where this has occurred in assessing the site, the extract from AS3959:2018 below state the requirements (including the size of the vegetation area if relevant to the assessment) for maintenance of those areas of land.

2.2.3.2 *Exclusions—Low threat vegetation and non-vegetated areas*

The following vegetation shall be excluded from a BAL assessment:

(a) Vegetation of any type that is more than 100 m from the site.

(b) Single areas of vegetation less than 1 ha in area and not within 100 m of other areas of vegetation being classified vegetation.

(c) Multiple areas of vegetation less than 0.25 ha in area and not within 20 m of the site, or each other or of other areas of vegetation being classified vegetation.

(d) Strips of vegetation less than 20 m in width (measured perpendicular to the elevation exposed to the strip of vegetation) regardless of length and not within 20 m of the site or each other, or other areas of vegetation being classified vegetation.

(e) Non-vegetated areas, that is, areas permanently cleared of vegetation, including waterways, exposed beaches, roads, footpaths, buildings and rocky outcrops.

(f) Vegetation regarded as low threat due to factors such as flammability, moisture content or fuel load. This includes grassland managed in a minimal fuel condition, mangroves and other saline wetlands, maintained lawns, golf courses (such as playing areas and fairways), maintained public reserves and parklands, sporting fields, vineyards, orchards, banana plantations, market gardens (and other non-curing crops), cultivated gardens, commercial nurseries, nature strips and windbreaks.

NOTES:

1 Minimal fuel condition means there is insufficient fuel available to significantly increase the severity of the bushfire attack (recognizable as short-cropped grass for example, to a nominal height of 100 mm).

2 A windbreak is considered a single row of trees used as a screen or to reduce the effect of wind on the leeward side of the trees.

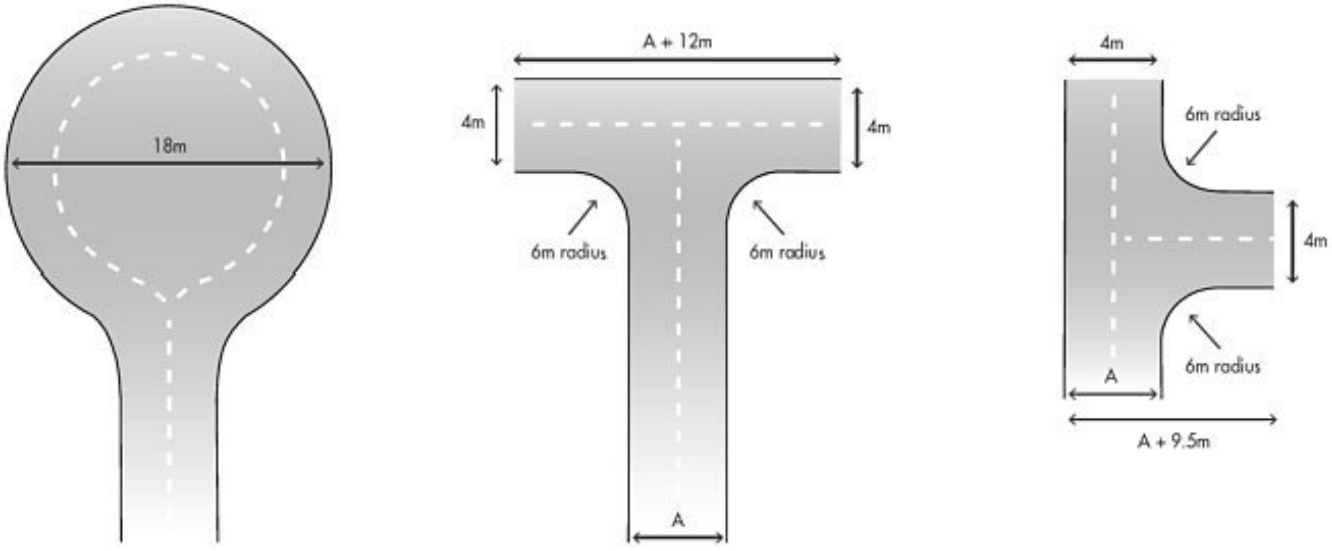
APPENDIX C: TECHNICAL REQUIREMENTS FOR VEHICULAR ACCESS

The design/layout requirements for access are established by the acceptable solutions of the Guidelines (DPLH, 2021 v1.4) Element 3 and vary dependent on the access component, the land use and the presence of 'vulnerable' persons. Consequently, the best reference source are the Guidelines. The technical requirements that are fixed for all components and uses are presented in this appendix.

GUIDELINES TABLE 6, EXPLANATORY NOTES E3.3 & E3.6 AND RELEVANT ACCEPTABLE SOLUTIONS

Technical Component	Vehicular Access Types / Components			
	Public Roads	Emergency Access Way [1]	Fire Service Access Route [1]	Battle-axe and Private Driveways [2]
Minimum trafficable surface (m)	In accordance with A3.1	6	6	4
Minimum Horizontal clearance (m)	N/A	6	6	6
Minimum Vertical clearance (m)	4.5			
Minimum weight capacity (t)	15			
Maximum Grade Unsealed Road [3]	As outlined in the IPWEA Subdivision Guidelines	1:10 (10%)		
Maximum Grade Sealed Road [3]		1:7 (14.3%)		
Maximum Average Grade Sealed Road		1:10 (10%)		
Minimum Inner Radius of Road Curves (m)		8.5		

Turnaround Area Dimensions for No-through Road, Battle-axe Legs and Private Driveways [4]



Passing Bay Requirements for Battle-axe leg and Private Driveway

When the access component length is greater than the stated maximum, passing bays are required every 200m with a minimum length of 20m and a minimum additional trafficable width of 2m (i.e. the combined trafficable width of the passing bay and constructed private driveway to be a minimum 6m).

Emergency Access Way – Additional Requirements

Provide a through connection to a public road, be no more than 500m in length, must be signposted and if gated, gates must be open the whole trafficable width and remain unlocked.

[1] To have crossfalls between 3 and 6%.

[2] Where driveways and battle-axe legs are not required to comply with the widths in A3.5 or A3.6, they are to comply with the Residential Design Codes and Development Control Policy 2.2 Residential Subdivision.

[3] Dips must have no more than a 1 in 8 (12.5% or 7.1 degree) entry and exit angle.

[4] The turnaround area should be within 30m of the main habitable building.

APPENDIX D: TECHNICAL REQUIREMENTS FOR FIREFIGHTING WATER SUPPLY

Reticulated Areas – Hydrant Supply

The Guidelines state "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."

The main scheme water suppliers / authorities in WA are The Water Corporation, AqWest – Bunbury Water Corporation and Busselton Water Corporation. Various local authority exists in other non-scheme and regional areas. However, most existing fire hydrants are connected to Water Corporation water mains.

Consequently, the hydrant location specifications from The Water Corporation's 'No 63 Water Reticulation Standard' (Ver 3 Rev 15) are provided in the extract below with the key distances relevant to bushfire planning assessments being highlighted. This Standard is deemed to be the baseline criteria for developments and should be applied unless different local water supply authority conditions apply. Other applicable specification will be found in the Standard.

Note: The maximum distance from a hydrant to the rear of a lot/building is generally interpreted as not applicable to large lot sizes where the maximum distance becomes an impractical limitation i.e., typically rural residential areas.

WATER CORPORATION

Design Standard DS 63
Water Reticulation Standard

2.2.1.5 Appurtenances

c. Hydrants

Hydrants shall be screw-down hydrant with built-in isolation valve and installed only on DN100 or larger pipes. Hydrants shall be located:

- so that the maximum distance between a hydrant and the rear of a building envelope, (or in the absence of a building envelope the rear of the lot) shall be 120m;
- so that spacing (as measured by hose-run) between hydrants in non-residential or mixed use areas shall be maximized and no greater than 100m;
- so that spacing (as measured by hose-run) between hydrants in residential areas with lots per dwelling <10,000m^2 shall be maximized and no greater than 200m;
- so that spacing between hydrants (as measured by hose-run) in rural residential areas where minimum lots per dwelling is >10,000 m^2 (1ha) shall be maximized and no greater than 400m;
- centrally along the frontage of a lot to avoid being under driveways, unless the lot features a frontage 6m or less, in which case it shall be placed to the side opposite the driveway;
- at lots that have the widest frontage in the local area;
- where appropriate at the truncation of road junctions or intersections so that they can serve more than one street and can be readily located;
- on both sides of the major roads at staggered intervals where there are mains on both sides of the road;
- at major intersections on dual multi-lane roads, where two hydrants are to be sited on diagonally opposite corners;
- hydrants should be located at least 20m from traffic calming devices i.e., median slow points or chokers, chicanes, mini traffic circles, and intersection 'pop-outs' to ensure traffic is not impeded;
- in a position not less than 10m from any high voltage main electrical distribution equipment such as transformers and distribution boards, liquefied petroleum gas or other combustible storage;
- directly on top of the main using a tee unless proved to be impractical.

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