# Bushfire Management Plan

Report Details					
Project:	Proposed Commercial Development				
Project Address:	71 Dandaragan DR, DAWESVILLE				
Prepared by:	James Terenciuk, BPAD Accredited Level 2				
	Assessor, BPAD36529, MAIBS, AIMM.				
Report / Job Number	Report Version	Date submitted:			
14488	1	28 August 2020			





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# 1. Background Information

This Bushfire Management Plan was prepared to provide guidance for the planning and management of potential bushfire threat. The standards and recommendations within this plan are based on the performance criteria as set out in Guidelines for Planning in Bushfire Prone Areas (Version 1.3, Dec-2017).

This Bushfire Management Plan meets the requirements of SPP 3.7 and the Guidelines for Planning in Bushfire Prone Areas.

James Terenciuk Level 2 BPAD Practitioner

# 1.1 Purpose of Plan

The purpose of this Plan is minimise the occurrence and impact of bushfires and their devastating effects to life, property and the environment, and to document fire prevention requirements at the Site. By providing acceptable solutions the BAL level can be managed to an acceptable level.

# 1.2 Objectives

The objectives of this Plan are to:

- Define areas where values are located
- Define and rank hazard areas
- Identify individuals and organizations responsible for fire management and associated works within the area of the plan
- Develop fire management strategies for all land with regard to life, property and the environment
- Nominate an assessment procedure that evaluates the effectiveness and impact of proposed and existing fire prevention work and strategies
- Identify performance criteria and acceptable solutions for all fire management works, including acceptable solutions for fire breaks, low fuel areas and building construction standards.

This Plan will achieve the objectives by:

- Assessing the bushfire attack level
- Determining bushfire management requirements
- Determining ongoing management responsibilities



# **1.3 Statement against Other Relevant Documents**

This Bushfire Management Plan meets the intent of:

- 1. State Planning Policy 3.7,
- 2. Guidelines for Planning in Bushfire Prone Areas,
- 3. Local planning strategy references to bushfire risk management,
- 4. Local planning scheme provisions relating to bushfire risk management,
- 5. Applicable structure plans, special control area provisions, previous planning approvals or similar referencing bushfire risk management applicable to the subject site,
- 6. Standard fire break orders of the area; and
- 7. AS3959 Construction of Buildings in Bushfire-Prone Areas.

# **1.4 Proposal details**

The Site is located approximately 86.7 km South of the Perth CBD. The lot area is about 4840m2. The proposal at 71 Dandaragan DR DAWESVILLE seeks approval for a shopping center (refer to Figure 1: Site layout plan).

It has been identified as being located within a bushfire prone area according to the most recent map published by the Department of Fire and Emergency Services (refer to Figure 2).

There are no relevant environmental considerations, including local reserves, State Forest, National park, wetlands, Bush Forever sites, etc. within the site or being affected by the development.

There are no known previous bushfire assessments that have been undertaken for the site.



## 1.4.1 Figure 1: Site plan

WOODSTOCK AVENUE ROAD RESERVE FUTURE MIXED P 1 FUTURE DEVELOPMEN FUTURE PA DANDARAGAN DRIVE 1 Sins. 2.0 COCKELBIDDY GATE FUTURE RETAIL EXISTING PUMP STATION BAILEY BOULEVARD

**Bushfire Management Plan** 



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# 2. Bushfire assessment Results

# 2.1 Assessment Inputs

The location and extent of the classifiable vegetation in relation to the proposed developments have been assessed and recorded in the attached BAL Assessment Report extract. The BAL Assessment Report is produced based on a methodology 1 assessment, with the vegetation being assessed "as is" in accordance with AS3959. The initial BAL rating is given in the table below.

Plot	Vegetation Classification	Effective Slope	Separation (m)	BAL
1	Class G Grassland	Flat land	8m	BAL – 29
2	Class B Woodland	Flat land	67.8m	BAL – 12.5
3	Class G Grassland	Flat land	18.6m	BAL – 12.5
4	Excludable – Clause 2.2.3.2(a)	-	-	BAL – LOW
5	Class G Grassland	Flat land	8m	BAL – 29
6	Excludable – Clause 2.2.3.2(e)	-	-	BAL – LOW
	Excludable – Clause 2.2.3.2(f)	-	-	BAL – LOW
7	Class B Woodland	Flat land	72.5m	BAL – 12.5
8	Excludable – Clause 2.2.3.2(a)	-	-	BAL – LOW
9	Class C Shrubland	Flat land	0m	BAL – FZ
10	Excludable – Clause 2.2.3.2(a)	-	-	BAL – LOW
11	Class C Shrubland	Flat land	64.75m	BAL – 12.5
12	Excludable – Clause 2.2.3.2(a)	-	-	BAL – LOW

# Table 2A: Worst case BAL that applies to the site

# Table 2B: Determined Bushfire Attack Level (BAL)

The Determined Bushfire Attack Level for the proposed development has been determined in accordance with clause 2.2.6 of AS 3959-2018 using the above analysis.

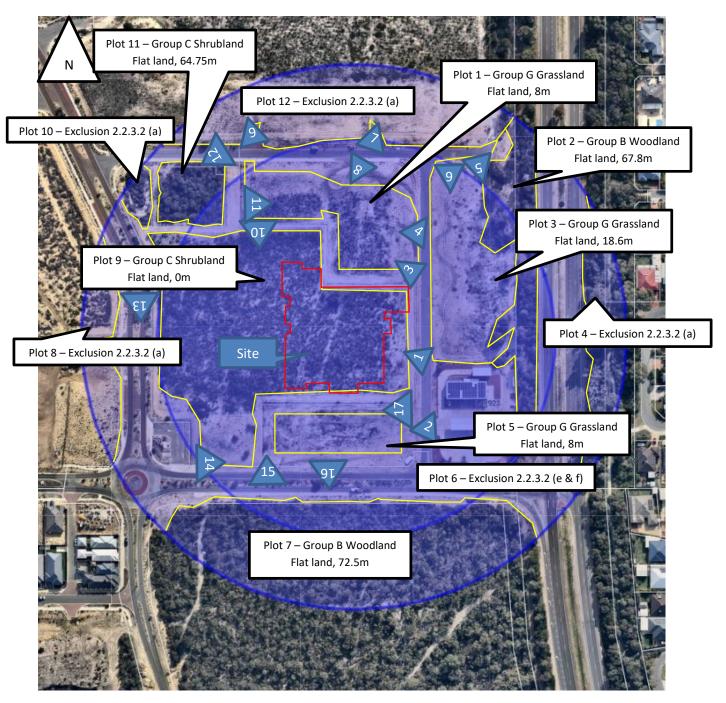
Determined	Bushfire Atta	ck Level	
Photo ID:	1	Plot:	9
Vegetation	Classification o	or Exclusi	on Clause
Class C Shru	bland - Low sh	rubland (	2-12
Description	/ Justification	for Class	ification
cover. Unde	n high; greater t rstoreys may c na often domin nes.	ontain gr	asses. Acacia



# 2.2 Preliminary BAL Assessment

#### 2.2.1 Site Assessment & Site Plans

The assessment of this site was undertaken by a BPAD Accredited Practitioner for the purpose of determining the Bushfire Attack Level in accordance with AS 3959 - 2018 Simplified Procedure (Method 1).



#### <u>Legend</u>



= Photo location

= Site

= 100m and 150m wide buffers

= Vegetation plots

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## 2.2.2 Vegetation Classification

All vegetation within 100m of the site development was classified in accordance with Clause 2.2.3 of AS 3959-2018. Each distinguishable vegetation plot with the potential to determine the Bushfire Attack Level is identified below.

Photo ID:	: 1 Plot:	9		
Vegetation	on Classification or Exclus	ion Clause		
Class C Shru	nrubland - Low shrubland	C-12		
Description / Justification for Classification Shrubs <2 m high; greater than 30% foliage cover. Understoreys may contain grasses. Acacia and Casuarina often dominant in the arid and semi-arid zones.				
Excludable - Description Non-vegetat	on Classification or Exclus le - 2.2.3.2(e) Non Vegetat on / Justification for Class etated areas, that is, areas if vegetation, roads, footpa	ed Areas ification permanently		



				fast building approvals
Photo ID:	3	Plot:	1	
Vegetation	Classification	or Exclus	ion Clause	and the state of the
Class G Gra	ssland – Open	tussock G	i-23	and the second se
Description	n / Justificatio	n for Class	ification	
situations v overstorey	except tussock vith shrubs an foliage cover i sture and crop	d trees, if is less thar	the	
Photo ID:	4	Plot:	3	
Vegetation	Classification	or Exclus	ion Clause	
Class G Gra	ssland – Open	tussock G	i-23	
Description	n / Justificatio	n for Class	ification	
All forms (except tussock moorlands), including situations with shrubs and trees, if the overstorey foliage cover is less than 10%. Includes pasture and cropland.		the		
Photo ID:	5	Plot:	2	
Vegetation	Classification	or Exclus	ion Clause	
Class B Wo	odland - Low v	voodland	B-07	
Trees 10 m dominated	–30 m high; 10 –30 m high; 10 by eucalypts a grassy unders rubs.	0%–30% fo and/or cal	bliage cover listris with a	



Photo ID: 6 Plot: 3 **Vegetation Classification or Exclusion Clause** Class G Grassland – Open tussock G-23 **Description / Justification for Classification** All forms (except tussock moorlands), including situations with shrubs and trees, if the overstorey foliage cover is less than 10%. Includes pasture and cropland. Photo ID: 7 Plot: 12 **Vegetation Classification or Exclusion Clause** Excludable - 2.2.3.2(a) >100m from site **Description / Justification for Classification** Vegetation of any type that is more than 100 m from the site. Photo ID: 1 8 Plot: **Vegetation Classification or Exclusion Clause** Class G Grassland – Open tussock G-23 **Description / Justification for Classification** All forms (except tussock moorlands), including situations with shrubs and trees, if the overstorey foliage cover is less than 10%. Includes pasture and cropland.



Photo ID: 9 Plot: 12 **Vegetation Classification or Exclusion Clause** Excludable - 2.2.3.2(a) >100m from site **Description / Justification for Classification** Vegetation of any type that is more than 100 m from the site. Photo ID: Plot: 10 9 **Vegetation Classification or Exclusion Clause** Class C Shrubland - Low shrubland C-12 **Description / Justification for Classification** Shrubs <2 m high; greater than 30% foliage cover. Understoreys may contain grasses. Acacia and Casuarina often dominant in the arid and semi-arid zones.



Photo ID: 11 Plot: 1 **Vegetation Classification or Exclusion Clause** Class G Grassland – Open herbfield G-27 **Description / Justification for Classification** All forms (except tussock moorlands), including situations with shrubs and trees, if the overstorey foliage cover is less than 10%. Includes pasture and cropland. Photo ID: 12 Plot: 11 **Vegetation Classification or Exclusion Clause** Class C Shrubland - Closed (low) heath C-10 **Description / Justification for Classification** Found in wet areas and/or areas affected by poor soil fertility or shallow soils. Shrubs 1 m-2 m high. Wet heaths occur in sands adjoining dunes of the littoral (shore) zone. Montane heaths occur on shallow or water-logged soils.



Photo ID: 13 Plot: 6 **Vegetation Classification or Exclusion Clause** Excludable - 2.2.3.2(f) Low Threat Vegetation **Description / Justification for Classification** 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, maintained nature strips. Photo ID: 14 Plot: 9 **Vegetation Classification or Exclusion Clause** Class C Shrubland - Low shrubland C-12 **Description / Justification for Classification** Shrubs <2 m high; greater than 30% foliage cover. Understoreys may contain grasses. Acacia and Casuarina often dominant in the arid and semi-arid zones. Photo ID: 15 Plot: 5 **Vegetation Classification or Exclusion Clause** Class G Grassland – Open tussock G-23 **Description / Justification for Classification** All forms (except tussock moorlands), including situations with shrubs and trees, if the overstorey foliage cover is less than 10%. Includes pasture and cropland.



Photo ID: 16 Plot: 7 **Vegetation Classification or Exclusion Clause** Class B Woodland - Low woodland B-07 **Description / Justification for Classification** Trees 10 m–30 m high; 10%–30% foliage cover dominated by eucalypts and/or callistris with a prominent grassy understorey. May contain isolated shrubs. Photo ID: 17 Plot: 5 **Vegetation Classification or Exclusion Clause** Class G Grassland – Open tussock G-23 **Description / Justification for Classification** All forms (except tussock moorlands), including situations with shrubs and trees, if the overstorey foliage cover is less than 10%. Includes pasture and cropland.

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# 2.3 Assessment outputs

# 2.3.1 Figure 3. Vegetation Classification



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# 3 Assessment outputs (when Contour Map)

## 3.1.1 Figure 4: BAL Contour Map

		PLOT 7		
LECEND		BUSHFIRE ATTACKLEVELS		
SUBJECT LAN	ID.	BAL-FZ		
	UILDING OUTLINE	BAL-40		
150m FROM T	HE EXTERNAL	BAL-29		
ASSESSMENT	F THE SUBJECT SITE AREA (100m FROM THE	BAL-19		
EXTERNAL BO SUBJECT SITI	DUNDARY OF THE E)	BAL-12.5		
VEGETATION	PLOT BOUNDARY			
VEGETATION	PLOT TO BE CLEARED	BAL-LOW		
Prepared by: James Terencluk, BPADAccredited Level 2 Assessor, BPAD36529, MAIBS, AIMM.	Project Commercial Building Loostion details: Cnr Dandaragan Drive & Bailey Boulevard Dawesville WA6211	As essement Date: 27/08/2020 Date serial photo: June 2020	BAL Contour Map	

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# 4. Assessment against the Bushfire Protection Criteria

# 4.1 Compliance

Each of the elements listed within Appendix 4 of the Guidelines for Planning in Bushfire Prone Areas has been addressed in this bushfire management plan as per the following table.

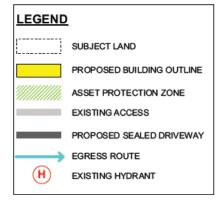
Bushfire protection criteria	Method of Compliance/Acceptable Solutions	Proposed bushfire management strategies		
Element 1: Location	A1.1 Development location	The site is located in an area subjects to BAL-FZ (refer to Table 2A and 2B). However, it is demonstrated in Figure 3 that the risk around the proposed construction will be managed to achieve BAL-29.		
Element 2: Siting and design of development	A2.1 Asset Protection Zone	<ul><li>The APZ is to be contained solely within the boundaries of the lot except in instances where areas are managed in a low-fuel state on an ongoing basis.</li><li>The standards for APZ from the <i>Guidelines for Planning in Bushfire Prone Areas</i> is attached as Appendix 1.</li></ul>		
	A3.1 Two access routes	The existing road network demonstrates that access provided to the site giving a choice of two safe egress destinations, one to the East (Bailey Boulevard to Dawesville Bypass) and one to the South (Dandargan Drive to Ocean Road). Both are available to all people at all times.		
	A3.2 Public road	All public roads are constructed as per the requirements of Table 6 Column 1 (attached as Appendix 2).		
Element 3:	A3.3 Cul-de-sac (including dead-end-road)	N/A		
Vehicular access	A3.4 Battle-axe	N/A		
	A3.5 Private driveway longer than 50m. A private driveway is to meet detailed requirements contained within the Guidelines.	N/A		
	A3.6 Emergency access way	N/A		
	A3.7 Fire services access routes (perimeter roads)	N/A		
	A3.8 Firebreak width	N/A		
	A4.1 Reticulated areas	The development or land use is provided with a reticulated water supply in accordance with the specifications of the relevant water supply authority and Department of Fire and Emergency Services.		
Element 4: Water	A4.2 Non-reticulated areas	N/A		
	A4.3 Individual lots within non-reticulated areas (Only for use if creating 1 additional lot and cannot be applied cumulatively)	N/A		

# **Bushfire Management Plan**



#### 4.1.1 Figure 3: Spatial representation of the bushfire management strategies





#### Notes

1) The APZ is within the boundary of the lot. Refer to Appendix 1.

2) The existing network is minimum 6m and trafficable (bitume and hard gravel).

3) Firebreak to comply with the City of Mandurah's Firebreak and hazard Reduction Notice attached in Appendix 3.

Location Details: 71 Dandaragan DR, DAWESVILLE Local Government Area: City of Mandurah Assessment Date: 27/08/2020 Date of aerial photo: Unknown

Prepared by: James Tereciuk Accreditation Level: Level 2 BPAD Bushfire Accrediation Number: BPAD36529 Accrediation Expiry Date: February 2021

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# 5. Responsibilities for Implementation and Management of the Bushfire

# Measures

DEVE	DEVELOPER/LANDOWNER – PRIOR TO SALE OR OCCUPANCY					
No.	Implementation Action					
1	Install the private driveway to the standards stated in the BMP.					
2	Establish the Asset Protection Zone to the dimensions and standards stated in the BMP.					
LAND	LANDOWNER/OCCUPIER – ONGOING MANAGEMENT					
No.	Management Action					
1	Maintain the Asset Protection Zone to the dimensions and standard stated in the BMP.					
2	Comply with the relevant local government annual firebreak notice issued under s33 of the <i>Bush Fires Act 1954.</i>					
3	Maintain vehicular access routes within the lot to the required surface condition and clearances .					

To ensure that the above individuals/organisations are able to comply with the Bushfire Management Plan they are to be notified of their responsibilities by the developer and be given a copy of the endorsed Bushfire Management Plan.

This Bushfire Management Plan relates to a specific planning approval and should be referred to periodically as part of the owner's fire mitigation strategy. As time passes, any items found to require review due to changing circumstances are to be brought to the attention of the local government and the Bushfire Management Plan author.

# Certification by bushfire consultant

I James Terenciuk, certify that at the time of inspection, the BAL ratings contained within this BMP are correct; Clearance by local government is recommended.

James Terenciuk Level 2 BPAD Practitioner

Date: 28 August 2020



# 6. Appendix 1: Schedule 1: Standard for Asset Protection Zones (Appendix 4 of the Guidelines)

• **Fences:** within the APZ are constructed from non-combustible materials (e.g. iron, brick, limestone, metal post and wire).

It is recommended that solid or slatted non-combustible perimeter fences are used.

- **Objects:** within 10 metres of a building, combustible objects must not be located close to the vulnerable parts of the building i.e. windows and doors.
- **Fine Fuel load:** combustible dead vegetation matter less than 6 millimetres in thickness reduced to and maintained at an average of two tonnes per hectare.
- Trees (> 5 metres in height): trunks at maturity should be a minimum distance of 6 metres from all
  elevations of the building, branches at maturity should not touch or overhang the building, lower
  branches should be removed to a height of 2 metres above the ground and or surface vegetation, canopy
  cover should be less than 15% with tree canopies at maturity well spread to at least 5 metres apart as to
  not form a continuous canopy.

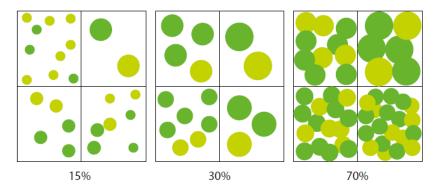


Figure 18: Tree canopy cover - ranging from 15 to 70 per cent at maturity

- Shrubs (0.5 metres to 5 metres in height): should not be located under trees or within 3 metres of buildings, should not be planted in clumps greater than 5m2 in area, clumps of shrubs should be separated from each other and any exposed window or door by at least 10 metres. Shrubs greater than 5 metres in height are to be treated as trees.
- **Ground covers (<0.5 metres in height)**: can be planted under trees but must be properly maintained to remove dead plant material and any parts within 2 metres of a structure, but 3 metres from windows or doors if greater than 100 millimetres in height. Ground covers greater than 0.5 metres in height are to be treated as shrubs.
- Grass: should be managed to maintain a height of 100 millimetres or less.



TECHNICAL REQUIREMENTS	1 Public road	2 Cul-de-sac	3 Private driveway	4 Emergency access way	5 Fire service access routes
Minimum trafficable surface (m)	6*	6	4	6*	6*
Horizontal clearance (m)	6	6	6	6	6
Vertical clearance (m)	4.5	N/A	4.5	4.5	4.5
Maximum grade <50 metres	1 in 10	1 in 10	1 in 10	1 in 10	1 in 10
Minimum weight capacity (t)	15	15	15	15	15
Maximum crossfall	1 in 33	1 in 33	1 in 33	1 in 33	1 in 33
Curves minimum inner radius (m)	8.5	8.5	8.5	8.5	8.5
*Refer to E3.2 Public roads: Trafficable surface					

# 7. Appendix 2: Table 6 – Vehicular access technical requirements

## E3.1 Two access route

Two different vehicular access routes are provided, both of which connect to the public road network, provide safe access and egress to two different destinations and are available to all residents/the public at all times and under all weather conditions.

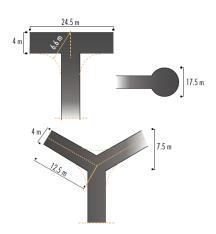
#### E3.2 Public road

*Trafficable surface:* Widths quoted for access routes refer to the width of the trafficable surface. A six metre trafficable surface does not necessarily mean paving width. It could, for example, include four metre wide having one metre wide constructed road shoulders. In special circumstances, where eight lots or less are being serviced, a public road with a minimum trafficable surface of four metres for a maximum distance of 90 metres may be provided subject to the approval of both the local government and Department of Fire and Emergency Services.

## E3.5 Private Driveway longer than 50 metres

A private driveway is to meet all of the following requirements:

- a) Requirements in Table 4, Column 3;
- b) Required where a house site is more than 50 metres from a public road;
- c) Passing bays: every 200 metres with a minimum length of 20 metres and a minimum width of two metres (i.e. the combined width of the passing bay and constructed private driveway to be a minimum six metres);
- d) Turn-around areas designed to accommodate type 3.4 fire appliances and to enable them to turn around safely every 500 metres (i.e. kerb to kerb 17.5 metres) and within 50 metres of a house; and
- e) Any bridges or culverts are able to support a minimum weight capacity of 15 tonnes.
- f) All-weather surface (i.e. compacted gravel, limestone or sealed).





# 8. Appendix 3: LG's Firebreak Notice

# What do I need to do?

#### Preparing for fire is a shared responsibility

The City of Mandurah has a role in setting the requirements for fire preparation on properties within its boundaries. Owners are encouraged to contact Ranger Services to discuss fire management measures in the lead up to fire season or seek further information from the City's website.

#### What is required?

According to Section 33 of the Bush Fires Act 1954 you are required to carry out fire prevention work on land you own.

Work must be carried out by 17 November 2019 or within 14 days of becoming the owner, and maintained until 31 May 2020.

#### **Firebreak variations**

If impractical to clear firebreaks or if natural features. make firebreaks unnecessary, you may apply to the City by 1 November 2019 for an alternative solution.

#### Fire Management Plans

Where an approved Fire Management Plan relates to a property, owners are required to fully comply with the requirements of that plan.

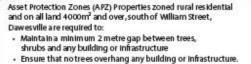
#### It can happen to you

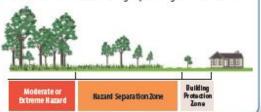
ALL properties within Mandurah are subject to ember attacks from nearby fires. Preparing your property can help to prevent damage, loss and significant trauma.

#### Who can enter my property?

Under section 14 of the Bush Fires Act 1954 a Bush Fire Control Officer is appointed in accordance with the provisions of the Act and can enter your property to inspect firebreaks and/or anything he considers to be a fire hazard.

If you do not meet your responsibilities as a property owner, you could be liable for a maximum penalty of \$10,000 plus costs. The City may access a property and undertake required work at the expense of the owner.









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# **Fire Compliance Notice**

## Requirements for properties









# Larger Blocks

#### Occupied or Unoccupied Land 4000m<sup>2</sup> and Over

When the area of land is 4000m<sup>2</sup> and over, provide a trafficable mineral earth firebreak of 4 metres wide, with a height clearance of 4.2 metres:

- · Inside all external boundaries on the property
- · Surrounding all outbuildings erected on the property
- · Surrounding haystacks, fuel storage or other flammable materials.

## Smaller Blocks

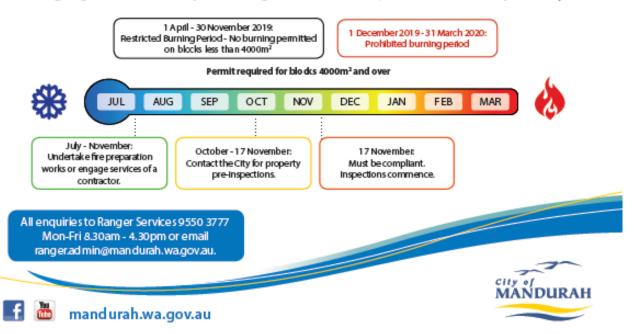
#### Occupied or Unoccupied Land less than 4000m<sup>2</sup>

- Have the entire property clear of all flammable materials except for living standing trees
- · Mowing, slashing, whipper snipping to a height of no more than 4 cm
- Ploughing, cultivating, scarifying or chemical spraying, followed by slashing to 4cm or other approved method by the City.

NOTE: A 4 metre firebreak may not be sufficient on properties with dense vegetation. Owners may be required to thin vegetation out to the satisfaction of the City to reduce any significant fire risk.

# Fire Preparedness Timeline

Ongoing maintenance is required throughout the fire season, this is the owners responsibility.



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