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Bushfire Management Plan

Lot 26 Wanneroo Road, Woodvale

Prepared for
GMF WA Pty Ltd
by Strategen

May 2017

Bushfire Management Plan

Lot 26 Wanneroo Road, Woodvale

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May 2017

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Client: GMF WA Pty Ltd

Report Version	Revision No.	Purpose	Strategen author/reviewer	Submitted to Client	
				Form	Date
Draft Report	Rev A	For review by client	P Molinari / R Banks (BPAD No. 36857)	Electronic (email)	10/11/2016
Final Draft Report	Rev 0	Agency review	P Molinari / R Banks (BPAD No. 36857)	Electronic (email)	11/11/2016
Final Report	Rev 1	Agency approval	P Molinari / R Banks (BPAD No. 36857)	Electronic (email)	6/04/2017
Revised Final Report	Rev 2	Agency approval	P Molinari / R Banks (BPAD No. 36857)	Electronic (email)	31/05/2017

Filename: GMF16037_01 R007 Rev 2 - 31 May 2017

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1. Introduction

1.1 Background

GMF WA Pty Ltd (GMF) proposes to develop a residential estate on Lot 26 Wanneroo Road, Woodvale (the project area, Figure 1). The subdivision plan aims to create 19 residential properties which will range in size from 327 m²–352 m². GMF also owns the land to the west of the project area which will remain as Public Open Space.

The Western Australian Planning Commission (WAPC) has conditionally approved the subdivision of Lot 26 Wanneroo Road (Application No. 152199). In accordance with condition 23 GMF is required to prepare a Bushfire Management Plan (BMP) for the project area:

'A fire management plan being prepared, approved and relevant provisions implemented during subdivisional works, in accordance with the WAPC's Guideline Planning for Bushfire Protection Edition 2, May 2010 (in particular Appendix 3) to the specifications of the local government and/or the Department of Fire and Emergency Services. (Local Government).'

Furthermore, the entire project area is designated as bushfire prone on the WA *Map of Bush Fire Prone Areas* (DFES 2016) due to the extent of on-site and adjacent vegetation.

Consequently, Strategen were commissioned by GMF to prepare a BMP to support the subdivision. The BMP was prepared in accordance with *State Planning Policy 3.7 Planning in Bushfire-Prone Areas* (SPP 3.7; WAPC 2015a) and *Guidelines in Bushfire-Prone Areas* (the Guidelines; WAPC 2015b) which, supersede WAPC's *Guideline Planning for Bushfire Protection Edition 2, May 2010* referred to in the subdivision conditions.

1.2 Purpose and application of the plan

The purpose of this BMP is to provide guidance on how to plan for and manage the potential bushfire risk to future assets of the project through implementation of a range of bushfire risk mitigation measures. The BMP outlines how future on-site assets can be protected during the summer months when the threat from bushfire is at its peak. This is particularly relevant when existing fire appliances in the area may be unable to offer an immediate emergency suppression response; therefore, development planning and design should aim to provide mitigation strategies that protect future life and property from bushfire as a priority.

2. Spatial consideration of bushfire threat

2.1 Existing site characteristics

2.1.1 Location

The project area occupies approximately 1.68 ha and is contained within Lot 26 Wanneroo road, Woodvale, in the City of Wanneroo (CoW). The project area is bound by the following, as depicted in Figure 1:

- vacant land to the north
- Yellagonga Regional Park and Wallubuenup Swamp to the west
- Wanneroo road and car yards to the east
- residential properties to the south.

2.1.2 Zoning and land use

The site is currently zoned as 'Urban Development' under the CoW District Planning Scheme No. 2 (DPS 2). The site is zoned as 'Urban' under the Metropolitan Region Scheme (MRS).

2.1.3 Assets

There are currently no existing life, property or infrastructure assets within the project area. Proposed urban development will significantly intensify these critical assets by increasing the number of residents, visitors and built assets across the project area.

2.1.4 Access

The project area is currently accessed via Solaia loop to the south and Wanneroo road to the east.

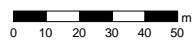
2.1.5 Water and power supply

Strategen understands reticulated water and underground power supply provisions will be available to the project area through extension of existing services adjacent to the project area.



Figure 1: Site overview

Scale 1:2,300 at A4



Coordinate System: GDA 1994 MGA Zone 50

Note that positional errors may occur in some areas

Date: 3/11/2016

Author: DWhite

Source: Aerial image: Nearmap, flown 07/2016. Subdivision layout: Client 10/2016. Existing cadastre: SLIP, Landgate 2016.



Legend

- Site boundary
- Existing cadastre
- 100m wide assessment area
- Yellagona Regional Park
- Interim 17m wide area cleared of vegetation around Lot 41
- Proposed subdivision layout
- POS
- Proposed Claret Loop



2.2 Existing fire environment

2.2.1 Vegetation class

Strategen assessed the pre-development vegetation present within the project area and adjacent 100 m through on-ground site investigation on 19 September 2016. The project area has recently been completely cleared and subsequently, there is no classified vegetation within the project area. Land within the surrounding 100 m currently contains a mixture of woodland, shrubland and grassland vegetation.

GMF are proposing to revegetate land within the POS to the west of the project area as per the landscape concept plan presented in Appendix 1. The plan illustrates that a managed garden bed made up shrubs and groundcovers will be planted at a density of 2–3 plants per square metre to east of the drainage swale (located approximately 30 m west of the proposed lots). The garden bed will be mulched and managed in a low fuel state consistent with Clause 2.2.3.2 (f) of AS 3959–2009. The drainage swale itself will be planted with reeds and sedges at a density of 6-8 plants per square metre. Land to the west of the drainage swale will be planted with a combination of trees, reeds and sedges at a density of one to nine plants per square metre (Appendix 1). Consequently, land within the swale and to its west has been classified as Class B woodland vegetation as this is the predominant vegetation type. Consistent with the Guidelines, the landscape works have been included in the current vegetation class assessment and presented in Figure 2.

Vegetation that currently exists within the project area and surrounding 100 m of land is currently comprised of the following vegetation classes assessed in accordance with methodology contained within *AS 3959–2009 Construction of Buildings in Bushfire-Prone Areas* (AS 3959; SA 2009) and the *Visual Guide for Bushfire Risk in Western Australia* (DoP 2016):

- Class B woodland vegetation (Plate 1–Plate 2)
- Class C shrubland vegetation (Plate 3–Plate 4)
- Class G grassland vegetation (Plate 5–Plate 8)
- exclusions under Clause 2.2.3.2 (e) and (f) of AS 3959–2009 (Plate 9–Plate 12).

Vegetation classes as described above and photograph locations and direction (Plate 1–Plate 12) are depicted in Figure 2.

Land to the north of the project is forecast to be developed in the future as documented in the *Woodvale Local Structure Plan No. 64* (CoW 2016). To service the northern lots of the development (lots 41, 53–59) a road, Claret Loop (approximately 15 m wide including the road reserve), will be constructed connecting Wanneroo road to the northeast of the project area to Solaia loop to southwest. This will remove the grassland abutting the northern boundary of the project area and will provide access for lots 53–59. Lots 53–59 will not be developed or sold until Claret Loop has been constructed and the associated grassland vegetation cleared. In the interim, to allow Lot 41 to be sold and developed, a minimum 17 m of the grassland vegetation surrounding the lot will be cleared as a bushfire mitigation measure. The interim clearing of grassland vegetation surrounding Lot 41 and the introduction of Claret Loop has been included in the BAL assessment in Figure 4.

2.2.2 Effective slope

Strategen has assessed site topography and effective slope under classified vegetation within the project area and adjacent 100 m through on-ground verification in accordance with AS 3959-2009 (Figure 2).

The project area rises from approximately 27 metres Australian Height Datum (mAHD) along its western boundary to 35 mAHD along its eastern boundary (Wanneroo road). The topography of the land within 100 m of the project area is an extension of this, decreasing in height west of the project area and increasing to the east.

The following information summarises the slope characteristics under the classified vegetation to inform the BAL assessment outlined in Section 2.4 and displayed in Figure 2:

- slope under classified vegetation to the west of the project area is down-slope at an angle of 0–5 degrees relative to the proposed lots
- slope under classified vegetation to the southwest of the project area varies from being upslope or on flat land and down-slope at an angle of 0–5 degrees relative to the proposed lots
- slope under classified vegetation to the north of the project area is upslope or on flat land relative to the proposed lots
- slope under classified vegetation to the northwest is down-slope at an angle of 5–10 degrees relative to the proposed lots.



Figure 2: Vegetation class

Scale 1:2,500 at A4
 0 10 20 30 40 50 m

Coordinate System: GDA 1994 MGA Zone 50
 Note that positional errors may occur in some areas
 Date: 4/11/2016

Author: jcrute
 Source: Aerial image: Nearmap, flown 07/2016. Subdivision layout: Client 10/2016. Existing cadastre: SLIP, Landgate 2016.

Path: Q:\Consult\2016\GMF\GMF16037\ArcMap_documents\R007\GMF16037_01_R007_RevA_F002.mxd

Legend

- Photo points and direction
- Proposed subdivision layout
- ▭ Site boundary

- ▭ 100m wide assessment area
- ▭ POS

- ▭ Interim 17m wide area cleared of vegetation around Lot 41
- ▭ Proposed Claret Loop
- ▭ Existing cadastre

Vegetation class

- ▭ Class B Woodland
- ▭ Class C Shrubland

- ▭ Class G Grassland
- ▭ Excluded as per Clauses (e) or (f) of AS 3959-2009





Plate 1: Photo Point 1: Class B woodland vegetation (background) to the northwest of the project area



Plate 2: Photo Point 2: Class B woodland to the southwest of the project area



Plate 3: Photo Point 3: Class C shrubland to the southwest of the project area



Plate 4: Photo Point 4: Class C shrubland (background) to the southwest of the project area



Plate 5: Photo Point 5: Class G grassland vegetation north of the project area



Plate 6: Photo Point 6: Class G grassland vegetation north of the project area



Plate 7: Photo Point 7: Class G grassland vegetation west of the project area



Plate 8: Photo Point 8: Class G grassland vegetation west of the project area

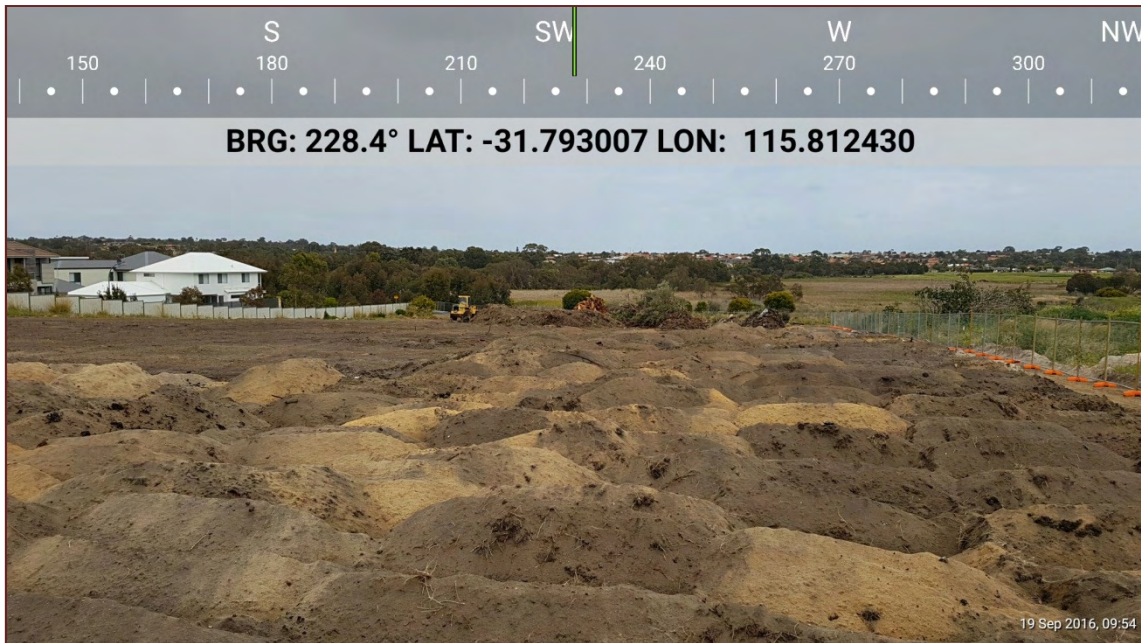


Plate 9: Photo Point 9: Excluded from classification under Clause 2.2.3.2 (e) of AS 3959–2009 within the project area

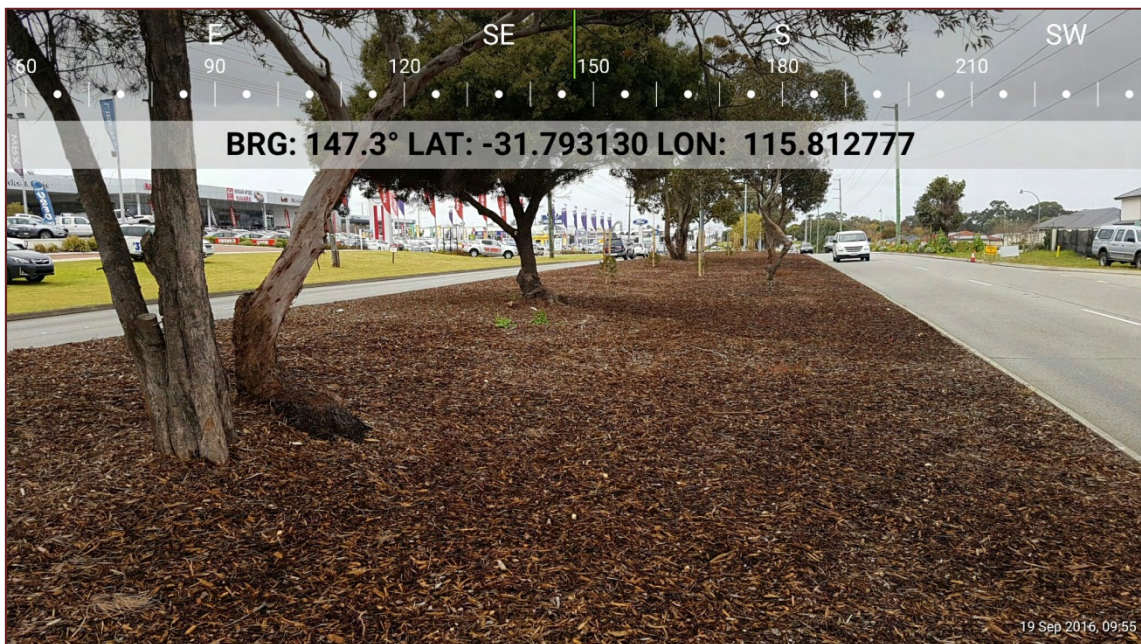


Plate 10: Photo Point 10: Excluded from classification under Clause 2.2.3.2 (e) of AS 3959–2009 to the east of the project area



Plate 11: Photo Point 11: Excluded from classification under Clause 2.2.3.2 (f) of AS 3959–2009 (foreground) to the south of the project area



Plate 12: Photo Point 12: Excluded from classification under Clauses 2.2.3.2 (e) & (f) of AS 3959–2009 to the south of the project area

2.2.3 Bushfire weather conditions

Worst case bushfire weather conditions

Southwest Western Australia generally experiences a cool to mild growing season in the months of August through to November of each year, followed by four months of summer drought conditions, which is when the potential for bushfire occurrence is at its peak. Worst case (adverse) bushfire weather conditions can occur during this dry period when a low pressure trough forms off the west coast and strong winds develop from the north or northeast. These conditions are sometimes associated with 'Extreme' or 'Catastrophic' fire dangers, which are consistent with very high temperatures, low relative humidity and very strong winds. Based on the predominant summer climatic conditions of the local area, 'Extreme' and 'Catastrophic' fire dangers normally occur less than 5% of the time during the designated bushfire season, which equates to around six days between December and March (McCaw & Hanstrum 2003).

Predominant bushfire weather conditions

Predominant fire weather conditions are considered to occur 95% of the time during the designated bushfire season and these conditions generally align with average summer climatic conditions of the locality.

Average 9:00 am and 3:00 pm January wind profiles for Perth Metro weather station (approximately 18.5 km to the south-southeast) are contained in Appendix 2. These illustrate that the predominant winds during the designated bushfire season are from the east in the morning averaging 13.9 km/h; and from the southwest in the afternoon averaging around 19.0 km/h (BoM 2016).

The mean 9:00 am and 3:00 pm relative humidity for Perth Metro weather station during the designated bushfire season is around 51% and 39% respectively, with average monthly maximum temperatures peaking at around 31.7°C in February.

The predominant bushfire weather conditions discussed above correlate with an average fire danger index of 'High', as determined using the Commonwealth Science and Industrial Research Organisation (CSIRO) Fire Danger and Fire Spread Calculator (CSIRO 1999).

2.2.4 Bushfire history, fuel age, risk of ignition and potential ignition source

Bushfire history in the project area is infrequent and there are no recent records of any fires occurring within the vicinity of the project area within 5 km of the project area within the last ten years as outlined in the recent Landgate Firewatch data (Landgate 2016); however, recent bushfires in the Perth Hills in 2011 and Stoneville/Parkerville in 2013 have highlighted the need to consider bushfire planning in future developments in the metropolitan region.

Available fuel loads within areas of classified vegetation are patchy and inconsistent due to variations in vegetation density, litter depth and trash height.

Since most bushfires in developed to semi-developed areas are ignited by humans; the current ignition risk is low due to the low levels of residency, public access and visitation throughout the site and surrounding rural landholdings. However, Strategen considers that the ignition risk, particularly within the project area, may increase following development intensification and increased levels of public access and resident occupancy at the bushland interface.

The potential sources of ignition in the area are expected to be from:

- deliberately lit fire (i.e. arson)
- lightning strike
- accidental causes, such as vehicle accidents and sparks from vehicle exhausts/machinery
- escapes from fuel hazard reduction burning
- pole-top fires
- incorrect disposal of cigarettes.

2.3 Bushfire hazard level assessment

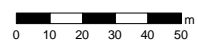
Bushfire hazard levels have been assessed for this site in accordance with methodology contained within the Guidelines. Strategen has mapped the bushfire hazard levels within the project area and adjacent 100 m as per the pre-development conditions discussed in Sections 2.2.1, 2.2.2, and 2.2.3. A summary of results is provided below and depicted in Figure 3:

- Class B woodland vegetation to the north, west and southwest of the project area, Class C shrubland vegetation to the southwest of the project area and Class G grassland vegetation to the north and west of the project area represents a 'Moderate' bushfire hazard due the fragmented nature of the woodland vegetation and the low fuel load of the shrubland and grassland vegetation
- all areas located within 100 m of moderate or extreme bushfire hazards areas represent a moderate bushfire hazard level by default to reflect the increased level of risk and 100 m wide Hazard Separation Zone (HSZ) requirements (WAPC 2015b).



Figure 3: Bushfire Hazard Levels

Scale 1:2,300 at A4



Coordinate System: GDA 1994 MGA Zone 50
 Note that positional errors may occur in some areas

Date: 4/11/2016

Author: jcrute

Source: Aerial image: Nearmap, flown 07/2016. Subdivision layout: Client 10/2016. Existing cadastre: SLIP, Landgate 2016.

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Legend

- | | | | |
|-------------------------------|-----------------------------|---|------------------------------|
| — Proposed subdivision layout | □ Existing cadastre | ▨ Interim 17m wide area cleared of vegetation around Lot 41 | Bushfire hazard level |
| □ Site boundary | □ 100m wide assessment area | ▨ Proposed Claret Loop | ■ Moderate |
| ▨ POS | | | ■ Low |



2.4 BAL assessment

Vegetation with a 'Moderate' or 'Extreme' bushfire hazard level is considered bushfire prone and any proposed development within 100 m of the bushfire prone vegetation extent will require application of Australian Standard *AS 3959–2009 Construction of Buildings in Bushfire-prone Areas* (SA 2009) via implementation of increased building construction standards in response to the assessed Bushfire Attack Level (BAL).

All of the proposed lots within the project area will be located within bushfire prone land, which will require a BAL response in accordance with AS 3959–2009 (Figure 4). This is largely consistent with findings of the *WA State Map of Bush Fire Prone Areas*.

The Method 1 procedure for calculating the BAL (as outlined in AS 3959–2009) incorporates the following factors:

- state-adopted FDI rating
- vegetation class
- slope under classified vegetation
- distance maintained between proposed development areas and the classified vegetation.

Based on the specified BAL, construction/separation requirements for proposed buildings can then be assigned.

2.4.1 Fire Danger Index

A blanket rating of FDI 80 is adopted for Western Australian environments, as outlined in AS 3959–2009 and endorsed by Australasian Fire and Emergency Service Authorities Council.

2.4.2 Vegetation class

Vegetation class is described in Section 2.2.1 and depicted in Figure 2 and consists of woodland (Class B), shrubland (Class C) and grassland (Class G). Where BAL contours differ based on the different BAL application distances associated with the two vegetation classifications, the highest BAL has been applied (e.g. BAL 12.5 in Class B woodland vs. BAL 19 in Class C shrubland – BAL 19 would be the end result).

2.4.3 Slope under classified vegetation

Slope under classified vegetation is assessed in Section 2.4.3, with a summary provided as follows based on the surface elevations depicted in Figure 2:

- slope under classified vegetation to the west of the project area is down-slope at an angle of 0–5 degrees relative to the proposed lots
- slope under classified vegetation to the southwest of the project area varies from being upslope or on flat land and down-slope at an angle of 0–5 degrees relative to the proposed lots
- slope under classified vegetation to the north of the project area is upslope of on flat land relative to the proposed lots
- slope under classified vegetation to the northwest is down-slope at an angle of 5–10 degrees relative to the proposed lots.

2.4.4 Distance between proposed development areas and the classified vegetation

Strategen has assessed and identified the separation distances between future buildings and the classified vegetation extent, as summarised in Table 1.

2.4.5 Method 1 BAL calculation

A Method 1 BAL calculation has been completed for each proposed lot in accordance with AS 3959–2009 (Table 1). The BAL rating gives an indication of the level of bushfire attack (i.e. the radiant heat flux) that may be received by the proposed dwelling and subsequently informs the standard of building construction required for that dwelling to withstand such impacts.

The majority of the project area will be located within 100 m of vegetation assessed as having a 'Moderate' bushfire hazard level (i.e. bushfire prone land), which will require implementation of AS 3959–2009 (refer to Figure 4). The 'Moderate' bushfire hazard applies to Class B woodland vegetation to the north, west and southwest of the project area, Class C shrubland vegetation the southwest of the project area and Class G grassland vegetation to the west and north of the project area. Vegetation under slope is summarised in Section 2.4.3.

BALs for proposed built assets within 100 m of this vegetation are outlined in Table 1. The resulting hazard separation distances around dwellings will be provided in the form of Asset Protection Zones (APZs). Although APZ's are technically to be provided around the building envelope, at this stage of planning they will be provided around the proposed lot boundary as the building envelope is yet to be determined. The purpose of this is to illustrate that it is possible for buildings within the proposed lots to be located outside areas with BAL FZ or BAL 40 ratings. The width of the APZ will be reassessed once the location of the building envelope within the proposed lots is finalised.

Table 1: Determination of Bushfire Attack Level

Vegetation class	Bushfire attack level (BAL)				
	BAL FZ	BAL 40	BAL 29	BAL 19	BAL 12.5
	Distance (m) of the site from the predominant vegetation class				
Vegetation is upslope or on flat land (0 degrees)					
Class B Woodland	0-<10	10-<14	14-<20	20-<29	29-<100 m
Class G Grassland	0-<6 m	6-<8 m	8-<12 m	12-<17 m	17-<50 m
Vegetation is down-slope (>0 to 5 degrees)					
Class B Woodland	0-<13 m	13-<17 m	17-<25 m	25-<35 m	35-<100 m
Class C Shrubland	0-<7 m	7-<10 m	10-<15 m	15-<22 m	22-<100 m
Class G Grassland	0-<7 m	7-<9 m	9-<14 m	14-<20 m	20-<50 m

Section 6.6.2 of SPP 3.7 states that, subdivision and development applications in areas of BAL 40 or BAL FZ will not be supported without extraordinary planning approval. Therefore, all proposed lots must be able to accommodate future buildings outside of areas subject to BAL FZ or BAL 40 to avoid applying for extraordinary planning approval (i.e. proposal for unavoidable or minor development).

3. Bushfire management measures

Strategen has identified a range of bushfire management measures that on implementation will enable all proposed lots to be developed whilst maintaining a manageable level of bushfire risk and compliance with the Guidelines. The bushfire management measures are depicted in Figure 4 (where applicable) and discussed in the following subsections.

3.1 Hazard separation distances and Asset Protection Zones (APZs)

Strategen has designated areas of hazard separation between classified vegetation and proposed lots in the form of APZs. The width of each proposed lot's APZ has been determined on the basis of compliance with a BAL 12.5, BAL 19 and BAL 29 rating under AS 3959–2009. A minimum 15 m wide APZ will be maintained between all proposed lots and classified vegetation in the form of road reserves and managed garden in a low threat state.

The APZs are low fuel areas around each building or lot and are required to be maintained on a regular and ongoing basis at a fuel load less than 2 t/ha to achieve a low threat minimal fuel condition status all year round. Overstorey trees can be retained to some extent within the APZ provided all flammable material including understorey grasses, weeds, shrubs and scrub are removed from the fuel profile, essentially creating a managed parkland cleared landscape, which would result in a diminishing level of radiant heat, ember attack and fire rate of spread at the dwelling interface.

This is also consistent with requirements under City of Wanneroo Fire and Burning Information 2015-2016 (CoW 2015, Appendix 3) for every building and asset of critical infrastructure to be clear of all flammable material, with all grasses to be kept short and scrub pruned so that it is not dense. In addition, all trees, bushes and shrubs are to be trimmed back over driveways and access-ways to all buildings to 2 m wide with tree crowns a minimum of 10 m apart (CoW 2015). Lawns, managed gardens, paving, driveways and swimming pools are also suitable within the APZ. Buildings are not permitted within the APZ.

Hazard Separation Zones (HSZs) are not required around individual lot APZs in this instance, since proposed construction for each proposed dwelling meets the standard appropriate to the BAL for that location and does not exceed BAL 29 (WAPC 2015b).

Strategen reiterates that Section 6.6.2, of SPP 3.7, states that subdivision and development applications in areas of BAL 40 or BAL FZ will not be supported without extraordinary planning approval.

3.2 Increased building construction standards

Strategen has designated BAL requirements for each proposed lot in accordance with AS 3959–2009. This has resulted in a combination of BAL 19 and BAL 12.5 contours being applied to all lots within the project area.

3.3 Vehicular access

The proposed vehicular access network will initially provide two links to the surrounding public road network to the south and one link through the future road network (Claret Loop) to the north. The proposed vehicular access network will also provide buffers and access for emergency service vehicles between proposed buildings and adjacent vegetation.

Public roads, cul-de-sacs and private driveways longer than 50 m proposed as part of the subdivision (none are proposed) will need to comply with technical requirements of the Guidelines, as outlined in Table 2.

Table 2: Vehicular access technical requirements

Technical requirement	Public road	Cul-de-sacs	Private driveway	Emergency Access Way	Fire Service access routes
Minimum trafficable surface (m)	6*	6	4	6*	6*
Horizontal distance (m)	6	6	6	6	6
Vertical clearance (m)	4.5	N/A	4.5	4.5	4.5
Maximum grade <50 m	1 in 10	1 in 10	1 in 10	1 in10	1 in10
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	8.5	8.5	8.5	8.5	8.5

* Refer to E3.2 Public roads: Trafficable surface

Source: WAPC 2015b

3.4 Reticulated water supply

Water supply services will be extended throughout the project area from surrounding areas of residential development, which will result in provision of a reticulated mains water supply for proposed residences.

A network of hydrants will also be provided along the internal road network at locations which meet relevant water supply authority and DFES requirements.

3.5 Additional measures

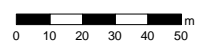
The following measures are also required to inform ongoing planning stages of the development:

1. Notification on Title: Notification on title be placed on all proposed lots with a BAL of 12.5 or greater as a condition of subdivision to ensure all landowners/proponents and prospective purchasers are aware that their lot is in a designated bushfire prone area and is subject to a Bushfire Management Plan.
2. Compliance with the City of Wanneroo annual fire season guide: the developer/land manager and prospective land purchasers are to comply with the current CoW annual fire season guides and bushfire information (Appendix 3).



Figure 4: Bushfire Management Plan: Lot 1000 Wanneroo Road, Woodvale

Scale 1:2,300 at A4



Coordinate System: GDA 1994 MGA Zone 50
 Note that positional errors may occur in some areas

Date: 4/11/2016

Author: jcrute

Source: Aerial image: Nearmap, flown 07/2016. Subdivision layout: Client 10/2016. Existing cadastre: SLIP, Landgate 2016.

Path: Q:\Consult\2016\GMF\GMF16037\ArcMap_documents\R007\GMF16037_01_R007_RevA_F004.mxd

Legend

- Proposed subdivision layout
- Existing cadastre
- Site boundary
- 100m wide assessment area
- POS
- Interim 17m wide area cleared of vegetation around Lot 41
- Proposed Claret Loop
- Classified vegetation
- BAL FZ
- BAL 40
- BAL 19
- BAL 12.5
- BAL 29



4. Proposal compliance and justification

The following information has been referenced from SPP 3.7 to demonstrate that the proposed development is compliant with the requirements of SPP 3.7 and associated guidelines.

The proposed development of Lot 1000 Wanneroo Road, Woodvale is required to comply with SPP 3.7 and the Guidelines, as required under the following policy measures:

6.2 Strategic planning proposals, subdivision and development applications

a) Strategic planning proposals, subdivision and development applications within designated bushfire prone areas relating to land that has or will have a Bushfire Hazard Level (BHL) above low and/or where a Bushfire Attack Level (BAL) rating above BAL-LOW apply, are to comply with these policy measures.

b) Any strategic planning proposal, subdivision or development application in an area to which policy measure 6.2 a) applies, that has or will, on completion, have a moderate BHL and/or where BAL-12.5 to BAL-29 applies, may be considered for approval where it can be undertaken in accordance with policy measures 6.3, 6.4 or 6.5.

c) This policy also applies where an area is not yet designated as a bushfire prone area but is proposed to be developed in a way that introduces a bushfire hazard, as outlined in the Guidelines.

6.4 Information to accompany subdivision applications

Any subdivision application to which policy measure 6.2 applies is to be accompanied by the following information in accordance with the Guidelines:

a) a BAL Contour Map to determine the indicative acceptable BAL ratings across the subject site, in accordance with the Guidelines. BAL Contour Maps should be prepared by an accredited Bushfire Planning Practitioner;

b) the identification of any bushfire hazard issues arising from the BAL Contour Map; and

c) an assessment against the bushfire protection criteria requirements contained within the Guidelines demonstrating compliance within the boundary of the subdivision site.

Implementation of this BMP is expected to meet the following objectives of SPP 3.7:

- 5.1: Avoid increasing the threat of bushfire to people, property and infrastructure. The preservation of life and the management of bushfire impact is paramount
- 5.2: Reduce vulnerability to bushfire through the identification and assessment of bushfire hazards in decision-making at all stages of the planning and development process
- 5.3: Ensure that planning proposals and development applications take into account bushfire protection requirements and include specified bushfire protection measures where land has or will have a moderate or extreme bushfire hazard level, and/ or where a rating higher than BAL-Low applies
- 5.4: Achieve a responsible approach between bushfire management measures and landscape amenity and biodiversity conservation values, with consideration of the potential impacts of climate change.

In response to the above requirements of SPP 3.7 and the Guidelines, bushfire management measures, as outlined in Section 3 have been devised for the proposed development accordance with Guideline acceptable solutions where possible to meet compliance with bushfire protection criteria. An 'acceptable solutions' assessment' is provided in Table 3 to assess the proposed bushfire management measures against each bushfire protection criteria in accordance with the Guidelines and demonstrate that the measures proposed meet the intent of each element of the bushfire protection criteria.

Table 3: Acceptable solutions assessment against bushfire protection criteria

Bushfire protection criteria	Intent	Solution	Proposed bushfire management measures	Compliance statement
Element 1: Location	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.	<u>Acceptable solution</u> A1.1 Development location The strategic planning proposal, subdivision and 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.	Refer to Section 2.4, which demonstrates that development will only occur in areas of BAL 19 or lower. No development is to occur in BAL 40 or BAL FZ areas.	The measures proposed are considered to comply and meet the intent of Element 1 Location.
Element 2: Siting and design of development	To ensure that the siting and design of development minimises the level of bushfire impact.	<u>Acceptable solution</u> A2.1 Asset Protection Zone Every building is surrounded by an APZ, depicted on submitted plans, which meets detailed requirements (refer to the Guidelines for detailed APZ requirements).	Refer to Section 3.1, which demonstrates that minimum 15 m APZs will be wholly contained within road reserves and / or managed garden beds.	The measures proposed are considered to comply and meet the intent of Element 2 Siting and design of development.
		<u>Acceptable solution</u> A2.2 Hazard Separation Zone Every building and its contiguous APZ is surrounded by an HSZ, depicted on submitted plans, that meets detailed requirements (refer to the Guidelines for detailed HSZ requirements). An HSZ may not be required if the proposed construction meets the standard appropriate to the BAL for that location, and does not exceed BAL-29.	HSZs are not proposed since the proposed lots will comply with the bushfire construction provisions of the Building Code of Australia (i.e. AS 3959-2009; BALs). No development is to occur in BAL 40 or BAL FZ areas.	
Element 3: Vehicular access	To ensure that the vehicular access serving a subdivision/development is available and safe during a bushfire event.	<u>Acceptable solution</u> A3.1 Two access routes 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.	Refer to Section 3.3 and Figure 4, which demonstrate that a minimum of two different vehicular access routes will be provided for all proposed lots via the internal road network.	The measures proposed are considered to comply and meet the intent of Element 3 Vehicular access.
		<u>Acceptable solution</u> A3.2 Public road A public road is to meet the requirements in Table 2, Column 1.	Refer to Section 3.3, which demonstrates that all proposed public roads will meet minimum requirements outlined in Table 2 of the Guidelines.	
		A3.3 Cul-de-sac (including a dead-end-road A cul-de-sac and/or a dead end road should be avoided in bushfire prone areas. Where no alternative exists (i.e. the lot layout already exists and/or will need to be demonstrated by the proponent), detailed requirements will need to be achieved (refer to the Guidelines for detailed cul-de-sac requirements).	N/A. Refer to Section 3.3, which demonstrates that no cul-de-sacs are proposed for the subdivision. If this changes during future planning stages then these will meet minimum requirements of the Guidelines outlined in Table 2.	

Bushfire protection criteria	Intent	Solution	Proposed bushfire management measures	Compliance statement
		<p>A3.4 Battle-axe Battle-axe access leg should be avoided in bushfire prone areas. Where no alternative exists, (this will need to be demonstrated by the proponent) detailed requirements will need to be achieved (refer to the Guidelines for detailed battle-axe requirements).</p>	<p>N/A. Refer to Section 3.3, which demonstrates that no battle axes are proposed for the subdivision.</p>	
		<p>A3.5 Private driveway longer than 50 m A private driveway is to meet detailed requirements (refer to the Guidelines for detailed private driveway requirements).</p>	<p>N/A. Refer to Section 3.3, which demonstrates that no private driveways longer than 50 m are proposed for the subdivision. If this changes during future planning stages then these will meet minimum requirements of the Guidelines outlined in Table 2.</p>	
		<p>A3.6 Emergency access way An access way that does not provide through access to a public road is to be avoided in bushfire prone areas. Where no alternative exists (this will need to be demonstrated by the proponent), an emergency access way is to be provided as an alternative link to a public road during emergencies. An emergency access way is to meet detailed requirements (refer to the Guidelines for detailed EAW requirements).</p>	<p>N/A. Refer to Section 3.3, which demonstrates that no emergency access-ways are proposed for the subdivision. If this changes during future planning stages then these will meet minimum requirements of the Guidelines outlined in Table 2.</p>	
		<p>A3.7 Fire service access routes (perimeter roads) Fire service access routes are to be established to provide access within and around the edge of the subdivision and related development to provide direct access to bushfire prone areas for fire fighters and link between public road networks for fire fighting purposes. Fire service access routes are to meet detailed requirements (refer to the Guidelines for detailed fire service access route requirements).</p>	<p>N/A. Refer to Section 3.3, which demonstrates that no fire service access routes are proposed for the subdivision. If this changes during future planning stages then these will meet minimum requirements of the Guidelines outlined in Table 2.</p>	
		<p>A3.8 Firebreak width Lots greater than 0.5 hectares must have an internal perimeter firebreak of a minimum width of three metres or to the level as prescribed in the local firebreak notice issued by the local government.</p>	<p>N/A No firebreaks are proposed as part of the development as the entire project area is cleared prior to development.</p>	

Bushfire protection criteria	Intent	Solution	Proposed bushfire management measures	Compliance statement
Element 4: Water	To ensure that water is available to the subdivision, development or land use to enable people, property and infrastructure to be defended from bushfire.	A4.1 Reticulated areas The subdivision, 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.	Refer to Section 3.4, which demonstrates that all proposed lots will be provided a reticulated water supply and network of hydrants in accordance with local water authority, CoW and DFES requirements.	The measures proposed are considered to comply and meet the intent of Element 4 Water.
		A4.2 Non-reticulated areas Water tanks for fire fighting purposes with a hydrant or standpipe are provided and meet detailed requirements (refer to the Guidelines for detailed requirements for non-reticulated areas).	N/A The proposed development will not occur within a non-reticulated area.	
		A4.3 Individual lots within non-reticulated areas (Only for use if creating 1 additional lot and cannot be applied cumulatively). Single lots above 500 square metres need a dedicated static water supply on the lot that has the effective capacity of 10 000 litres.	N/A The proposed development will not occur within a non-reticulated area.	

5. Implementation and enforcement

Implementation of the BMP applies to the developer, local government and prospective landowners to ensure bushfire management measures are adopted and implemented on an ongoing basis. A summary of the bushfire management measures described in Section 3, as well as a works program, is provided in Table 4. These measures will be implemented to ensure the ongoing protection of proposed life and property assets is achieved. Timing and responsibilities are also defined to assist with implementation of each measure.

Table 4: Proposed works program

Bushfire management measure	Timing for application	Responsibility
Ongoing maintenance of APZ (continuation of the current road verge maintenance regime)	As required to keep road verges slashed on a regular and ongoing basis (i.e. grasses and weeds to be maintained under 100 mm in height)	As per the current road verge management arrangement
Construction of public roads as per approved subdivision	Prior to development of lots for each respective stage	Developer
Provision of reticulated water supply and fire hydrant network	Prior to development of lots for each respective stage	Developer
Notification on Title	Following subdivision approval	Developer
Reassessment of the BAL and separation distances	Following any modification to the surrounding vegetation extent or proposed lot layout	Developer, prospective landowners
Compliance with current fire control order	All year round as specified in the current fire control order	Developer/land manager/prospective landowners

5.1 Document review

This BMP will be updated as necessary following the date of approval to ensure:

1. Implementation is assessed and corrective actions are applied in cases of non-compliance.
2. The effectiveness and impact of fire prevention work is evaluated and any significant changes in development design or the surrounding environment are reassessed in a revised BMP.

The lot immediately to the north is anticipated to be cleared prior to titles being issued for the northern lots. A reassessment of the BAL for the northern lots may be sought at the time of clearing.

The developer will be responsible for updating and revising the BMP until such time that the development is complete.

6. References

- Bureau of Meteorology (BOM) 2016, Climate statistics for Australian locations: Monthly climate statistics for Perth Metro, [Online], Commonwealth of Australia, available from: http://www.bom.gov.au/climate/averages/tables/cw_009225.shtml, [Accessed: 04 October 2016].
- City of Wanneroo (CoW) 2015, *City of Wanneroo Fire and Burning Information 2015–2016*, (Online), City of Wanneroo, Available from: file:///C:/Users/pmolinari/Downloads/15_486426_Promotional_Material_City_Fire_and_Burning_Information_Flip_Brochure_September_2015_FINAL_PROOF.pdf [Accessed: 03 October 2016].
- City of Wanneroo (CoW) 2016, *Woodvale Local Structure Plan No. 64*, (Online), City of Wanneroo, Available from: http://www.wanneroo.wa.gov.au/directory_record/178/woodvale_asp_no_64 [Accessed 03 October 2016].
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- Department of Fire and Emergency Services (DFES) 2016, *Map of Bush Fire Prone Areas*, [Online], Government of Western Australia, available from: <http://www.dfes.wa.gov.au/regulationandcompliance/bushfireproneareas/Pages/default.aspx>, [5/07/2016].
- Department of Planning (DoP) 2016, *Visual Guide for Bushfire Assessment in Western Australia*, Department of Planning, Government of Western Australia, Perth.
- Landgate 2016, *Firewatch*, [Online], Landgate, available from: <http://firewatch-pro.landgate.wa.gov.au/> [Accessed: 04 October 2016].
- McCaw L and Hanstrum B 2003, 'Fire environment of Mediterranean south-west Western Australia', in *Fire in Ecosystems of South-West Western Australia: Impacts and Management*, eds I Abbott & ND Burrows, Backhuys Publishers, Leiden, Netherlands, pp. 171–188.
- Standards Australia (SA) 2009, *Australian Standard AS 3959–2009 Construction of Buildings in Bushfire-prone Areas*, Standards Australia, Sydney.
- Western Australian Planning Commission (WAPC) 2015a, *State Planning Policy 3.7 Planning in Bushfire-Prone Areas*, Western Australian Planning Commission, Perth.
- Western Australian Planning Commission (WAPC) 2015b, *Guidelines for Planning in Bushfire-Prone Areas*, Western Australian Planning Commission, Perth.

Appendix 1
Landscape concept plan

VEGETATION TYPE A - PARKLAND
(3-4 PLANTS PER SQUARE METRE)

TREES

- MELALEUCA PREISSIANA

NOTE: TREE PLANTING WILL BE UNDERTAKEN TO ENSURE THAT CANOPIES WILL BE GREATER THAN 10M APART AT MATURITY.

SHRUBS + GROUNDCOVERS

- ACACIA PULCHELLA
- ANIGOZANTHOS MANGLESII
- CONOSTYLUS JUNCEA
- GREVILLEA OBTUSIFOLIA 'GIN GIN GEM'
- HEMIANDRA PUNGENS
- KENNEDIA PROSTRATA
- LECHENAULTIA BILOBA

VEGETATION TYPE B - MELALEUCA RHAPHIOPHYLLA / EUCALYPTUS RUDIS FOREST
(1 PLANT PER SQUARE METRE)

TREES

- EUCALYPTUS RUDIS
- MELALEUCA RHAPHIOPHYLLA

SHRUBS + GROUNDCOVERS

- MELALEUCA TERETIFOLIA
- MELALEUCA THYMOIDES
- RHAGODIA BACCATA
- VIMINARIA JUNCEA
- HEMIANDRA PUNGENS
- CONOSTYLIS JUNCEA
- KENNEDIA PROSTRATA

VEGETATION TYPE C - BIORETENTION SWALE
(6-8 PLANTS PER SQUARE METRE)

REEDS AND SEDGES

- CAREX APPRESSA
- FICINIA NODOSA
- JUNCUS PALLIDUS
- LEPIDOSPERMA GLADIATUM

VEGETATION TYPE D - 20M WETLAND TRANSITION ZONE
(4-6 PLANTS PER 10 SQUARE METRES - SHRUB & TREE SPECIES)
(5-8 PLANTS PER SQUARE METRE - RUSH & SEDGE SPECIES)

TREES

- MELALEUCA RHAPHIOPHYLLA

REEDS AND SEDGES

- BAUMEA JUNCEA
- BAUMEA PREISSII
- BAUMEA VAGINALIS
- BOLBOSCHOENUS CALDWELLII
- CAREX APPRESSA
- CAREX FASCICULARIS
- CAREX INVERSA



2.4M WIDE 30MM COMPACTED RED ASPHALT PATH (2% RED OXIDE INTRINSIC COLOURING). BASE COURSE TO BE 3M WIDE, 200MM THK CRUSHED LIMESTONE (75MM), ALLOWING 300MM WIDE SHOULDERS BOTH SIDES.

TIMBER BOLLARDS

EXTENT OF WORKS

CONSERVATION FENCING TO LOT BOUNDARY

DRAINAGE SWALE

EXISTING FOOTPATH

Appendix 2
January wind profiles for Perth Metro
weather station

Rose of Wind direction versus Wind speed in km/h (12 Jan 1994 to 08 Mar 2011)

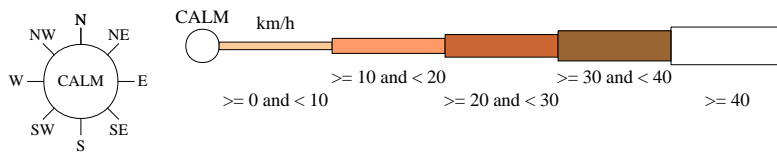
Custom times selected, refer to attached note for details

PERTH METRO

Site No: 009225 • Opened Feb 1993 • Still Open • Latitude: -31.9192° • Longitude: 115.8728° • Elevation 24.m

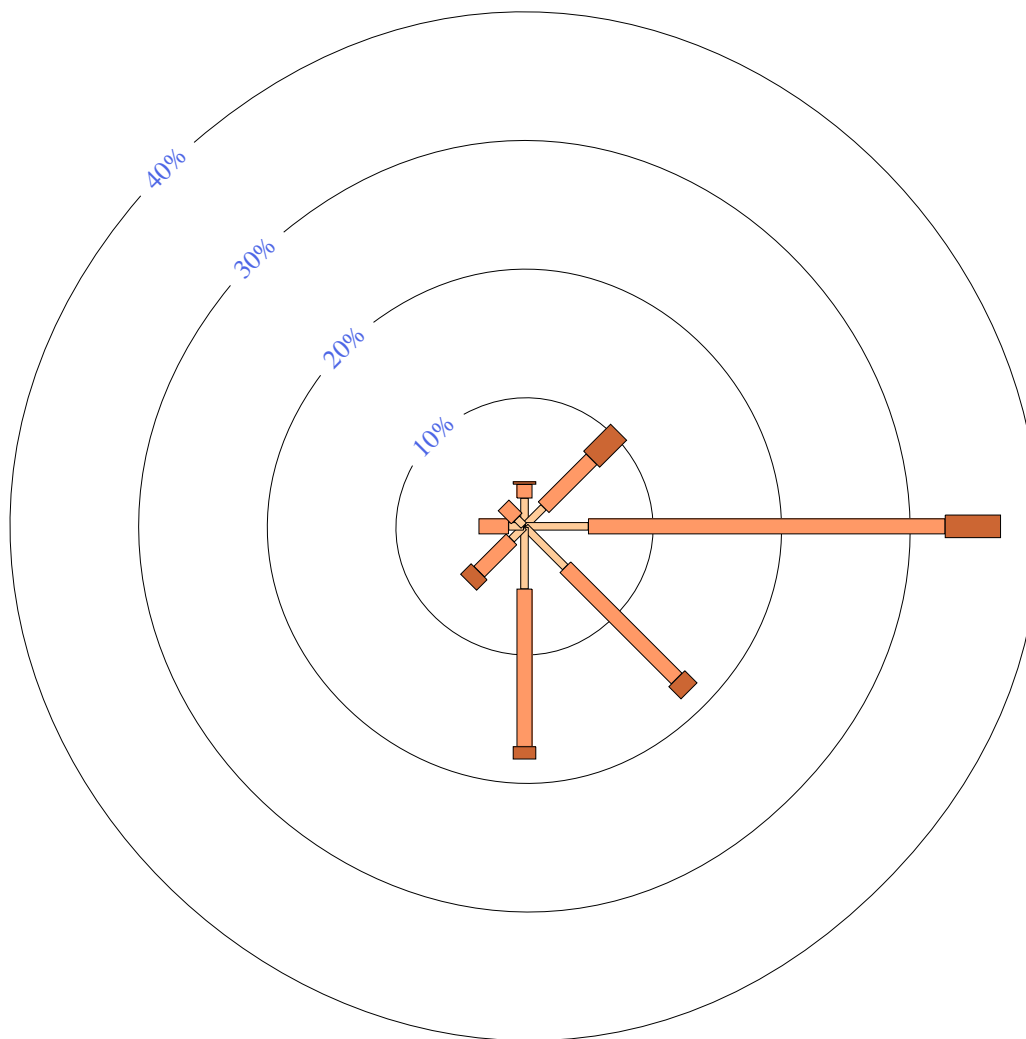
An asterisk (*) indicates that calm is less than 0.5%.

Other important info about this analysis is available in the accompanying notes.



9 am Jan
514 Total Observations

Calm *



Rose of Wind direction versus Wind speed in km/h (12 Jan 1994 to 08 Mar 2011)

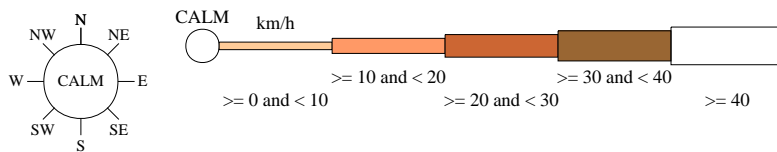
Custom times selected, refer to attached note for details

PERTH METRO

Site No: 009225 • Opened Feb 1993 • Still Open • Latitude: -31.9192° • Longitude: 115.8728° • Elevation 24.m

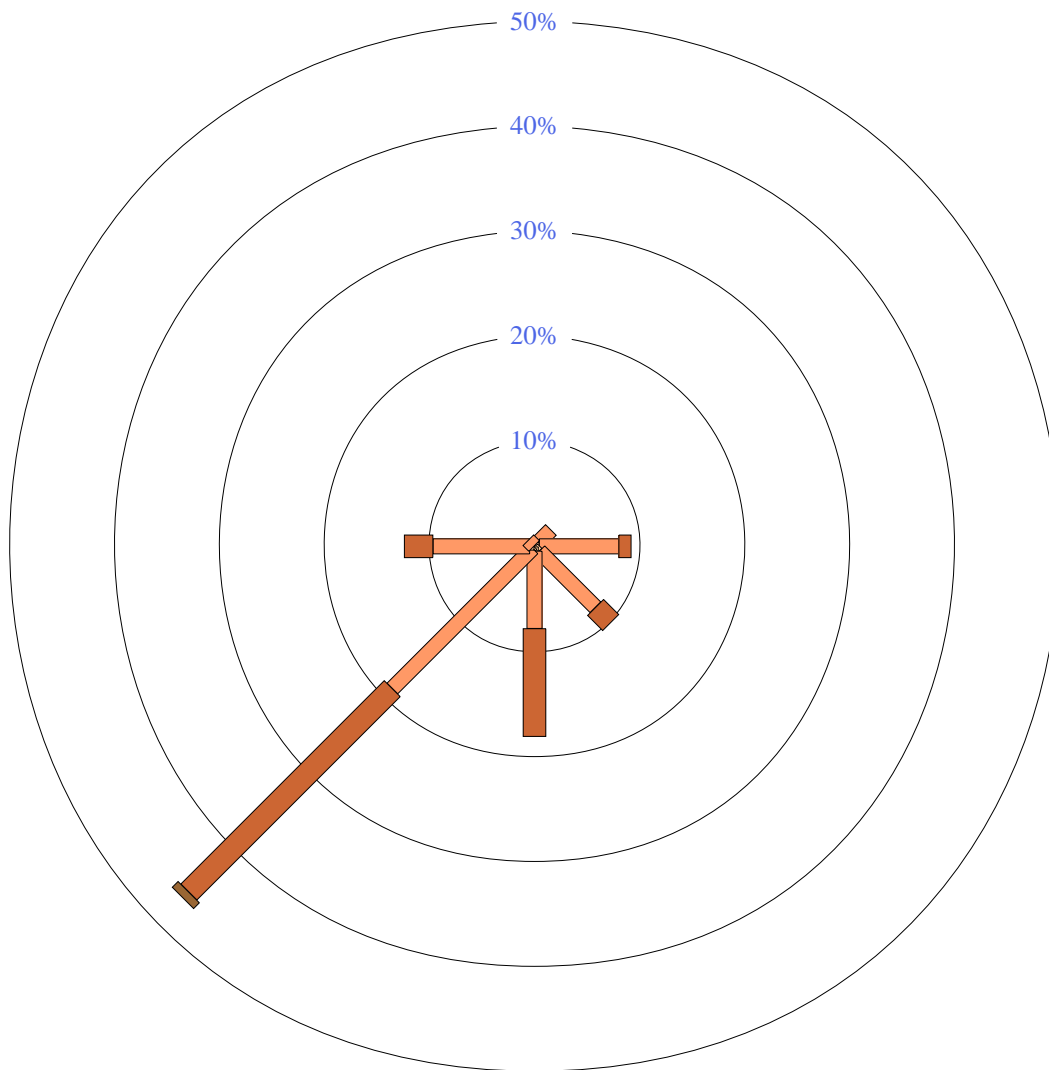
An asterisk (*) indicates that calm is less than 0.5%.

Other important info about this analysis is available in the accompanying notes.



3 pm Jan
516 Total Observations

Calm *



Appendix 3
City of Wanneroo fire and burning
information



CITY OF WANNEROO
FIRE AND BURNING INFORMATION
2015-2016

TO REPORT ALL FIRES RING 000

BURNING PERIODS & FDRS

BUILDING PROTECTION ZONES

BURNING GARDEN REFUSE

ALTERNATIVES TO BURNING

FIRE BANS / BRIGADE CONTACTS

BUSHFIRE SURVIVAL PLAN

FIREBREAKS & EXAMPLES

BURNING PERIOD DATES & FIRE DANGER RATINGS (FDRs)

1 DECEMBER TO 31 MARCH (INCLUSIVE)

ALL burning, including garden refuse is prohibited during this period.

Dates may be varied due to climate or weather conditions. Period variations will be advertised in local papers, the City website and Facebook page.

BURNING PERMITS ARE REQUIRED

1 APRIL - 30 NOVEMBER

Permits to burn may be obtained from the City of Wanneroo at the following locations:

Wanneroo Animal Care Centre

1204 Wanneroo Road, Ashby // 4pm-6pm everyday

City of Wanneroo Civic Centre

23 Dundobar Road, Wanneroo // 9am-4pm weekdays

Two Rocks Volunteer Fire Brigade

Carraway Loop, Two Rocks. Call **0427 026 000** before attending. For Two Rocks residents only (Seatrees Estate and Breakwater estate)

ALL BURNING IS PROHIBITED ON DAYS OF VERY HIGH OR ABOVE FIRE DANGER RATINGS AND IF A TOTAL FIRE BAN OR A HARVEST AND VEHICLE MOVEMENT BAN IS DECLARED.



FIRE DANGER RATINGS (FDR)

If you are in a bushfire risk location you need to know what the Fire Danger Rating (FDR) is for your area, monitor local conditions and keep informed.

The FDR is based on the forecast weather conditions and gives you advice about the level of bushfire threat on a particular day. When the rating is high, the threat of a bushfire increases.

FIRE DANGER RATING INFORMATION BOARDS

These boards clearly display the daily fire danger rating and are featured at eight locations across the City of Wanneroo.

- Corner of Joondalup Drive and Wanneroo Road
- Wanneroo Road, south of the Yanchep Beach Road turn off
- Wanneroo Road, Carabooda
- Marmion Avenue, Jindalee
- Neaves Road, Mariginiup
- Old Yanchep Road, Pinjar
- Gngangara Road, Landsdale
- Countryside Drive, Two Rocks

STAY INFORMED

An RSS feed is available to receive email alerts when the City's Harvest and Vehicle Movement Bans are declared. To sign up, visit the City website.

Harvest and Vehicle Movement Bans are also published on the website and broadcast on the ABC local radio station.



The City of Wanneroo's fire weather district is -
Lower West Coast.

You can find out the daily FDR online at:

- www.dfes.wa.gov.au
 - www.bom.gov.au
- or by phoning the **Telstra Weather Service on 1196.**

BURNING PERIODS & FDRS

BUILDING PROTECTION ZONES

A building protection zone (BPZ) is an area extending for at least 20 metres around a building on all sides where there is little or nothing to burn.

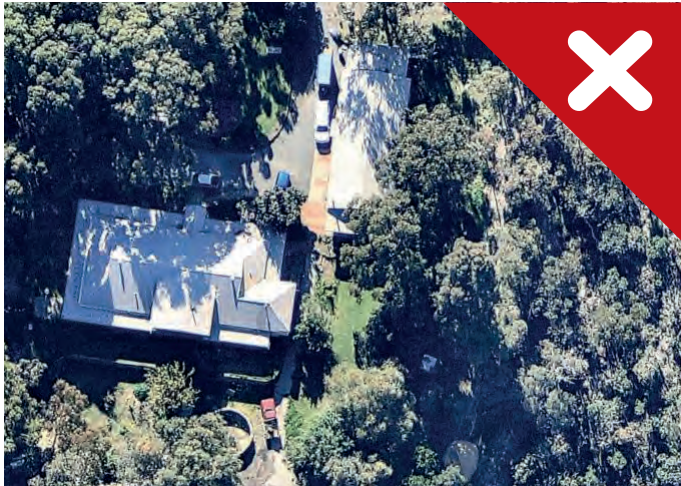
Reducing vegetation, rubbish and anything that can burn from around your home will increase its chances of surviving a bushfire.



If there is little or nothing to burn then the fire's impact will be reduced. This can be achieved by:

- Maintaining a minimum 2m gap between trees and the building. Make sure that no trees overhang the house.
- Ensuring tree crowns are a minimum of 10m apart.
- Ensuring there is a gap between shrubs and buildings of three times their mature height.
- Ensuring shrubs aren't planted in clumps.

- Keeping the grass short and prune the scrub so that it is not dense, nor does it have fine, dead aerated material in the crown of the scrub.
- Raking up leaves, twigs and removing tree trailing bark.
- Pruning lower branches (up to 2m off the ground) to stop a surface fire spreading to the canopy of the trees.
- Creating a mineral earth firebreak.
- Having your paths adjacent to the building and have your driveway placed so that it maximises the protection to the house.
- Keeping your gutters free of leaves and other flammable material



✓ EXAMPLE ABOVE:
extensive fire protection
zone created around
building.

✗ EXAMPLE LEFT:
no fire protection zone
created around building.

BUILDING PROTECTION ZONES

BURNING GARDEN REFUSE

There are many methods of hazard reduction available to residents. Reduction of fuel does not have to be as drastic as removing all vegetation. Burning garden refuse is one option available at certain times of the year.

GARDEN REFUSE MAY BE BURNT WITHOUT A PERMIT AFTER 6PM, SUBJECT TO:

- the pile of refuse being burnt not exceeding 1sqm
- a 2 metre wide area clear of flammable material surrounding the pile
- the fire only being lit between 6pm and 11pm
- only one heap being burnt at any one time
- the fire being completely extinguished by midnight
- a person in control of the fire staying with the fire until it is completely extinguished
- there being a means of extinguishing the fire available at all times (eg garden hose, knapsack spray or fire unit)
- neighbours are informed of your intention to burn
- the smoke does not cause a nuisance to neighbours
- the smoke does not create a traffic hazard
- household or commercial waste, or any noxious materials are not burned.



**BURNING PERMITS REQUIRED 01 APRIL - 30 NOVEMBER.
OUTSIDE OF THESE DATES (01 DEC - 3 MARCH)
BURNING IS PROHIBITED.**

MITIGATION BURNS

For assistance regarding mitigation burns, contact the City of Wanneroo Fire Protection Officers where properties can be assessed. Volunteer Fire Brigades in conjunction with the City's Fire Protection Officers may be able to assist with undertaking the burns. For more information please call 9405 5000.



Mild intensity prescribed burn for fuel reduction.

Eight months post burn at Ashbrook Park.



GARDEN REFUSE CANNOT BE BURNT:

- At any time during the Prohibited Burning Period
- If a Total Fire Ban or Harvest and Vehicle Movement Ban has been declared
- If the Fire Danger Rating is Very High or above.

NOTE: DO NOT BURN DAMP, WET OR GREEN MATERIAL AT ANY TIME AS THIS WILL CAUSE EXCESSIVE SMOKE.

BURNING GARDEN REFUSE

ALTERNATIVES TO BURNING

There are a range of alternatives to burning waste which can also be used as a method of hazard reduction.

In many circumstances, hand and mechanical clearing methods should be considered the best way to protect assets. These methods can be safer than burning, and easier to organise and maintain.

Raking or manual removal of fine fuels

Remove fuels such as fallen leaves, twigs and bark.

Mowing grass

Keep grass short, green and well watered. Mowed / slashed firebreaks need to be kept below 20mm.

Spraying

Grass can be sprayed with herbicide to reduce fuel loads. This may be a practical alternative particularly if erosion is a concern or if areas are difficult to access.

Slashing and mulching

This is an economical method of fuel reduction. To be effective, the cut material must be removed or allowed to rot before summer starts. Slashing and mowing may leave grass in rows, increasing fuel in some places. Mulching, or turbo mowing, also mulches the vegetation leaving the fuel where it is cut.



Ploughing and grading

These methods can produce effective firebreaks, however, the areas need constant maintenance. Loose soil may erode in steep areas, particularly where there is high rainfall and strong winds.

For further information on preventing erosion please contact the Fire Protection Officer.

DISPOSAL OF GREEN WASTE

City residents and ratepayers are able to dispose of green waste and garden refuse at the Greens recycling Facility (70 Motivation Drive, Wangara. 8am – 4.45pm weekends and public holidays).

Access to the site is free with a 'Greens voucher'. Four Greens vouchers are included with the annual Rates notice. Each voucher allows the disposal of a standard 6x4 trailer-load of clean greens at no charge. Entry fees apply without a valid voucher

Garden refuse can also be used as a mulch or compost to improve soils and the growth of plants. If you have large quantities of green waste (branches, tree trunks) you can arrange for mobile mulching services to mulch the material onsite.

Mulch piles should be no larger than 5 cubic metres to reduce the risk of spontaneous combustion and should be surrounded by a firebreak.



VERGES - A SHARED RESPONSIBILITY

The City of Wanneroo urges all residents to include their property's verge in their fire preparation activities.

The City cannot do it alone, given its size and number of bush verges requiring maintenance.

ALTERNATIVES TO BURNING

FIRE BANS / BRIGADE CONTACTS

TOTAL FIRE BAN

A Total Fire Ban is declared by Department of Fire and Emergency Services (DFES) on days when fires are most likely to threaten lives and property.

WHEN A BAN IS DECLARED IT WILL BE FEATURED ON:

- the DFES website www.dfes.wa.gov.au
- DFES Twitter account [@dfes_wa](https://twitter.com/dfes_wa)
- published to subscribers through DFES's automated RSS feeds
- broadcast on **ABC local radio**
- via DFES information line **1800 709 355**

VOLUNTEER BUSH FIRE BRIGADES

Volunteer Bush Fire Brigades are called to fires via a paging and radio communications system. The 000 emergency number will put you in contact with DFES who will dispatch the nearest Brigade.

Brigades should not be contacted directly to report a fire; call 000 to report a fire.



HARVEST AND VEHICLE MOVEMENT BAN

Harvest and Vehicle Movement Bans must be imposed by a local government when the bush fire danger index exceeds 35 during a Total Fire Ban.

They are also imposed when the Chief Bush Fire Control Officer is of the opinion that the use of engines, vehicles, plant or machinery during the prohibited burning times or the restricted burning times or both is likely to cause a fire or contribute to the spread of a bush fire.

If a Harvest and Vehicle Movement and Hot works Ban is declared it is published on the City's website and broadcast on radio 720 AM.

During a Total Fire Ban or Harvest and Vehicle Movement Ban you are not allowed to light, maintain or use a fire in the open air, or to carry out any activity in the open air that causes, or is likely to cause, a fire.

This includes a prohibition on the use of engines, vehicles, plant or machinery likely to cause or be conducive to the spread of a bush fire.

YOU COULD BE FINED UP TO \$25,000 AND/OR JAILED FOR 12 MONTHS IF YOU BREACH A BAN.



BRIGADE CONTACT INFORMATION

Quinns Rocks Brigade

T: 0428 498 779

www.quinnsrocksbfb.org.au

Wanneroo Fire Support Brigade

T: 0427 026 006

www.wanneroosupportbfb.org.au

Quinns Rocks Fire Station
14 Hidden Valley Retreat,
Clarkson

Two Rocks Brigade

Caraway Loop, Two Rocks

T: 0427 026 000

www.tworocksbfb.org.au

Wanneroo Brigade

Bldg 1, Ashby Operations Centre
1204 Wanneroo Road, Ashby

T: 0427 026 521

www.wanneroobfb.org.au

FIRE BANS / BRIGADE CONTACTS

ARE YOU BUSHFIRE READY?

areyouready.wa.gov.au

IT COULD SAVE YOUR LIFE!

If you live in or near bush, developing and using a **bushfire survival plan** is critical. Your plan will help you avoid making last minute decisions that could prove deadly during a bushfire.

Your plan **MUST** include

1

Your triggers to leave or start defending.

2

An informed decision about whether you will leave for a safer place or stay and actively defend.

Bushfire Survival Plan **TIPS**

- Your plan must work for you and your family. Everyone's bush fire survival plan will be different and depend on individual circumstances.
- If you live alone develop a plan with your neighbours.
- Write your plan down and don't doubt it when the time comes to put it into action.
- Prepare and practice your plan with all the members of your family before the start of the bushfire season.
- Review your plan when your family circumstances change.

3

A back-up plan. Conditions can change very quickly in a bushfire, often without warning. Your plan must be flexible and cover a range of situations you may face before, during or after the fire.

4

Where you will go and how you will get there if you plan to leave for a safer place?

Research has shown that leaving late can be deadly. Over the last 100 years 60% of people who died in bushfires were found within 100 metres of their own residence.

Act immediately. Never 'wait and see' what might happen. Relocating at the last minute can be deadly. **Never second guess your plan.**

- Don't forget to include your pets and livestock in your bushfire survival plan.

Download a bushfire survival plan template today at www.dfes.wa.gov.au



For more information visit www.dfes.wa.gov.au or contact **DFES Community Engagement** 9395 9861



Government of **Western Australia**
Department of **Fire & Emergency Services**



BUSHFIRE SURVIVAL PLAN

FIREBREAKS / FUEL HAZARD REDUCTION / FIREBREAK EXAMPLES

Under the Bush Fires Act (1954), all owners and occupiers of land in Western Australia must establish and maintain firebreaks.

Fire breaks and protection measures are vital in assisting the prevention of fires spreading and to allow safer access for bush fire fighters and vehicles.

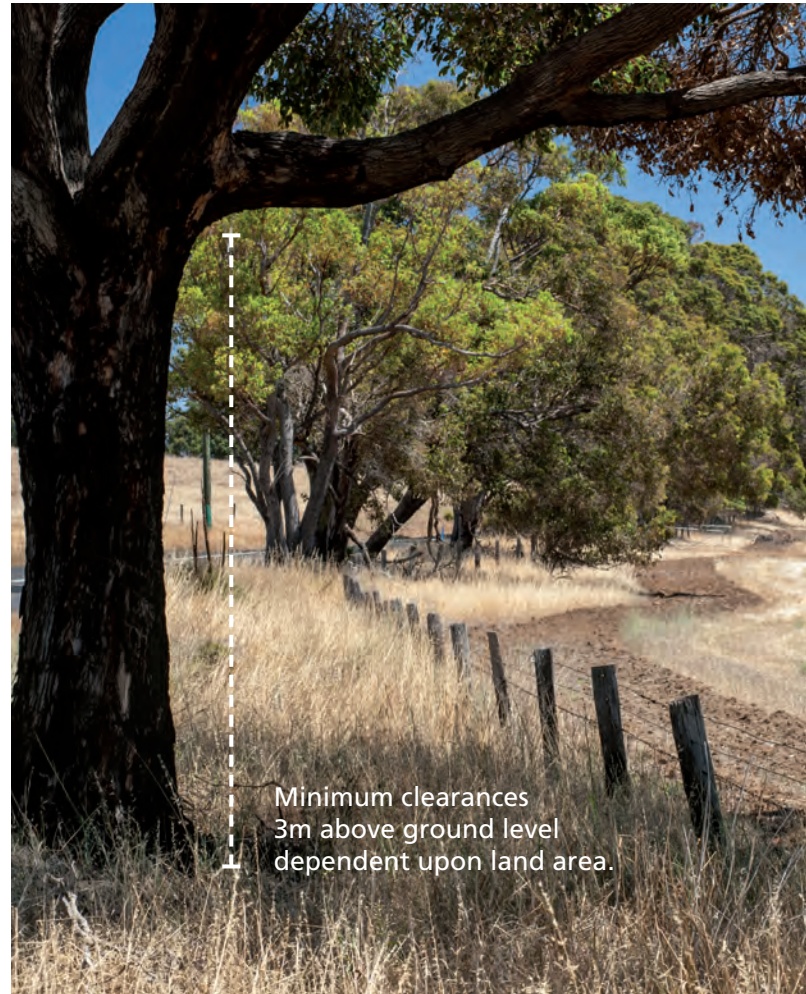
ALL LAND OWNERS WITHIN THE CITY OF WANNEROO BE ADVISED

Fire break installation must be completed by 15 November each year. Property inspections will commence the following day.

Failure to comply with these requirements may incur fines and further action by the City of Wanneroo.

Land with an area of less than 2,000m²

- A firebreak, not less than two (2) metres wide must be cleared immediately inside (or as close as possible) and around all external boundaries of the land.
- All tree branches that over-hang a firebreak must be trimmed back to a minimum height of three (3) metres above ground level.



Minimum clearances
3m above ground level
dependent upon land area.

Land with an area of 2,000m² or more

- A firebreak, not less than three (3) metres wide, must be cleared immediately inside (or as close as possible) around all external boundaries of the land.
- All tree branches that over-hang a firebreak must be trimmed back to a minimum height of three (3) metres above ground level.

Buildings

- A firebreak not less than three (3) metres wide immediately around all external walls of every building must be cleared.

APPLICATION TO VARY THE ABOVE REQUIREMENTS

If it is considered impracticable for any reason to implement any of these requirements, an application may be made not later than the 1st day of November annually to the Council or its authorised officer for permission to provide alternative fire protection measures. If permission is not granted the stated requirements must be complied with.

ADDITIONAL WORKS

In addition to these requirements, you may be required to carry out further works which are considered necessary by an Authorised Officer and specified by way of a separate written notice forwarded to the address of the owner/s as shown on the City of Wanneroo rates record for the relevant land.



Non-compliant: no firebreak installed inside boundary fence



Compliant: grass slashed to ground level



Non-compliant: mineral earth fire break showing grass/weed regrowth



Compliant: mineral earth fire break



Non-compliant: thick scrub creates a fire hazard around power poles



Compliant: cleared buffer zone around power poles



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