

Appendix 6
City of Wanneroo Firebreak Notice
(2018/2019)

Under the Bushfires Act (1954), all owners and occupiers of land in Western Australia must establish and maintain fire breaks.

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

Land with an area of less than 4,000m²

- A fire break, 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 fire break must be trimmed back to a minimum height of three and a half (3.5) metres above ground level and the growth on the fire break cannot exceed fifty (50) millimetres high.

Land with an area of 4,000m² or more

- A fire break, 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 fire break must be trimmed back to a minimum height of three and a half (3.5) metres above ground level and the growth on the fire break cannot exceed fifty (50) millimetres high.

Buildings

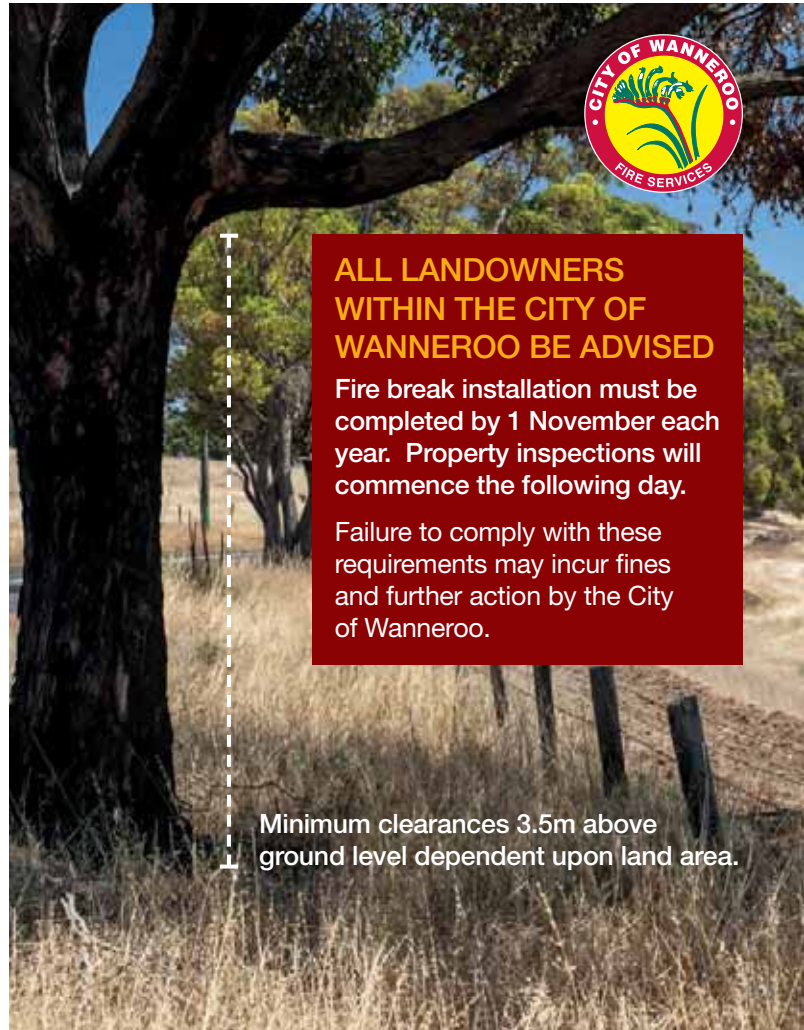
- Install and maintain a twenty (20) metre building protection zone surrounding all buildings, large hay stacks and fuel storage areas. A building protection zone includes undertaking measures such as pruning all lower tree branches to prevent fire entering the trees, ensuring three (3) metre spacing between tree canopies to prevent treetop fires spreading between trees, keeping all grasses to a height of not more than fifty (50) millimetres and storing all firewood piles more than twenty (20) metres away from the buildings.

APPLICATION TO VARY THE ABOVE REQUIREMENTS

If it is considered impracticable for any reason to implement any of the requirements of this Notice, application may be made not later than the 18th of October annually to the Council or its authorised officer for permission to provide alternative fire protection measures. If permission is not granted the requirements of this Notice must be complied with.

ADDITIONAL WORKS

In addition to the requirements of this Notice, 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.



ALL LANDOWNERS WITHIN THE CITY OF WANNEROO BE ADVISED

Fire break installation must be completed by 1 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.

Minimum clearances 3.5m above ground level dependent upon land area.



Non-compliant: no fire break 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

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: Amberton Estate Precincts 3N and 4E

Suburb: Eglinton

State: WA

P/code: 6034

Local government area: City of Wanneroo

Description of the planning proposal: Subdivision Application

BMP Plan / Reference Number: 60022 R01

Version: Rev 1

Date of Issue: 1/12/2020

Client / Business Name: Stockland

Reason for referral to DFES

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

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

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
Zac Cockerill	Level 2	37803	31/08/2021
Company	Contact No.		
Strategen-JBS&G	(08) 9792 4797		

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

Signature of Practitioner



Date 1/12/2020

Stockland
Bushfire Management Plan (Subdivision Application)
Amberton Estate Precincts 3N and 4E

1 December 2020
60022/133,781 (Rev 1)

JBS&G Australia Pty Ltd T/A Strategen-JBS&G

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Appendix B	APZ standards (Schedule 1 of Guidelines)
Appendix C	Vehicular access technical standards of the Guidelines
Appendix D	Water technical standards of the Guidelines
Appendix E	City of Wanneroo annual firebreak notice

1. Proposal details

1.1 Background

Stockland is seeking to lodge an updated subdivision application to facilitate ongoing residential development of Precincts 3N and 4E of Amberton Estate (i.e. P3N and P4E, hereon referred to as the project area), located in the City of Wanneroo. The subdivision plan (Figure 1) identifies:

- a total of 380 proposed residential lots
- proposed internal road layout
- two proposed Public Open Space (POS) and drainage lots
- proposed Lot 9029 balance landholding.

1.2 Site description

For the purposes of this Bushfire Management Plan (BMP), the project area comprises the residential component of the proposed subdivision within Lot 9029 (i.e. not the proposed balance landholdings) and is surrounded by (see Figure 2):

- cleared development footprint of the adjacent north Elavale Estate
- intact coastal heath vegetation to the west in varying degrees of condition
- existing Amberton Estate residential development to the south
- Marmion Avenue and intact coastal heath vegetation to the east.

The project area is designated as bushfire prone on the *Map of Bush Fire Prone Areas* (DFES 2020; see Plate 1).



Plate 1: Map of Bush Fire Prone Areas (DFES 2020)

1.3 Purpose

This BMP has been prepared to address requirements under Policy Measure 6.4 of *State Planning Policy 3.7 Planning in Bushfire-Prone Areas* (SPP 3.7; WAPC 2015) and *Guidelines for Planning in Bushfire-Prone Areas* (the Guidelines; WAPC 2017).

1.4 Other plans/reports

The BAL assessment outlined in this report is the most up to date assessment relating to the project area and therefore supersedes any previous Strategen/Strategen-JBS&G BAL assessments/contour assessments undertaken within the project area, including those documented in the following Bushfire Management Plans (BMPs)/addendums previously prepared by Strategen:

- Amberton Estate Fire Management Plan prepared by Strategen (2016)
- Stages 8 & 9 Amberton Estate BMP prepared by Strategen (2017)
- Portion Stages 8,9,39 & 40 Amberton Estate BMP prepared by Strategen (2018a)
- Amberton P3N and P4E Bushfire Management Plan prepared by Strategen (2018b)
- Amberton Estate Stages 10 and 10A BAL compliance report prepared by Strategen-JB&G (2020a)
- Lot 2053 Aplin Street (Childcare Lot) Amberton Estate BMP compliance report prepared by Strategen-JB&G (2020b).

Other plans/reports relating to this development include:

- MRS Amendment 1284/57
- Commonwealth EPBC Approval 2010/5777
- EPBC Approval 2013/7068
- EPBC Approval 2014/7137.

LEGEND

- APPLICATION AREA (114051716)
- EXISTING NATURAL CONTOUR (LOD)
- ROADWAY
- SHARED PATH

NOTE: ALL DIMENSIONS ARE SHOWN UNLESS OTHERWISE SPECIFIED AND ARE SUBJECT TO SURVEYING ERRORS.

LOT SUMMARY

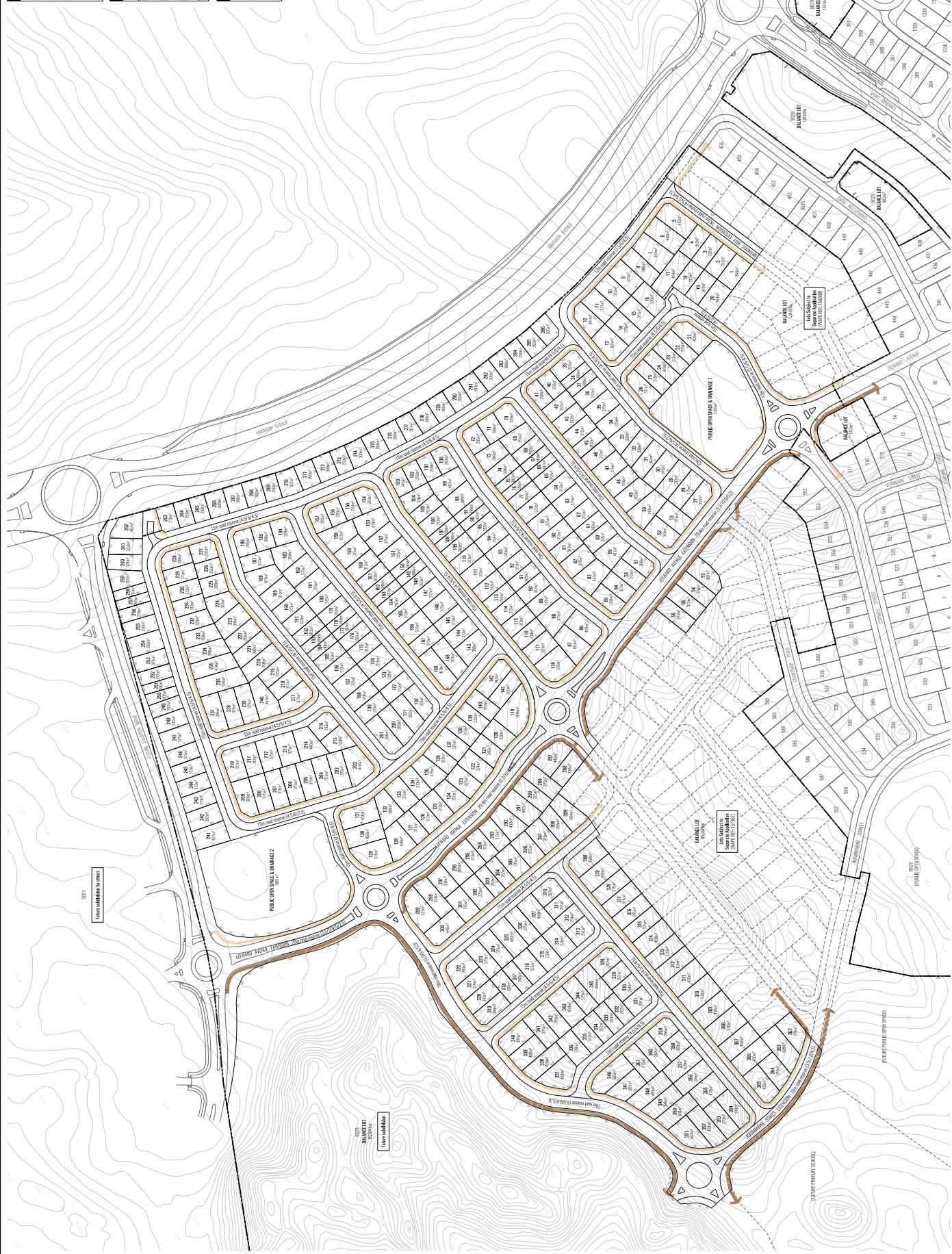
Site	No. Lots	Total Lots	Total Area
180m ² - 234m ²	22	5.19%	
235m ² - 313m ²	154	41.53%	
320m ² - 448m ²	172	45.29%	
450m ² - 495m ²	23	6.05%	
500m ² - 545m ²	8	2.11%	
500m ² - 595m ²	1	0.26%	
Total Residential Lots	380		

Minimum Lot Size: 187m²
 Maximum Lot Size: 634m²
 Average Lot Size: 347m²
 Total Lot Area: 122978.25ha

SUBJECT LAND SUMMARY

The proposed subdivision of Lot 5029 on Plan 419040 creates the following lots:

- 380 Residential Lots
- 2 Public Open Spaces & Drainage Lots
- 1 Balance Lot



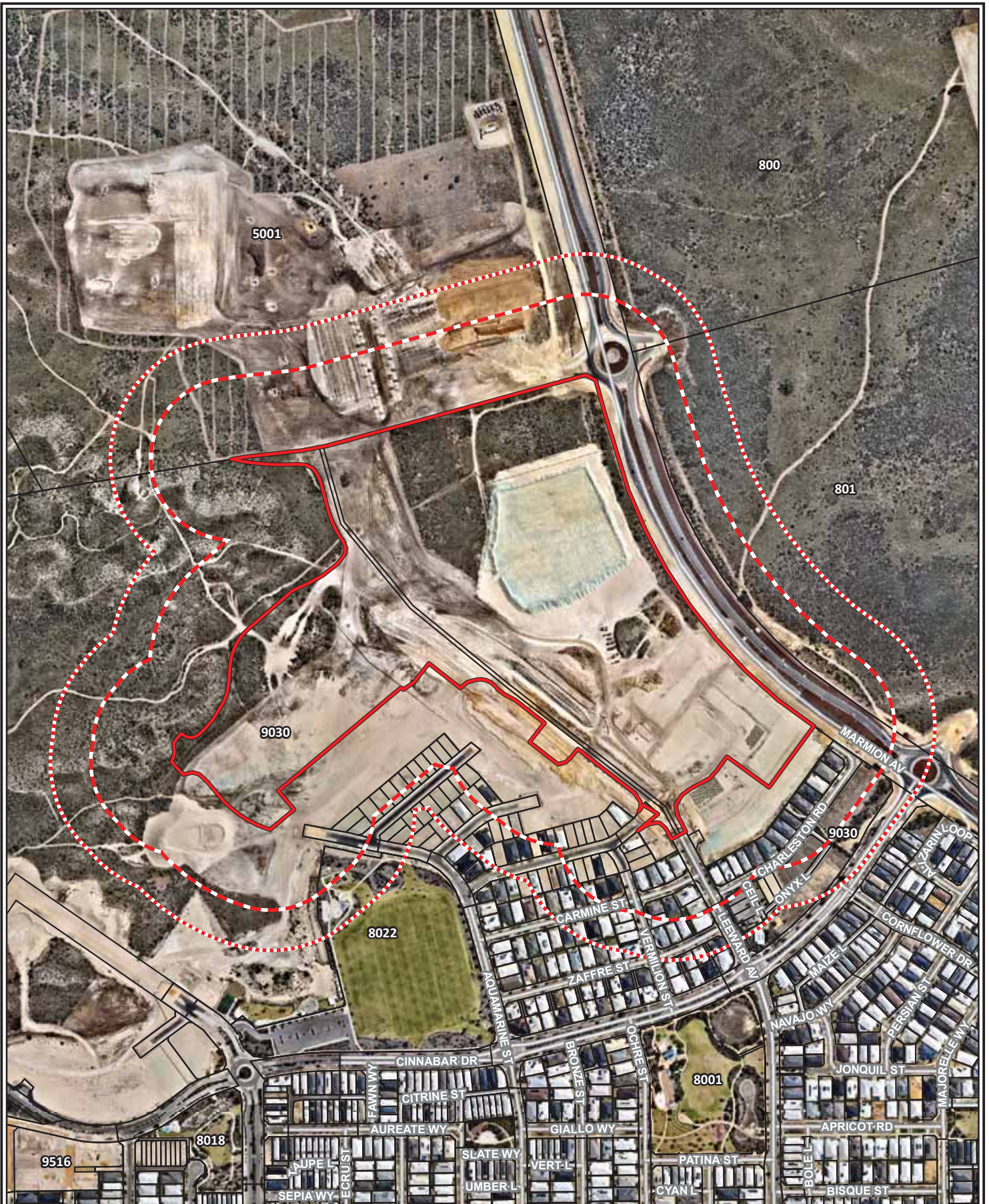
PROPOSED SUBDIVISION
 Lot 9029 Celeste Street, EGLINTON Page 1 of 3
 A Standard Project

Scale: 1:1000 @ A2

DATE: 15/07/2020
 DRAWN BY: J. BROWN
 CHECKED BY: J. BROWN
 PROJECT NO: 15134

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Legend Project area 100m assessment area 150m assessment area Cadastral boundary Roads (MRWA)	Scale 1:6,250 at A4				Lot 9029, Amberton Estate, Celeste Street, Eglinton, WA SITE OVERVIEW
	Coord. Sys. GDA 1994 MGA Zone 50		Z		
	Job No: 60022				FIGURE 2
	Client: Stockland				
	Version: A	Date: 30-Nov-2020			
Drawn By: ctatcher	Checked By: BM				

File Name: \\008pmpmr004v001.jbsg.aust\JBS Perth\Projects\1\Open\Stockland\Bushfire\Amberton\60022 BMP update Amberton P3N and P4E\GIS\Maps\R01_Rev_A\60022_02_SiteOverview.mxd
 Image Reference: www.nearmap.com - Imagery Date: 24. October 2020.

2. Environmental considerations

2.1 Native vegetation - modification and clearing

The project area is already predominantly cleared with the exception of some pockets of native vegetation, which will be modified to a low threat state to facilitate proposed urban residential development. Results from a search of publicly available environmental data relating to the project area is summarised in Table 1.

Strategen-JBS&G understands that all relevant environmental and clearing approvals have/will be sought as part of ongoing vegetation modification works within the project area and staging buffer.

Table 1: Summary of environmental values

Environmental value	Not mapped as occurring within or adjacent to the project area	Mapped as occurring within or adjacent to the project area		Description
		Within	Adjacent	
Environmentally Sensitive Area		✓	✓	The entire project area and all adjacent land is mapped as an Environmentally Sensitive Area (ESA), likely to be associated with the mapped Banksia Woodlands of the Swan Coastal Plain TEC.
Swan Bioplan Regionally Significant Natural Area	✓			N/A.
Ecological linkages	✓			N/A.
Wetlands	✓			N/A.
Waterways	✓			N/A.
Threatened Ecological Communities listed under the EPBC Act		✓	✓	Threatened Ecological Communities are mapped as occurring within and adjacent to the project area. Banksia Woodlands are mapped as possibly occurring within the project area and adjacent land.
Threatened and priority flora				Mapping layer not available at time of report preparation.
Fauna habitat listed under the EPBC Act		✓	✓	Possible Quenda habitat is mapped as occurring in the project area and adjacent areas. With respect to Carnaby's Black Cockatoo, the project area and adjacent areas are mapped as containing: <ul style="list-style-type: none"> • confirmed breeding areas • possible breeding areas • confirmed roosting areas • potential feeding areas Swan Coastal Plain.
Threatened and priority fauna				Mapping layer not available at time of report preparation.
Bush Forever Site	✓			N/A.
DBCA managed lands and waters (includes legislated lands and waters and lands of interest)	✓			N/A.
Conservation covenants	✓			N/A.

A large portion of the project area has been cleared, with remnant vegetation retained throughout adjacent land fragmented by cleared tracks, firebreaks and disturbed areas. Regional vegetation mapping identifies the pre-European Beard vegetation association within the project area as being Guilderton 1007: shrublands; *Acacia lasiocarpa* and *Melaleuca acerosa* heath/shrublands; *Acacia rostelifera* and *Acacia cyclops* thicket.

The proposed development will necessitate clearing of the remaining vegetation within the project area and adjacent staging buffers, with the possible exception of vegetation retained/introduced within the proposed POS areas. Any retained or introduced vegetation in these POS areas will be designed in accordance with landscape plans to be excludable under one or a combination of Clauses 2.2.3.2 (b), (c), (e) and (f) of AS3959 (as discussed in Section 2.2).

An EPBC referral (Ref: 2010/5777) was submitted for the proposed development (including adjacent development areas) in 2010, for potential impacts to Carnaby's Black Cockatoo. Department of Environment and Energy (DoEE) approved the proposal with conditions including the creation of Carnaby's cockatoo habitat within POS areas within the project area. This process was outlined in Amendment No.1 to Eglinton LSP No.82 submitted by Creative design and Planning (2016), as per the below extract:

- "Development of the eastern half of the Eglinton LSP No.82 area was assessed under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) due to the impact of clearing on Carnaby's Black Cockatoo foraging habitat. The determination on the referral was deemed a 'Controlled Action' and a formal assessment (EPBC 2010/5777) was undertaken. The Eglinton LSP No.82 was approved by the Commonwealth Minister for Environment on 30 April 2013, modified on 17 July 2013 and 20 October 2015. The western section of the Eglinton LSP No.82 area was referred under two separate proposals both of which were determined as 'Not a Controlled Action'."

Based on the above information, Strategen-JBS&G understands that all relevant environmental approvals have been sought up to this point in time. Subdivision approval will provide a valid clearing exemption to undertake the necessary subdivisional and clearing works required.

2.2 Revegetation / Landscape Plans

Landscaping within the project area will be limited to the proposed POS areas and street scaping. As previously mentioned, any landscaping proposed will consist of vegetation excludable under Clauses 2.2.3.2 (b), (c), (e) and (f) of AS3959. Final determination of the applicable exclusion clauses will be confirmed as part of detailed landscape design once final size, location, density and species selection are known. Detailed landscape planning and design will need to be consistent with the provisions of this BMP with regards to any exclusions/managed land proposed.

Based on conceptual landscape information available, proposed POS will constitute the following:

- POS 1 (exclusion clauses 2.2.3.2 (b), (e) and (f) – vegetated components less than 1 ha and greater than 100 m from classified vegetation, with additional areas of non-vegetated land and low threat managed vegetation): drainage basin planting with passive open space
- POS 2 (exclusion clauses 2.2.3.2 (b), (c), (e) and (f) – vegetated components less than 1 ha and greater than 100 m from classified vegetation, vegetated components less than 0.25 ha that are not within 20 m of each other, other areas of classified vegetation or proposed habitable development, with additional areas of non-vegetated land and low threat managed vegetation): drainage basin planting with passive open space.

3. Bushfire assessment results

3.1 Assessment inputs

3.1.1 Vegetation classification

Strategen-JBS&G assessed classified vegetation and exclusions within the 150 m assessment area through on-ground verification during numerous site investigations within the project area and for adjacent stages of Amberton Estate on 12 October 2017, 23 August 2018, 25 January 2019 and 1 March 2019 in accordance with AS 3959-2018 *Construction of Buildings in Bushfire-Prone Areas* (AS 3959; SA 2018) and the *Visual Guide for Bushfire Risk Assessment in Western Australia* (DoP 2016). Georeferenced site photos and a description of the vegetation classifications and exclusions are contained in Appendix A and depicted in Figure 3. Apart from newly cleared areas within and adjacent to the site in association with ongoing urban development of Amberton and the adjacent north Elavale Estate, Strategen-JBS&G can confirm that site conditions have not materially changed since the previous date of inspection.

Classified vegetation was identified within the 150 m assessment area in the form of the following, consistent with previous vegetation assessments over the site:

- Class D scrub within small pockets to the southwest, southeast and north of the project area
- Class C shrubland within the broader intact coastal heath vegetation surrounding the project area to the west, northwest, northeast and east.

Existing areas excluded from classification within the 150 m assessment area include:

- non-vegetated areas (i.e. roads, driveways, buildings, footpaths) excluded under Clause 2.2.3.2 (e)
- low threat managed vegetation (i.e. mowed lawns, managed gardens, slashed road verges, slashed vacant residential lots, managed POS, street trees) excluded under Clause 2.2.3.2 (f).

As previously discussed, all POS will be excluded from classification under one or a combination of Clauses 2.2.3.2 (b), (c), (e) and (f) of AS 3959. Detailed landscape planning and design will need to be consistent with the provisions of this BMP with regards to any exclusions/managed land proposed.

Classified vegetation currently situated within 100 m of the project area to the southwest is under control of the proponent and is temporary, subject to future clearing, earthworks and development as part of staged subdivision in accordance with LSP 82 and subsequent subdivision approvals (WAPC Ref. 157367 and 156088). This vegetation is to be modified as part of subdivisional works to form a 100 m wide low threat staging buffer within the balance landholding where required. This will mitigate the impact of temporary vegetation and will ensure there is no unnecessary BAL impact on proposed development. The staging buffer will not impact any proposed vegetation retention/habitat creation within the large conservation POS area to the west of the project area.

3.1.2 Effective slope

Strategen-JBS&G assessed effective slope under classified vegetation within the 150 m assessment area through on-ground verification on 12 October 2017, 23 August 2018, 25 January 2019, and 1 March 2019 in accordance with AS 3959. Results were cross-referenced with DPIRD 2m contour data and are depicted in Figure 3.

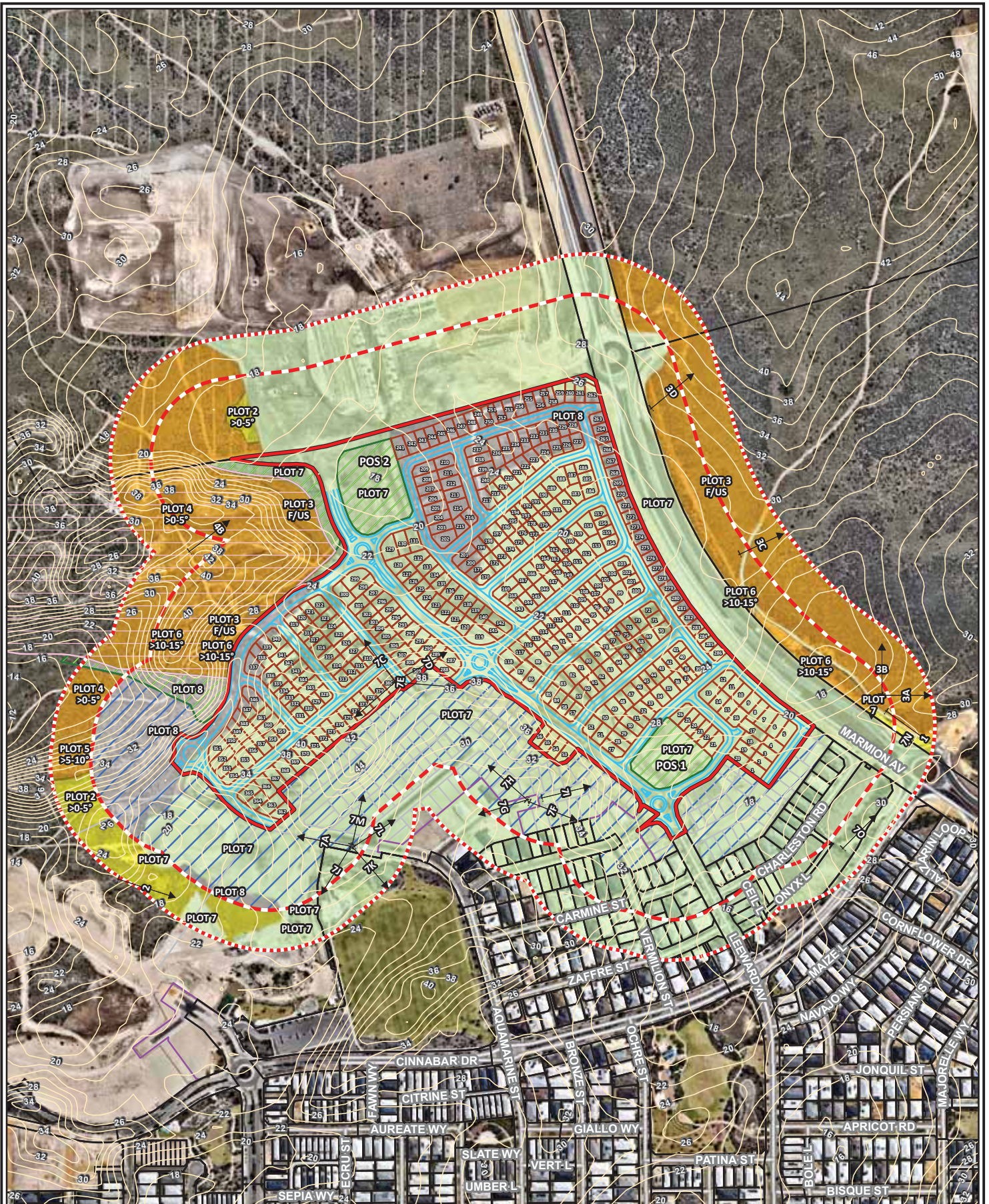
Site observations indicate that land within the 150 m assessment area undulates with variations in slope ranging from upslope of the project area to downslopes of up to 15 degrees. Effective slopes under classified vegetation from flat/upslope (0 degrees) to downslope >10–15 degrees have therefore been assigned to the various plots.

3.1.3 Summary of inputs

Figure 3 illustrates the anticipated post-development vegetation classifications and exclusions following completion of subdivision works and implementation of low threat landscaping/staging buffers throughout the project area and adjacent 150 m. The post-development vegetation classifications/exclusions and effective slope are summarised in Table 2.

Table 2: Summary of post-development vegetation classifications, exclusions and effective slope

Vegetation plot	Vegetation classification	Effective slope	Comments
1	Class D Scrub	Flat/upslope (0°)	Scrub vegetation greater than 2 m in height with a continuous horizontal fuel profile.
2	Class D Scrub	Downslope >0–5°	
3	Class C Shrubland	Flat/upslope (0°)	Shrubland vegetation less than 2 m in height with a continuous horizontal fuel profile.
4	Class C Shrubland	Downslope >0–5°	
5	Class C Shrubland	Downslope >5–10°	
6	Class C Shrubland	Downslope >10–15°	
7	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	Existing non-vegetated areas (i.e. roads, driveways, buildings, footpaths) and low threat managed vegetation (i.e. mowed lawns, managed gardens, slashed road verges, slashed vacant lots, managed POS, street trees).
8	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	Areas within the project area and staging buffer to be modified and maintained to a low threat state.



- Project area
- 100m assessment area
- 150m assessment area
- Cadastral boundary
- Proposed lots
- POS
- Balance lot
- Conservation POS
- 100m wide low threat staging buffer
- Photo point directions
- Carriageways

- Vegetation classification
- Class C Shrubland
 - Class D Scrub
 - Clause 2.2.3.2 (e) & (f)
 - Area to be modified to non-vegetated and low threat state
 - Indicative future subdivisions
 - Topographic contours (mAHD)
 - Roads (MRWA)

Scale 1:6,250 at A4	
Coord. Sys. GDA 1994 MGA Zone 50	Z
Job No: 60022	
Client: Stockland	
Version: A	Date: 30-Nov-2020
Drawn By: ctatcher	Checked By: BM

**Lot 9029, Amberton Estate,
Celeste Street, Eglinton, WA**

**VEGETATION CLASSIFICATION
AND EFFECTIVE SLOPE**

FIGURE 3

3.2 Assessment outputs

3.2.1 Bushfire Attack Level (BAL) contour assessment

Strategen-JBS&G has undertaken a BAL contour assessment in accordance with Method 1 of AS 3959 for the project area (Figure 4). The Method 1 procedure incorporates the following factors:

- state-adopted FDI 80 rating
- vegetation classification
- effective slope
- distance maintained between proposed development areas and the classified vegetation.

The BAL rating gives an indication of the level of bushfire attack (i.e. the radiant heat flux) that may be received by proposed future development and subsequently informs the standard of building construction and/or setbacks required for proposed habitable development to potentially withstand such impacts and/or achieve compliance with relevant bushfire protection criteria of the Guidelines.

The BAL contours are based on:

- the vegetation classifications and effective slope observed at the time of inspection as well as consideration of the proposed on-site clearing extent, resultant vegetation exclusions and separation distances achieved in line with the subdivision plan
- implementation and maintenance of POS and drainage cells 1 and 2 as low threat vegetation
- establishment and maintenance of the low threat staging buffer on the balance landholding where required.

Results of the BAL contour assessment are detailed in Table 3 and illustrated in Figure 4. The highest BAL applicable to the external boundary of the proposed lots is BAL-19.

Table 3: BAL contour assessment results

Method 1 BAL determination				
Plot	Vegetation classification	Effective slope	BAL contour width	Highest BAL (to lot boundary)
1	Class D Scrub	Flat/upslope (0°)	27-<100m	BAL-12.5
2	Class D Scrub	Downslope >0-5°	>100m	BAL-Low
3	Class C Shrubland	Flat/upslope (0°)	13-<19m	BAL-19
4	Class C Shrubland	Downslope >0-5°	22-<100m	BAL-12.5
5	Class C Shrubland	Downslope >5-10°	>100m	BAL-Low
6	Class C Shrubland	Downslope >10-15°	19-<28m	BAL-19
7	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	N/A	N/A
8	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	N/A	N/A

4. Identification of bushfire hazard issues

4.1 Bushfire context

The project area comprises predominantly cleared and degraded land with pockets of remnant vegetation. The remaining vegetation within the project area is proposed to be cleared, including provision of a 100 m wide low threat staging buffer, which will eliminate bushfire threat in these areas.

The greatest permanent bushfire threat to the proposed development is from remnant vegetation to be retained within conservation POS to the northwest. Separation from this shrubland vegetation is provided by interfacing road reserves and a managed POS buffer (i.e. POS 2), which form permanent and substantial buffers between proposed development and classified vegetation.

Bushfire behaviour may also occur to the east throughout intact vegetation beyond the 50 m wide Marmion Avenue road reserve. However, this bushfire scenario will have limited radiant heat impact on proposed development since Marmion Avenue provides significant defendable space. Vegetation to the east is also temporary given proposed urban development as part of Eglinton Hill.

4.2 Bushfire hazard issues

It is considered that the bushfire risk to the proposed development posed by the abovementioned hazards can be managed through application of acceptable solutions under the Guidelines, as well as through a direct bushfire suppression response if required. Bushfire mitigation strategies applicable to the proposed development are addressed in Section 5 of this BMP.

Examination of the bushfire hazards to the project area (as outlined in Section 3) has identified the following bushfire hazard issues:

1. The ability for the proposed residential lots to achieve a compliant rating of BAL-29 or lower is dependent on the implementation and maintenance of low threat POS and drainage cells 1 and 2, as well as the provision of a 100 m wide low threat staging buffer where required.
2. If subdivisional works are to be staged internal to the project area, the following staging provisions may need to be implemented as required and in advance of lot creation within each development stage to negate any unnecessary bushfire risk from future undeveloped stages:
 - internal 100 m wide low threat staging buffers
 - provision of temporary compliant cul-de-sacs and turn-around points (if staged road construction is to be less than 200 m long), until such time that through access can be achieved onto adjacent development stages
 - provision of temporary compliant Emergency Access Ways (EAWs) to achieve through access for each internal development stage if the access route is longer than 200 m and less than 600 m and cannot be dealt with via a compliant cul-de-sac.

These provisions will not apply for internal stages that are subject to BAL-Low.

The proposed development will be serviced by a reticulated water supply from the existing mains service along Cornell Street, Charleston Road, Leeward Avenue and Aquamarine Street; and the proposed public road network within the site and various connections to the existing public road network will provide occupants/emergency services with sufficient access options. On this basis, the proposed development will be compliant for Development Location, Siting and Design of Development, Vehicular Access and Water. A compliance assessment against acceptable solutions of the bushfire protection criteria of the Guidelines is provided in Section 5.

5. Assessment against bushfire protection criteria

5.1 Compliance table

An acceptable solutions assessment against the bushfire protection criteria is provided in Table 4.

Table 4: Compliance with the bushfire protection criteria of the Guidelines

Bushfire protection criteria	Method of compliance	Proposed bushfire management strategies	
		Acceptable solutions	
Element 1: Location	A1.1 Development location		The BAL contour assessment (see Figure 4 and Table 3) indicates that all proposed lots can achieve BAL-29 or lower.
Element 2: Siting and design	A2.1 Asset Protection Zone		The entire project area, including proposed lots, POS/drainage and road reserves will be established and managed in a low threat state. Therefore, all proposed lots can achieve a rating of BAL-29 or lower without the need for additional APZ requirements. Aside from any vegetation retained/planted within on-site drainage POS, the entire project area will be subject to ongoing low threat management in accordance with APZ standards outlined in the Guidelines (see Appendix B).
Element 3: Vehicular access	A3.1 Two access routes		The four proposed connections to the existing stages of Amberton Estate (i.e. Aquamarine Street, Leeward Avenue, Charleston Road and Cornell Street) will provide all occupants with the option of travelling to at least two different destinations.
	A3.2 Public road		All public roads will be constructed to the relevant technical requirements of the Guidelines (see Appendix C).
	A3.3 Cul-de-sac (including a dead-end-road)		No permanent cul-de-sacs are required as part of development. To achieve compliance during internal staging, temporary cul-de-sacs may be required. All temporary cul-de-sacs will be less than 200 m in length, will include minimum 17.5 m diameter turn-around heads and will be constructed to the relevant technical requirements of the Guidelines (see Appendix C).
	A3.4 Battle-axe		N/A – no battle-axes are proposed as part of the subdivision and the project area is not serviced by an existing battle-axe.
	A3.5 Private driveway longer than 50 m		N/A – the proposed lots are of size where all future habitable development will be located within 50 m of a public road.
	A3.6 Emergency access way		No permanent emergency access ways (EAW) are proposed; however if development and vehicular access construction is to be staged, any proposed temporary EAW is to be constructed to the relevant technical requirements of the Guidelines (see Appendix C).
	A3.7 Fire service access routes (perimeter roads)		N/A – the proposed subdivision design does not require fire service access routes (FSARs) to achieve access within and around the perimeter of the project area.
	A3.8 Firebreak width		Given that all lots will be cleared and developed, and all POS will be established and maintained in a low threat state under various exclusion clauses of AS3959, lot boundary firebreaks will not be required. Balance lots will need to comply with the annual firebreak notice as specified in Appendix E.

Bushfire protection criteria	Method of compliance Acceptable solutions	Proposed bushfire management strategies
Element 4: Water	<p>A4.1 Reticulated areas</p> <p>A4.2 Non-reticulated areas</p> <p>A4.3 Individual lots within non-reticulated areas (Only for use if creating 1 additional lot and cannot be applied cumulatively)</p>	<p>The proposed development will be connected to reticulated water supply via extension of services from surrounding development in accordance with Water Corporations Design Standard 63 requirements (refer to Appendix D). Existing water hydrants are located at 200 m intervals within the Cornell Street, Charleston Road, Leeward Avenue and Aquamarine Street road reserves.</p> <p>N/A – the proposed subdivision is located within an existing reticulated area.</p> <p>N/A – the proposed subdivision is located within an existing reticulated area.</p>

5.2 Additional management strategies

Strategen-JBS&G makes the following additional bushfire management recommendations to inform ongoing planning stages of the development and increase the level of bushfire risk mitigation across the site.

5.2.1 On-site staging buffers

If development (and therefore clearing) is to occur on a staged basis, clearing in advance will need to occur to ensure building construction is not inhibited by a temporary vegetation extent located within adjacent development stages yet to be cleared. This can be achieved by ensuring that each approved stage subject to construction is surrounded by a 100 m wide, on-site cleared or low threat buffer to development (not including any vegetation proposed to be retained). Once the buffers are created, they will need to be maintained on a regular and ongoing basis in accordance with AS 3959 Clause 2.2.3.2 (f) (including the management of grassland at 100 mm or lower) to achieve a low threat minimal fuel condition all year round until such time that the buffer area is developed as part of the next development stage. This will assist in managing the current on-site temporary vegetation hazards.

5.2.2 Staging of access

If development (and therefore construction of vehicular access) is to occur on a staged basis, vehicular access arrangements will need to ensure that all occupiers and visitors are provided with at least two access routes for all development stages. This can be achieved via construction of access in advance of stages or through provision of temporary compliant EAWs /cul-de-sacs until two formal public access roads are available.

5.2.3 Fuel management within cleared vacant lots

Cleared vacant lots are to be managed on a regular and ongoing basis by the developer until sale of lots after which time landowners will be responsible for ongoing management. Maintenance is to be in accordance with Clause 2.2.3.2 (f) of AS 3959 and Schedule 1 of the Guidelines (refer to Appendix B) and will involve slashing/mowing of grassland and weeds to height of less than 100 mm.

5.2.4 Road verge fuel management

Existing and proposed road verges that have been excluded as low threat are to be managed to ensure the understorey and surface fuels remain in a low threat, minimal fuel condition in accordance with Clause 2.2.3.2 (f) of AS 3959. Ongoing road verge management is the responsibility of the City via continuation of the City's ongoing verge treatment regime.

5.2.5 Notification on title

Notification is to be placed on the Title of proposed lots subject to BAL-12.5 or higher (either through condition of subdivision or other head of power) to ensure landowners/proponents and prospective purchasers are aware that their lot is subject to an approved BMP and BAL assessment.

5.2.6 Building construction standards

Future Class 1, 2, 3 and associated 10a buildings in areas subject to BAL-12.5 or higher are required to comply with the bushfire specific building construction requirements of AS 3959.

5.2.7 BMP compliance report at future stages

A BMP compliance report will be prepared prior to issue of title to validate and confirm that relevant management measures of this BMP have been implemented appropriately to achieve the intended bushfire management outcomes and compliance with bushfire protection criteria.

5.2.8 Landscaping plan

The BAL contour assessment is reliant on the proposed POS and drainage cells 1 and 2 being implemented and maintained to a low threat state in accordance with one or a combination of Clauses 2.2.3.2 (b), (c), (e) and (f) of AS3959. Strategen-JBS&G recommends that in order to achieve the desired BAL outcomes as depicted in Figure 4, a detailed landscaping plan be prepared that adequately demonstrates the intended low threat outcome within on-site POS. Responsibility for establishment and maintenance of low threat landscaping is discussed in Section 6.

5.2.9 Compliance with annual firebreak notice

The developer is to comply with the City of Wanneroo annual firebreak notice as amended (refer to Appendix E) for all balance lots adjacent to the project area. Given the intended urban residential landscape proposed throughout the project area, including the provision of perimeter roads, no internal firebreaks are deemed necessary.

The City of Wanneroo annual firebreak notice requires that on all land with an area of less than 4000 m², owners/occupiers of the land are required to comply with the following requirements:

- Maintain grasses and inflammable materials with the exception of living trees on the entire property to a height of no more than 50 millimetres. The entire property is required to be maintained below 50 millimetres from 1 November each year until 30 April the following year.

OR

- A 3 metre wide trafficable firebreak as close as possible to all external boundaries of the property must be installed by 1 November each year and maintained until 30 April the following year.
 - If it is not possible to install the firebreak adjacent to the external boundary of the property due to naturally occurring obstacles, it is acceptable to install the firebreak around the obstacle. If this requires the firebreak to be greater than 5 metres away from the external boundary, a firebreak variation is required.
 - Ensure a minimum vertical clearance of 4 metres is maintained along the firebreaks to enable vehicles to drive along the firebreaks without access being obstructed.
- Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements in this Notice and with any additional requirements outlined within that plan.

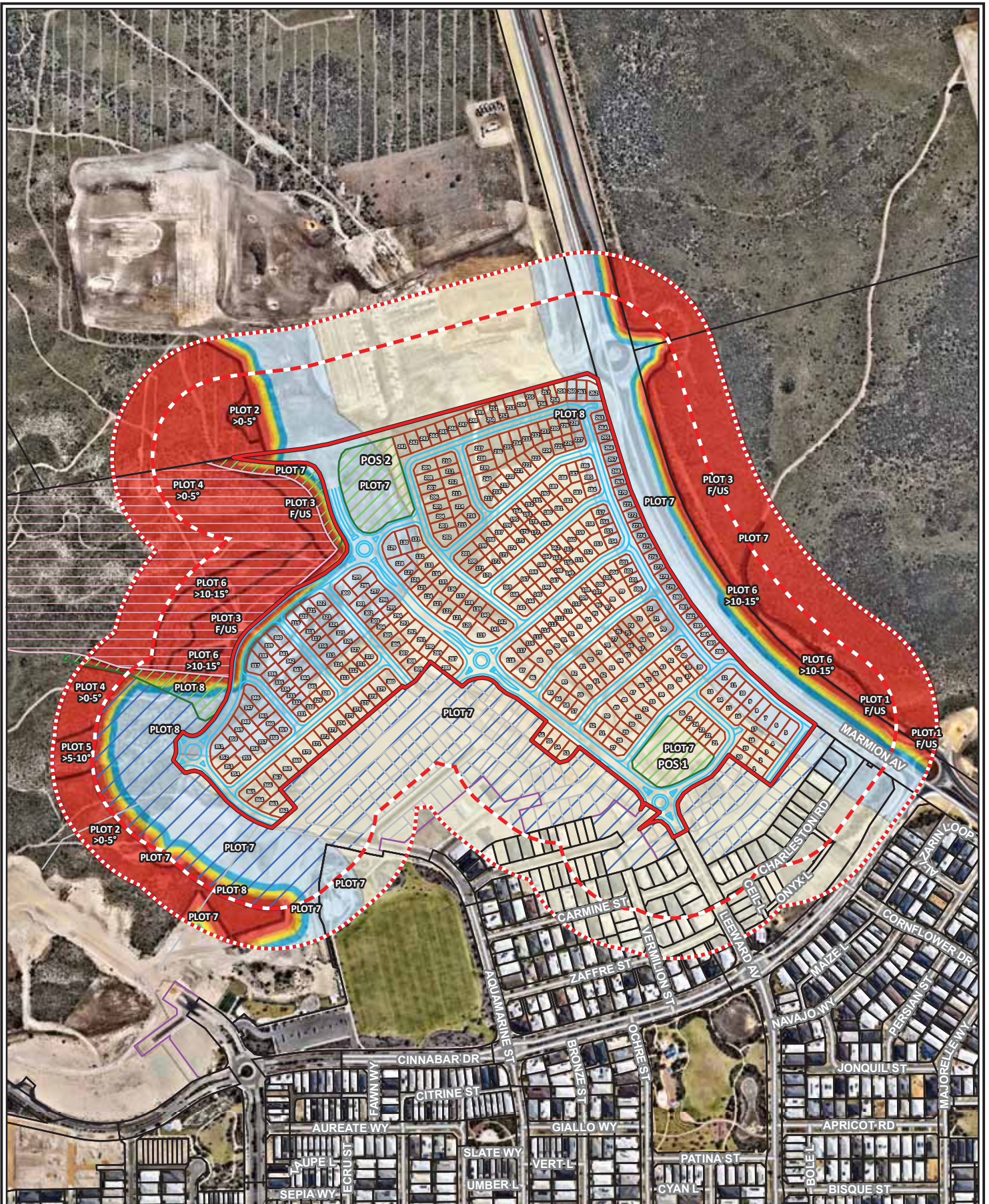
Where the area of land exceeds 4000 m², owners/occupiers of the land are required to comply with the following requirements:

- A 3 metre wide trafficable firebreak as close as possible to all external boundaries of the property must be installed by 1 November each year and maintained until 30 April the following year.
 - If it is not possible to install the firebreak adjacent to the external boundary of the property due to naturally occurring obstacles, it is acceptable to install the firebreak around the obstacle. If this requires the firebreak to be greater than 5 metres away from the external boundary, a firebreak variation is required.
 - Ensure a minimum vertical clearance of 4 metres is maintained along the firebreaks to enable vehicles to drive along the firebreaks without access being obstructed.
- Install and maintain a 20 metre bare earth area around all hay stacks and/or fuel dumps.

- Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements in this Notice and with any additional requirements outlined within that plan.

On all vacant land greater than 4000 m² owners/occupiers of the land are required to comply with the following requirements:

- A 3 metre wide trafficable firebreak as close as possible to all external boundaries of the property must be installed by 1 November each year and maintained until 30 April the following year.
- Ensure a minimum vertical clearance of 4 metres is maintained along the firebreaks to ensure vehicles can drive along the firebreaks without being impeded by tree branches.
- If the land is an area greater than 4000sqm but less than 50,000sqm (5 hectares) all grass on the land must be maintained to a height of less than 50 millimetres.
- If the land is an area of 50,000sqm (5 hectares) or greater, the grass must be maintained on the land to a height no greater than 50 millimetres for a distance of 10 metres from any firebreak.



Legend 		Scale 1:6,250 at A4 	Lot 9029, Amberton Estate, Celeste Street, Eglinton, WA
		Coord. Sys. GDA 1994 MGA Zone 50 	BAL CONTOUR MAP AND BUSHFIRE MANAGEMENT MEASURES
Job No: 60022 Client: Stockland		FIGURE 4	
Version: A Drawn By: ctatcher	Date: 30-Nov-2020 Checked By: BM		

File Name: \\008pmpmr004v001.jbsg.aust\JBS Perth\Projects\1\Open\Stockland\Bushfire\Amberton\60022 BMP update Amberton P3N and P4E\GIS\Maps\R01_Rev_A\60022_04_BALs.mxd
 Image Reference: www.nearmap.com - Imagery Date: 24. October 2020.

6. Responsibilities for implementation and management of the bushfire measures

Implementation of the BMP applies to the developer, prospective landowners and the City to ensure bushfire management measures are adopted and implemented on an ongoing basis. A bushfire responsibilities table is provided in Table 5 to drive implementation of all bushfire management works associated with this BMP.

Table 5: Responsibilities for implementation and management of the bushfire measures

Implementation/management table	
Developer – prior to issue of titles	
No.	Implementation action
1	Construct (or works have bonded) the public roads and reticulated water supply to the standards stated in this BMP.
2	Construct (or works have bonded) any temporary cul-de-sacs/EAWs as required during staging to the dimensions and standards stated in this BMP.
3	Establish on-site staging buffers to achieve exclusion Clause 2.2.3.2 (f) of AS 3959 to the dimensions and standard stated in this BMP, including slashing/mowing of grassland and weeds to height of less than 100 mm.
4	Provide information sufficient to demonstrate low threat landscaped outcomes within POS cells 1 and 2.
5	Where relevant, establish POS cells 1 and 2 in a low threat state to achieve exclusion Clause 2.2.3.2 (f) of AS 3959.
6	Establish all proposed lots in a low threat state to achieve exclusion Clause 2.2.3.2 (f) of AS 3959, including slashing/mowing of grassland and weeds to height of less than 100 mm.
7	Establish road verges in a low threat minimal fuel condition as per Clause 2.2.3.2 (f) of AS 3959.
8	Comply with the City of Wanneroo annual firebreak notice as amended.
9	Undertake a BMP compliance assessment.
10	Place a notification on title of all lots subject to BAL-12.5 or higher to ensure landowners/proponents and prospective purchasers are aware that their lot is subject to an approved BMP and BAL assessment.
Developer – until sale/transfer of land	
No.	Implementation action
1	Maintain the public roads and reticulated water supply to the standards stated in this BMP.
2	Maintain any temporary EAWs/cul-de-sacs as required during staging to the dimensions and standards stated in this BMP.
3	If lot creation is staged, maintain on-site staging buffers to achieve exclusion Clause 2.2.3.2 (f) of AS 3959, including slashing/mowing of grassland and weeds to height of less than 100 mm.
4	Maintain POS cells 1 and 2 in a low threat state to achieve exclusion Clause 2.2.3.2 (f) of AS 3959.
5	Maintain all proposed lots in a low threat state to achieve exclusion Clause 2.2.3.2 (f) of AS 3959, including slashing/mowing of grassland and weeds to height of less than 100 mm.
6	Maintain road verges in a low threat minimal fuel condition as per Clause 2.2.3.2 (f) of AS 3959.
7	Comply with the City of Wanneroo annual firebreak notice as amended.
Landowner – prior to building construction	
No.	Implementation action
1	Maintain cleared/vacant lots in a low threat state to achieve exclusion Clause 2.2.3.2 (f) of AS 3959, including slashing/mowing of grassland and weeds to height of less than 100 mm, until developed to a permanent low fuel state.
2	Comply with the City of Wanneroo annual firebreak notice as amended.
Landowner/builder – during building construction	
No.	Implementation action
1	Construct the Class 1, 2, 3 and associated 10a building/s in accordance with the bushfire construction standard relevant to the assessed BAL rating for the building.
Landowner/occupier – ongoing	
No.	Implementation action
1	Maintain the Class 1, 2, 3 and associated 10a building/s in accordance with the bushfire construction standard relevant to the assessed BAL rating for the building.
2	Comply with the City of Wanneroo annual firebreak notice as amended.
Local government – ongoing management	
No.	Implementation action
1	Maintain road verges in a low threat minimal fuel condition as per Clause 2.2.3.2 (f) of AS 3959.
2	Maintain POS cells 1 and 2 in a low threat minimal fuel condition as per Clause 2.2.3.2 (f) of AS 3959.
3	Enforce compliance with the City of Wanneroo annual firebreak notice as amended.

7. References

- Department of Fire and Emergency Services (DFES) 2020, *Map of Bush Fire Prone Areas*, [Online], Government of Western Australia, available from: <https://maps.slip.wa.gov.au/landgate/bushfireprone/>, [10/11/2020].
- Department of Planning (DoP) 2016, *Visual guide for bushfire risk assessment in Western Australia*, Department of Planning, Perth.
- Standards Australia (SA) 2018, *Australian Standard AS 3959–2018 Construction of Buildings in Bushfire-prone Areas*, Standards Australia, Sydney.
- Strategen Environmental (Strategen) 2016, *Amberton Estate Fire Management Plan*, Strategen, Bunbury/Perth.
- Strategen Environmental (Strategen) 2017, *Stages 8 & 9 Amberton Estate BMP*, Strategen, Bunbury/Perth.
- Strategen Environmental (Strategen) 2018, *Bushfire Management Plan (Subdivision Application): Amberton P3N & P4E*, Strategen, Bunbury/Perth.
- Strategen-JBS&G 2020a, *Bushfire Attack Level (BAL) Compliance Report: Amberton Estate Stages 10 and 10A*, Strategen-JBS&G, Bunbury/Perth
- Strategen-JBS&G 2020b, *Bushfire Management Plan (BMP) Compliance Report: Lot 2053 Aplin Street (Childcare Lot) Amberton Estate, Eglinton*, Strategen-JBS&G, Bunbury/Perth
- Western Australian Planning Commission (WAPC) 2015, *State Planning Policy 3.7 Planning in Bushfire Prone Areas*, Western Australian Planning Commission, Perth.
- Western Australian Planning Commission (WAPC) 2017, *Guidelines for Planning in Bushfire Prone Areas*, Version 1.3 August 2017, Western Australian Planning Commission, Perth.

8. Limitations

Scope of services

This report ("the report") has been prepared by Strategen-JBS&G in accordance with the scope of services set out in the contract, or as otherwise agreed, between the Client and Strategen-JBS&G. In some circumstances, a range of factors such as time, budget, access and/or site disturbance constraints may have limited the scope of services. This report is strictly limited to the matters stated in it and is not to be read as extending, by implication, to any other matter in connection with the matters addressed in it.

Reliance on data

In preparing the report, Strategen-JBS&G has relied upon data and other information provided by the Client and other individuals and organisations, most of which are referred to in the report ("the data"). Except as otherwise expressly stated in the report, Strategen-JBS&G has not verified the accuracy or completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report ("conclusions") are based in whole or part on the data, those conclusions are contingent upon the accuracy and completeness of the data. Strategen-JBS&G has also not attempted to determine whether any material matter has been omitted from the data. Strategen-JBS&G will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to Strategen-JBS&G. The making of any assumption does not imply that Strategen-JBS&G has made any enquiry to verify the correctness of that assumption.

The report is based on conditions encountered and information received at the time of preparation of this report or the time that site investigations were carried out. Strategen-JBS&G disclaims responsibility for any changes that may have occurred after this time. This report and any legal issues arising from it are governed by and construed in accordance with the law of Western Australia as at the date of this report.

Environmental conclusions

Within the limitations imposed by the scope of services, the preparation of this report has been undertaken and performed in a professional manner, in accordance with generally accepted environmental consulting practices. No other warranty, whether express or implied, is made.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

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Appendix A Vegetation plot photos and description



Photo ID: 1

Plot number		Plot 1
Vegetation classification	Pre-development	Class D Scrub
	Post-development	Class D Scrub
Description / justification		Scrub vegetation greater than 2 m in height with a continuous horizontal fuel profile.

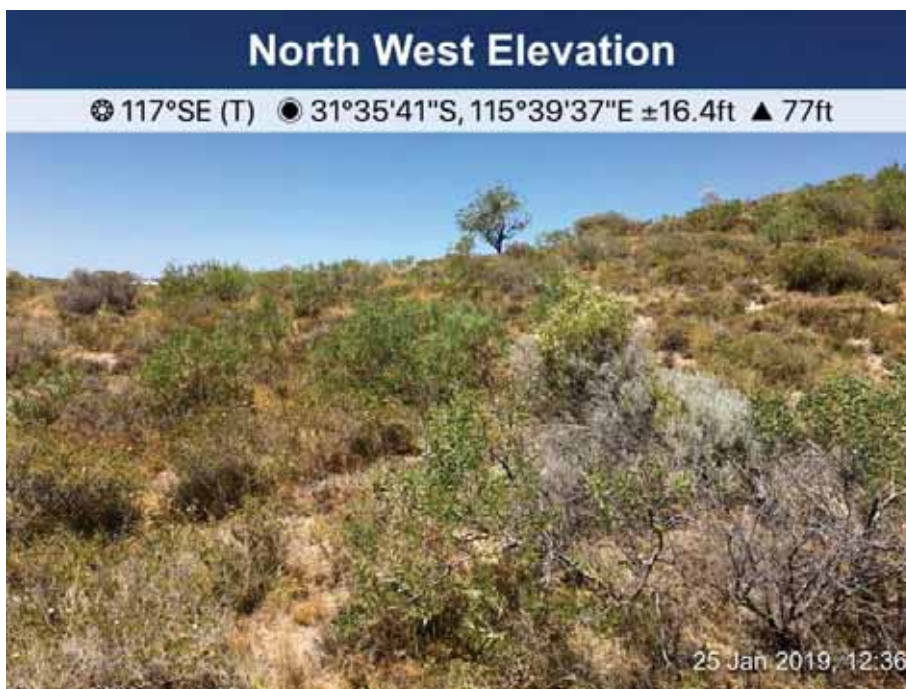


Photo ID: 2

Plot number		Plot 2
Vegetation classification	Pre-development	Class D Scrub
	Post-development	Class D Scrub
Description / justification		Scrub vegetation greater than 2 m in height with a continuous horizontal fuel profile.



Photo ID: 3a

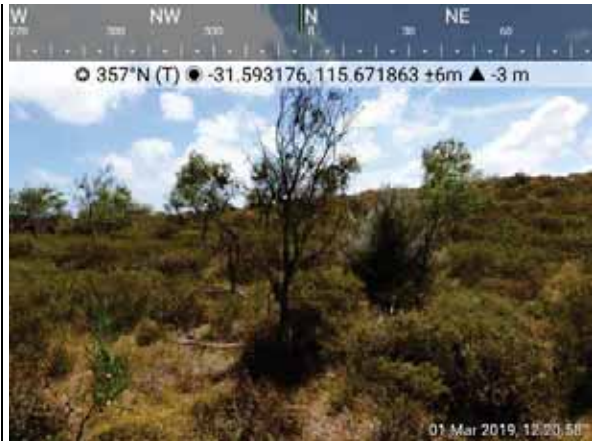


Photo ID: 3b



Photo ID: 3c



Photo ID: 3d

Plot number		Plot 3
Vegetation classification	Pre-development	Class C Shrubland
	Post-development	Class C Shrubland
Description / justification		Shrubland vegetation less than 2 m in height with a continuous horizontal fuel profile.



Photo ID: 4a



Photo ID: 4b

Plot number		Plot 4
Vegetation classification	Pre-development	Class C Shrubland
	Post-development	Class C Shrubland
Description / justification		Shrubland vegetation less than 2 m in height with a continuous horizontal fuel profile.



Nearmap image (dated 24 October 2020)

Plot number		Plot 5
Vegetation classification	Pre-development	Class C Shrubland
	Post-development	Class C Shrubland
Description / justification		Shrubland vegetation less than 2 m in height with a continuous horizontal fuel profile.



Nearmap image (dated 24 October 2020)

Plot number		Plot 6
Vegetation classification	Pre-development	Class C Shrubland
	Post-development	Class C Shrubland
Description / justification		Shrubland vegetation less than 2 m in height with a continuous horizontal fuel profile.



Photo ID: 7a



Photo ID: 7b



Photo ID: 7c



Photo ID: 7d



Photo ID: 7e



Photo ID: 7f

Plot number		Plot 7
Vegetation classification	Pre-development	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])
	Post-development	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])
Description / justification		Existing non-vegetated areas (i.e. roads, driveways, buildings, footpaths) and low threat managed vegetation (i.e. mowed lawns, managed gardens, slashed road verges, slashed vacant lots, managed POS, street trees).



Photo ID: 7g



Photo ID: 7h



Photo ID: 7i



Photo ID: 7j



Photo ID: 7k



Photo ID: 7l

Plot number		Plot 7
Vegetation classification	Pre-development	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])
	Post-development	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])
Description / justification		Existing non-vegetated areas (i.e. roads, driveways, buildings, footpaths) and low threat managed vegetation (i.e. mowed lawns, managed gardens, slashed road verges, slashed vacant lots, managed POS, street trees).



Photo ID: 7m



Photo ID: 7o



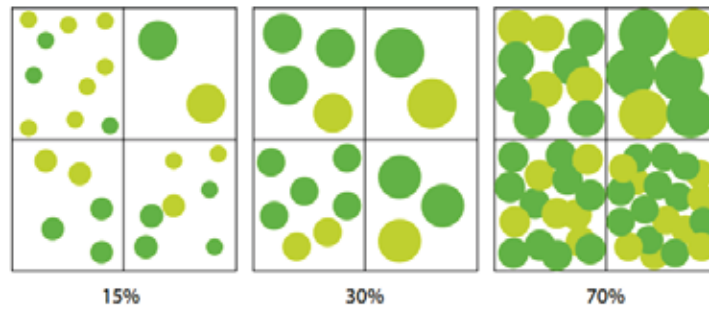
Photo ID: 7n

Plot number		Plot 7
Vegetation classification	Pre-development	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])
	Post-development	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])
Description / justification		Existing non-vegetated areas (i.e. roads, driveways, buildings, footpaths) and low threat managed vegetation (i.e. mowed lawns, managed gardens, slashed road verges, slashed vacant lots, managed POS, street trees).

Appendix B APZ standards (Schedule 1 of Guidelines)


Schedule 1: Standards for Asset Protection Zones

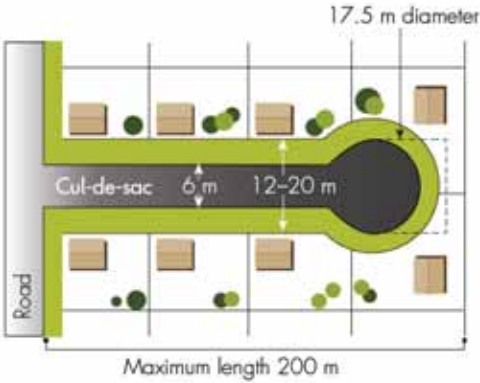
- **Fences:** within the APZ are constructed from non-combustible materials (e.g. iron, brick, limestone, metal post and wire). It is recommended that solid or slatted non-combustible perimeter fences are used.
- **Objects:** within 10 metres of a building, combustible objects must not be located close 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.

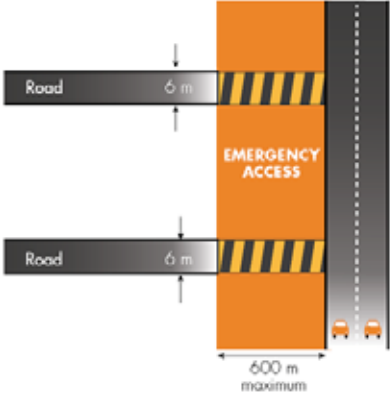


- **Shrubs (0.5 metres to 5 metres in height):** should not be located under trees or within 3 metres of buildings, should not be planted in clumps greater than 5m² in area, clumps of shrubs should be separated from each other and any exposed window or door by at least 10 metres. Shrubs greater than 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.

Appendix C Vehicular access technical standards of the Guidelines

Public roads	
Acceptable solution A3.2	A public road is to meet the requirements in Table 1, Column 1.
Explanatory note E3.2	<p>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 paving 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.</p> <p>Public road design: All roads should allow for two-way traffic to allow conventional two-wheel drive vehicles and fire appliances to travel safely on them.</p>  <p>The diagram illustrates a road cross-section. It shows a central paved area of 4 meters width, with a 1-meter shoulder on both the left and right sides. A total height clearance of 4 meters is indicated on the left side. A red fire truck and a blue car are shown driving on the road. Trees are depicted on both sides of the road.</p>

Cul-de-sac (including a dead-end road)	
Acceptable solution A3.3	<p>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), the following requirements are to be achieved:</p> <ul style="list-style-type: none"> • Requirements in Table 1, Column 2 • Maximum length: 200 metres (if public emergency access is provided between cul-de-sac heads maximum length can be increased to 600 metres provided no more than eight lots are serviced and the emergency access way is no more than 600 metres) • Turn-around area requirements, including a minimum 17.5 metre diameter head.
Explanatory note E3.3	<p>In bushfire prone areas, a cul-de-sac subdivision layout is not favoured because they do not provide access in different directions for residents. In some instances it may be possible to provide an emergency access way between cul-de-sac heads to a maximum distance of 600 metres, so as to achieve two-way access. Such links must be provided as right of ways or public access easements in gross to ensure accessibility to the public and fire services during an emergency. A cul-de-sac in a bushfire prone area is to connect to a public road that allows for travel in two directions in order to address Acceptable Solution A3.1.</p> <div style="text-align: center;">  <p>The diagram illustrates a cul-de-sac layout. On the left, a vertical road is labeled 'Road'. A horizontal cul-de-sac branches off to the right. The cul-de-sac is labeled 'Cul-de-sac' with a width of '6 m'. The length of the cul-de-sac is indicated as '12-20 m'. At the end of the cul-de-sac is a circular head with a '17.5 m diameter'. The total length of the cul-de-sac from the road to the head is labeled 'Maximum length 200 m'. The diagram shows several lots along the cul-de-sac, represented by brown rectangles and green circles.</p> </div>

Emergency access way	
Acceptable solution A3.6	<p>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 all of the following requirements:</p> <ul style="list-style-type: none"> • Requirements in Table 1, Column 4 • No further than 600 metres from a public road • Provided as right of way or public access easement in gross to ensure accessibility to the public and fire services during an emergency • Must be signposted.
Explanatory note E3.6	<p>An emergency access way is not a preferred option however may be used to link up with roads to allow alternative access and egress during emergencies where traffic flow designs do not allow for two-way access. Such access should be provided as a right-of-way or easement in gross to ensure accessibility to the public and fire emergency services during an emergency.</p> <p>The access should comply with minimum standards for a public road and should be signposted. Where gates are used to control traffic flow during non-emergency periods, these must not be locked. Emergency access ways are to be no longer than 600 metres and must be adequately signposted where they adjoin public roads.</p> <p>Where an emergency access way is constructed on private land, a right of way or easement in gross is to be established.</p> <div style="text-align: center;">  </div>

Technical requirement	1	2	3	4	5
	Public road	Cul-de-sac	Private driveway longer than 50 m	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 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	8.5	8.5	8.5	8.5	8.5

* Refer to E3.2 Public roads: Trafficable surface

Appendix D Water technical standards of the Guidelines

Reticulated areas	
Acceptable solution A4.1	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.
Explanatory note E4.1	Water supply authorities in Western Australia include the Water Corporation, Aqwest and the Busselton Water Board. The Water Corporation's 'No. 63 Water Reticulation Standard' is deemed to be the baseline criterion for developments and should be applied unless local water supply authorities' conditions apply.

Appendix E City of Wanneroo annual firebreak notice

IMPORTANT FIRE MITIGATION NOTICE

**FIRE MITIGATION MEASURES MUST BE IN PLACE BY 1 NOVEMBER
AND MAINTAINED UNTIL 30 APRIL EACH YEAR.**

This is a requirement under the Bush Fires Act 1954 Section 33.

Failure to comply with this Notice may incur penalties of up to \$5000 and the works required by this Notice will be carried out at the expense of the owner/occupier.

FIRE MANAGEMENT REQUIREMENTS FOR LAND LESS THAN 4000sqm

- Maintain grasses and inflammable materials with the exception of living trees on the entire property to a height of no more than 50 millimetres. The entire property is required to be maintained below 50 millimetres from 1 November each year until 30 April the following year.
- OR**
- A 3 metre wide trafficable firebreak as close as possible to all external boundaries of the property must be installed by 1 November each year and maintained until 30 April the following year.
 - If it is not possible to install the firebreak adjacent to the external boundary of the property due to naturally occurring obstacles, it is acceptable to install the firebreak around the obstacle. If this requires the firebreak to be greater than 5 metres away from the external boundary, a firebreak variation is required.
 - Ensure a minimum vertical clearance of 4 metres is maintained along the firebreaks to enable vehicles to drive along the firebreaks without access being obstructed.
 - Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements in this Notice and with any additional requirements outlined within that plan.

FIRE MANAGEMENT REQUIREMENTS FOR LAND GREATER THAN 4000sqm

- A 3 metre wide trafficable firebreak as close as possible to all external boundaries of the property must be installed by 1 November each year and maintained until 30 April the following year.
 - If it is not possible to install the firebreak adjacent to the external boundary of the property due to naturally occurring obstacles, it is acceptable to install the firebreak around the obstacle. If this requires the firebreak to be greater than 5 metres away from the external boundary, a firebreak variation is required.
 - Ensure a minimum vertical clearance of 4 metres is maintained along the firebreaks to enable vehicles to drive along the firebreaks without access being obstructed.
- Install and maintain a 20 metre bare earth area around all hay stacks and/or fuel dumps.
- Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements in this Notice and with any additional requirements outlined within that plan.

ALL VACANT LAND **GREATER** THAN 4000sqm

- A 3 metre wide trafficable firebreak as close as possible to all external boundaries of the property must be installed by 1 November each year and maintained until 30 April the following year.
- Ensure a minimum vertical clearance of 4 metres is maintained along the firebreaks to ensure vehicles can drive along the firebreaks without being impeded by tree branches.
- If the land is an area greater than 4000sqm but less than 50,000sqm (5 hectares) all grass on the land must be maintained to a height of less than 50 millimetres.
- If the land is an area of 50,000sqm (5 hectares) or greater, the grass must be maintained on the land to a height no greater than 50 millimetres for a distance of 10 metres from any firebreak.

Frequently Asked Questions

I live in a residential area, does this notice apply to me?

Yes. All City of Wanneroo property owners must comply with the Bush Fires Act 1954.

Please refer overleaf for fire management requirements to be in place by 1 November to ensure your property is compliant.

Most properties under 1000sqm will automatically comply if gardens are maintained.

Do I need a Bushfire Survival Plan?

If you live in, on or near bushland, you are at risk from a bushfire and developing a bushfire survival plan is critical.

Visit the Department of Fire and Emergency Services website for information on how to develop a plan for your property dfes.wa.gov.au

I am concerned my neighbour's property is not compliant, what can I do?

All properties are required to be compliant by 1 November. If you think your neighbour's property does not comply with the requirements as outlined in this Notice, please let the City know by calling 9405 5000.

I own a vacant lot, do I need a firebreak?

Firebreak requirements differ depending on your lot size and vegetation levels. If vegetation is unable to be maintained to a height of 50 millimetres or less (living trees exempt), a firebreak must be installed by 1 November. Please refer overleaf for more information.

I am unable to meet the requirements outlined, what should I do?

If it is considered impracticable for any reason to implement any of the requirements of this Notice, an application for a firebreak variation must be made to the City of Wanneroo by no later than 18 October of each year. If permission is not granted, the requirements of this Notice must be complied with.

Visit the City's website wanneroo.wa.gov.au/fireinformation to apply for a variation.

Where can I learn more about this Notice and bushfire management?

Visit the City's website wanneroo.wa.gov.au/fireinformation to learn more.

Please note, in addition to the requirements of this Notice, if a City of Wanneroo Fire Control Officer considers further works are necessary to reduce the risk of bushfire, Landowners will be notified via letter to the address shown on the City of Wanneroo rates record for the relevant land.

For further information call the City of Wanneroo Community Safety and Emergency Management Team on 9405 5000 or visit wanneroo.wa.gov.au/fireinformation



TO REPORT ALL FIRES
CALL 000

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Document Status

Report version	Rev No.	Purpose	Author	Reviewed and Approved for Issue	
				Name	Date
Draft	Rev A	For review by client	Brodie Mastrangelo (BPAD45985, Level 1)	Zac Cockerill (BPAD37803, Level 2)	28/09/2018
Final report	Rev 0	Issued for use: to accompany subdivision application	Zac Cockerill (BPAD37803, Level 2)	Zac Cockerill (BPAD37803, Level 2)	3/10/2018
Draft Report	Rev B	Updated in accordance with revised subdivision plan	Brodie Mastrangelo (BPAD 45985, Level 1)	Zac Cockerill (BPAD 37803, Level 2)	30 November 2020
Final Report	Rev 1	Updated to address client comments and finalised for submission.	Brodie Mastrangelo (BPAD 45985, Level 1)	Zac Cockerill (BPAD 37803, Level 2)	1 December 2020

