

**Bushfire Management Plan and Site Details** 

Site Address / Plan Reference: Amberton Estate Coastal Precinct



### **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.

Suburb: Eglinton	Stat	e: WA	P/code:	6034
Local government area: City of Wanneroo				
Description of the planning proposal: Subdivision application				
BMP Plan / Reference Number: 61185/138,575	Version: R01 Rev 0	Date of Issue:	22/07/2	2021
Client / Business Name: Stockland				
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Reason for referral to DFES		Yes		No
Has the BAL been calculated by a method other than method method 1 has been used to calculate the BAL)?	as outlined in AS3959 (tick no if AS3	3959	1	Ø
Have any of the bushfire protection criteria elements been ad- principle (tick no if only acceptable solutions have been used t		nance [	]	図
Is the proposal any of the following special development type	es (see SPP 3.7 for definitions)?			
Unavoidable development (in BAL-40 or BAL-FZ)			1	$\boxtimes$
Strategic planning proposal (including rezoning applications)			1	Ø
Minor development (in BAL-40 or BAL-FZ)			1	Ø
High risk land-use			1	Ø
Vulnerable land-use			Į.	M
If the development is a special development type as listed ab above listed classifications (E.g. considered vulnerable land-u N/A.				
Note: The decision maker (e.g. local government or the WAP	C) should only refer the proposal to	DFES for comm	ent if one	e (or
more) of the above answers are ticked "Yes".				10001
BPAD Accredited Practitioner Details and Declaration			No.	-
	tation Level Accreditation No. BPAD 37803 Contact No. (08) 9792 4797	Accredit 31/08/2	ation Expi 2021	ry
I declare that the information provided within this bushfire of	nanagement plan is to the best of m	y knowledge tr	ue and co	rrect
Signature of Practitioner	Date 2	22/07/2021		



Stockland

Bushfire Management Plan (Subdivision Application)

Amberton Estate Coastal Precinct, Eglinton

22 July 2021

61185/138,575 (Rev 0)

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



### **Table of Contents**

1.	Prop	osal deta	nils	1
	1.1	Backgro	ound	1
	1.2	Site des	scription	1
	1.3	Purpos	e	1
	1.4	Other p	plans/reports	1
2.	Envi	ronmenta	al considerations	5
	2.1	Native	vegetation – modification and clearing	5
	2.2	Revege	etation / Landscape Plans	7
3.	Bush	nfire asses	ssment results	8
	3.1	Assessr	ment inputs	8
		3.1.1	Vegetation classification	8
		3.1.2	Effective slope	8
		3.1.3	Pre-development inputs	9
	3.2	Assessr	ment outputs	11
	3.3	Bushfir	e Attack Level (BAL) contour assessment	11
4.	Iden	tification	of bushfire hazard issues	13
	4.1	Bushfir	e context	13
	4.2	Bushfir	e hazard issues	14
5.	Asse	ssment a	gainst the bushfire protection criteria	15
	5.1	Compli	ance table	15
	5.2	Additio	nal management strategies	17
		5.2.1	On-site staging buffers	17
		5.2.2	Staging of access	17
		5.2.3	Fuel management within cleared vacant lots	17
		5.2.4	Road verge fuel management	17
		5.2.5	Notification on title	17
		5.2.6	Building construction standards	17
		5.2.7	BMP compliance reporting	17
		5.2.8	Landscaping plan	18
		5.2.9	Compliance with annual firebreak notice	18
6.	Resp	onsibiliti	es for implementation and management of the bushfire measu	ıres19
7.	Refe	rences		20
8.	Limi	tations		21



### List of Tables

Table 1: Sumi	mary of environmental values	6		
	mary of post-development vegetation classifications/exclusions and effecti			
Table 3: Sumi	mary of vegetation classifications, exclusions and effective slope	11		
Table 4: Com	pliance with the bushfire protection criteria of the Guidelines	15		
Table 5: Resp	onsibilities for implementation and management of the bushfire measures	.19		
List of Figu				
· ·	division Plan			
•	overview			
Figure 3: Vegetation classification and effective slope10				
Figure 4: BAL	contour map	12		
List of Plat	res			
Plate 1: Map	of Bush Fire Prone Areas (DFES 2019)	2		
Appendice	es s			
Appendix A	Landscape Plan			
Appendix B	Vegetation plot photos and description			
Appendix C	APZ standards (Schedule 1 of the Guidelines)			
Appendix D	Vehicular access technical standards of the Guidelines			
Appendix E	Water technical standards of the Guidelines			
Appendix F	City of Wanneroo Firebreak Notice (2020/21)			



### 1. Proposal details

### 1.1 Background

Stockland is seeking to update a previous subdivision approval for changes to the Amberton Coastal Precinct and proposed subdivision within Precinct 4 West to guide future residential development within Amberton Estate, Eglinton (the project area), located in the City of Wanneroo.

A plan of subdivision is provided in Figure 1, which depicts the following within the project area:

- 632 proposed residential lots
- five Public Open Space (POS) and drainage lots
- internal public road network
- foreshore reserve
- one balance landholding.

### 1.2 Site description

The project area is situated within Lots 9032, 1802 and 1803 and is surrounded by (see Figure 2):

- remnant vegetation to be retained and partially rehabilitated to the north and northeast within conservation POS
- land predominantly cleared for ongoing development stages of Amberton Estate to the south and southeast
- vegetation yet to be cleared as part of future development stages of Amberton Estate to the east
- remnant vegetation to be retained, landscaped and partially rehabilitated within proposed foreshore POS to the west.

The project area is designated as bushfire prone on the *Map of Bush Fire Prone Areas* (DFES 2019; see Plate 1).

### 1.3 Purpose

This Bushfire Management Plan (BMP) has been prepared to address requirements under *Policy Measure 6.3 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

Other reports that have been prepared for the project area include:

- Bushfire Management Plan (Subdivision Application): Stages 29-38, Amberton (Strategen 2019)
- Amberton Estate Fire Management Plan (Strategen 2016)
- Stages 8 & 9 Amberton Estate Bushfire Management Plan (Strategen 2017)
- Portion Stages 8, 9, 39 & 40 Amberton Estate Bushfire Management Plan (Strategen 2018a)
- Stages P3N and P4E Amberton Estate Bushfire Management Plan (Strategen 2018b).

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.

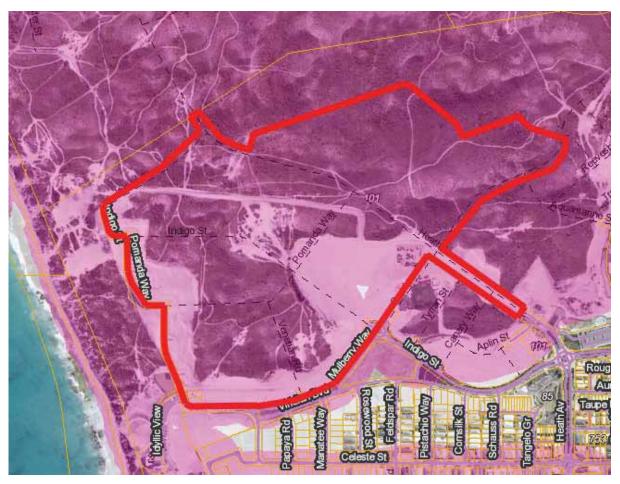
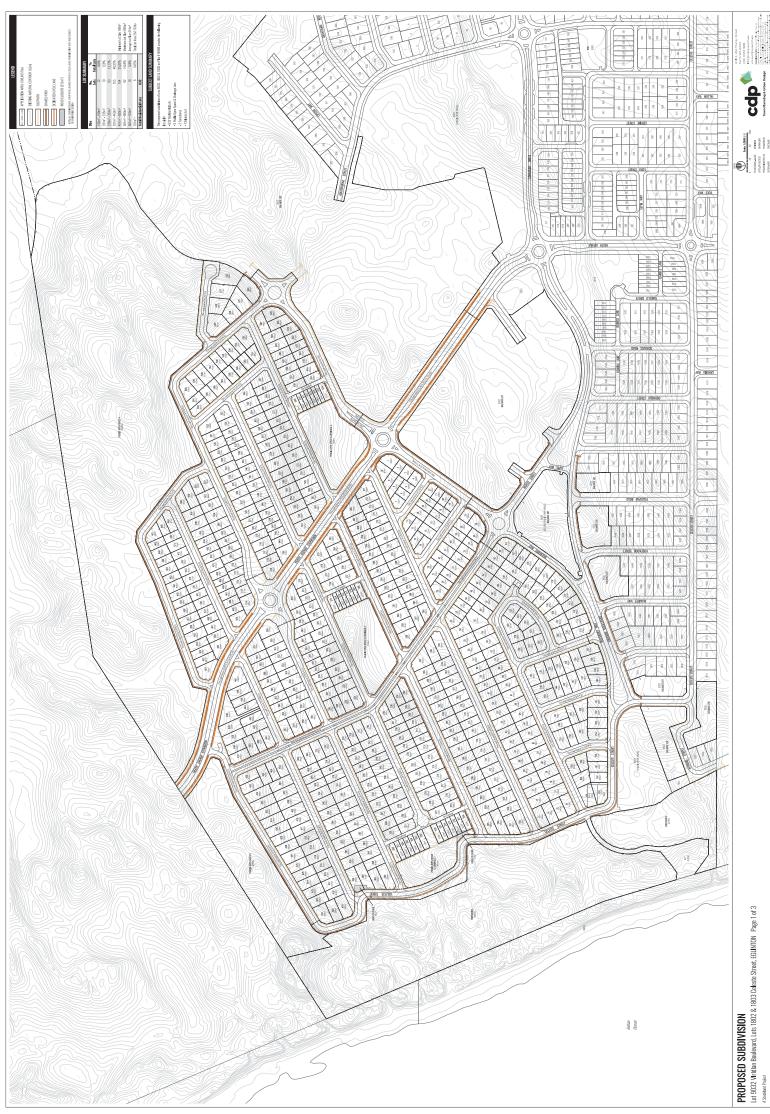


Plate 1: Map of Bush Fire Prone Areas (DFES 2019)









### 2. Environmental considerations

### 2.1 Native vegetation – modification and clearing

A large portion of the project area contains remnant vegetation, which will be cleared as part of the proposal. The proposed development will also necessitate clearing of native vegetation adjacent to the project area to the southeast as part of a low threat staging buffer. There will be a combination of POS areas to be excluded under Clauses 2.2.3.2 (e) and (f) and POS areas where vegetation is to be retained and reintroduced (i.e. classifiable), which will be designed in accordance with the landscape plan (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 Black Cockatoo habitat within POS areas throughout the Eglinton LSP. This process was outlined in Amendment No.1 to Eglinton LSP No.82.

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 south-western section of the Eglinton LSP No.82 area (Amberton Estate) was referred under the EPBC Act by Stockland WA Development Pty under the following two separate proposals, both of which were determined as 'Not a Controlled Action':

- Part Lot 9005 Marmion Avenue (EPBC 2013/7068)
- Lot 5000 and Part lot 5001 (EPBC 2014/7137).

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.

A search of publicly available environmental data relating to the project area has been undertaken and is summarised in Table 1.



Table 1: Summary of environmental values

Environmental value	Mapped as occurring within or adjacent to the project area  Within Adjacent		e Description	
Environmentally Sensitive Area	<b>√</b>	<b>√</b>	The project area and adjacent land is mapped as Environmentally Sensitive Areas. The ESA is likely to be associated with the endangered Banksia Woodlands of the Swan Coastal Plain TEC.	
Swan Bioplan Regionally Significant Natural Area	×	*	No Swan Bioplan Regionally Significant Natural Areas were identified.	
Ecological linkages	<b>✓</b>	<b>✓</b>	Ecological linkages occur in the west and southwest corner of the project area.	
Wetlands	×	×	No Geomorphic Wetlands of the Swan Coastal Plain or RAMSAR Wetlands were identified.	
Waterways	×	*	No waterways were identified.	
Threatened Ecological Communities (TECs) listed under the EPBC Act	<b>✓</b>	<b>✓</b>	Threatened Ecological Communities are mapped throughout the project area and adjacent vegetation and are likely to be associated with the endangered Banksia Woodlands of the Swan Coastal Plain which may occur in this area.	
Threatened and priority flora	<b>✓</b>	✓	Priority 4 flora is mapped as occurring within the eastern portion of project area and adjacent land to the east.	
Fauna habitat listed under the EPBC Act	<b>√</b>	<b>√</b>	Carnaby's Black Cockatoo habitat is mapped throughout the project area and adjacent land, including confirmed breeding areas and confirmed roosting areas (buffered)  The project area was also mapped as potential Quenda habitat.	
Bush Forever Site	×	✓	A Bush Forever Site (BF397) exists along the foreshore reserve, encompassing a mapped Perth Regional Ecological Linkage.	
DBCA managed lands and waters (includes legislated lands and waters and lands of interest)	*	×	No lands of interest or legislated lands or waters were identified.	
Conservation covenants	×	*	N/A	



### 2.2 Revegetation / Landscape Plans

Revegetation within the project area will be limited to the foreshore lots and proposed foreshore POS/drainage areas to the west. The Landscape Plan (refer to Appendix A) demonstrates that revegetation within foreshore POS and the foreshore lots will result in a vegetation extent consistent with the surrounding vegetation (i.e. Class C shrubland). The drainage basin within POS Lot 8023 to the south of the project area has been planted out predominantly with sedges equating with a Class G grassland classification. Post development classification of proposed POS and revegetation is considered and identified in Section 3.1.

Landscaping within the project area (i.e. not within the foreshore reserve) will be limited to the proposed three internal POS areas, as well as any street scaping. This landscaping will consist of low threat vegetation excludable under various sections of Clause 2.2.3.2 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.

Other POS and drainage adjacent to the project area established during previous stages of Amberton Estate is maintained in a low threat state, comprising heavy mulch, manicured lawns and sparse planting of shrubs.



### 3. Bushfire assessment results

### 3.1 Assessment inputs

### 3.1.1 Vegetation classification

Strategen-JBS&G assessed classified vegetation and exclusions within 150 m of the project area through on-ground verification on 22 June 2021.

Vegetation classifications have been assigned 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 B. Vegetation classification and effective slope results are outlined in Table 2/Figure 3.

Strategen-JBS&G identified the predominant vegetation within and adjacent to the site to be Class C shrubland consisting of very low coastal heath vegetation less than 2 m in height fragmented by informal tracks and sand dune blow-outs. This was identified within the vegetated areas of the project area, as well as to the south (Peet Shorehaven land), west (foreshore reserve), north (adjacent undeveloped Eglinton site) and east (future stages of Amberton Estate).

Some isolated vegetation pockets west of the project area that directly front the coast are significantly degraded and occur in very small clumps of individual low shrubs amongst predominant areas of bare sand dunes (i.e. there is a distinct lack of continuous fuel profile in this area). This vegetation is directly exposed to the year-round effects of coastal processes such as wind, waves and salt drift that significantly limit vegetation growth and fuel accumulation. On this basis, some areas along the fore-dunes situated west and northwest of the project area have been largely excluded from classification under Clause 2.2.3.2 (e) and (f) of AS 3959 as being in a non-vegetated or low threat state incapable of supporting bushfire spread.

Post-development conditions will return the majority of foreshore lots and foreshore POS areas discussed in Section 2.2 to a Class C shrubland classification following revegetation/rehabilitation/drainage works in accordance with an approved landscape plan. The remaining three proposed internal POS areas will be modified to a low threat state excluded under various sections of Clause 2.2.3.2 in accordance with an approved landscape plan. The remainder of the project area and adjacent staging buffers will be modified to a low threat state, excluded under Clauses 2.2.3.2 (e) and (f) to allow for future lot and road construction.

### 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 22 June 2021 in accordance with AS 3959. Results were cross-referenced with DAFWA 2 m contour data and are depicted Figure 3.

Strategen-JBS&G assessed effective slope to be highly variable due to the nature of the dune systems in which the proposed development is situated. Effective slope was assessed to vary between up-slope/flat land (i.e. 0 degrees) to down-slope >10–15 degrees.

On completion of the development, the retained areas of classified vegetation within the project area would be predominantly flat in relation to areas supporting habitable development.

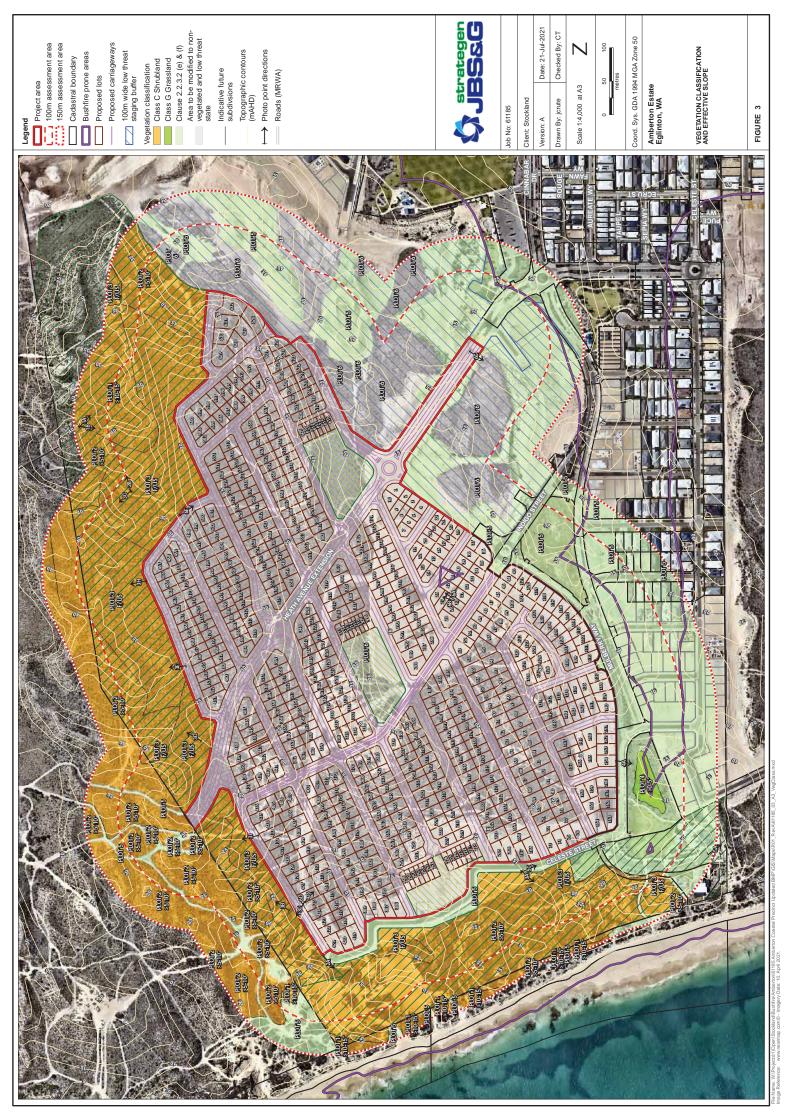


### 3.1.3 Pre-development inputs

Figure 3 illustrates the anticipated post-development vegetation classifications and exclusions following completion of subdivision works including implementation of proposed foreshore revegetation/rehabilitation, establishment of low threat staging buffers and low threat POS landscaping. 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 C Shrubland	Downslope >10– 15°	Costal sand dune vegetation consisting of shrubland no more than 2 m high. Predominantly outside the project area to the north along a steep ridge.
2	Class C Shrubland	Downslope >5–10°	Costal sand dune vegetation consisting of shrubland no more than 2 m high. Consisting within and around the project area.
3	Class C Shrubland	Flat/upslope (0°)	Costal sand dune vegetation consisting of shrubland no more than 2 m high. Consisting within and around the project area.
4	Class G Grassland	Downslope >0–5°	Lot 8023 which was created as a POS and drainage cell. Due to the sedge replanting in the drainage basin, it has been classified as Class G grassland.
5	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	A combination of non-vegetated areas and low threat managed vegetation within and around the project area.
6	Excluded – Low threat (Clause 2.2.3.2 [f])	N/A	Vegetation to be modified to a non- vegetated/low threat state as part of the proposal (i.e. proposed residential lots, roads, low threat POS and staging buffers).





### 3.2 Assessment outputs

### 3.3 Bushfire Attack Level (BAL) contour assessment

Strategen 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 development and subsequently informs the standard of building construction and/or setbacks required for proposed habitable development to potentially withstand such impacts and achieve compliance with relevant bushfire protection criteria of the Guidelines.

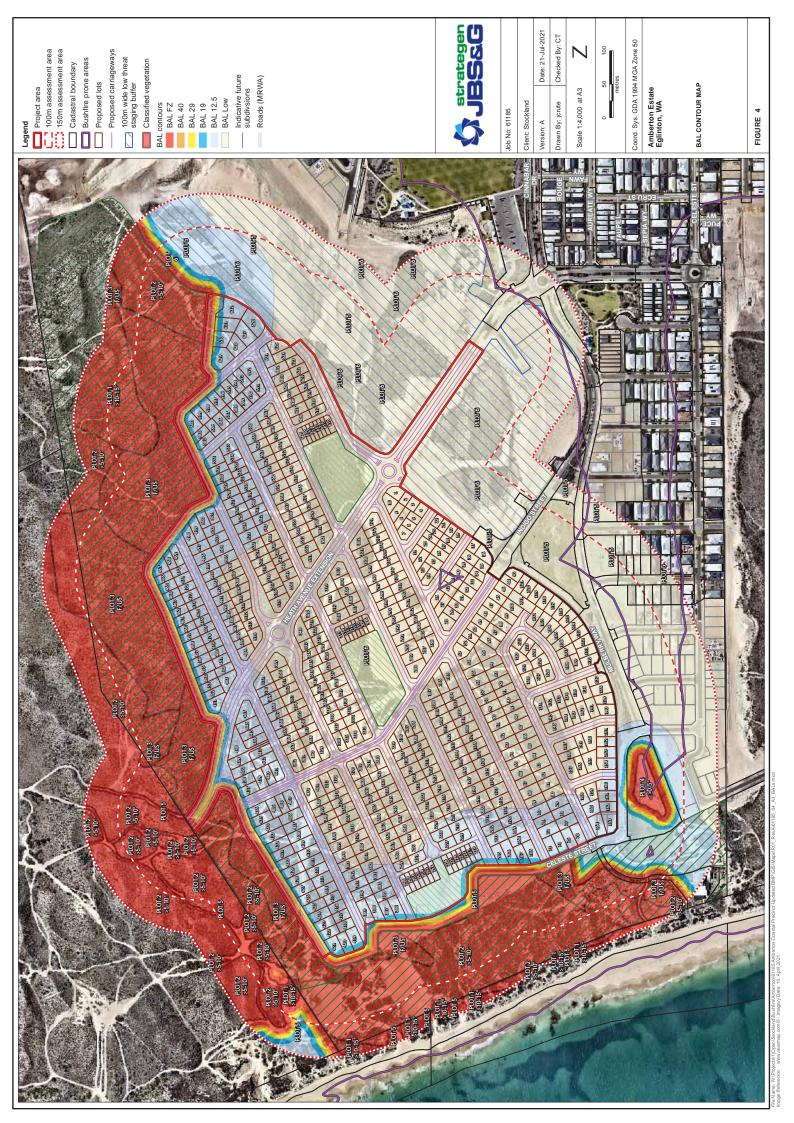
The BAL contours are based on:

- the vegetation classifications and effective slope observed at the time of inspection, as well as consideration of the proposed clearing extent, resultant vegetation exclusions and separation distances achieved in line with the plan of subdivision
- implementation and maintenance of a low threat staging buffer to Asset Protection Zone (APZ) standards extending into approved but unconstructed Amberton development stages to the east and southeast, as depicted in Figure 4 and discussed further in Section 5
- classified vegetation throughout conservation POS adjacent to the project area to the north and northeast (see Figure 4)
- extent of revegetation, retention of existing vegetation and low threat landscaping based on the Landscaping Plan and landscaping detail provided in Section 2.2 of this BMP.

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-29. Lower BAL ratings may be achieved for individual lots following implementation of landscaping and building setbacks.

Table 3: Summary of vegetation classifications, exclusions and effective slope

Vegetation plot	Vegetation classification	Effective slope	Separation distance	Highest BAL (to residential lot boundary)
1	Class C Shrubland	Downslope >10–15°	43m	BAL-12.5
2	Class C Shrubland	Downslope >5-10°	15m	BAL-29
3	Class C Shrubland	Flat/upslope (0°)	15m	BAL-19
4	Class G Grassland	Downslope >0-5°	15m	BAL-19
5	Excluded – Non-vegetated and	N/A	N/A	N/A
	Low threat (Clause 2.2.3.2 [e]			
and [f])				
6	Excluded – Low threat (Clause	N/A	N/A	N/A
	2.2.3.2 [f])			





### 4. Identification of bushfire hazard issues

### 4.1 Bushfire context

The project area is surrounded by a combination of existing residential development, remnant shrubland vegetation and cleared land. A summary of the potential bushfire scenarios from each direction is as follows:

- The capacity of vegetation to the north to support long fire runs of over 2 km significantly increases the potential bushfire risk to proposed development. However, this risk is temporary given the broad extent of urban development proposed to the north under the approved Eglinton LSP No. 82. A large parcel of vegetation will be retained within conservation POS to the north/northeast, which will retain some potential for an isolated bushfire scenario. This will be managed through a combination of low threat staging buffers, provision of minimum 15 m wide perimeter roads, increased building construction standards (where required) and provision of street hydrants to assist a direct suppression response.
- Land to the south/southeast comprises existing and ongoing residential development at Amberton Estate in the form of roads, cleared vacant lots, houses and low threat managed landscaping and current/proposed low threat staging buffers that do not pose a bushfire threat. Vegetation beyond 150 m to the south consists of low shrubland, similar to vegetation contained within the foreshore reserve to the west. This vegetation is very low and sparse, particularly throughout the steep sand dune interface with the beach and areas disturbed by off-road vehicle use. Ongoing development of future stages of Shorehaven will ultimately remove the majority of vegetation to the south, except for that located in the foreshore reserve.
- A Bush Forever site (BF397) is located to the west within the Foreshore Lots comprising
  intact remnant vegetation, and along with interfacing POS, will form a permanent bushfire
  hazard. A 15 m wide perimeter road reserve has been constructed to form a permanent
  buffer and defendable space to this vegetation, while increased building construction
  standards will be employed where required.

All other land within the project area and adjacent 150 m is either already excluded under Clauses 2.2.3.2 (e) or (f) or will be modified to a low threat state as part of future development to achieve exclusion under Clauses 2.2.3.2 (e) or (f). A summary of these exclusions is provided as follows:

- non-vegetated land (i.e. existing buildings, roads, paths, etc) is excluded under Clause 2.2.3.2 (e)
- low threat managed land (i.e. road verges, managed gardens/landscaping, etc) is excluded under Clause 2.2.3.2 (f).

It is considered that the bushfire risk to the proposed development posed by the hazards identified above can be managed through standard application of acceptable solutions under the Guidelines, including provision of adequate emergency water supply, vehicular access, low threat staging buffers, increased building construction standards (as addressed in Section 5 and Table 4 as well as through a direct bushfire suppression response if required. On this basis, Strategen-JBS&G considers the bushfire hazards adjacent to the project area and the associated bushfire risks are readily manageable.



### 4.2 Bushfire hazard issues

The BAL contours identified in Figure 4 demonstrate that all proposed lots are located within areas of BAL-29 or lower.

On completion of development within the project area, there will be a reduced bushfire risk to future assets as a result of vegetation clearing/modification that will be undertaken to facilitate development. Vegetation clearing throughout development staging will play an important role in managing the bushfire risk posed by on-site temporary vegetation during roll out of individual development stages. If development is staged, vehicular access arrangements will also need to ensure that that all occupiers and visitors are provided with at least two vehicular access routes at all times. Potential staging matters are discussed as key management measures in Section 5.

If subdivisional works are to be staged internal to the project area, the following staging provisions are to be implemented as required and in advance of lot creation within each development stage to negate any unnecessary bushfire risk from future development stages:

- establishment of internal 100 m wide low threat staging buffers around proposed residential lots, as discussed in Section 5
- 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 (this may also require consideration of
  temporarily quarantined lots to accommodate 17.5 m diameter cul-de-sac heads that cannot
  otherwise be achieved within existing road reserve widths)
- 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 cannot be dealt with via a compliant temporary cul-de-sac.

These provisions will not apply for internal stages that are subject to BAL-LOW and/or are not designated bushfire prone.

Quinns Rocks Bush Fire Brigade and Fire and Rescue Services stationed at Yanchep and Butler are expected to provide a best-case emergency suppression response time of 15–20 minutes should a bushfire threaten habitable buildings within the project area.

On this basis, Strategen considers the bushfire hazards within and adjacent to project area and the associated bushfire risks are readily manageable through standard management responses outlined in the Guidelines and AS 3959. These responses have been factored in to proposed development as early as possible at all stages of the planning process to ensure a suitable, compliant and effective bushfire management outcome is achieved for protection of future life, property and environmental assets.



## 5. Assessment against the 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	Method of compliance	and the control of th
protection criteria	protection criteria   Acceptable solutions	rioposed businine management surategies
Element 1: Location	A1.1 Development location	The BAL contour assessment (see Figure 4 and Table 3) identifies all lots as being situated in areas subject to BAL-29 or lower.
Element 2: Siting and design	A2.1 Asset Protection Zone	Given all proposed residential lots can achieve BAL-29 or lower through the provision of proposed low threat separation, no additional APZ provisions are required. Low threat areas such as internal POS and staging buffers are to be established and maintained in accordance with Schedule 1 of the Guidelines (Appendix C) and the City's Firebreak and Fuel Hazard Reduction Notice (see Appendix F).
Element 3: Vehicular access	A3.1 Two access routes	Multiple vehicular access points are proposed to the existing public road network to the west and south, which will provide all occupants with the option of travelling to more than two different destinations (i.e. east to Marmion Avenue via Viridian Boulevard and Cinnabar Drive, and south to Peet Shorehaven via Fallow Way). The main distributor road in Marmion Avenue provides occupants with the option of travelling north towards Yanchep or south towards Alkimos.
	A3.2 Public road	All public roads are to be constructed to the relevant technical requirements of the Guidelines (see Appendix D).
	A3.3 Cul-de-sac (including a dead-end-road)	A3.3 Cul-de-sac (including One permanent cul-de-sac is proposed in the northeast of the project area due to the position of the conservation POS to the north and future a dead-end-road)  POS cell to the east, meaning a through road connection is unavoidable. The proposed cul-de-sac is compliant with acceptable solution A3.3 in helpography and sacrated by the proposed permanent of the sac as
		well as any proposed temporary cul-de-sacs required during development staging, are to comply with Guideline requirements (see Appendix D).
	A3.4 Battle-axe	N/A No battle-axes are proposed and the project area is not serviced by an existing battle-axe.
	A3.5 Private driveway Ionger than 50 m	N/A All private driveways are expected to be within 50 m of a public road.
	A3.6 Emergency access way	Any proposed temporary emergency access ways required during staging of development will be required to comply with Guideline requirements (see Appendix D).
	A3.7 Fire service access routes (perimeter roads)	N/A No FSARs are expected to be required given the proposed perimeter public access roads proposed.
	A3.8 Firebreak width	N/A – given that all residential lots will be cleared and developed, individual lot boundary firebreaks will not be required.



Bushfire	Method of compliance	The contraction of the contracti
protection criteria	orotection criteria   Acceptable solutions	Proposed Dustrille management strategies
Element 4: Water	Element 4: Water   A4.1 Reticulated areas	The proposed development will be connected to a reticulated water supply via extension from surrounding development in accordance with
		Water Corporations Design Standard 63 requirements and relevant technical requirements of the Guidelines (Appendix E).
	A4.2 Non-reticulated	N/A – the proposed subdivision is located within an existing reticulated area.
	areas	
	A4.3 Individual lots	N/A – the proposed subdivision is located within an existing reticulated area.
	within non-reticulated	
	areas (Only for use if	
	creating 1 additional lot	
	and cannot be applied	
	cumulatively)	



### 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 staging buffer (not including 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) and Schedule 1 of the Guidelines (Appendix C) to achieve a low threat minimal fuel condition all year round until such time that the buffer area is developed as part of future development stages. 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 at all stages of development. This can be achieved via construction of public access roads in advance of stages or through provision of temporary emergency access ways/cul-desacs until two formal access roads are available.

### 5.2.3 Fuel management within cleared vacant lots

Cleared 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 C) and will involve slashing/mowing of grassland and weeds to height of less than 100 mm.

### 5.2.4 Road verge fuel management

Surrounding road verges that have been excluded as low threat are to continue 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 Shire.

### 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 1a, Class 1b, Class 2, Class 3 residential buildings and associated Class 10a structures in an area subject to BAL—12.5 or higher are required to comply with the bushfire specific construction requirements of AS 3959.

### 5.2.7 BMP compliance reporting

A BMP compliance report will be prepared as evidence demonstrating that the BMP has been implemented as intended as a mechanism to clear subdivision conditions relating to the BMP. The BMP compliance report will be prepared following completion of subdivisional works and prior to issue of lot title to validate and confirm the accuracy of the BAL contour map depicted in the BMP, as



well as identify that compliant vehicular access and water supply provisions have been implemented for the subdivision as required under the BMP. The BMP compliance report will also demonstrate any change in the assessed BAL or other management measures documented in this BMP, which may occur as a result of changes in building location, vegetation class or bushfire management approach.

### 5.2.8 Landscaping plan

The BAL contour assessment is reliant on all landscaping being implemented and maintained in accordance with an approved Landscaping Plan, as guided by the proposed landscape design outlined in Appendix A and details under Section 2.2 of this BMP. Responsibility for establishment and maintenance of low threat landscaping is discussed in Section 6.

### 5.2.9 Compliance with annual firebreak notice

The developer/land manager and prospective land purchasers are to comply with the current City of Wanneroo annual firebreak notice as amended (refer to Appendix F).



### 6. Responsibilities for implementation and management of the bushfire measures

Implementation of the BMP applies to the developer, prospective landowners and the Shire 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	Provide for construction of vehicular access including public roads, permanent/temporary cul-de-sacs and				
	temporary EAWs (where required) to the standards stated in the BMP.				
2	Provide for construction of reticulated water supply and network of hydrants to the standards stated in the BMP.				
3	Prepare POS landscaping plans to drive revegetation/rehabilitation and low threat landscaping outcomes				
	throughout on-site POS consistent with the provisions of this BMP.				
4	Establish low threat areas (i.e. development footprint, road verges, low threat staging buffers and low threat POS				
	as per landscape plans) to the standards stated in this BMP.				
5	Undertake BMP compliance reporting on a staged basis as evidence to demonstrate proper implementation of				
	the BMP.				
	Developer – until sale/transfer of lots				
No.	Implementation action				
1	Maintain all established low threat areas (i.e. development footprint, road verges, low threat staging buffers, low				
	threat POS) to the standards stated in this BMP.				
2	Comply with the Shire's annual firebreak notice, as amended.				
	Landowner/occupier – prior to building construction and ongoing				
No.	Implementation action				
1	Maintain low threat areas (i.e. cleared vacant lots) to the standards stated in this BMP.				
2	Comply with the Shire's annual firebreak notice, as amended.				
	Local government – ongoing management				
No.	Implementation action				
1	Maintain low threat road verges to the standards stated in this BMP.				
2	Maintain low threat POS areas to the standards stated in this BMP.				



### 7. References

- Department of Fire and Emergency Services (DFES) 2019, *Map of Bush Fire Prone Areas*, [Online], Government of Western Australia, available from: <a href="https://maps.slip.wa.gov.au/landgate/bushfireprone/">https://maps.slip.wa.gov.au/landgate/bushfireprone/</a>, [01/07/2021].
- 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.
- 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.

Strategen-JBS&G accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by Strategen-JBS&G, and should not be relied upon by other parties, who should make their own enquiries.



### Appendix A Landscape Plan



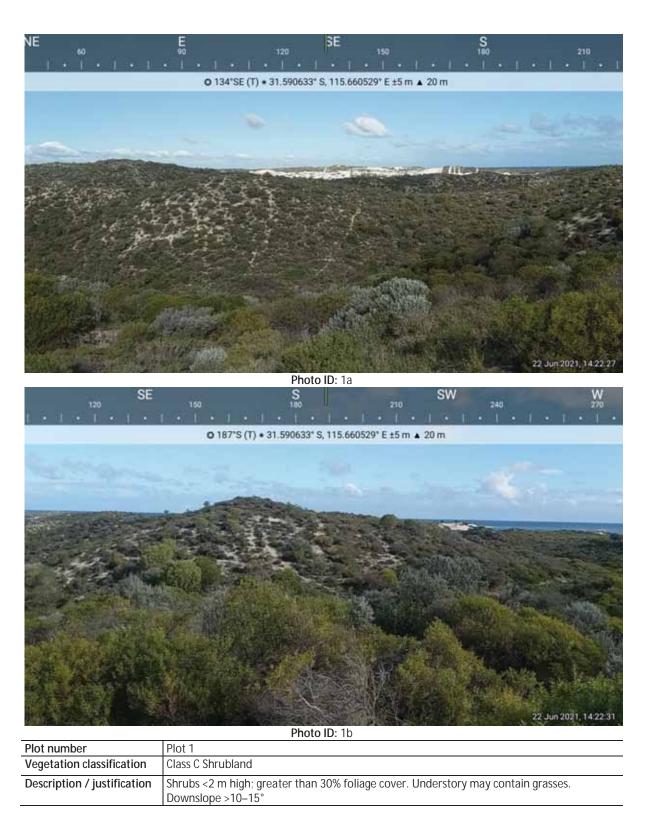






# Appendix B Vegetation plot photos and description











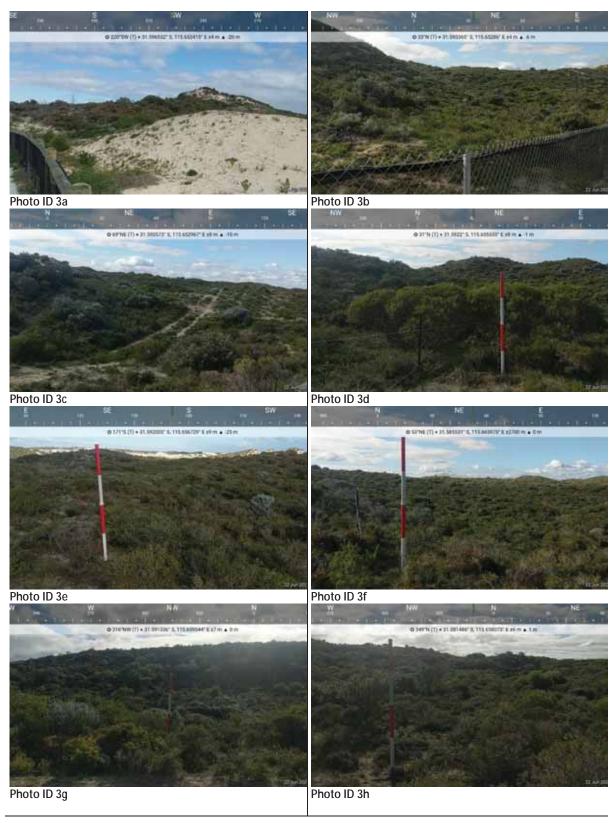


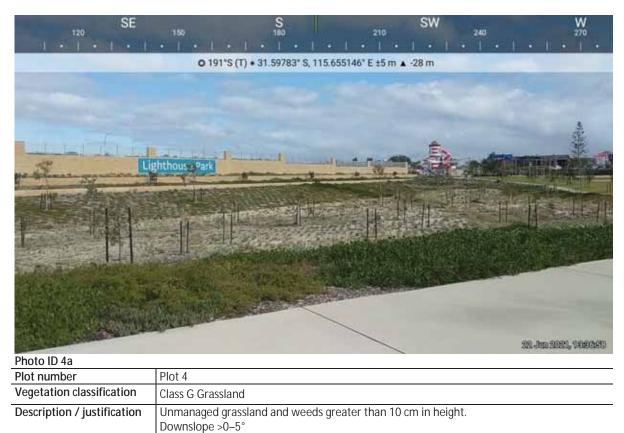




Photo ID 3i

Plot number	Plot 3
Vegetation classification	Class C Shrubland
Description / justification	Shrubs <2 m high; greater than 30% foliage cover. Understory may contain grasses. Flat/upslope (0°)















FIIOTO ID 3C	Filoto ID 3d
Plot number	Plot 5
Vegetation classification	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])
Description / justification	A combination of non-vegetated areas and low threat managed vegetation







0 JETH (T) + 31,390000 %, 115,001020 E.s.l.m + 3.m)



Photo ID 6c



Photo ID 6d

Photo ID 6e

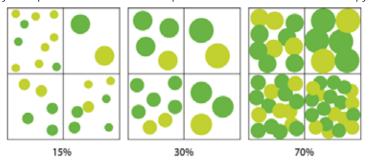
Plot number	Plot 6
Vegetation classification	Excluded – Low threat (Clause 2.2.3.2 [f])
Description / justification	Area to be modified to a low threat.



### Appendix C APZ standards (Schedule 1 of the 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 D Vehicular access technical standards of the Guidelines

A public road is to meet the requirements in Table 1, Column 1.				
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. 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.				



Cul-de-sac (including a dead	
Acceptable solution A3.3	<ul> <li>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:</li> <li>Requirements in Table 1, Column 2</li> <li>Maximum length: 200 metres (if public emergency access is provided between cul-desac 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)</li> <li>Turn-around area requirements, including a minimum 17.5 metre diameter head.</li> </ul>
Explanatory note E3.3	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.



Emergency access way	
Acceptable solution A3.6	<ul> <li>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:</li> <li>Requirements in Table 1, Column 4</li> <li>No further than 600 metres from a public road</li> <li>Provided as right of way or public access easement in gross to ensure accessibility to the public and fire services during an emergency</li> <li>Must be signposted.</li> </ul>
Explanatory note E3.6	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.  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.  Where an emergency access way is constructed on private land, a right of way or easement in gross is to be established.



Tashuisal	1	2	3	4	5
Technical requirement	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 Publ	ic roads: Trafficable s	surface	•		



### Appendix E 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 F City of Wanneroo Firebreak Notice (2020/21)



### 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.
- 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.





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### **Document Status**

Report version	Rev No.	Purpose	Author	Reviewed and Approved for Issue	
				Name	Date
Draft Report	Rev A	For review by client	Ben Musitano	Zac Cockerill (BPAD 37803, Level 2)	16 July 2021
Final Report	Rev 0	Issued for use: to accompany subdivision application	Ben Musitano	Zac Cockerill (BPAD 37803, Level 2)	22 July 2021

