ADVICE BRIEF

Limitations Notice:

1. *This is advice only. It is intended to assist decision making and is not suitable to submit with a building or planning application; and*
2. *The site visit conducted for this advice will not necessarily preclude a more detailed site assessment and recording of data being required for subsequent development of bushfire building/planning documentation and/or alternative solutions when relevant.*

Our Reference:	[redacted]
Client Details:	
Bushfire Consultant:	
Report prepared by:	
Appraisal Method:	

EXISTING BUILDING

Description:	Single existing habitable house.	
Site Location:	Lot 111, 18 Honeytree Place, Falcon	**Lot Size:** 4000 m^2
Is a planning application, that addresses the conditions established by State Planning Policy 3.7, required in addition to a building application?		No

PRELIMINARY CONSIDERATIONS

i. The subject site does not fall within a designated bushfire prone area. The location of the site is not within close proximity to extreme classifiable vegetation types and topography conducive to bushfire, therefore there is unlikely to be an increased emphasis on bushfire planning requirements, to improve and detail the bushfire safety on the site through management measures to lessen risk to occupants.

The existing house is, however, surrounded by an unmanaged garden, classifiable as forest. The vegetation encircles the edge of the house, shed and water tank creating a fire risk for existing assets if vegetation is not managed.

ii. Implementing a suitable separation distance from unmanaged standing vegetation to facilitate Asset Protection Zone (APZ) development to limit ignition sources in close proximity to the existing building and radiant heat impact on the building, as a bushfire treatment strategy and achieve a 29kW/m^2 or less radiant heat flux exposure (for BAL-29 rating).

iii. Management of the native vegetation is to be aligned with the Guidelines for Planning in Bushfire Prone Areas Schedule 1: Standards for Asset Protection Zones. This will provide an area that can be readily managed by the landowner. This will assist with fire-fighting efforts should conditions enable protection of the structures on-site and minimise risk of loss to life and structures during a bushfire event.

SITE OBSERVATIONS

i. The property comprises a combination of scrub and forest classified vegetation, based on the understory and extent of canopy coverage as per *AS 3959 Construction of buildings in Bushfire Prone Areas* Table 2.3

ii. The house and shed will be impacted by direct flame contact (BAL-FZ). Unmanage *Xanthorrhoea Preissii* (Grass Trees) are located under eaves, the veranda, and against building walls and sheds.

iii. Grass trees are predominantly fine fuels and these fine fuels will readily ignite from embers. The density of Grass Trees will support a high intensity fire from one Grass Tree to the next. The fire behaviour will be wind

driven and fast moving, therefore the house will potentially be impacted by direct flame contact before intervention by a fire brigade. In this scenario a garden hose will very likely not be adequate to supress the fire.

iv. Potential entrapment – there is a potential for a deliberate or accidental ignition or ember attack from either a distant bushfire event or close structure fire. The escalation of a Grass Tree fire has potential to entrap the residence and vehicles.

v. A large Jarrah tree, in my opinion, is displaying signs of tree rot and is leaning towards the house. This requires an arborist report.

ADVICE/RECOMMENDATIONS

i. The whole property is to be managed in accordance with Schedule 1 (Appendix 3).

ii. Obtain authority from the City of Mandurah to modify vegetation for Asset Protection Zone (APZ) requirements, as per Appendix 3.
Note: this may require management or removal of some vegetation.

   a. Remove Grass Trees that lie within 3 metres of any assets including the shed, water tank and house.

   b. Remove some Grass Trees that lie within the property to reduce the density of vegetation on the property.

   c. Manage all remaining grass trees to minimise the fuel load by trimming or burning the dead material on the underskirts of the trees.

iii. Under prune all trees to a height of 2 metres to remove low hanging branches.

iv. Clean up leaf litter and combustible plant material.

v. Have arborist examine the Jarrah Tree leaning towards the house

SUMMARY

This advice brief outlines key strategies to minimise the risk to life and bushfire damage on the existing building and assets on the property by effectively managing vegetation and reducing the potential fuel sources.

The recommendations are based on:

- Maintaining vegetation in a low fuel state by regularly pruning and removing dead branches and debris.
- Thinning out overgrown areas to decrease vegetation density which can help prevent rapid fire spread.
- Focusing on creating firebreaks and cleared areas around structures to act as fuel breaks.
- Identifying and removing grass trees or other flammable vegetation that are in close proximity to buildings, as they can serve as ignition sources during a bushfire.
- Ensuring that trees and bushes are under pruned to prevent the formation of a continuous ladder of fuels that could allow a ground fire to reach the canopy.

Bushfire Prone Planning recommend proactive vegetation control, prioritising low fuel states, and creating defensible spaces. Following these guidelines can significantly reduce the risk of damage in the event of a bushfire and enhance the overall safety of residents and the house and structures while minimising unnecessary removal of native vegetation.

ATTACHMENT 1 – INFORMATION LINKS AND RELEVANT CONTACTS

INFORMATION LINKS	
DFES – Map of Bushfire Prone Areas	https://maps.slip.wa.gov.au/landgate/bushfireprone/
Department of Planning, Lands and Heritage – all bushfire planning documentation	https://www.wa.gov.au/government/document-collections/state-planning-policy-37-planning-bushfire-prone-areas
AS 3959:2018 Construction of buildings in bushfire prone areas	https://infostore.saiglobal.com/en-au/standards/as-3959-2018-122340_saig_as_as_2685241/
NASH Standard – Steel Framed Construction in Bushfire Area	https://nash.asn.au/nash/publications/nash-standards
City of Mandurah Fire Break and Fuel Hazard Reduction Notice 2022/2023	https://www.mandurah.wa.gov.au/explore/whats-on/news/2022/08/fire-break-and-fuel-hazard-reduction-notice-2022-2023
Bushfire Practitioner Accreditation (FPA Australia)	http://www.fpaa.com.au/bpad.aspx

ATTACHMENT 2 – PHOTOS

<table>
<tr><td colspan="2"> 
</td><td colspan="2"> 
</td></tr>
<tr><td colspan="2">Vegetation Classification: Class A Forest</td><td colspan="2">Vegetation Classification: Class D Scrub</td></tr>
<tr><td colspan="2">Comments: Grass trees located less than 1 metre away from the shed.</td><td colspan="2">Comments: Grass trees lie within close proximity to the water tank.</td></tr>
<tr><td colspan="2"> 
</td><td colspan="2"> 
</td></tr>
<tr><td colspan="2">Vegetation Classification: Class A Forest</td><td colspan="2">Vegetation Classification: Class A Forest</td></tr>
<tr><td colspan="2">Comments: Grass trees locate right up to the edge of the veranda of the house posing a fire risk to the building.</td><td colspan="2">Comments: Classifiable forest vegetation is located within 5 metres of the house which creates a high fire risk to the building.</td></tr>
<tr><td colspan="2"> 
</td><td colspan="2"> 
</td></tr>
<tr><td colspan="2">Vegetation Classification: Class A Forest</td><td colspan="2">Vegetation Classification: Class A Forest</td></tr>
<tr><td colspan="2">Comments: Large amounts of unmanaged grass trees and Eucalyptus trees with overhanging branches are located on the property. These contain a high fuel load and will impact the fire risk of the building.</td><td colspan="2">Comments: Tree pictured recommended to be examined by an arborist.</td></tr>
</table>

ATTACHMENT 3 – TECHNICAL REQUIREMENTS FOR ONSITE VEGETATION MANAGEMENT

PART A: REQUIREMENTS ESTABLISHED BY THE GUIDELINES FOR PLANNING IN BUSHFIRE PRONE AREAS - WAPC 2017 V1.3 APPENDIX 4, ELEMENT 2, SCHEDULE 1 AND EXPLANATORY NOTE E2.1

DEFINING THE ASSET PROTECTION ZONE (APZ)

Description: An APZ is an area surrounding a building that is managed to reduce the bushfire hazard to an acceptable level (by reducing fuel loads). The width of the required APZ varies with slope and vegetation and varies corresponding to the BAL rating determined for a building (lower BAL = greater dimensioned APZ).

For planning applications, the minimum sized acceptable APZ is that which is of sufficient size to ensure the potential radiant heat impact of a fire does not exceed 29kW/m² (BAL-29). It will be site specific.

For subdivision planning, design elements and excluded/low threat vegetation adjacent to the lot(s) can be utilised to achieve the required vegetation separation distances and therefore reduce the required dimensions of the APZ within the lot(s).

Defendable Space: The APZ includes a defendable space which is an area adjoining the asset within which firefighting operations can be undertaken to defend the structure. Vegetation within the defendable space should be kept at an absolute minimum and the area should be free from combustible items and obstructions. The width of the defendable space is dependent on the space, which is available on the property, but as a minimum should be 3 metres.

Establishment: The APZ should be contained solely within the boundaries of the lot on which the building is situated, except in instances where the neighbouring lot or lots will be managed in a low-fuel state on an ongoing basis, in perpetuity.

The APZ may include public roads, waterways, footpaths, buildings, rocky outcrops, golf courses, maintained parkland as well as cultivated gardens in an urban context, but does not include grassland or vegetation on a neighbouring rural lot, farmland, wetland reserves and unmanaged public reserves.

[Note: Regardless of whether an Asset Protection Zone exists in accordance with the acceptable solutions and is appropriately maintained, fire fighters are not obliged to protect an asset if they think the separation distance between the dwelling and vegetation that can be involved in a bushfire, is unsafe.]

Schedule 1: Standards for APZ

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.

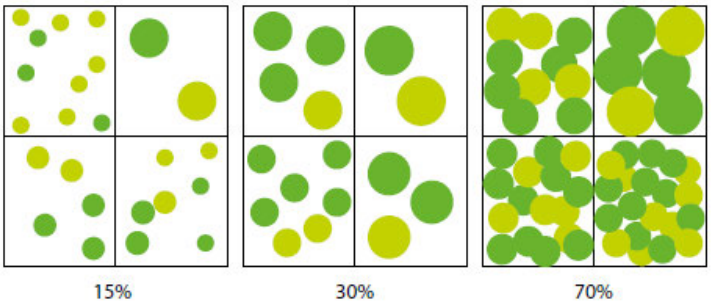
Fine Fuel Load: combustible dead vegetation matter less than 6 mm in thickness reduced to and maintained at an average of two tonnes per hectare (example below).

Example: Fine fuel load of 2 t/ha
(Image source: Shire of Augusta Margaret River's Firebreak and Fuel Reduction Hazard Notice)

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. Diagram below represents tree canopy cover at maturity.

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



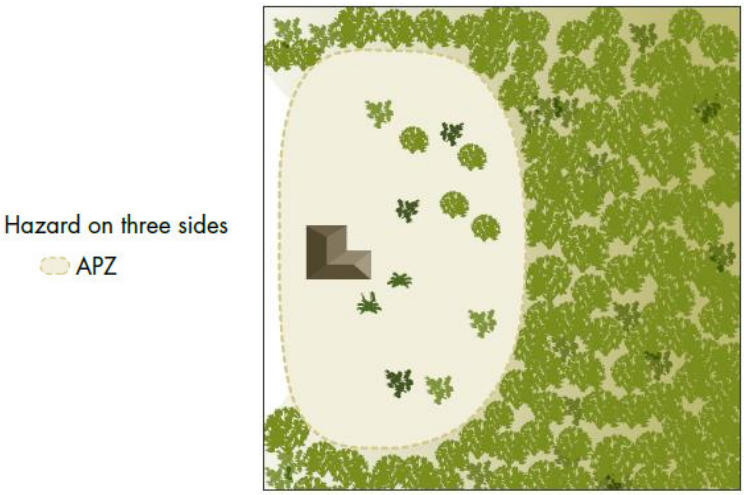
(Source: Guidelines for Planning in Bushfire Prone Areas 2017, Appendix 4)

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 mm 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 mm or less.

The following example diagrams illustrate how the required dimensions of the APZ will be determined by the type and location of the vegetation.



PART B: REQUIREMENTS ESTABLISHED BY THE LOCAL GOVERNMENT – THE FIREBREAK NOTICE

The relevant local government's current Firebreak Notice is available on their website, at their offices and is distributed as ratepayer's information. It must be complied with.

These requirements are established by the relevant local government's Firebreak Notice created under s33 of the Bushfires Act 1954 and issued annually (potentially with revisions). The Firebreak Notice may include additional components directed at managing fuel loads, accessibility and general property management with respect to limiting potential bushfire impact.

If Asset Protection Zone (APZ) specifications are defined in the Firebreak Notice, these may differ from the Standards established by the Guideline's, with the intent to better satisfy local conditions. When these are more stringent than those created by the Guidelines, or less stringent and endorsed by the WAPC and DFES, they must be complied with.

The minimum APZ dimensions to be physically established and maintained, will be based on which of the following establishes the larger APZ dimension:

- The dimensions corresponding to the determined BAL of a building; or
- The APZ dimensions established by the local government's Firebreak Notice.

PART C: REQUIREMENTS RECOMMENDED BY DFES – PROPERTY PROTECTION CHECKLISTS

Further guidance regarding ongoing property protection from the threats of bushfire and consequential fire is presented on the Department of Fire and Emergency Services (DFES) website.

Part D: REQUIREMENTS ESTABLISHED BY THE AS 3959:2018 BAL DETERMINATION METHODOLOGY

This information establishes what areas of vegetation can be excluded from classification as a potential bushfire threat.

"Australian Standard - AS 3959:2018 Section 2.2.3.2: Exclusions - Low threat vegetation and non-vegetated areas:

The Bushfire Attack Level shall be classified BAL-LOW where the vegetation is one or a combination of the following:

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

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

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

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

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

*f) Vegetation regarded as low threat due to factors such as flammability, moisture content or fuel load. This includes grassland managed in a **minimal fuel condition**, (means insufficient fuel available to significantly increase the severity of a bushfire attack – for example, recognisable as short cropped grass to a nominal height of 100mm), mangroves and other saline wetlands, maintained lawns, golf courses (such as playing areas and fairways), maintained public reserves and parklands, sporting fields, vineyards, orchards, banana plantations, market gardens (and other non-curing crops), cultivated gardens, commercial nurseries, nature strips and windbreaks (single row of trees)."*

ATTACHMENT 4 – EXPLANATION OF BUSHFIRE ATTACK LEVELS AND REFERENCES FOR CONSTRUCTION REQUIREMENTS

Bushfire Attack Level	Explanation of BAL Levels [1]	References for Construction Requirements	
		AS 3959:2018 Construction of Buildings in Bushfire Prone Areas	**The Nash Standard – Steel Framed Construction in Bushfire Areas**
		Referenced by the Building Code of Australia for Building Classes 1, 2, 3 & 10a	Referenced by the Building Code of Australia for Building Classes 1 & 10a
BAL – LOW	There is insufficient risk to warrant specific construction requirements but there is still some risk. *(Note: DFES recommend that ember attack protection features be incorporated in the design where practicable).*	Section 4. No Requirements	No Requirements
BAL – 12.5	There is a risk of ember attack. Construction elements are expected to be exposed to heat flux not greater than 12.5 kW/m²	Sections 3 & 5.	All construction requirements for BAL-12.5 to BAL-40 are the same except for windows and external doors, which must comply with AS 3959. The construction requirements are set out as essentially non-combustible construction systems for each of the following building elements: • Section 1.4: General Requirements • Section 2: Roof and Ceiling System • Section 3: External Wall System • Section 4: Floor System • Section 5: Carports Verandahs and Decks.
BAL – 19	There is a risk of ember attack and burning debris ignited by windborne embers and a likelihood of exposure to radiant heat. The construction elements are expected to be exposed to a heat flux not greater than 19 kW/m².	Sections 3 & 6	
BAL – 29	There is an increased risk of ember attack and burning debris ignited by windborne embers and a likelihood of exposure to an increased level radiant heat. The construction elements are expected to be exposed to a heat flux not greater than 29 kW/m².	Sections 3 & 7.	
BAL – 40	There is a much increased risk of ember attack and burning debris ignited by windborne embers, a likelihood of exposure to a high level of radiant heat and some likelihood of direct exposure to flames from the fire front. The construction elements are expected to be exposed to a heat flux not greater than 40kW/m².	Sections 3 & 8.	
BAL – FZ (Flame Zone)	There is an extremely high risk of ember attack and burning debris ignited by windborne embers, and a likelihood of exposure to an extreme level of radiant heat and direct exposure to flames from the fire front. The construction elements are expected to be exposed to a heat flux greater than 40 kW/m².	Sections 3 & 9.	The construction requirements are set out in Sections 1-5 and differ from the requirements for all other BAL ratings.

[1] AS 3959:2018 *Construction of buildings in bushfire prone areas,* defines a Bushfire Attack Level (BAL) as a "means of measuring the severity of a building's potential exposure to ember attack, radiant heat and direct flame contact, using increments of radiant heat flux expressed in kW/m², and is the basis for establishing the requirements for construction to improve protection of building elements from attack by bushfire."