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Bushfire Hazard Report

For proposed 11 - lot subdivision at
441 Tinderbox Road, Tinderbox, v3

Clients: PDA Surveyors OBO Tinderbox P/L

Prepared by: Jim Mulcahy (BFP 159)

Date: November 2023

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General Disclaimer

All reasonable steps have been taken to ensure that the information and advice contained in this report is an accurate reflection of the fire hazard affecting the proposed development at the time of the assessment and the hazard management measures necessary to meet the standards prescribed in E1.0 Bushfire Prone Areas Code of the Kingborough Interim Planning Scheme 2015 and Australian Standard AS 3959-2009.

The prescribed hazard management measures are designed to reduce bushfire risk to any dwelling(s) constructed on the site. The effectiveness of these measures relies on their implementation in full and their maintenance for the life of the development. No liability can be accepted for actions by landowners or third parties that undermine or compromise the integrity of prescriptions and recommendations contained in this report.

Due to the unpredictable nature of bushfires, particularly under extreme weather conditions, landowners should be aware that implementation and maintenance of the hazard management measures outlined in this report cannot guarantee that a building will survive a bushfire event.

Executive Summary

Owners	Tinderbox P/L
Applicant	PDA Surveyors on behalf of owners

Title references	FR 139168/1
PIDs	7438654
Address	441 Tinderbox Road Tinderbox
Land size	321.1 ha (+/-)

Municipality	Kingborough
Planning Scheme	*Kingborough Interim Planning Scheme 2015*
Zoning	14.0 Environmental Living & 26.0 Rural Resource

Proposed development	11 lot staged subdivision (10 lots & balance)
Date of site assessment	22 October 2019
Bushfire Assessment	Existing dwellings are exempt due to insufficient increase in risk. New lots can support BAL-19 building areas capable of meeting the requirements of the Code in respect of hazard management areas, access for firefighting and water supplies for firefighting.
Conclusion	Compliant development

The proposed subdivision is in an area subject to the Bushfire Prone Areas overlay of the Kingborough Interim Planning Scheme 2015 (the Scheme). The Scheme requires that the bushfire risk to the development and appropriate hazard management responses to those risks be considered during the planning process. The proposed subdivision has been assessed against the requirements of E1.0 Bushfire Prone Areas Code of the Scheme (the Code) and AS 3959-2009 Construction of Buildings in Bushfire Prone Areas (AS 3959).

A Bushfire Hazard Management Plan has been prepared, showing indicative building areas for all new lots and hazard management areas which demonstrate the potential for future habitable buildings to achieve a Bushfire Attack Level (BAL) rating of BAL-19 under Table 2.4.4 of AS 3959.

The Bushfire Hazard Management Plan demonstrates compliance with the acceptable solutions for subdivision under the Code and has been certified.

The certified Bushfire Hazard Management Plan will accompany the final version of this report and will be provided to Kingborough Council as part of a development application for the proposed subdivision.

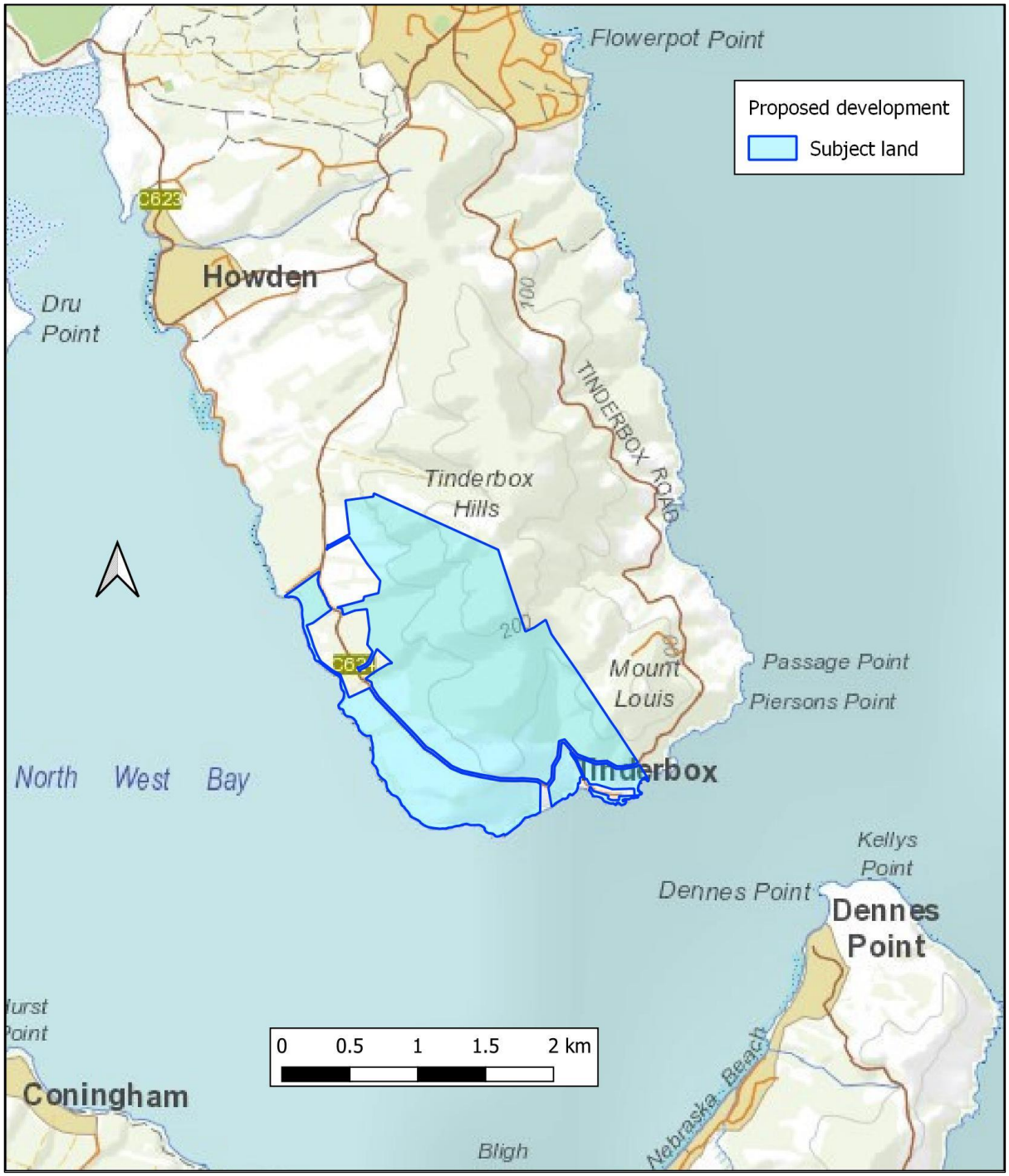


Figure 1. Location of the subject land

1.0 Introduction

This report has been prepared by Mr Jim Mulcahy, Accredited Person under Section 60B of the *Fire Service Act 1979* (Accreditation number BFP-159). The report has been prepared in support of a development application for an eleven-lot staged subdivision at 441 Tinderbox Road Tinderbox (see Figure 2).

The whole of the subject land is affected by the Bushfire Prone Areas overlay of the Kingborough Interim Planning Scheme 2015 (the Scheme).

1.1 Purpose

The planning system in Tasmania aims for an integrated approach to development in bushfire prone areas between subdivision and the future construction of habitable buildings. The planning requirements aimed at delivering this integrated approach are detailed in E1.0 Bushfire Prone Areas Code of the Scheme (the Code).

The purpose of the Code is “to ensure that use and development is appropriately designed, located, serviced, and constructed, to reduce the risk to human life and property, and the cost to the community, caused by bushfires”.

The purpose of this report is to demonstrate that the proposed development complies with the relevant provisions of the Code and AS 3959-2009 Construction of Buildings in Bushfire Prone Areas (AS 3959).

1.2 Scope

This report considers the bush-fire prone vegetation in the vicinity of the proposed subdivision, assesses the bushfire threat to existing and future habitable buildings and outlines appropriate bushfire hazard management measures in respect of:

- minimum separation distances required for current and future habitable buildings to achieve BAL-19 or BAL-12.5 under table 2.4.4 of AS 3959,
- provision of hazard management areas which deliver the required separation distances to achieve BAL-19 under table 2.4.4 of AS 3959,
- establishment and maintenance requirements and management recommendations for hazard management areas,
- provision of access for firefighting, and
- provision of water supplies for firefighting.

1.3 Limitations

Statutory requirements

This report only deals with the potential bushfire risk to the proposed subdivision development. Other statutory requirements relating to the development are generally outside the scope of the report, although planning issues which intersect with bushfire hazard management needs are referenced as appropriate.

Changing circumstances over time

The recommendations in this report are based on the surrounding vegetation at the time of the site inspection and the author's professional assessment of:

- the fire hazard posed by that vegetation; and
- any potential for changes to vegetation in the future (succession) that may increase bushfire risk to the development.

It is not possible, however, to accurately predict environmental changes over time and the impacts of those changes on the future bushfire hazard at the site, particularly where those outcomes are dependent on land management decisions on adjoining properties. No liability can be accepted for actions by landowners or third parties that undermine or compromise the integrity of prescriptions and recommendations contained in this report.

Limitations of scope

The attached Bushfire Hazard Management Plan defines 'indicative building areas' for all new lots based on meeting the provisions of the Environmental Living Zone and the Rural Resource Zone, and the acceptable solutions under the Code. In light of this limited scope, the following issues are worth noting.

- Section 11F (2) (a) of the *Tasmanian Building Act 2016* – Building Amendment (Bushfire-Prone Areas) Regulations 2016, provides that a Bushfire Hazard Management Plan undertaken for the purposes of a subdivision approval can be utilised to satisfy the bushfire planning requirements of a subsequent application to build on a lot arising from that subdivision, "unless that bushfire hazard management plan is more than 6 years old."
- All the indicative building areas except one can achieve the minimum boundary setbacks required to meet the acceptable solutions under the Environmental Living Zone (20 m). It is assumed that Council will accept a side setback of 17 m on the Balance lot as meeting the performance criteria.
- All the indicative building areas except one can achieve the minimum dimensions required to meet the acceptable solutions under the Environmental Living Zone (30 m x 30 m). It is assumed that Council will accept a building area of 30 m x 25 m on the Balance lot as meeting the performance criteria.
- The bushfire hazard associated with narrow strips of forest adjoining Lots 4, 5, 6, 7, 8 and 9 is exaggerated under the acceptable solutions, which require use of Method 1 (Simplified Procedure) of AS3959. Calculations under Method 2 addressing the performance criteria and considering the short potential fire-front and/or the short potential fire-run associated with these areas of forest may allow for a building area closer to the hazard.

- The indicative building areas are larger than would generally be required for a single residential structure. Future buildings constructed to BAL-19 (or higher) may be located anywhere within these indicative building areas. The required hazard management areas may be reduced to suit the actual building footprints if the minimum separation distances identified under the attached Bushfire Hazard Management Plan are maintained.

2.0 Site description

2.1 The subject land

The subject land is comprised of a single title +/- 321.1 ha in size (Tinderbox Farm), which is located on the western side of the Tinderbox peninsula about 6 km south of Blackmans Bay and approximately 5.5 km south-east of Margate. Vegetation on the land is predominantly forest to the west and pasture to the east, with small areas of woodland, regenerating cleared land and vineyard. More than half of the land is occupied by dry eucalypt forest (the mid to upper slopes of Tinderbox Hills). This area supports two threatened forest communities and important habitat for several threatened species.

The area affected by the subdivision proposal has a generally westerly aspect, descending from a maximum height of ~260 m above sea level on the Tinderbox Hills to sea level, where there is title to high water mark along parts of the eastern boundary. Several un-named ephemeral watercourses drain through the property and support dams of various sizes.

The affected land has a long frontage to Tinderbox Road, including several different section of frontage to access strips created as part of previous sub-divisions. There are two existing residential dwellings and associated outbuildings in the south-east of the property near Tinderbox Bay. This area also supports vineyards and several large dams. Other notable infrastructure on the property is:

- a large dam near the centre of the property; and
- a communications tower on the top of Tinderbox Hill which is accessed via a vehicle track which forms the basis of shared access for Lots 1 - 4.

2.2 Context

The subject land is variously zoned Environmental Living and Rural Resource under the Scheme. The whole of the land is subject to the Bushfire Prone Areas overlay and the Biodiversity Protection Area overlay. Parts of the land are affected by the Waterway and Coastal Protection Area overlay, the Landslide Hazard Area overlay (Low) and the Scenic Landscape overlay.

Immediately to the north of the subject land is the Tinderbox Nature Reserve (Magazine Reserve) which is managed by the Parks and Wildlife Service and is mostly forested. To the east and north-east are properties zoned environmental living which are 1.3 – 4 ha in size and have mostly been developed for residential purposes. Some of these properties are still heavily forested and some are occupied mostly by pasture. Immediately to the east-northeast is a private reserve which is mostly forested. To the east-southeast lies are properties zoned environmental living which are 2 – 8 ha in size that have generally been developed for residential purposes but remain mostly forested.

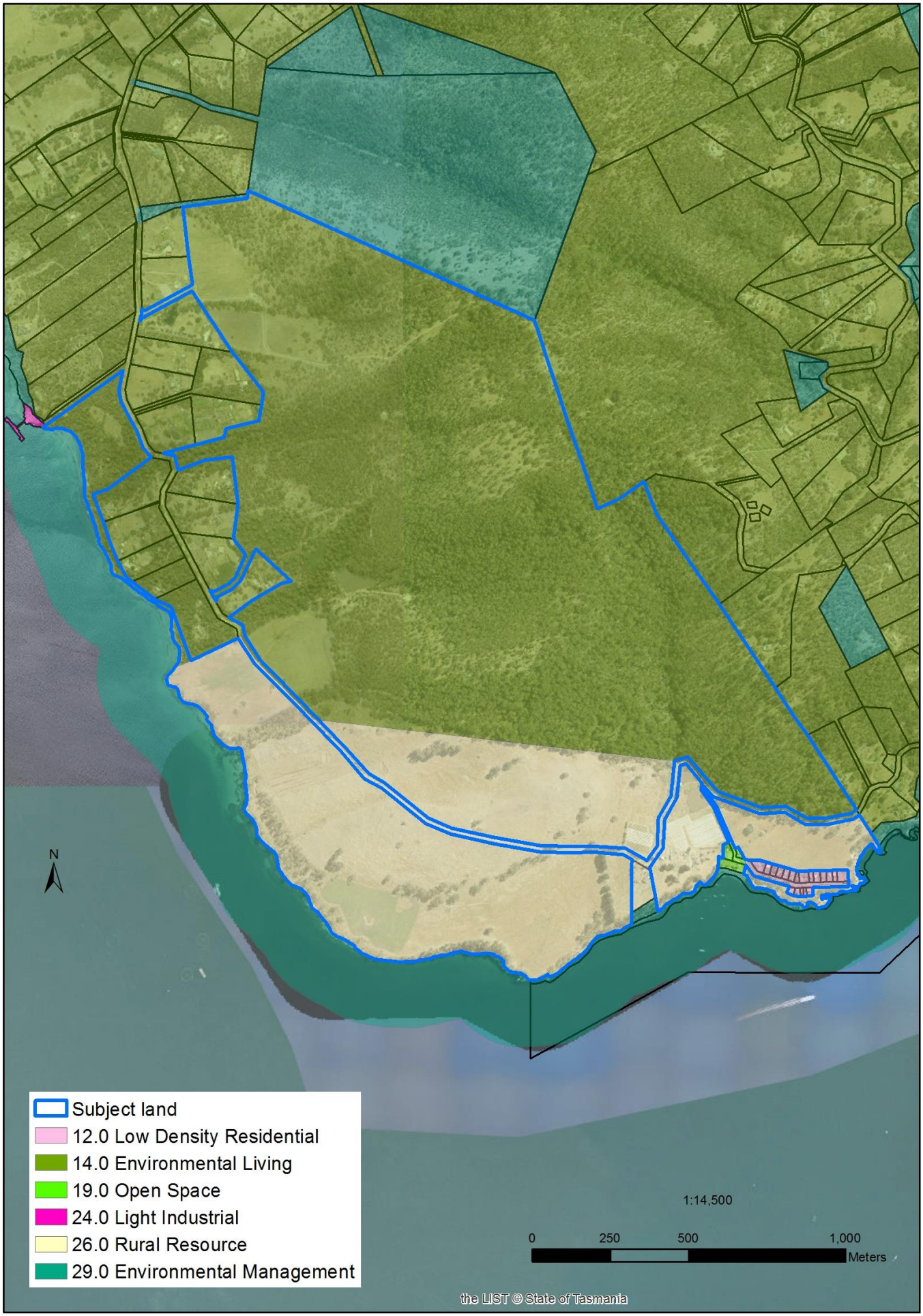


Figure 2. Zoning and context

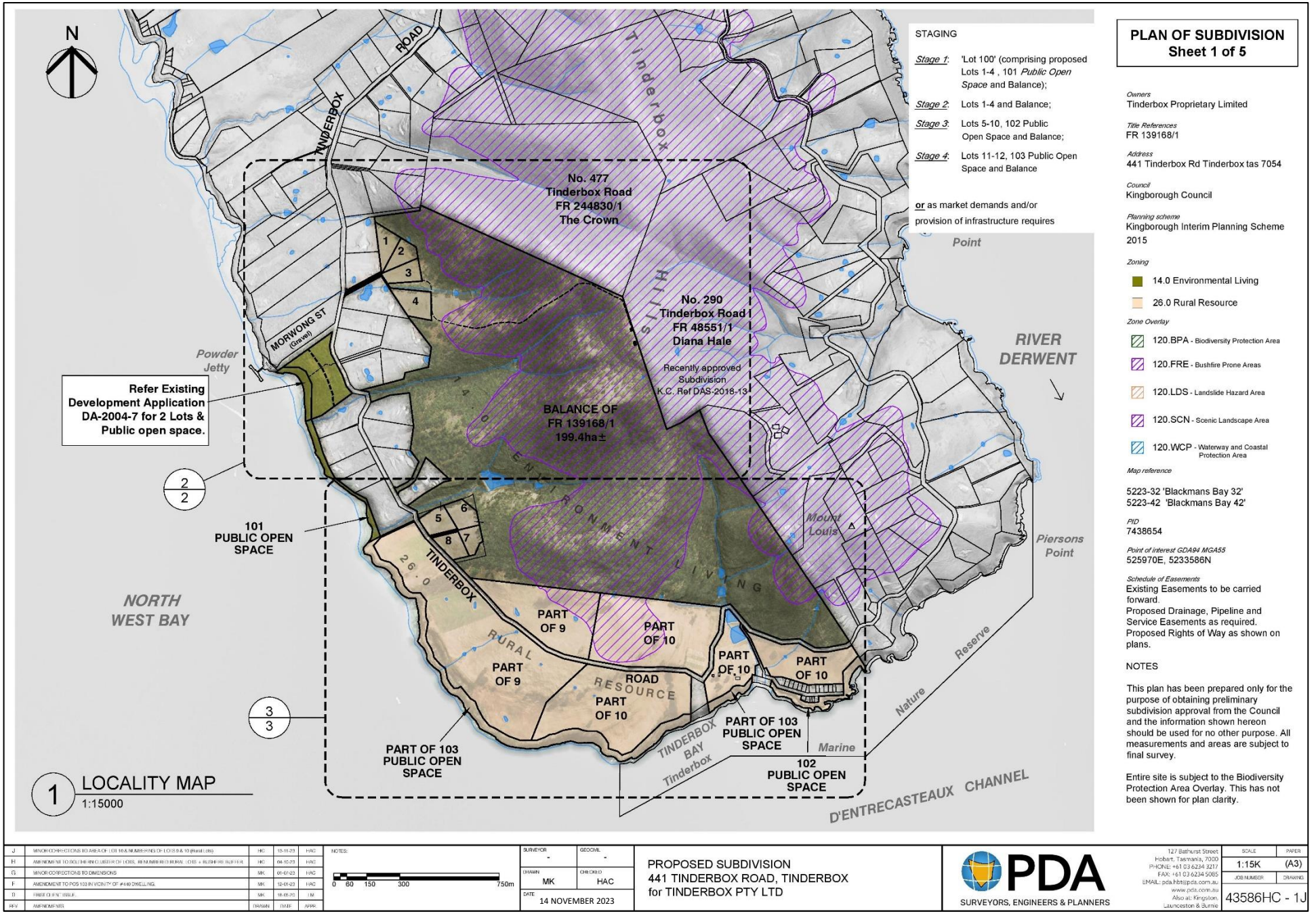


Figure 3. Subdivision proposal (PDA surveyors, November 2023)

3.0 Development proposal

An eleven-lot staged subdivision is proposed (10 lots and Balance), creating eight environmental living blocks, two rural resource blocks and a large balance lot which captures the forested western slopes of the Tinderbox Hills (see Figure 3):

- Stage 1 - Lots 1 - 4, Balance and Public Open Space,
- Stage 2 - Lots 5 - 8, Balance and Public Open Space, and
- Stage 3 - Lots 9 and 10, Balance and Public Open Space.

The subdivision proposal includes the following features relevant to an assessment of bushfire hazard.

- All lots can support building areas with separation distances from the lot boundaries that are sufficient for BAL-19 hazard management areas to be accommodated entirely within the lot boundaries.
- All lots can support property accesses suitable for access by firefighting appliances and compliant with the Code.
- All lots can support compliant static water supplies dedicated to firefighting.

4.0 Bushfire Threat Assessment

4.1 General

Fire Danger Index: FDI 50 (this index applies across Tasmania).

Bushfire History: the Fire History layer of the Land Information System Tasmania (LIST) shows no history of bushfire on the subject land or immediate surrounds.

Under ember attack and extreme conditions, the lots arising from the subdivision could potentially be subject to bushfire attack from any direction, although attack across the water from the south and east is unlikely. In terms of the probability of extreme fire weather conditions and vegetation, the main hazard is from the north.

With appropriate management, future habitable buildings on the subject land are unlikely to be subject to a severe head-fire attack, but the site is at risk from bushfire. The potential impacts of forest fires in the broader landscape should not be underestimated in terms of their potential to create ember, smoke and radiant heat attack on any future habitable buildings and to spark spot fires on the subject land.

4.2 Hazard Assessment

The subject land and surrounds were surveyed by the author on 22 October 2019 with reference to the draft subdivision layout and proposed indicative building areas. Information and images were collected which allowed assessment of Bushfire Attack Level (BAL) using Method 1 (Simplified Procedure) of AS3959.

Vegetation and slope were assessed within 500 m of the subject land to provide context. A more detailed assessment was then undertaken for 100 m in every direction from the existing dwellings and indicative building areas. Minimum separation distances required for future habitable buildings to meet the requirements

of BAL-19 under Table 2.4.4 of AS3959 were calculated for each combination of vegetation and slope and the separation distances overlaid to determine the 'primary hazard' and the effective slope.

The current bushfire attack level (BAL) was then calculated for the existing dwellings and indicative building areas to determine the separation distances and hazard management areas required to meet the requirements of BAL-19 under Table 2.4.4 of AS3959 (see Figure 4 and Tables 1 - 12). This assessment was used to prepare the Bushfire Hazard Management Plan (BHMP) at Attachment A.

4.2 Bushfire-prone vegetation

The following bushfire-prone vegetation occurs within 100m of the indicative building areas (pursuant to vegetation classification under AS3959 Table 2.3 and Figures 2.4 A-G):

- exotic pasture, which for the purposes of this report has been classified as G(i) Grassland,
- weedy native grassland complex/regenerating cleared land, which has been classified as G(i) Grassland for the purposes of this report,
- regenerating cleared land/wattle scrub (D. Scrub); and
- black gum (*E. ovata*) forest, black peppermint (*E. amygdalina*) forest and woodland on sandstone and blue gum (*E. globulus*) dry forest and woodland (A. Forest).

Illustrative photos of vegetation on and around the subject land can be found at Appendix A.

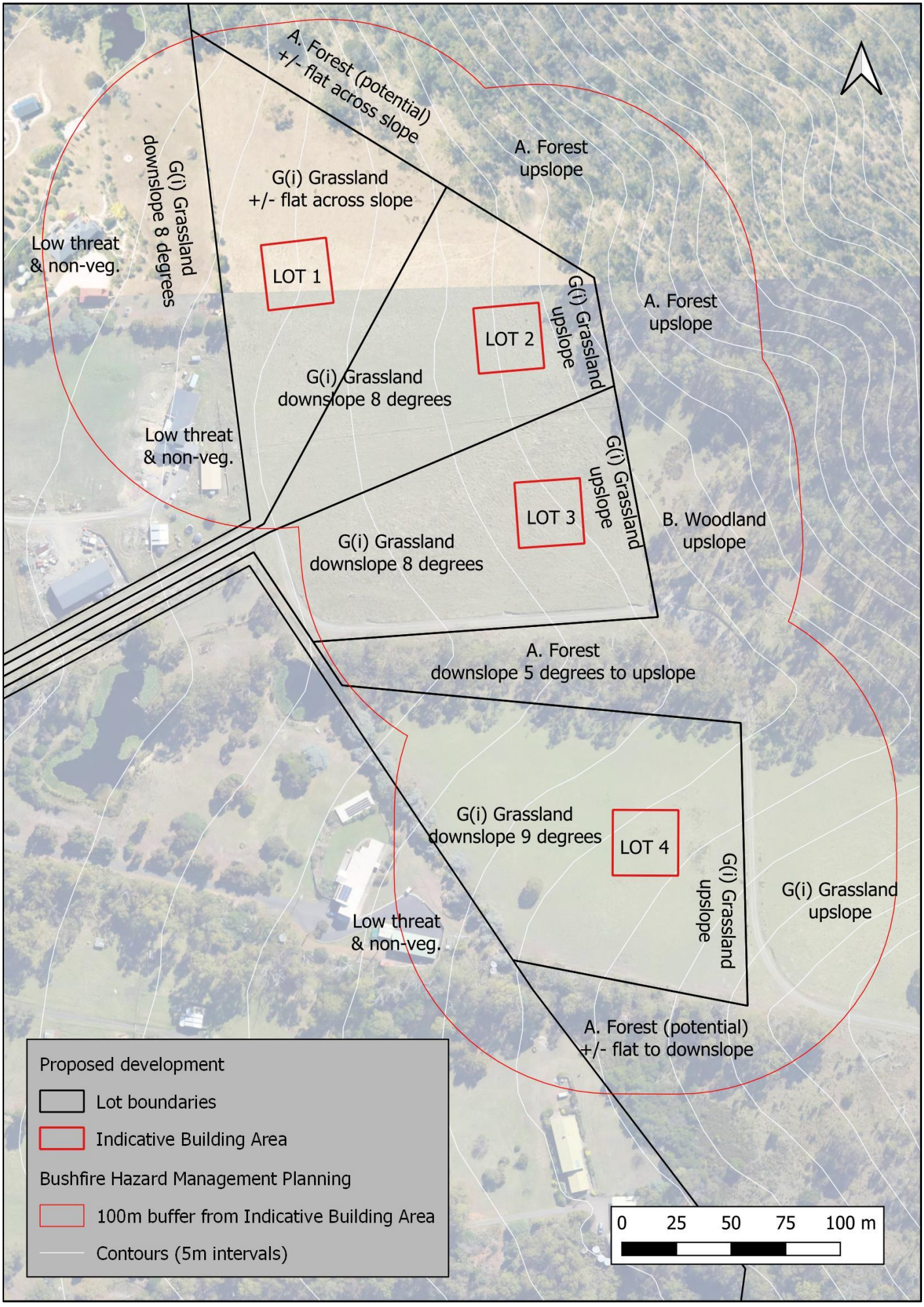


Figure 4. Bushfire Hazard Assessment Map A

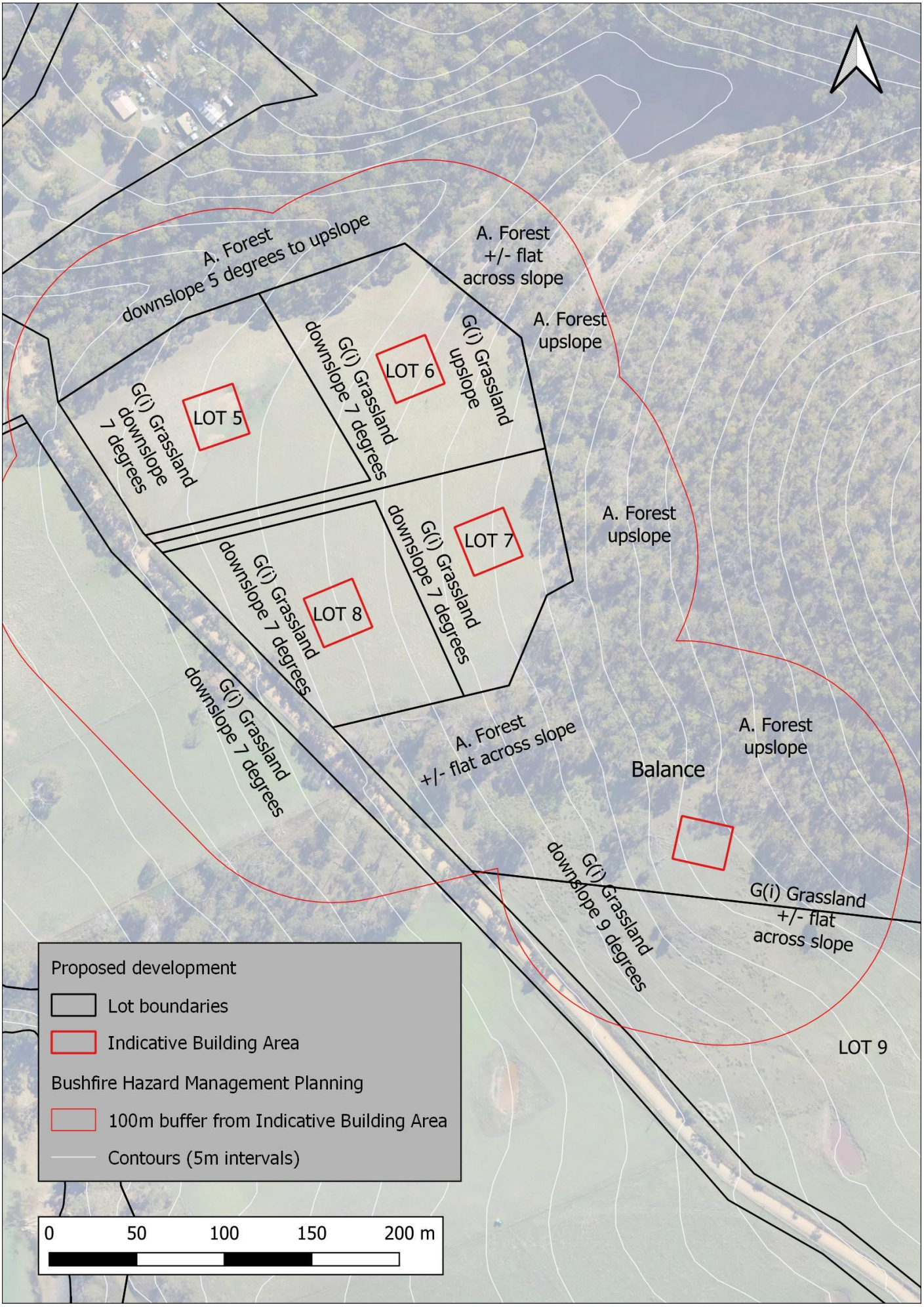


Figure 5. Bushfire Hazard Assessment Map B

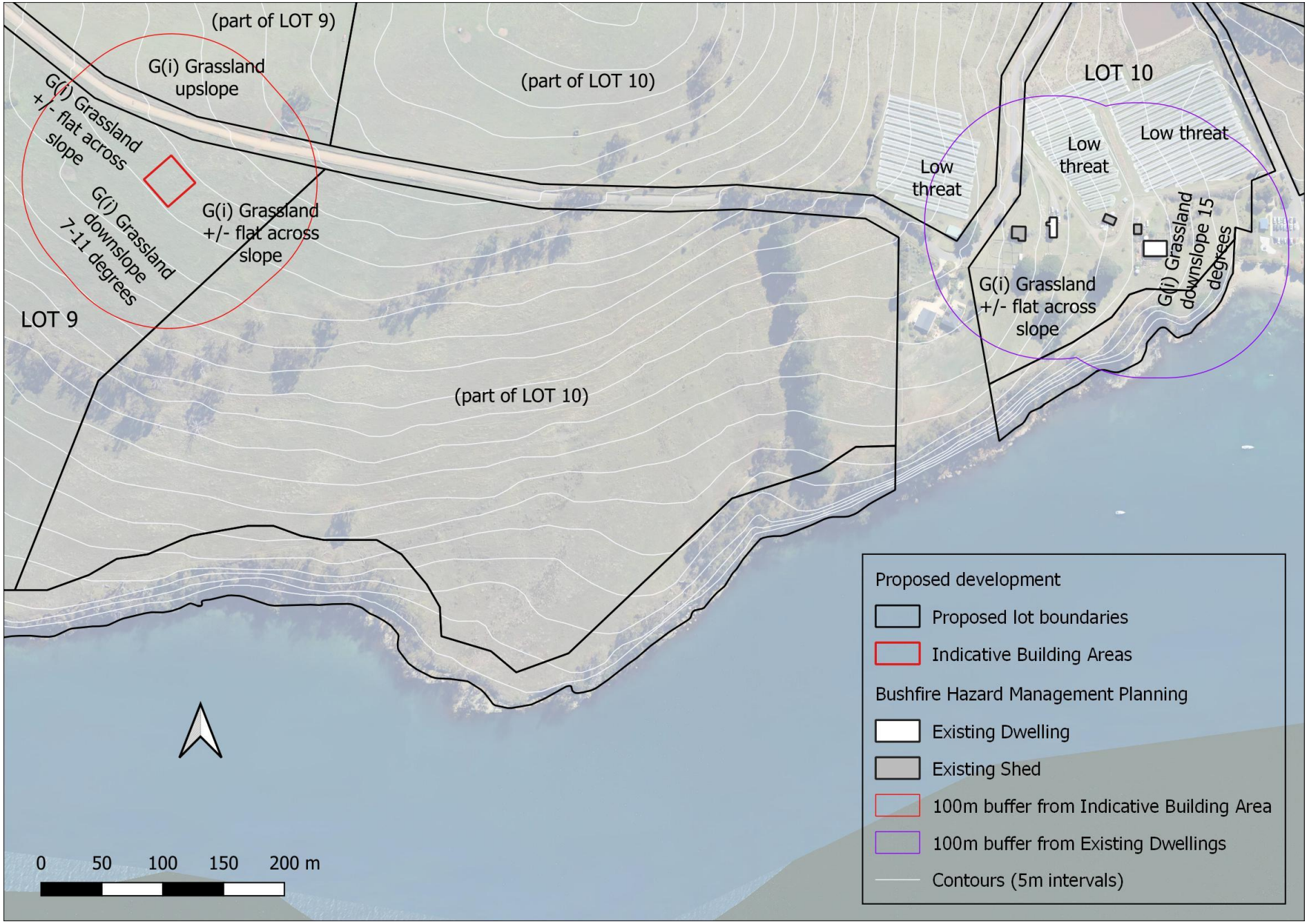


Figure 6. Bushfire Hazard Assessment Map C

Table 1. Separation distance calculations for Existing Dwelling A on Balance (eastern dwelling)

Direction	Vegetation Classification#	Effective Slope under vegetation	Approx. distance from dwelling (m)	Current BAL rating	Separation distance for BAL-12.5 (m)	Recommended minimum hazard management area
North	Non-veg./low threat (lawn/drive/vineyard)*	+/- flat across slope	0 - 100	-	-	To fence-line (35 m+)
East	Non-veg. & low threat (lawn & garden)*	-	0 - 5	-	-	22 m
	G (i). Grassland	Downslope 15^0	5 - 75	BAL-FZ	22 - <50	
	Non-veg. & low threat (park & carpark)*	-	-	-	-	
South	G (i). Grassland	+/- flat across slope	0 - 43	BAL-FZ	14 - <50	14 m
	D. Scrub	Downslope $>20^0$	60 - 88	Outside scope of Method 1		
	Sea	-	-	-	-	
West	Non-veg. & low threat (garden)*	-	0 - 6			14 m
	G (i). Grassland	Upslope	6 - 21	BAL-29	14 - <50	
	Non-veg. & low threat (lawn & garden)*	-	-	-	-	

Table 2. Separation distance calculations for Existing Dwelling B on Balance (western dwelling)

Direction	Vegetation Classification#	Effective Slope under vegetation	Approx. distance from IBA (m)	Current BAL rating	Separation distance for BAL-12.5 (m)	Recommended minimum hazard management area
North	Non-veg. & low threat (lawn, drive & vineyard)*	+/- flat across slope	0 - 100	-	-	14 m (for consistency)
East	Non-veg. & low threat (lawn & drive)*	-	0 - 53	-	-	14 m (for consistency)
	G (i). Grassland	Downslope 14^0	53 - 63	-	-	
	Non-veg. & low threat (garden & house)*	-	-	-	-	
South	Non-veg. & low threat (lawn)*	-	0 - 14	-	-	To fence-line (~14 m)
	G (i). Grassland	+/- flat to downslope 14^0	14 - 100	BAL-12.5	14 - <50	
West	G (i). Grassland	Upslope	0 - 42	BAL-FZ	14 - <50	To shed (14 m+)
	Non-veg./low threat (lawn/drive/vineyard)*	Upslope	42 - 100	-	-	

* Exclusion under AS3959-2009 2.2.3.2 # Classification as per AS3959-2009 amendment 3, Table 2.3 and Figures 2.4(A)-2.4(G)

Table 3. Separation distance calculations for indicative building area (IBA) on Lot 1 (Stage 1)

Direction	Vegetation Classification#	Effective Slope under vegetation	Approx. distance from IBA (m)	Current BAL rating	Separation distance for BAL-19 (m)	Prescribed minimum hazard management area
North	G (i). Grassland	Downslope 2^0 to upslope	0 - 56	BAL-FZ	11 - <16	15 m (for consistency)
	A. Forest (potential)	Upslope	56 - 100	BAL-12.5	-	
North East	G (i). Grassland	Upslope	0 - 49	BAL-FZ	10 - <14	15 m (for consistency)
	A. Forest (potential)	Upslope	49 - 81	BAL-12.5	-	
	A. Forest	Upslope	81 - 100	BAL-12.5	-	
East	G (i). Grassland	Upslope	0 - 91	BAL-FZ	10 - <14	15 m (for consistency)
	A. Forest (potential)	Upslope	91 - 100	BAL-12.5	-	
South	G (i). Grassland	+/- flat across slope	0 - 100	BAL-FZ	10 - <14	15 m (for consistency)
West	G (i). Grassland	Downslope 8^0	0 - 100	BAL-FZ	13 - <19	15 m

Table 4. Separation distance calculations for indicative building area (IBA) on Lot 2 (Stage 1)

Direction	Vegetation Classification#	Effective Slope under vegetation	Approx. distance from IBA (m)	Current BAL rating	Separation distance for BAL-19 (m)	Prescribed minimum hazard management area
North	G (i). Grassland	Downslope 2^0 to upslope	0 - 26	BAL-FZ	11 - <16	15 m
	A. Forest (potential and actual)	Upslope	26 - 100	BAL-12.5	-	
North East	G (i). Grassland	Upslope	0 - 23	BAL-FZ	10 - <14	To boundary (23 m+)
	A. Forest (potential and actual)	Upslope	23 - 100	BAL-19	23 - <32	
East	G (i). Grassland	Upslope	0 - 28	BAL-FZ	10 - <14	To boundary (28 m+)
	A. Forest	Upslope	28 - 100	BAL-19	23 - <32	
South	G (i). Grassland	Downslope 1-3^0	0 - 100	BAL-FZ	11 - <16	15 m
West	G (i). Grassland	Downslope 8^0	0 - 100	BAL-FZ	13 - <19	15 m

* Exclusion under AS3959-2009 2.2.3.2 # Classification as per AS3959-2009 amendment 3, Table 2.3 and Figures 2.4(A)-2.4(G)

Table 5. Separation distance calculations for indicative building area (IBA) on Lot 3 (Stage 1)

Direction	Vegetation Classification#	Effective Slope under vegetation	Approx. distance from IBA (m)	Current BAL rating	Separation distance for BAL-19 (m)	Prescribed minimum hazard management area
North	G (i). Grassland	Upslope	0 - 100	BAL-FZ	10 - <14	15 m (for consistency)
East	G (i). Grassland	Upslope	0 - 23	BAL-FZ	10 - <14	To boundary (23 m+)
	B. Woodland (potential and actual)	Upslope	23 - 85	BAL-12.5	-	
	A. Forest	Upslope	85 - 100	BAL-12.5	-	
South	G (i). Grassland	Downslope 5^0	0 - 30	BAL-FZ	11 - <16	15 m (for consistency)
	Non-veg. & low threat (road & verge)*	-	30 - 40	-	-	
	A. Forest	Downslope 5^0 to upslope	40 - 71	-	-	
	G (i). Grassland	Upslope	71 - 100			
West	G (i). Grassland	Downslope 6^0	0 - 100	BAL-FZ	13 - <19	15 m

Table 6. Separation distance calculations for indicative building area (IBA) on Lot 4 (Stage 1)

Direction	Vegetation Classification#	Effective Slope under vegetation	Approx. distance from IBA (m)	Current BAL rating	Separation distance for BAL-19 (m)	Prescribed minimum hazard management area
North	G (i). Grassland	Downslope 7^0	0 - 49	BAL-FZ	13 - <19	15 m
	A. Forest	Downslope 5^0 to upslope	49 - 71	BAL-12.5	-	
	Non-veg. & low threat (road & verge)*	Upslope	71 - 93	-	-	
	B. Woodland	Upslope	93 - 100	BAL-12.5	-	
East	G (i). Grassland	Upslope	0 - 31	BAL-FZ	10 - <14	15 m (for consistency)
	Non-veg. & low threat (road & verge)*	-	31 - 42	-	-	
	G (i). Grassland		42 - 100	-	BAL-12.5	
South	G (i). Grassland	Upslope	0 - 47	BAL-FZ	10 - <14	15 m (for consistency)
	A. Forest (potential)	+/- flat to downslope 4^0	47 - 100	BAL-12.5-	-	
West	G (i). Grassland	Downslope 9^0	0-100	BAL-FZ	13 - <19	15 m

* Exclusion under AS3959-2009 2.2.3.2 # Classification as per AS3959-2009 amendment 3, Table 2.3 and Figures 2.4(A)-2.4(G)

Table 7. Separation distance calculations for indicative building area (IBA) on Lot 5 (Stage 2)

Direction	Vegetation Classification#	Effective Slope under vegetation	Approx. distance from IBA (m)	Current BAL rating	Separation distance for BAL-19 (m)	Prescribed minimum hazard management area
North & northwest	G (i). Grassland	Downslope 7^0	0 - 41	BAL-FZ	13 - <19	25 m
	A. Forest	Downslope 6^0 to upslope (effectively flat)	41 - 100	BAL-12.5	23 - <32	
Northeast	G (i). Grassland	Flat across slope	0 - 80	BAL-FZ	10 - <14	15 m+
	A. Forest	Flat across slope	80 - 100	BAL-12.5	-	
East	G (i). Grassland	Upslope	0 - 100	BAL-FZ	10 - <14	15 m (for consistency)
South	G (i). Grassland	Upslope to +/- flat	0 - 100	BAL-FZ	10 - <14	15 m (for consistency)
West	G (i). Grassland	Downslope 7^0	0 - 78	BAL-FZ	13 - <19	15 m
	Low threat & non-veg. (road & verge)		78 - 100	-	-	

Table 8. Separation distance calculations for indicative building area (IBA) on Lot 6 (Stage 2)

Direction	Vegetation Classification#	Effective Slope under vegetation	Approx. distance from IBA (m)	Current BAL rating	Separation distance for BAL-19 (m)	Prescribed minimum hazard management area
North & northwest	G (i). Grassland	Downslope 7^0	0 - 53	BAL-FZ	13 - <19	25 m
	A. Forest	Downslope 6^0 to upslope (effectively flat)	53 - 100	BAL-12.5	-	
Northeast	G (i). Grassland	Flat across slope	0 - 35	BAL-FZ	10 - <14	15 m+
	A. Forest	Flat across slope	35 - 100	BAL-12.5	-	
East	G (i). Grassland	Upslope	0 - 40	BAL-FZ	10 - <14	15 m (for consistency)
	A. Forest	Upslope	40 - 100	BAL-12.5	-	
South	G (i). Grassland	Upslope to +/- flat	0 - 100	BAL-FZ	10 - <14	15 m (for consistency)
West	G (i). Grassland	Downslope 7^0	0 - 78	BAL-FZ	13 - <19	15 m

* Exclusion under AS3959-2009 2.2.3.2 # Classification as per AS3959-2009 amendment 3, Table 2.3 and Figures 2.4(A)-2.4(G)

Table 9. Separation distance calculations for indicative building area (IBA) on Lot 7 (Stage 2)

Direction	Vegetation Classification#	Effective Slope under vegetation	Approx. distance from IBA (m)	Current BAL rating	Separation distance for BAL-19 (m)	Prescribed minimum hazard management area
North	G(i) Grassland	Downslope 4 - 6^0	0 - 100	BAL-FZ	11 - <16	15 m (for consistency)
East & southeast	G(i) Grassland	Upslope	0 - 25	BAL-FZ	10 - <14	23 m+ (to the boundary to the southeast)
	A. Forest	Upslope	25 - 100	BAL-19	23 - <32	
South	G(i) Grassland	+/- flat across slope	0 - 42	BAL-FZ	10 - <14	15 m+
	A. Forest	+/- flat across slope	42 - 100	BAL-12.5	23 - <32	
Southwest & West	G(i) Grassland	Downslope 8 - 9^0	0 - 100	BAL-FZ	13 - <19	15 m

Table 10. Separation distance calculations for indicative building area (IBA) on Lot 8 (Stage 2)

Direction	Vegetation Classification#	Effective Slope under vegetation	Approx. distance from IBA (m)	Current BAL rating	Separation distance for BAL-19 (m)	Prescribed minimum hazard management area
North	G(i) Grassland	Downslope 1 - 2^0	0 - 100	BAL-FZ	11 - <16	15 m (for consistency)
East	G(i) Grassland	Upslope	0 - 100	BAL-FZ	10 - <14	15 m (for consistency)
Southeast & South	G(i) Grassland	+/- flat across slope	0 - 52	BAL-FZ	10 - <14	15 m (for consistency)
	A. Forest	+/- flat across slope	52 - 100	BAL-12.5	-	
Southwest & West	G(i) Grassland	Downslope 9^0	0 - 57	BAL-FZ	13 - <19	15 m
	Low threat & non-veg. (road & verge)		57 - 70	-	-	
	G(i) Grassland	Downslope 9^0	70 - 100	-	-	

* Exclusion under AS3959-2009 2.2.3.2 # Classification as per AS3959-2009 amendment 3, Table 2.3 and Figures 2.4(A)-2.4(G)

Table 11. Separation distance calculations for indicative building area (IBA) on Lot 9 (Stage 3)

Direction	Vegetation Classification#	Effective Slope under vegetation	Approx. distance from IBA (m)	Current BAL rating	Separation distance for BAL-19 (m)	Prescribed minimum hazard management area
North East	G(i) Grassland	Upslope	0 - 39	BAL-FZ	10 - <14	15 m (for consistency)
	Low threat & non-veg. (road & verge)	-	39 - 66	-	-	
	G(i) Grassland	Upslope	66 - 100	-	-	
South East	G(i) Grassland	+/- flat to downslope 9^0	0 - 100	BAL-FZ	10 - <14	15 m (for consistency)
South West	G(i) Grassland	Downslope 7-11^0	0 - 100	BAL-FZ	13 - <19	15 m
North West	G(i) Grassland	+/- flat to downslope 5^0	0 - 100	BAL-FZ	10 - <14	15 m (for consistency)

Table 12. Separation distance calculations for indicative building area (IBA) on the Balance (Stage 3)

Direction	Vegetation Classification#	Effective Slope under vegetation	Approx. distance from IBA (m)	Current BAL rating	Separation distance for BAL-19 (m)	Prescribed minimum hazard management area
North	G(i) Grassland	+/- flat across slope	0 - 23	BAL-FZ	10 - <14	23 m
	A. Forest	+/- flat across slope	23 - 100	BAL-19	23 - <32	
East	G(i) Grassland	Upslope	0 - 23	BAL-FZ	10 - <14	23 m
	A. Forest (potential)	Upslope	23 - 100	BAL-19	23 - <32	
South	G(i) Grassland	Downslope 7-14^0	0 - 100	BAL-FZ	13 - <19	15 m
West	G(i) Grassland	Downslope 15-9^0	0 - 100	BAL-FZ	15 - <22	15 m

* Exclusion under AS3959-2009 2.2.3.2 # Classification as per AS3959-2009 amendment 3, Table 2.3 and Figures 2.4(A)-2.4(G)

5.0 Bushfire Protection Measures

5.1 Limitations on hazard management

The forest and woodland in the area of the proposed subdivision includes areas of black gum (*E. ovata*) dry forest (DOV), blue gum (*E. globulus*) dry forest and woodland (DGL) and black peppermint (*Eucalyptus amygdalina*) forest and woodland on sandstone (DAS). These communities are listed as threatened under Schedule 3A of the *Nature Conservation Act 2002.*

The area affected by the subdivision also contains trees meeting the definition of 'high conservation trees' under the Scheme. Some of these trees provide foraging habitat for the endangered swift parrot (blue gums and black gums) and the endangered forty-spotted pardalote (white gums).

There is a wedge-tailed eagle nest to the south-east of Lot 4 that showed signs of active use in the 2020/2021 breeding season. It is Standard advice from DPIPWE that a 500 m buffer and a 1 km line-of-sight buffer should be applied between a nest and any proposed development works. Application of these buffers has forced a re-design of the proposed subdivision. Lots and indicative building areas have been designed and located to avoid clearance or disturbance of any native vegetation, including for hazard management works, and to minimise any disturbance to eagle breeding.

5.2 Exemptions

It is considered that there is insufficient increase in risk to the existing dwellings as a result of the proposal to warrant any specific bushfire protection measures:

- no title boundary is being moved closer to the dwellings,
- all vegetation within 100 m of the dwellings will remain in the same ownership and under the same management control,
- existing property access to the dwellings is unaffected by the proposal,
- existing water supplies available to the dwellings and access to those water supplies will be unaffected by the proposal, and
- this report provides the opportunity to educate owners about the bushfire risk to the existing dwellings and to make recommendations aimed at reducing that risk.

5.3 Hazard management areas

The objectives of providing hazard management areas are:

- to facilitate an integrated approach between subdivision and subsequent building on a lot,
- to provide for sufficient separation of building areas from bushfire-prone vegetation to reduce radiant heat levels, direct flame attack and ember attack at the building area, and
- to provide protection for lots at any stage of a staged subdivision.

5.3.1 Code provisions

The requirements for hazard management areas within a subdivision are detailed in E1.6.1 of the Code.

In summary, the acceptable solutions under E1.6.1 A1 of the Code require that:

(a) TFS or an accredited person certifies that there is an insufficient increase in risk from bushfire to warrant the provision of hazard management areas as part of a subdivision; or

(b) The proposed plan of subdivision:

(iii) shows hazard management areas between bushfire-prone vegetation and each building area that have dimensions equal to, or greater than, the separation distances required for BAL-19 in Table 2.4.4 of AS3959.

5.3.2 Compliance

It is considered that there is insufficient increase in risk to the existing dwellings as a result of the proposal to warrant to warrant the mandating of hazard management areas, pursuant to clause E1.6.1 A1 (a) of the Code.

The bushfire hazard assessment (see Figures 4 & 5 & Tables 1 - 12) indicates that all new lots require hazard management areas to provide separation distances that will allow future habitable buildings to meet the requirements of BAL-19 under Table 2.4.4 of AS3959.

All new lots can support building areas with separation distances from the lot boundaries that are sufficient for hazard management areas meeting the requirements of BAL-19 to be accommodated entirely within the lot boundaries.

The Bushfire Hazard Management Plan at Attachment A shows indicative building areas for all lots and defines hazard management areas with sufficient separation distances from bushfire prone vegetation to allow existing and future habitable buildings to meet the requirements of BAL-19.

In several circumstances the separation distances prescribed in this report and the Bushfire Hazard Management Plan at Attachment A exceed the distances prescribed under AS3959:

- for consistency in establishment and management, a standard separation distance of 15 m has been prescribed from grassland hazards on down-slopes between 1 and 10 degrees, and
- to cater for potential vegetation succession over time (eg from regenerating cleared land to woodland or from woodland to forest), larger separation distances have been prescribed around some indicative building areas.

5.3.3 Establishment and maintenance of hazard management areas

Hazard management areas for each new lot arising from the subdivision must be established at the time of building on the lot and must be completed to a compliant standard prior to the occupation of any habitable buildings.

To minimise bushfire hazard to existing and future habitable buildings, hazard management areas must be maintained as ‘low threat vegetation’ and/or ‘non-

vegetated land' for the life of the development on each lot. The need to maintain effective hazard management areas into the future must be considered when making landscaping choices and establishing gardens.

Prescribed hazard management areas include the land within the indicative building areas and strips of land 5 m wide along the property accesses (a 4 m wide carriageway and an additional 0.5 m clearance on each side).

All indicative building areas are in areas of pasture and are surrounded by areas of pasture. As a result, establishment and maintenance of hazard management areas is largely a matter of maintaining surrounding pasture through regular mowing, slashing and/or grazing.

General management guidelines for establishment and maintenance of hazard management areas can be found in Schedule 1 of this report and the attached Bushfire Hazard Management Plan.

5.4 Firefighting access

The objectives for property access within a subdivision are:

- to allow safe access and egress for residents, fire fighters and emergency services personnel,
- to provide access to the bushfire-prone vegetation that allows both property to be defended when under bushfire attack and for hazard management works to be undertaken,
- to provide access to water supplies for fire appliances,
- that design and construction allow for fire appliances to be manoeuvred, and
- that design allows connectivity, and where needed, offers multiple evacuation points.

5.4.1 Code provisions for access

The requirements for property access within a subdivision are detailed in E1.6.2 and Table E2 of the Code. The content of Table E2 has been reproduced in Schedule 2 of this report.

In summary, the acceptable solutions under E1.6.2 A1 require that:

(a) TFS or an accredited person certifies that there is an insufficient increase in risk from bushfire to warrant specific measures for public access in the subdivision for the purposes of firefighting; or

(b) A proposed plan of subdivision showing the location of property access to building areas is included in a bushfire hazard management plan that:

  (i) demonstrates proposed private accesses will comply with Table E2, and

  (ii) is certified by the TFS or an accredited person.

5.4.2 Existing and proposed access for firefighting

The subject land has extended frontage to Tinderbox Road, which is a Council maintained road with a formation 6 – 7 m wide along the frontage to the land.

Tinderbox Road is sealed at the eastern end of the frontage in the vicinity of the existing dwellings but elsewhere along the frontage is surfaced with gravel.

The two existing dwellings share a property access from a sealed section of Tinderbox Road. The existing driveway provides adequate access but is not fully compliant with the requirements of the Code.

The subdivision utilises existing vehicle accesses from Tinderbox Road to minimise new junctions. There is an existing access at the northern end of the land that has been upgraded to service the communications tower on the top of the Tinderbox Hills. This access and formed carriageway will form the basis of the property access to service Lots 1 - 4, with Rights of Way 5 m wide to be employed as required. There is another existing access in the centre of the land currently used for farm management purposes which will be upgraded to provide shared access for Lots 5 - 8. New individual accesses will be required to service Lot 9 and the Balance lot.

Indicative property accesses to all lots are shown on the Bushfire Hazard Management Plan at Attachment A. The exact lengths of the property accesses will depend on where future habitable buildings are located within the indicative building areas, but:

- the shared property access to Lots 1 - 4 will be over 180 m in length and will provide access to more than three properties,
- independent access to Lots 1 - 4 will probably all be greater than 200 m in length,
- the shared property access to Lots 5 - 8 will be over 200 m in length and provides access to more than three properties, and
- property access service Lot 9 and the Balance lot will be greater than 30 m and less than 200 m in length.

5.4.3 Compliance – firefighting access

It is considered that there is insufficient increase in risk to the existing dwellings as a result of the proposal to warrant any specific measures for public access for the purposes of firefighting, pursuant to E1.6.2 A1 (a) of the Code.

Tinderbox Road is a Council-maintained gravel road 6 – 7 m wide along the frontage to the subject land and provides an adequate access for firefighting purposes.

The indicative property accesses shown on the Bushfire Hazard Management Plan at Attachment A demonstrate that:

- property access for all new lots can be appropriately located and constructed to provide firefighting access to indicative building areas, and
- the proposed lot sizes and configuration can accommodate the required carriageway widths, horizontal clearances and turning areas for access by firefighting appliances.

Property access to each lot must be constructed at the time of building on the lot and must be completed to a compliant standard prior to the occupation of any habitable buildings.

The exact location, alignment and engineering design for new property accesses will be detailed as part of any future development applications for construction of habitable buildings. The developers, consultants and contractors must ensure at this time that design and construction comply in all respects with the detailed standards in Table E2, which are outlined in Schedule 2 of this report.

5.5 Provision of water supplies for firefighting purposes

The objective in provision of water supply for firefighting purposes is that:

- adequate, accessible and reliable water supply for the purposes of firefighting can be demonstrated at the subdivision stage and allow for the protection of life and property associated with the subsequent use and development of bush fire-prone areas.

5.5.1 Code provisions

The development occurs in an area not serviced with reticulated water supply.

The requirements for provision of static water supplies for firefighting purposes are detailed in E1.6.3 A2 and Table E5 of the Code. The content of Table E5 has been reproduced in Schedule 3 of this report.

In summary, the acceptable solutions under E1.6.3 A2 require that:

(a) TFS or an accredited person certifies that there is an insufficient increase in risk from bushfire to warrant the provision of a water supply for firefighting purposes, or

(b) The TFS or accredited person certifies that a proposed plan of subdivision demonstrates that a static water supply, dedicated to firefighting, will be provided and located compliant with Table E5.

5.5.2 Existing and Proposed water supplies for firefighting

There are ample water supplies available in the vicinity of the existing dwellings in the form of water tanks and dams. The owners also have private firefighting equipment in the form of pumps, hoses and a purpose-built trailer. There are, however, no compliant water tanks dedicated for firefighting purposes.

For the purposes of this report, the establishment of compliant static water supplies dedicated to firefighting in the form of water tanks is proposed to service all new lots.

5.5.3 Compliance – water supplies for firefighting

It is considered that there is insufficient increase in risk to the existing dwellings as a result of the proposal to warrant the mandating of a water supply for firefighting purposes, pursuant to E1.6.3 A2 (a) of the Code.

The indicative water tanks for firefighting and the indicative property access provisions shown on the Bushfire Hazard Management Plan at Attachment A demonstrate the capacity for all new lots to accommodate static water supplies compliant with the Code.

Static water supplies for firefighting to service each lot must be installed at the time of building on the lot and must be completed to a compliant standard prior to the occupation of any habitable buildings.

The actual location and specifications of static water supplies for firefighting to service the new lots arising from the subdivision will be detailed as part of any future development applications for construction of habitable buildings. If configured differently to the indicative solutions shown on the Bushfire Hazard Management Plan at Attachment A, developers, consultants and contractors must ensure at this time that design and installation comply in all respects with the detailed standards in Table E5, which are outlined in Schedule 3 of this report.

6.0 Advice

It is considered that there is insufficient increase in risk to the existing dwellings because of the proposal to warrant any specific bushfire protection measures, pursuant to the exemptions provided under clauses E1.6.1 A1 (a), E1.6.2 A1 (a) and E1.6.3 A2 (a) of the Code. Nevertheless, the risk to the existing dwellings could be reduced by upgrading elements of property access and water supplies for firefighting to make them more compliant with the Code.

The following recommendations do not form part of the requirements being certified under this report and the Bushfire Hazard Management Plan at Attachment A. They are provided as advice to the owners to reduce bushfire risk to the existing dwellings.

- Consider current vegetation management around the dwellings in the light of Table 1 and Table 2 of this report and BAL-12.5 requirements under AS3959 2009 and ensure that adequate separation is being provided from bushfire prone vegetation.
- During the next period of driveway maintenance, upgrade the shared access to the existing dwellings to provide a compliant turning area and compliant hardstand.
- At the next convenient opportunity, install a compliant water tank or water tanks dedicated for firefighting purposes in the vicinity of the existing dwellings, with a capacity of at least 20,000 l and provided with a compliant hardstand area.

7.0 Conclusions

The Bushfire Hazard Management Plan at Attachment A demonstrates the capacity of the subdivision to comply with the Code and AS3959 in respect of Building Areas, Provision of hazard management areas, Public and firefighting access and Provision of water supply for firefighting purposes. As a result, the Bushfire Hazard Management Plan has been certified.

8.0 References

Standards Australia Limited (2018). AS3959:2018 *Construction of buildings in bushfire prone areas*. Standards Australia, Sydney.

Tasmanian Planning Commission (2019). *Kingborough Interim Planning Scheme 2015.* Retrieved from iplan: http://www.iplan.tas.gov.au.

Appendix A. Illustrative photos of access & vegetation

Image 1 Access to existing dwellings on Lot 10 from Tinderbox Road (A)

Image 2 Access to existing dwellings on Lot 10 from Tinderbox Road (B)

Image 3 Potential location for dedicated static water supply for firefighting and provision of compliant turning area on Lot 10

Image 4 View N of Existing Dwelling A on Lot 10

Image 5 View E of Existing Dwelling A on Lot 10

Image 6 View S of Existing Dwelling A on Lot 10

Image 7 View W of Existing Dwelling A on Lot 10

Image 8 View N of Existing Dwelling B on Lot 10

Image 9 View E of Existing Dwelling B on Lot 10, with potential location for dedicated static water supply for firefighting and provision of compliant turning area at centre

Image 10 View S of Existing Dwelling B on Lot 10

Image 11 View W of Existing Dwelling B on Lot 10

Image 12 Typical Tinderbox Road frontage north of proposed access point for Lots 1 - 4 (Stage 1)

Image 13 Proposed shared access point for Lots 1 - 4 (Stage 1)

Image 14 Lower section of proposed shared access for Lots 1 - 4 (Stage 1)

Image 15 Proposed shared access point to Lots 5 – 8

Image 16 Typical Tinderbox Road frontage south of proposed access point for Lots 5 - 8 and north of proposed access point for the Balance

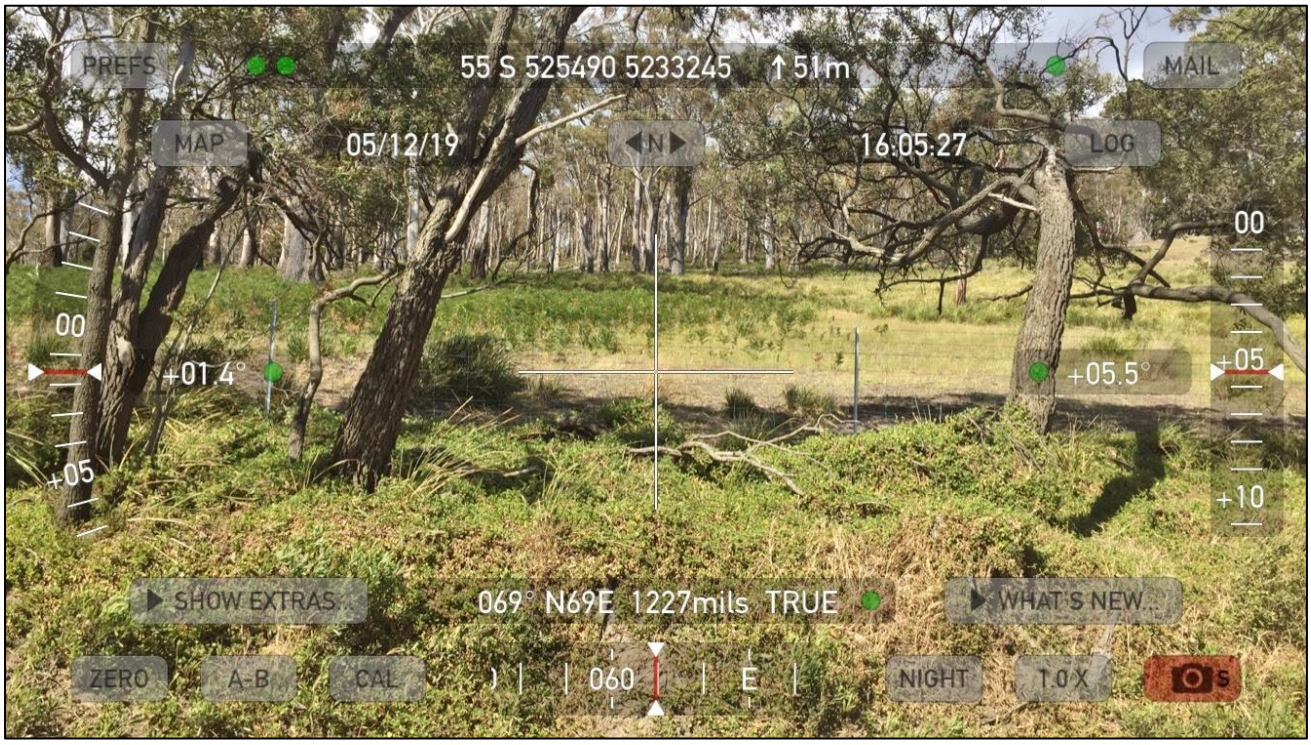


Image 17 Proposed access point for the Balance

Image 18 Pasture and forest (potential) north of the Indicative Building Area on Lot 1

Image 19 Pasture and forest (potential) east of the Indicative Building Area on Lot 1

Image 20 Pasture south of the Indicative Building Area on Lot 1

Image 21 Pasture west of the Indicative Building Area on Lot 1

Image 22 Pasture north of the Indicative Building Area on Lot 2

Image 23 Pasture east of the Indicative Building Area on Lot 2

Image 24 Pasture south of the Indicative Building Area on Lot 2

Image 25 Pasture west of the Indicative Building Area on Lot 2

Image 26 Pasture & forest north of the Indicative Building Area on Lot 3

Image 27 Pasture, woodland & forest east of the Indicative Building Area on Lot 3

Image 28 Pasture & forest south of the Indicative Building Area on Lot 3

Image 29 Pasture west of the Indicative Building Area on Lot 3

Image 30 Pasture & forest north of Indicative Building Area on Lot 4

Image 31 Pasture east of Indicative Building Area on Lot 4

Image 32 Pasture and narrow shelter belt south of Indicative Building Area on Lot 4

Image 33 Pasture & scrub west of Indicative Building Area on Lot 4

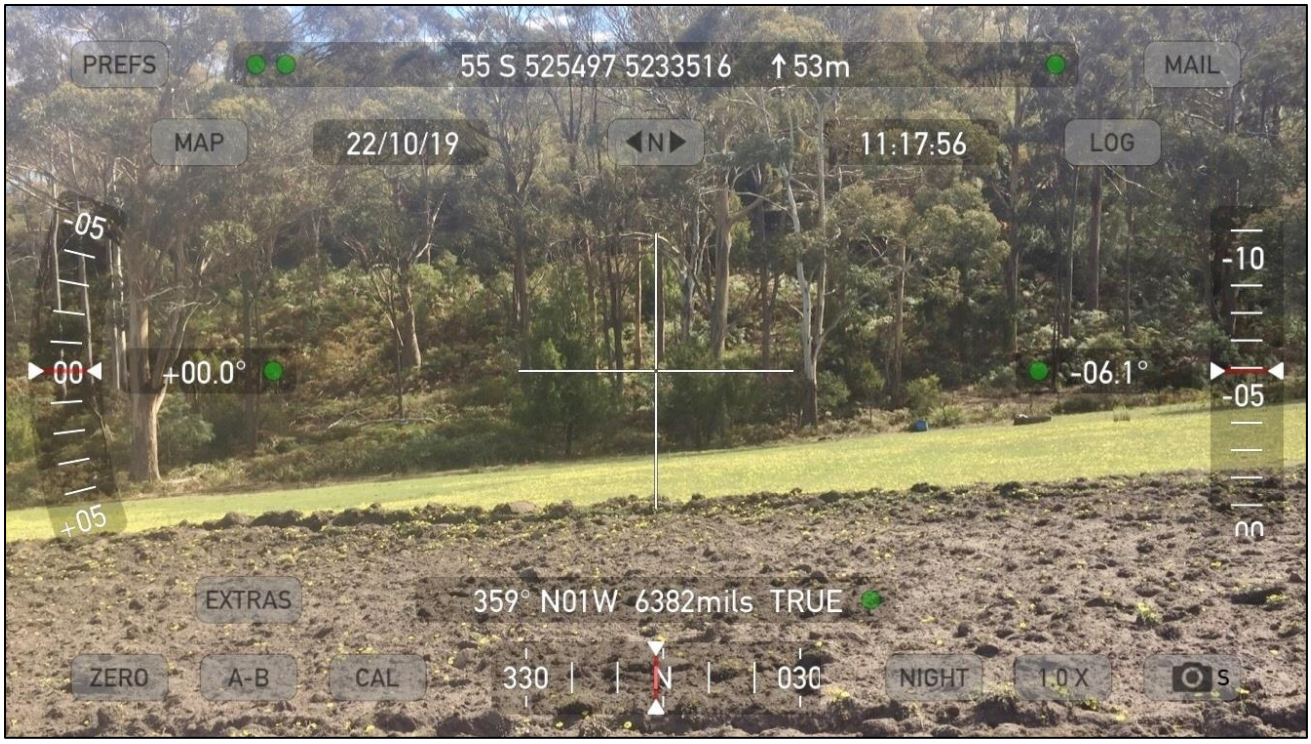


Image 34 Pasture & forest north of Indicative building areas on Lots 5 & 6

Image 35 Pasture & forest east of Indicative building areas on Lots 5 & 6

Image 36 Pasture south of Indicative building areas on Lots 5 & 6

Image 37 Pasture west of Indicative building areas on Lots 5 & 6

Image 38 Pasture north of Indicative building areas on Lots 7 & 8

Image 39 Pasture & forest east of Indicative building areas on Lots 7 & 8

Image 40 Pasture & 'forest' south of Indicative building areas on Lots 7 and 8

Image 41 Pasture west of Indicative building areas on Lots 7 and 8

Image 42 Pasture north of Indicative Building Area on Lot 9

Image 43 Pasture east of Indicative Building Area on Lot 9

Image 44 Pasture south of Indicative Building Area on Lot 9

Image 45 Pasture west of Indicative Building Area on Lot 9

Image 46 Pasture & forest north of Indicative Building Area on the Balance

Image 47 Pasture & forest (potential) east of Indicative Building Area on the Balance

Image 48 Pasture south of Indicative Building Area on the Balance

Image 49 Pasture west of Indicative Building Area on the Balance

Schedule 1. Guidelines for establishment and maintenance of Hazard Management Areas (HMAs)

Hazard management areas

Where not explicit, the following general advice should be applied to both the management of existing vegetation and the design and establishment of new plantings. More detailed advice about the principles and practices involved with bushfire hazard management can be found on the Tasmania Fire Service (TFS) website: http://www.fire.tas.gov.au/Show?pageId=colBuildingForBushfire.

1. An annual inspection and maintenance of hazard management areas should be conducted prior to summer or any other identified period of high fire risk.
2. Hazard management does not require the removal of all standing vegetation. Strategically retained or established areas of trees and shrubs can assist in mitigating bushfire risk by acting as an ember screen and wind break, particularly if comprised of relatively low flammability species.
3. To reduce the overall density of vegetation available to fuel a fire and to minimise potential for transmission of fire, areas of trees and shrubs should be thinned or separated to create discontinuous 'clumps' and a minimum 20 m separation should be maintained between any retained or planted clumps of vegetation.
4. Flammable vegetation should not be retained or planted directly adjacent to dwellings or in corridors which can form a 'wick' to the vicinity of habitable buildings.
5. A minimum 2 – 5 m horizontal separation should be maintained between the canopies of any retained or planted trees and low branches should be removed to create a minimum 2 m vertical separation between the tree canopy and underlying shrubs or ground cover.
6. No trees or branches should overhang habitable buildings and retained or planted trees should ideally be sited a minimum 10 m away from habitable buildings.
7. Grassland, pasture and lawn must be kept short (<100 mm) to act as 'low threat vegetation'.
8. Fine fuels such as leaves, bark and twigs should be removed from the ground periodically, particularly leading into summer.
9. Landscaping choices and management of flammable materials in the area immediately adjacent to habitable buildings is particularly important to minimise risk, particularly directly adjacent to flammable building elements (eg wooden decks and cladding) and glazed elements (eg windows and glass doors).

   It is recommended that non-combustible elements such as paths, paving and inorganic mulch (eg gravel or pebbles) are employed under and directly adjacent to habitable buildings and decks, with only minimal planting of relatively low-flammability vegetation (preferably low-growing shrubs and ground-cover).

   Other appropriate landscaping choices in the vicinity of habitable buildings may include maintained lawn, swimming pools, ornamental gardens comprised of recognised 'low flammability' species, vegetable gardens and orchards.
10. Flammable materials such as stored fuel (including gas cylinders), firewood, building materials and organic mulch (eg wood chips or bark) should not be stored under or directly adjacent to habitable buildings and decks.

Schedule 2. Requirements for property access in the subdivision to comply with *E1.0 Bushfire Prone Areas Code*

Property access for firefighting

Property access is required for a fire appliance to access firefighting water points on all lots.

All property access required for a fire appliance to access firefighting water points will need to meet the following standards to comply with the Code:

(a) all-weather construction,

(b) load capacity of at least 20 tonnes, including for bridges and culverts,

(c) minimum carriageway width of 4 metres,

(d) minimum vertical clearance of 4 metres,

(e) minimum horizontal clearance of 0.5 metres from the edge of the carriageway,

(f) cross falls of less than 3 degrees (1:20 or 5%),

(g) dips less than 7 degrees (1:8 or 12.5%) entry and exit angle,

(h) curves with a minimum inner radius of 10 metres,

(i) maximum gradient of 15 degrees (1:3.5 or 28%) for sealed roads, and 10 degrees (1:5.5 or 18%) for unsealed roads, and

(j) terminate with a turning area for fire appliances provided by one of the following:

  (i) a turning circle with a minimum inner radius of 10 metres,

  (ii) a property access encircling the building, or

  (iii) a hammerhead “T” or “Y” turning head 4 metres wide and 8 metres long.

Shared property access to Lots 1, 2, 3 and 4 is over 200 m long and is required to access 3 or more properties. As such, it will need to meet the following additional standards to comply with the Code:

(a) passing bays of 2 metres additional carriageway width and 20 metres length must be provided every 100 metres.

Individual property access to Lot 4 from the end of the shared access is over 200 m long. As such, it will need to meet the following additional standards to comply with the Code:

(a) passing bays of 2 metres additional carriageway width and 20 metres length provided every 200 metres.

Schedule 3. Requirements for static water supply for firefighting to comply with *E1.0 Bushfire Prone Areas Code*

Provision of static water supplies for firefighting purposes

Static water supplies dedicated for firefighting purposes are required to service all lots and need to meet the following standards to comply with the Code.

A. Distance between building area to be protected and water supply

The following requirements apply:

a) the building area to be protected must be located within 90 m of the firefighting water point of a static water supply, and

b) the distance must be measured as a hose lay, between the firefighting water point and the furthest part of the building area.

B. Static Water Supplies

A static water supply:

a) may have a remotely located off-take connected to the static water supply,

b) may be a supply for combined use (firefighting and other uses) but the specified minimum quantity of firefighting water must be available at all times,

c) must be a minimum of 10,000 l per building area to be protected; this volume of water must not be used for any other purpose including firefighting sprinklers and spray systems,

d) must be metal, concrete or lagged by non-combustible materials if above ground, and

e) if a tank can be located so it is shielded in all directions in compliance with section 3.5 of *Australian Standards AA3959-2009 Construction of buildings in bushfire-prone areas*, the tank may be constructed of any material, provided that the lowest 400 mm of the tank is protected by:

(i) metal,

(ii) non-combustible material, or

(iii) fibre-cement a minimum of 6mm thickness.

C. Fittings, pipework and accessories (including stands and tank supports)

Fittings and pipework associated with a firefighting water point for a static water supply must:

a) have a minimum nominal internal diameter of 50 mm,

b) be fitted with a valve with a minimum nominal internal diameter of 50 mm,

c) be metal or lagged by non-combustible materials if above ground,

d) if buried, have a minimum depth of 300mm (compliant with *AS/NZS 160-19600.1-2003 clause 5.23*),

e) provide a DIN or NEN Standard forged Storz 65 mm coupling fitted with a suction washer for connection to firefighting equipment,

f) ensure the coupling is accessible and available for connection at all times,

g) ensure the coupling is fitted with a blank cap and securing chain (minimum 220 mm length),

h) ensure underground tanks have either an opening at the top of not less than 250 mm diameter or a coupling compliant with this Table, and

i) if a remote offtake is installed, ensure the offtake is in a position that is:

(i) visible,

(ii) accessible to allow connection by firefighting equipment,

(iii) at a working height of 450 – 600 mm above ground level, and

(iv) protected from possible damage, including damage by vehicles.

D. Signage for static water connections

The firefighting water point for a static water supply must be identified by a sign permanently fixed to the exterior of the assembly in a visible location. The sign must:

a) comply with water tank signage requirements within *Australian Standard AS2304-2011 Water storage tanks for fire protection systems*, or

b) comply with the Tasmania Fire Service Guideline:

(i) marked with the letter 'W' contained within a circle, with the letter in upper case and not less than 100 mmm in height,

(ii) marked in fade-resistant material with white reflective lettering and circle on a red background,

(iii) located within 1m of the water connection point in a situation which will not impede access or operation, and

(iv) no less than 400 mm above ground.

E. Hardstand

A hardstand area for fire appliances must be:

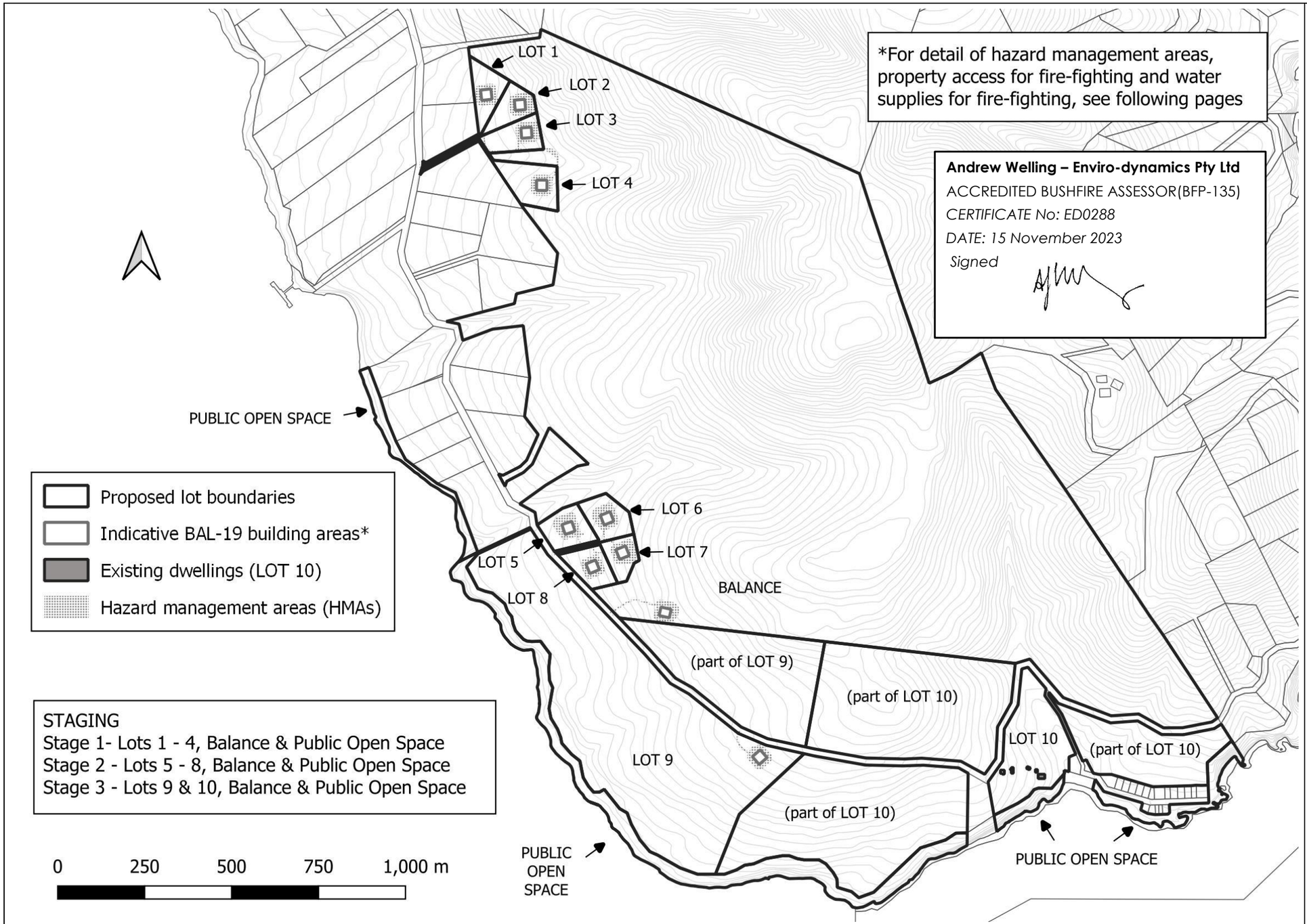
a) no more than 3 m from the firefighting water point, measured as a hose lay (including the minimum water level in dams, swimming pools and the like),

b) no closer than 6 m from the building area to be protected,

c) a minimum width of 3 m constructed to the same standard as the carriageway, and

d) connected to the property access by a carriageway equivalent to the standard of the property access.

ATTACHMENT A. *Bushfire Hazard Management Plan, v3 (page 1 of 5) – Overview of proposed subdivision*



*For detail of hazard management areas, property access for fire-fighting and water supplies for fire-fighting, see following pages

Andrew Welling – Enviro-dynamics Pty Ltd
ACCREDITED BUSHFIRE ASSESSOR(BFP-135)
CERTIFICATE No: ED0288
DATE: 15 November 2023
Signed

STAGING
Stage 1- Lots 1 - 4, Balance & Public Open Space
Stage 2 - Lots 5 - 8, Balance & Public Open Space
Stage 3 - Lots 9 & 10, Balance & Public Open Space

For: PDA Surveyors obo owners

Titles: CT 139168/1

Assessment #: ED0288

enviro-dynamics
environmental solutions for a changing world

This plan is to be printed at A3 and read in conjunction with:

- Bushfire Hazard Report for proposed 11 - lot subdivision at 441 Tinderbox Road Tinderbox (v3, Enviro-dynamics, November 2023)

1. Hazard Management Areas (HMAs)

a) HMAs must be provided at the time of building on each lot and established to a compliant standard prior to occupation of any habitable buildings.
b) HMAs must be maintained as 'low threat vegetation' or 'non-vegetated land' (as defined by Clause 2.2.3.2 of AS3959) for the life of the development.
c) No tree branches should overhang habitable buildings and preferably no branches/canopy should be within 10 m of habitable buildings.
d) Trees and shrubs should be separated to create discontinuous 'clumps' and a minimum 20m separation should be maintained between clumps of shrubs.
e) Horizontal separation of 2-5 m should be maintained between tree canopies and low branches should be removed to create a minimum 2 m vertical separation between tree canopy and underlying vegetation.
f) Grassland, pasture and lawn must be kept short (less than 100 mm).
g) Fine fuels such as leaves, bark and twigs should be removed from the ground periodically, particularly leading into summer.
h) Flammable vegetation should not be retained or planted under or directly adjacent to habitable buildings (particularly decks, flammable cladding and glazed elements) or in corridors which can act as a 'wick' to channel fire to habitable buildings.
i) Flammable material such as firewood, building materials, organic mulch and fuel should not be stored under decks or habitable buildings nor directly adjacent to habitable buildings.

2. Public and Firefighting Access

a) Property access must be constructed at the time of building on each lot and must be established to a compliant standard prior to occupation of any habitable buildings.
b) At the time of construction, owners /developers must ensure that property access complies with Table E2 of the Code.

3. Water Supply for Firefighting

a) No reticulated water supply is available.
b) Static water supplies for firefighting must be provided at the time of building on each lot and established to a compliant standard prior to occupation of any habitable buildings.
c) At the time of installation, owners/developers must ensure that static water supplies for firefighting comply with Table E5 of the Code.

4. Construction Standards

a) This plan only certifies that future habitable buildings constructed within the indicative building areas can achieve the separation distances required to allow construction to BAL-19.

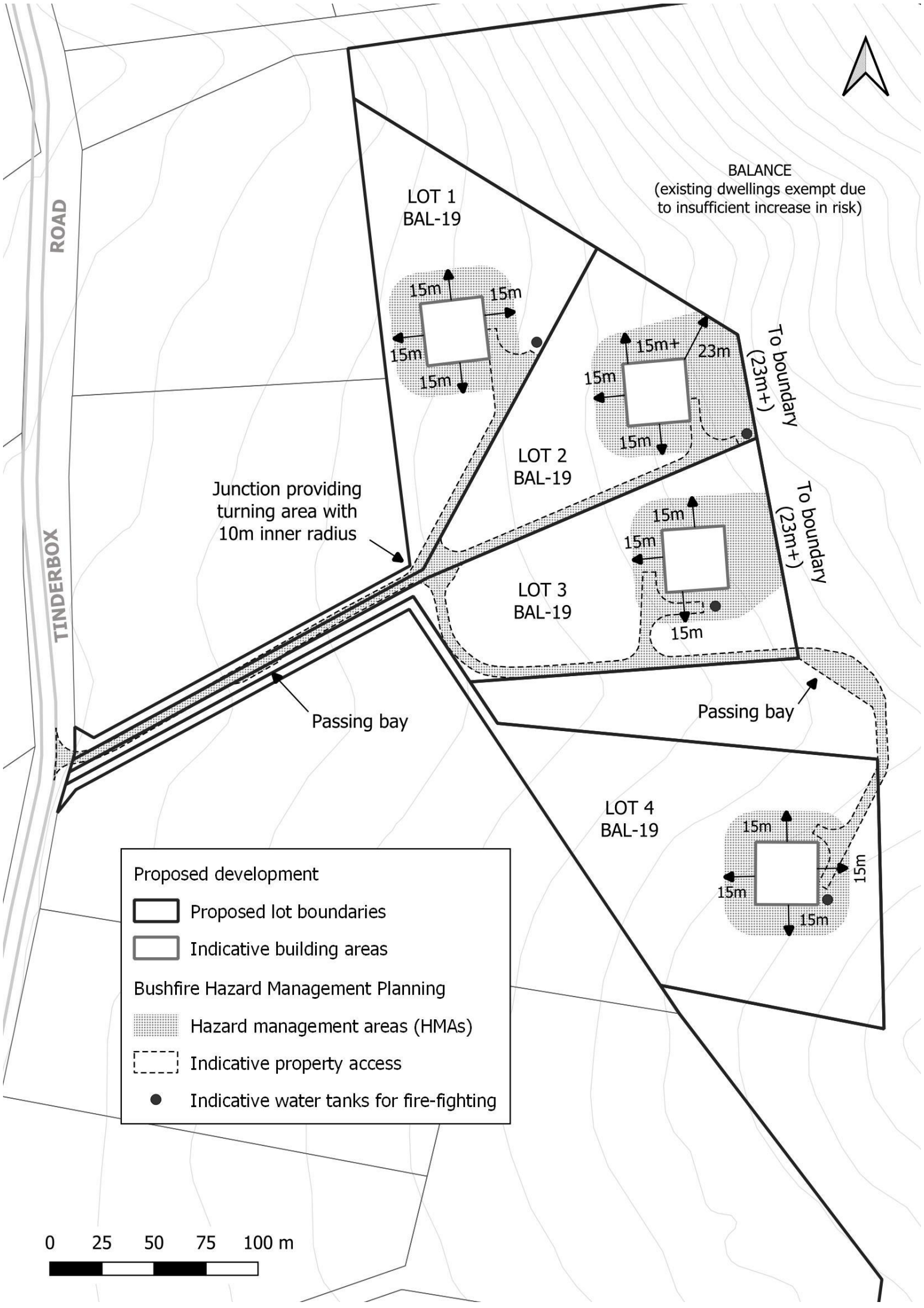
For: PDA Surveyors obo owners

Titles: CT 139168/1

Assessment #: ED0288

This plan is to be printed at A3 and read in conjunction with:

- Bushfire Hazard Report for proposed 11 - lot subdivision at 441 Tinderbox Road Tinderbox (v3, Enviro-dynamics, November 2023)



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d) Trees and shrubs should be separated to create discontinuous 'clumps' and a minimum 20m separation should be maintained between clumps of shrubs.
e) Horizontal separation of 2-5m should be maintained between tree canopies and low branches should be removed to create a minimum 2m vertical separation between tree canopy and underlying vegetation.
f) Grassland, pasture and lawn must be kept short (less than 100mm).
g) Fine fuels such as leaves, bark and twigs should be removed from the ground periodically, particularly leading into summer.
h) Flammable vegetation should not be retained or planted under or directly adjacent to habitable buildings (particularly decks, flammable cladding and glazed elements) or in corridors which can act as a 'wick' to channel fire to habitable buildings.
i) Flammable material such as firewood, building materials, organic mulch and fuel should not be stored under decks or habitable buildings nor directly adjacent to habitable buildings.

2. Public and Firefighting Access

a) Property access must be constructed at the time of building on each lot and must be established to a compliant standard prior to occupation of any habitable buildings.
b) At the time of construction, owners /developers must ensure that property access complies with Table E2 of the Code.

3. Water Supply for Firefighting

a) No reticulated water supply is available.
b) Static water supplies for firefighting must be provided at the time of building on each lot and established to a compliant standard prior to occupation of any habitable buildings.
c) At the time of installation, owners/developers must ensure that static water supplies for firefighting comply with Table E5 of the Code.

4. Construction Standards

a) This plan only certifies that future habitable buildings constructed within the indicative building areas can achieve the separation distances required to allow construction to BAL-19.

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Andrew Welling – Enviro-dynamics Pty Ltd
ACCREDITED BUSHFIRE ASSESSOR(BFP-135)
CERTIFICATE No: ED0288
DATE: 15 November 2023
Signed

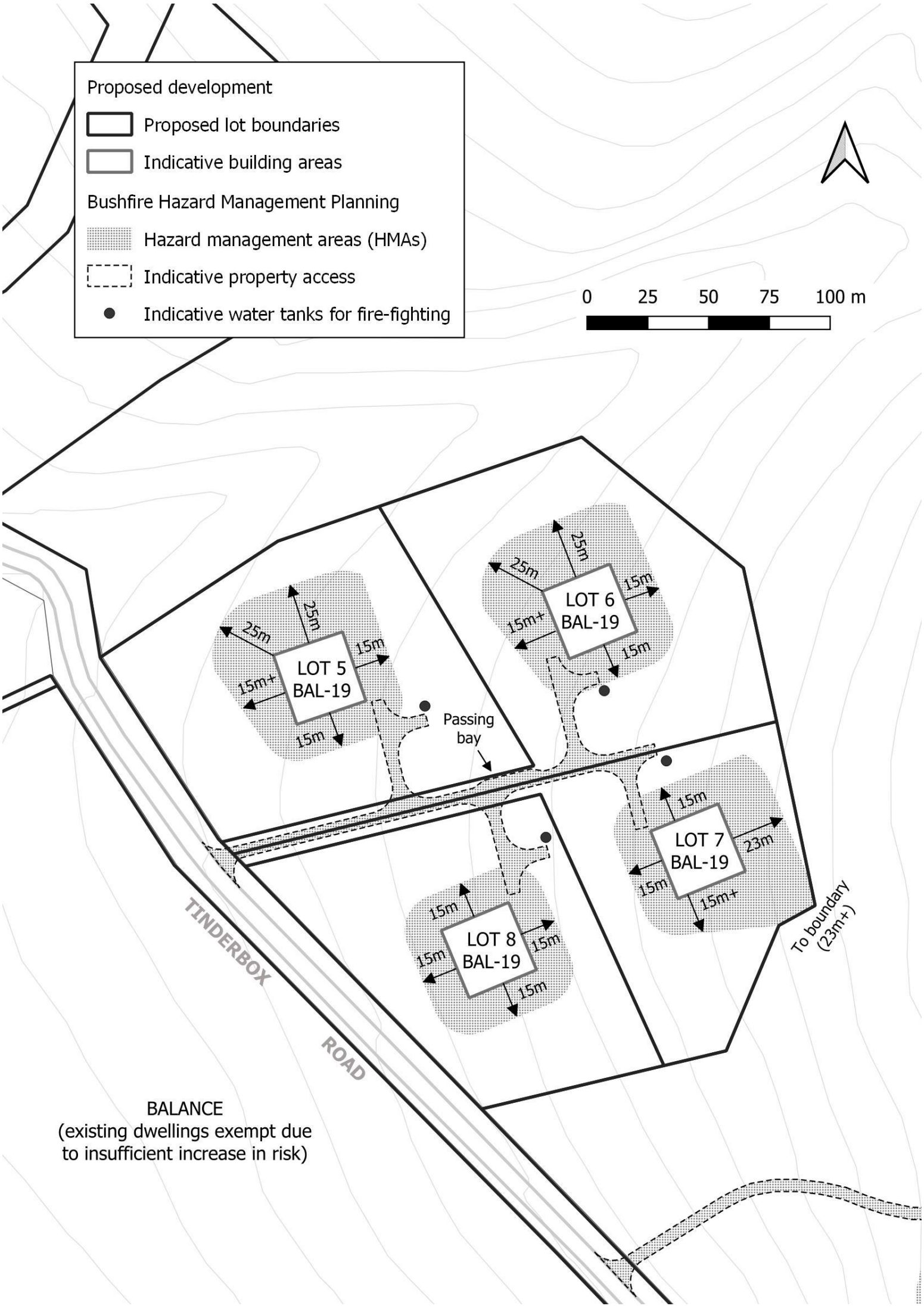
For: PDA Surveyors obo owners

Titles: CT 139168/1

Assessment #: ED0288

This plan is to be printed at A3 and read in conjunction with:

- Bushfire Hazard Report for proposed 11 - lot subdivision at 441 Tinderbox Road Tinderbox (v3, Enviro-dynamics, November 2023)



1. Hazard Management Areas (HMAs)

a) HMAs must be provided at the time of building on each lot and established to a compliant standard prior to occupation of any habitable buildings.
b) HMAs must be maintained as 'low threat vegetation' or 'non-vegetated land' (as defined by Clause 2.2.3.2 of AS3959) for the life of the development.
c) No tree branches should overhang habitable buildings and preferably no branches/canopy should be within 10m of habitable buildings.
d) Trees and shrubs should be separated to create discontinuous 'clumps' and a minimum 20m separation should be maintained between clumps of shrubs.
e) Horizontal separation of 2-5m should be maintained between tree canopies and low branches should be removed to create a minimum 2m vertical separation between tree canopy and underlying vegetation.
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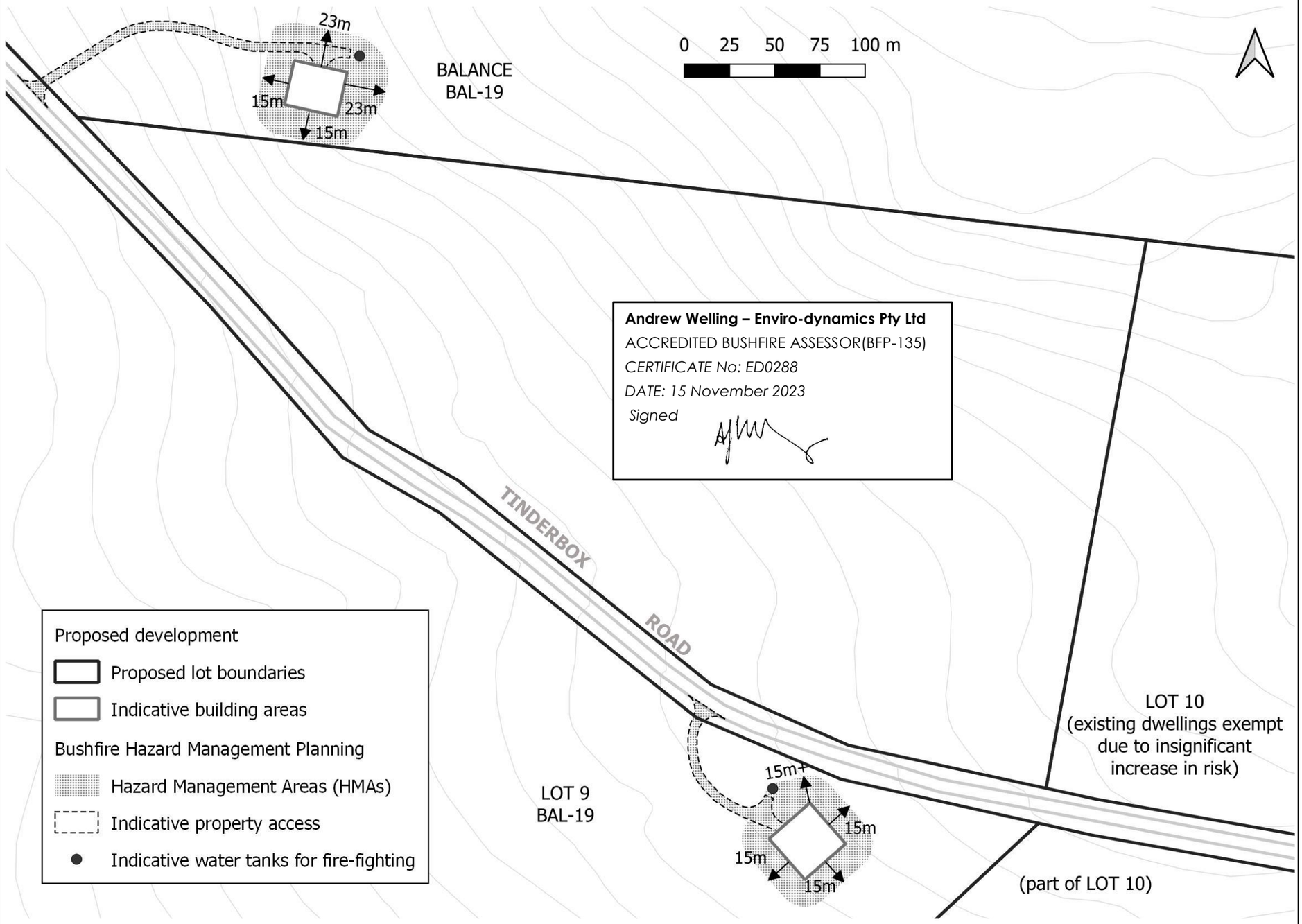
ATTACHMENT A. *Bushfire Hazard Management Plan, v3 (page 4 of 5) – Stage 3*



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For: PDA Surveyors obo owners

Titles: CT 139168/1

Assessment #: ED0288

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This plan is to be printed at A3 and read in conjunction with:

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For: PDA Surveyors obo owners

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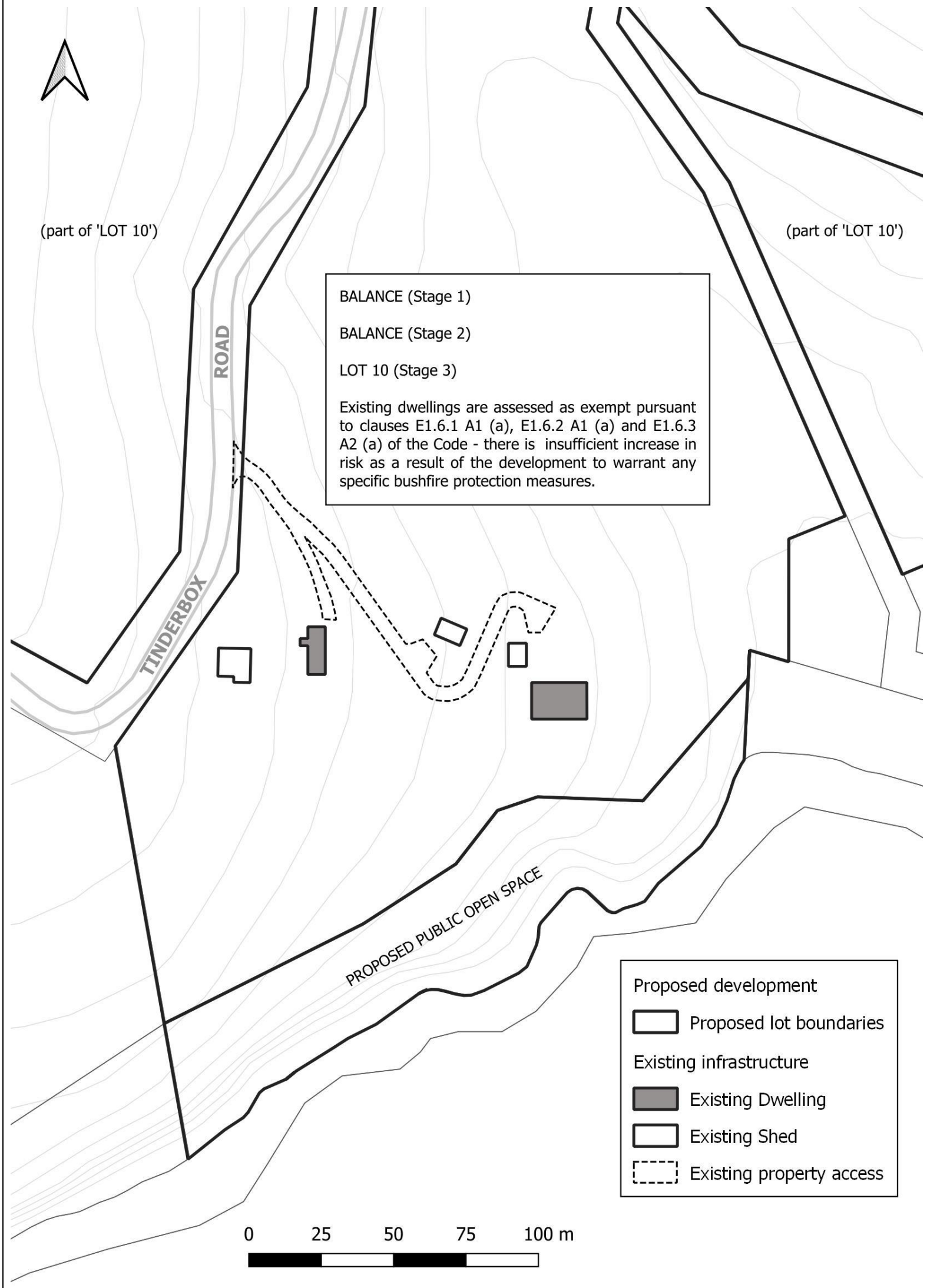

1. Exemptions

The existing dwellings have been assessed as exempt from specific bushfire hazard management measures pursuant to clauses E1.6.1 A1 (a), E1.6.2 A1 (a) and E1.6.1 A2 (a) of the Code. As such, there are no prescribed bushfire protection measures in respect of hazard management areas, access for firefighting or water supplies for firefighting.

2. Advice

The following recommendations do not form part of the requirements being certified under this Bushfire Hazard Management Plan. They are provided as advice to the owners to reduce bushfire risk to the existing dwellings.

b) Consider current vegetation management around the dwellings in the light of Table 1 and Table 2 of this report and BAL-12.5 requirements under AS3959 2009 and ensure that adequate separation is being provided from bushfire prone vegetation.

c) During the next period of driveway maintenance, upgrade the shared access to the existing dwellings to provide a compliant turning area and compliant hardstand.

d) At the next convenient opportunity, install a compliant water tank or water tanks dedicated for firefighting purposes in the vicinity of the existing dwellings, with a capacity of at least 20,000l and provided with a compliant hardstand area.

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Andrew Welling – Enviro-dynamics Pty Ltd
ACCREDITED BUSHFIRE ASSESSOR(BFP-135)
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Signed

BUSHFIRE-PRONE AREAS CODE

CERTIFICATE[1] UNDER S51(2)(d) *LAND USE PLANNING AND APPROVALS ACT 1993*

1. Land to which certificate applies

The subject site includes property that is proposed for use and development and includes all properties upon which works are proposed for bushfire protection purposes.

Street address:	441 Tinderbox Road Tinderbox
Certificate of Title / PID:	FR 139168/1

2. Proposed Use or Development

Description of proposed Use and Development:	Eleven-lot subdivision (ten lots & balance)
Applicable Planning Scheme:	Kingborough Interim Planning Scheme 2015

3. Documents relied upon

This certificate relates to the following documents:

Title	Author	Date	Version
43586HC_Bushfire Hazard Report_v3	Enviro-dynamics	November 2023	3
43586HC_BHMP_v3	Enviro-dynamics	15 November 2023	3

[1] This document is the approved form of certification for this purpose and must not be altered from its original form.

4. Nature of Certificate

The following requirements are applicable to the proposed use and development:

☒	**E1.4 / C13.4 – Use or development exempt from this Code**	
	Compliance test	**Compliance Requirement**
☐	E1.4(a) / C13.4.1(a)	Insufficient increase in risk

☐	**E1.5.1 / C13.5.1 – Vulnerable Uses**	
	Acceptable Solution	**Compliance Requirement**
☐	E1.5.1 P1 / C13.5.1 P1	
☐	E1.5.1 A2 / C13.5.1 A2	Emergency management strategy
☐	E1.5.1 A3 / C13.5.1 A2	Bushfire hazard management plan

☐	**E1.5.2 / C13.5.2 – Hazardous Uses**	
	Acceptable Solution	**Compliance Requirement**
☐	E1.5.2 P1 / C13.5.2 P1	
☐	E1.5.2 A2 / C13.5.2 A2	Emergency management strategy
☐	E1.5.2 A3 / C13.5.2 A3	Bushfire hazard management plan

☒	**E1.6.1 / C13.6.1 Subdivision: Provision of hazard management areas**	
	Acceptable Solution	**Compliance Requirement**
☐	E1.6.1 P1 / C13.6.1 P1	
☒	E1.6.1 A1 (a) / C13.6.1 A1(a)	Insufficient increase in risk (pursuant to existing dwellings on the Balance)

☒	E1.6.1 A1 (b) / C13.6.1 A1(b)	Provides BAL-19 for all new lots (including any lot designated as 'balance')
☐	E1.6.1 A1(c) / C13.6.1 A1(c)	Consent for Part 5 Agreement

☒	**E1.6.2 / C13.6.2 Subdivision: Public and fire fighting access**	
	Acceptable Solution	**Compliance Requirement**
☐	E1.6.2 P1 / C13.6.2 P1	
☒	E1.6.2 A1 (a) / C13.6.2 A1 (a)	Insufficient increase in risk (pursuant to existing dwellings on the Balance)
☒	E1.6.2 A1 (b) / C13.6.2 A1 (b)	Access for all new lots complies with relevant Tables

☒	**E1.6.3 / C13.1.6.3 Subdivision: Provision of water supply for fire fighting purposes**	
	Acceptable Solution	**Compliance Requirement**
☐	E1.6.3 A1 (a) / C13.6.3 A1 (a)	Insufficient increase in risk
☐	E1.6.3 A1 (b) / C13.6.3 A1 (b)	Reticulated water supply complies with relevant Table
☐	E1.6.3 A1 (c) / C13.6.3 A1 (c)	Water supply consistent with the objective
☒	E1.6.3 A2 (a) / C13.6.3 A2 (a)	Insufficient increase in risk (pursuant to existing dwellings on the Balance)
☒	E1.6.3 A2 (b) / C13.6.3 A2 (b)	Static water supply complies with relevant Table
☐	E1.6.3 A2 (c) / C13.6.3 A2 (c)	Static water supply consistent with the objective

5. Bushfire Hazard Practitioner

Name:	Andrew Welling	**Phone No:**	0400 151 205
Postal Address:	16 Collins St Hobart 7000	**Email Address:**	andy.welling@enviro-dynamics.com.au
Accreditation No:	BFP – 135	**Scope:**	1 & 3B, 3C

6. Certification

I certify that in accordance with the authority given under Part 4A of the *Fire Service Act 1979* that the proposed use and development:

☐ Is exempt from the requirement Bushfire-Prone Areas Code because, having regard to the objective of all applicable standards in the Code, there is considered to be an insufficient increase in risk to the use or development from bushfire to warrant any specific bushfire protection measures, or

☒ The Bushfire Hazard Management Plan/s identified in Section 3 of this certificate is/are in accordance with the Chief Officer's requirements and compliant with the relevant **Acceptable Solutions** identified in Section 4 of this Certificate.

Signed:

certifier

Name:	Andrew Welling	**Date:**	15 November 2023

Certificate Number: ED0288

(for Practitioner Use only)