

# Agricultural, Natural Values and Bushfire Hazard Management Report

**Report for:** Allen Bryan

**Property Location:** 247 West End Road, Leeka, Flinders Island.

**Prepared by:** Astrid Ketelaar & Scott Livingston  
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**Date:** 11<sup>th</sup> December 2013



## Summary

- Client:** Allen Bryan. Owners SJ, NA & TJ Bryan.
- Property identification:** The title is located at Tanners Bay 5km east of Leeka on the western side of Flinders Island. Current zoning is Rural, (*Flinders Island Planning Scheme 1994*). CT 228091/1 (7.3ha), 247 West End Road, Leeka, Tas 7252. The land is within the “ecologically sensitive” special area.
- Proposal:** A 3 lot subdivision is planned for land at 247 West End Road, Flinders Island.
- Assessment comments:** Under the *Flinders Island Planning Scheme 1994*, consideration of the impact on agriculture, natural values and under Planning Directive 5 an assessment of the bushfire risks is required. An initial desktop assessment was undertaken followed by a field inspection on the 2<sup>nd</sup> Dec 2013 to confirm or otherwise the desktop study findings and determine the Bushfire Attack Level and Risk. This report summarises the findings of the desktop and field assessment and provides a Bushfire Hazard Management Plan.
- Conclusion:** The title has no agricultural value now and no agricultural potential. The majority of the title supports a threatened vegetation community (*Callitris rhomboidea* forest (NCR)) and is likely to support some threatened flora and possibly threatened fauna, however none were identified on the site visit. The subdivision will have minimal impact on the identified natural values. The area is bushfire prone, being less than 100m from vegetation greater than 1 ha in size. There is an existing house on Lot 1 for which there is no increase in risk. Lot 2 has a small building envelope at BAL19 only and Lot 3 has a building envelope at BAL12.5. with a larger envelope at BAL19. Provision of a water supply and access construction/upgrades will be required to meet Code requirements.

**Assessment by:** \_\_\_\_\_

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And



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## INTRODUCTION

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The title is located at Tanners Bay, 5km east of Leeka on the western side of Flinders Island. The title (CT 228091/1) is approximately 7.3ha at 247 West End Road, Leeka. The current zoning is Rural, (*Flinders Island Planning Scheme 1994*) and the land is within the “ecologically sensitive” special area.

A 3 lot subdivision is proposed for the title. Under the *Flinders Island Planning Scheme 1994*, consideration of the impact on agriculture, natural values and under Planning Directive 5 an assessment of the bushfire risks is required. An initial desktop assessment was undertaken followed by a field inspection on the 2<sup>nd</sup> Dec 2013 to confirm or otherwise the desktop study findings and determine the Bushfire Attack Level and Risk. This report summarises the findings of the desktop and field assessment and provides a Bushfire Hazard Management Plan in Appendix 3.

## DESCRIPTION

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The title is bisected by West End Road which follows the base of the slope along the southern edge of the Leeka Peninsula. Above (north of) the road the land slopes steeply rising from 10m ASL at the road to 70m ASL in the north western corner. Below (south of) the road the land slopes gently down to the coast. The title has a south-easterly aspect. There are two access tracks off West End Road visible on the aerial imagery which join and provide access to a dwelling near the coast.

Other than the cleared portion in the vicinity of the existing house, and some grassland adjacent to the coast, vegetation on and surrounding the title is comprised of forest and dry scrub. The land is bounded to the south by coast and sea.

Mean annual rainfall is 700mm (DPIPWE). Underlying geology is granite and soils have a coarse sandy surface horizon.

Published Land Capability shows the area to be Class 5.

There are no threatened flora or fauna recorded on the title (Department of Primary Industry, accessed 25/9/13). The title is bound by the Marshall Beach Conservation Area on the coast to the south, similar sized private freehold titles to the east and west and the Mount Tanner Nature Recreation Area to the north.

See Appendix 1 for maps and Appendix 2 for photos.

## AGRICULTURAL VALUE

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There are no irrigation water resources associated with the title (DPIPWE 2013) and there is no capacity to develop irrigation on the title as there are no surface water sources and groundwater is likely to be too saline for irrigating. The closest irrigation water rights are

more than 6km to the north on farming land in the vicinity of Killiecrankie. There is no agricultural activity in proximity to the subject title.

Soils have been mapped by Dimmock (1957) as Quoin (Q). Dimmock (1957) describes Quoin soils as follows;

Quoin (Q) – Strongly acidic granite based soils, unattractive for agricultural development because of restricted drainage, acidity and low natural fertility.

Soils on the title are considered not suitable for agricultural development and this combined with slope and rock outcrops on the northern portion, and the sandy nature of the soils leading to a high risk of erodibility, as well as the saline nature of the coastal environment indicates the agricultural limitations are more severe than is commonly associated with Class 5 Land. The majority of the northern portion of the title is Class 7 land and the balance is Class 6. Class 6 land is not suitable for cultivation and should be retained under its native vegetation cover; at best this can support some grazing and Class 7 land is unsuitable for agriculture (Grose, 1999). There is no agricultural activity in the vicinity of the title.

The title is considered to have no agricultural value currently and no agricultural potential.

## **NATURAL VALUES**

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### **VEGETATION**

Other than the cleared portion in the vicinity of the existing house, vegetation on the title according to Tasveg 3.0 is comprised of 6.4ha *Callitris rhomboidea* forest (NCR), 1.6ha *Eucalyptus nitida* forest (DNF) and 0.6ha Coastal grass and herbfield (GHC) (Tasveg 3.0). Of these NCR is listed as a threatened vegetation community in Schedule 3A of the *Nature Conservation Act 2002*. The 6.4ha of NCR is part of a much larger area (145ha) of this vegetation community which extends to the west both north and south of West End Rd through to Pine Scrub and on to the adjacent title to the east.

The site visit assessment concentrated on the areas proposed for development and as a result the boundaries of the vegetation communities in the vicinity of the potential house sites were more accurately defined. The previously cleared area (now mainly bracken fern and kunzea) was mapped as urban/developed land (FUM) and dry scrub (SDU). The extent of the *Callitris rhomboidea* forest (NCR) and the Coastal grass and herbfield (GHC) was actually less than shown by Tasveg 3.0 in the vicinity of the building envelopes (3ha for the NCR and 0.1ha for the GHC and the DNF was more extensive (3.1ha). The proposed building envelopes will not intrude on the threatened vegetation community or the Coastal grass and herbfield. The proposed building envelopes are within previously cleared areas (now mainly bracken and kunzea) or *Eucalyptus nitida* forest (DNF). See Appendix 1, Figure 2.

### **FLORA**

The Natural Vales Atlas has records of threatened flora sightings and table 1 lists records within 1km of the subject title.

**Table 1. Threatened flora species recorded in the Natural Values Atlas within 1km of the subject titles.**

Species Name	Preferred Common Names	State Schedule	National Schedule	Last recorded sighting
<i>Isopogon ceratophyllus</i>	horny conebrush	vulnerable		unknown
<i>Leucopogon esquamatus</i>	Swamp beardheath	rare		unknown
<i>Spyridium parvifolium</i>	Dusty miller	rare		unknown

Three threatened flora species have previously been recorded within 1km of the title. The species recorded are listed under the State Schedules and there are none listed on National Schedules of EPBC. An assessment of the proposed building envelopes was undertaken and no species of threatened flora were found on the proposed development sites.

### **FAUNA**

The Natural Values Atlas has records of threatened fauna sightings in the vicinity of the titles and there are no records within 1km of the title, although there is a white bellied sea eagle nest recorded approximately 1km to the west. Table 2 includes species with suitable habitat within 1km of the subject titles.

Of these it is possible that the subject title provides habitat for tussock skink, although the habitat is limited to the foreshore and is only approximately 0.1ha occurs on the title. The proposed building envelopes do not intrude on this area.

### **DISTURBANCE**

The Natural Values Atlas records African boxthorn, narrow leafed cotton bush and Paterson curse as being present within 5km. None of these species were found on the title and while there is some disturbance and previous clearance associated with a macadamia plantation and powerlines as well as the road dissecting the title, the cleared areas and road verges are now regenerating (predominantly with bracken and kunzea).

Table 2. Threatened fauna recorded or with suitable habitat within 1km of the subject titles from the Natural Values Atlas

Species Name	Preferred Common Names	State Schedule	National Schedule	Recorded with 1km	Habitat suitability on subject titles	Notes
<i>Antipodia chaostola</i>	chaostola skipper	e	EN	no	unlikely	Not previously recorded on FI
<i>Galaxiella pusilla</i>	eastern dwarf galaxias	v	VU	no	Nil	No waterways
<i>Haliaeetus leucogaster</i>	White-bellied sea eagle	v		Nest recorded in the 1980s	unlikely	No nesting habitat as there are no tall Eucalypt communities on the title. Foraging habitat only.
<i>Limnodynastes peroni</i>	striped marsh frog	e		no	unlikely	No permanently wet areas
<i>Litoria raniformis</i>	green and gold frog	v	VU	no	unlikely	No permanently wet areas
<i>Pardalotus quadragintus</i>	forty-spotted pardalote	e	EN	no	Nil	Prefers dry Eucalypt forest with <i>E. viminalis</i>
<i>Prototroctes maraena</i>	australian grayling	v	VU	no	none	No waterways
<i>Pseudemoia pagenstecheri</i>	tussock skink	v		no	possible	Prefers native tussock grassland, however extent of tussock grassland is limited to the foreshore
<i>Pseudomys novaehollandiae</i>	new holland mouse	e	VU	no	low	Prefers dry/sandy heathland

**BAL AND RISK ASSESSMENT**

The land is considered to be within a Bushfire Prone Area due to proximity of a vegetation patch to the west, north and east greater than 1 ha in area.

**VEGETATION AND SLOPE**

Lot 1(Existing dwelling) – Building envelope not relevant

Lot 2

	North	East	South	West
Vegetation, within 100 m of subdivision boundary and proposed lots	0-27m, road 27-100m, forest	0-100m mosaic managed land/residence/scrub/forest	0-20m Grassland 20-30m Sand 30 – 100m water	0-100m mosaic managed land/residence/scrub/forest
Slope (degrees, over 100m)	Upslope	Flat	Flat	Flat

	North	East	South	West
Vegetation, within 100 m of building envelope	0-83m, scrub 83-100m, road	0-50m managed land 50-100m scrub/forest	0-30m managed land 30-80m scrub 80 – 100m grassland	0-50m scrub 50-80 managed land 80-100 scrub
Slope (degrees, over 100m)	Upslope	Flat	Flat	Flat

Lot 3

	North	East	South	West
Vegetation, within 100m of subdivision boundary and proposed lots	0-100m forest	0-20m forest 20 – 47m road 47 – 100m mosaic regenerating cleared land/scrub/forest/access tracks	0-27m, road 27 – 100m mosaic regenerating cleared land/scrub/forest/access tracks	0-100m forest
Slope (degrees, over 100m)	Upslope	Flat	Downslope0-5°	Upslope

	North	East	South	West
Vegetation, within 100m of building envelope	0-100m forest	0-40m forest 40 – 67m road 67 – 100m mosaic regenerating cleared land/scrub/forest	0-20m forest 20 -47m, road 47 – 100m mosaic regenerating cleared land/scrub/forest	0-100m forest
Slope (degrees, over 100m)	Upslope	Flat	Downslope0-5°	Flat

See Appendix 1 (Figure 4) for building envelopes and BAL ratings and Appendix 2 for photos.

### **BUILDING AREA BAL RATING**

Setbacks distances for Bal 12.5 and 19 Ratings have been calculated using Mapinfo GIS on vegetation types adjacent to the proposed building envelopes. It has been assumed that adequate clearing can be undertaken on the property except where the *Callitris rhomboidea* forest (NCR), threatened vegetation community occurs. A 100m setback from high water mark (based on Tasmap) and a 20m setback from all boundaries as required under planning scheme provisions has also been applied.

Lot 1 has an existing dwelling, hence no building envelopes have been calculated for this Lot. The proposed subdivision does not present any increase in risk for this existing dwelling.

Lot 2 has a very small building envelope 292 sq m and this is based on a BAL rating of 19 for the building. It is feasible to fit a 10 x 15m building on this envelope. There is no available building envelope at a BAL rating of 12.5

Lot 3 has a building envelop of 3,395 sq m at a BAL rating of 12.5. At BAL 19 additional area is available which expands the building envelope up to 5,476 sq m.

### **FIRE FIGHTING WATER SUPPLY**

All habitable buildings constructed on the property will require a 10,000l static fire fighting water supply to be located greater than 6m but closer than 120m to the habitable building. Tanks and associated plumbing are to be constructed of non flammable materials.

### **ACCESS**

Both lots have access to a through road within 220m of building areas. West End Road provides access to Palana Road to the east or via Boat Harbour Road (over Mount Tanner to the north). Access to the coast also provides an alternate safe place in the advent of bushfire preventing travel on Boat Harbour Road or West End Road.

Internal accesss to service lots require upgrading/construction to meet at least Class 4C standard with a minimum width of 4m, to within 30m of the furthest extent of any habitable building. Access to the building envelope on Lot 2 will be via the power line route adjacent to the western boundary. It is feasible to clear sufficient width between the threatened vegetation community and the boundary to meet the requirements.

Lot 1 with the existing dwelling will require slight modifications for the driveway to be contained within the Lot, however these do not need to comply with the Class 4C standard and there will be only very minor impact on the *Callitris rhomboidea* forest (NCR). Driveways to the building envelopes on Lot 2 and Lot 3 will be less than 100m, however once the permitter road is included, the length of the driveway is likely to exceed 100m so passing bays will be required.

Bushfire Code E1.6.1.2.cii, acceptable solutions, requires a perimeter road between habitable buildings and bushfire prone vegetation, hence all developments should include a road that encircles habitable buildings providing access for fire fighting vehicles to defend the buildings.

## CONCLUSIONS

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The title has no agricultural value now and no agricultural potential.

The title supports a threatened vegetation community (*Callitris rhomboidea* forest (NCR)) and is likely to support some threatened flora and possibly threatened fauna, however, none were identified on the site visit. The subdivision will have minimal impact on the identified natural values.

The area is bushfire prone, being less than 100m from vegetation greater than 1 ha in size. There is an existing house on Lot 1 for which there is no increase in risk, Lot 2 has a small building envelope at BAL19 only and Lot 3 has a building envelope at BAL12.5 with a larger envelope at BAL19. Provision of water supplies and access construction/upgrades will be required to meet Code requirements.

## REFERENCES

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- Department of Primary Industry, P. W. (accessed 25/9/13). *Natural Values Report, Derived from the Natural Values Atlas, online database.*
- Dimmock, D. M. (1957). *Soils of Flinders Island.* University of Melbourne.
- DPIPWE. (2009, August). Cadastral Parcels Dataset. TASMAR Department of Primary Industries, Parks, Water and Environment.
- DPIPWE. (2007, November). Land Capability of Tasmania Dataset. Department of Primary Industries, Parks, Water and Environment.
- DPIPWE. (2010, March 22th). *Tasmanian Register of Water Licences and Dam Permits.* Retrieved March 29th, 2010, from Water Information Management System: <http://wims.dpiwe.tas.gov.au>.
- DPIPWE. (n.d.). *Tasmanian Register of Water Licences and Dam Permits Spatial data.* Retrieved November 15, 2010, from Water Information Management System: <http://water.dpiw.tas.gov.au/>
- DPIPWE. (2013). Tasmanian Vegetation Monitoring and Mapping Program TASVEG 3.0. Department of Primary Industries, Parks, Water and Environment.
- Flinders Island Council. (1994). *Flinders Island Planning Scheme.*
- Grose, C. J. (1999). *Land Capability Handbook. Guidelines for the Classification of Agricultural Land in Tasmania.* (Second Edition ed.). Tasmania, Australia: Department of Primary Industries, Water and Environment.
- Standards Australia. (2009). *AS 3959-2009 Construction of Buildings in Bushfire Prone Areas.*
- Tasmanian Planning Commission. (2011). *Planning Directive 5 Bushfire Prone Areas Code.*

APPENDIX 2 – MAPS



Figure 1. Location and published Land Capability

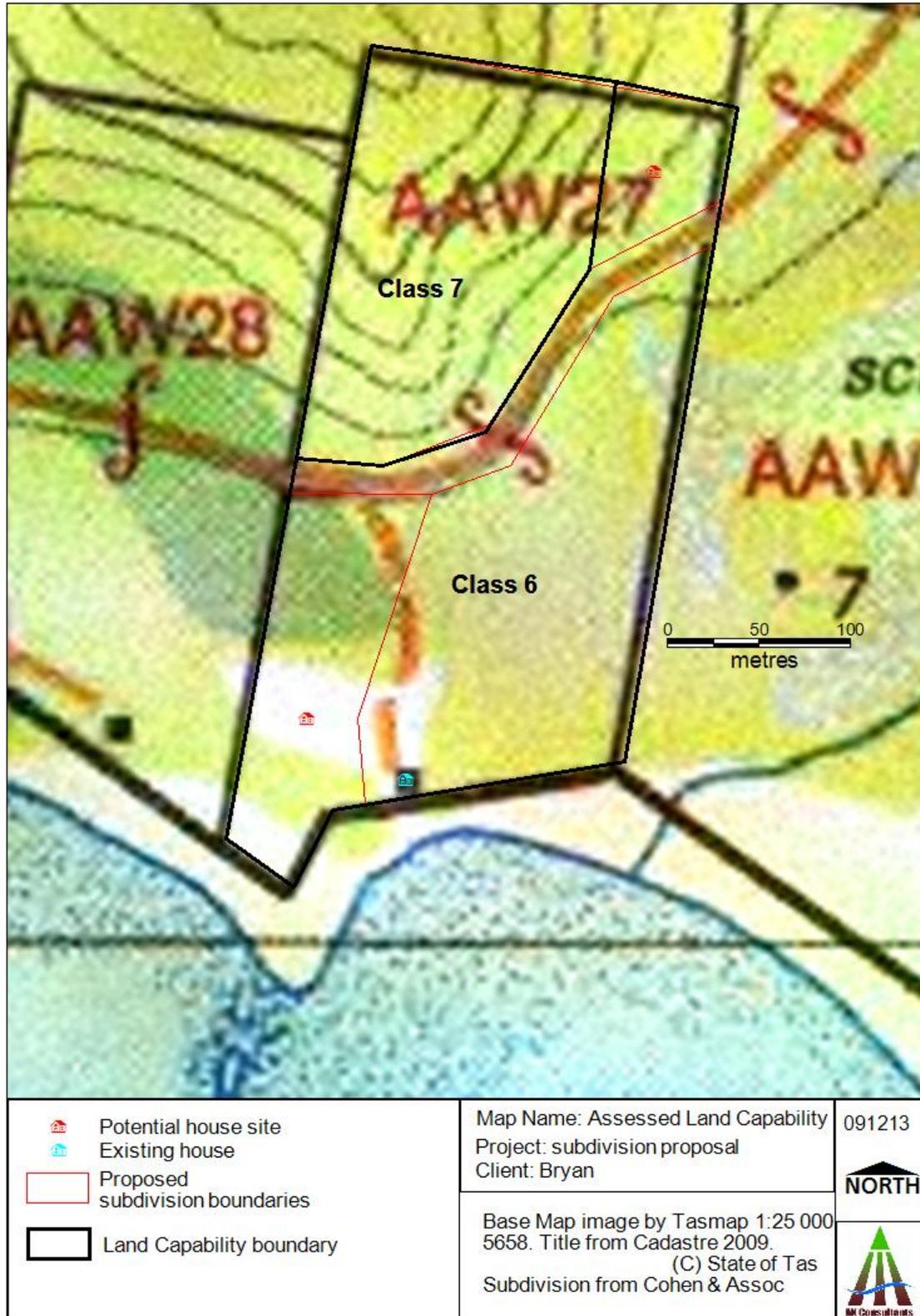


Figure 2. Assessed Land Capability



Figure 3. Assessed vegetation

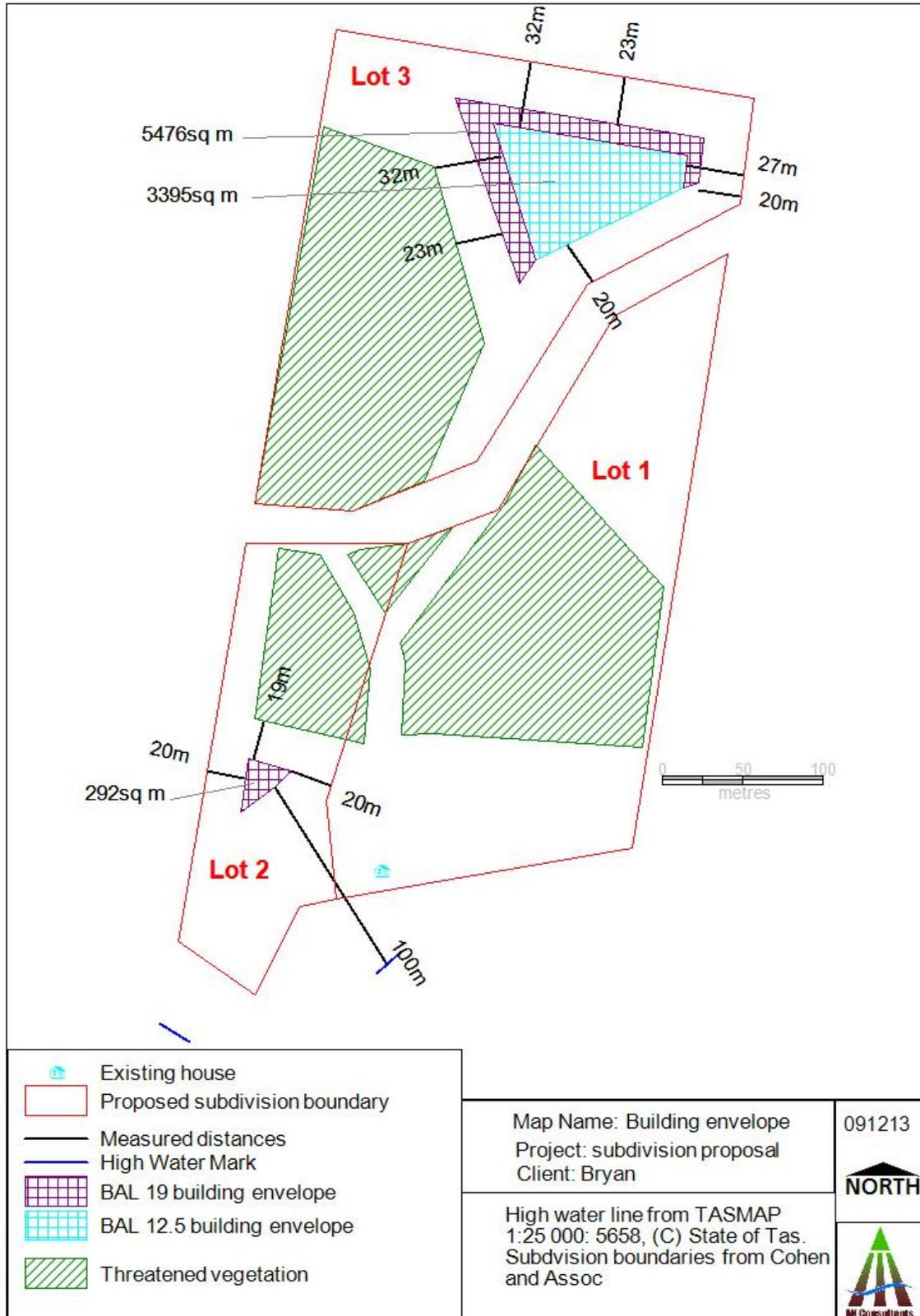


Figure 4. Building envelopes and BAL rating

**APPENDIX 2 – PHOTOS**

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Taken by Astrid Ketelaar 2<sup>nd</sup> Dec 2013



**Plate 1. View from West End Road, south along power line and proposed access to Lot 2.**



**Plate 2. View east along West End road. South western corner of Lot 3 on left.**



**Plate 3. View south from West End Road over *Eucalyptus nitida* Furneaux forest on Lot 1**



**Plate 4. Existing entrance to Lot 1**



**Plate 5. View from West End road towards *Eucalyptus nitida* Furneaux forest and building envelope on Lot 3**



**Plate 6. View from access track on Lot 1 towards *Callitris rhomboidea* forest (threatened vegetation community).**



**Plate 7. View from eastern boundary across building envelope on Lot 2.**



**Plate 8. View from western corner of BAL19 building envelope on Lot 2 north along previously cleared powerline (proposed access road route).**



**Plate 9. View from western edge of BAL19 building envelope towards exiting house on Lot 1**



**Plate 10. View along southern boundary of Lot near south western corner of Lot 2**



Plate 11. View from High water mark towards existing house on Lot 1



Plate 12. View from West End road, west towards *Eucalyptus nitida* Furneaux forest and building envelope on Lot 3

### APPENDIX 3 - BUSHFIRE HAZARD MANAGEMENT PLAN: SUBDIVISION OF 247 WEST END ROAD, LEEKA

#### HAZARD MANAGEMENT AREAS

Land adjacent to any future habitable buildings to be constructed on the lots must have vegetation managed to meet the following setbacks.

Vegetation type	flat and upslopes	Downslope 0-5°	Downslope 5-10°
managed land	0-14m	0-16m	0-19m
grassland	>14m	>16m	>19m
scrub	>27m	>31m	>35m
woodland	>22m	>26m	>32m
forest	>32m	>38m	>46m

- “Managed land” means areas maintained in a low fuel state, for example managed lawns and gardens or where grasslands are to be managed as “low fuel”. The grasses must be maintained at less than 100mm tall during the period from 1<sup>st</sup> November to 30<sup>th</sup> March. “Grasslands” may be grown to more than 100mm.

#### ACCESS

All private access to any habitable dwelling must:

- Have a carriageway at least 4m wide,
- Be to within a 30m hose lay of the furthest extent of the dwelling,
- Be within 3m of the water supply,
- Clear of vegetation for 4m in height and 2m either side of the carriageway,
- Have a driveway encircling the building, with a minimum radius of 10m,
- Have passing bays 6m wide and 20m long, placed no more than 100m apart,
- Culverts and bridges must be designed for a minimum vehicle load of 20 tonnes.
- Be within 3m of water supply point.

#### WATER SUPPLY

Each habitable building must have a minimum of 10,000 L static water supply, constructed of non flammable materials, within 3m of accessible hard standing, sited more than 6m and less than 120m from the building and fitted to Tasmania Fire Service Standards.

#### COMPLIANCE

E1.6.1.1 provision of Hazard Management Areas	Complies with Acceptable Solutions A1.b	Requires ongoing management of land around future habitable
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		buildings
E1.6.1.2 Public Access	Complies with A1.c	
	Complies with A2	
E1.6.1.3 provision of water supply for fire fighting purposes	Complies with A2.d	tanks to be installed (A2d)



Scott Livingston,  
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