



ÖKOLOGIE CONSULTING

Bushfire Management Statement

For the proposed subdivision of
150 Briody Drive, Torquay

Prepared for:
St Quentin Consulting

PLANNING & ENVIRONMENT ACT 1987
SURF COAST PLANNING SCHEME

This Briody Drive West Development Plan complies with the requirements of Clause
43.04 of the Surf Coast Planning Scheme

Approval Number: 15/0446
Date: 7/12/2017 Sheet No: 1 of 29

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Document Information

Bushfire Management Statement for the proposed subdivision of 150 Briody Drive,
Torquay

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Table of Contents

Document Information	2
Document Control	2
Summary	4
1 Introduction	5
1.1 Background	5
2 Site Description	6
2.1 Site Details	6
Figure 1 – Location plan	7
3 Methodology	8
3.1 Desktop Assessment	8
3.2 Bushfire Hazard Site Assessment	8
3.3 Vegetation	8
3.4 Topography	9
3.5 Bushfire Attack Level	9
3.6 Defendable Space	10
3.7 Construction Standards	10
3.8 Bushfire Hazard Landscape Assessment	10
3.9 Limitations	10
4 Bushfire Hazard Landscape Assessment	11
4.1 Site and Landscape Context	11
4.2 Vegetation Extent in the Locality	11
4.3 Recent Bushfire History	11
4.4 Potential Bushfire Scenario	11
4.5 Landscape Type	12
Figure 2: Bushfire Hazard Landscape Assessment	14
5 Bushfire Hazard Site Assessment	15
5.1 Vegetation	15
5.2 Topography	15
5.3 Bushfire Hazard Site Assessment	17
Figure 3 – Bushfire Hazard Site Assessment	18
6 Bushfire Management Statement	19
6.1 Application Requirements	19
Figure 4 – Defendable Space, Water and Access Plan	23
7 Conclusion	24
8 References	25
Appendix 1: Vegetation management requirements	26
Appendix 2: Access Requirements	27
Appendix 3: Water Supply Requirements	28
<p style="text-align: center;">PLANNING & ENVIRONMENT ACT 1987 SURE COAST PLANNING SCHEME This Briody Drive West Development Plan complies with the requirements of Clause 43.04 of the Surf Coast Planning Scheme Approval Number: 15/0446 Date: 7/12/2017 Sheet No: 3 of 29 Digitally Signed by the Responsible Authority Bill Cathcart</p>	
M306_Briody_Drive_BMS_03102016_V3	3



Summary

This Bushfire Management Statement has been prepared to support a development plan that will facilitate the future subdivision of the property. While no detailed design of the subdivision is available at this stage, the assessment was undertaken to inform the bushfire risk and management response to reduce this risk to appropriate levels.

The majority of the site has been previously cleared for agricultural use, and comprises open pasture with planted windrows and scattered trees. Land to the north and east contains low-density residential properties surrounded by established gardens and woodland vegetation, which extends along Deep Creek to the east. Land to the south generally comprises open pasture with planted windrows and scattered trees. Land west of the site contains low-density residential properties surrounded by established gardens and woodland vegetation.

The effective slope under Woodland vegetation to the north and east was classified as Upslope and flat land 0 degrees. Areas of Grassland vegetation to the south and west were classified as Upslope and flat land 0 degrees.

The surrounding landscape was identified as Broader Landscape Type One. The potential bushfire scenario with the highest probable impact on the site involves a four-hectare area of woodland, located approximately 200 metres north of the site, which is contiguous with woodland vegetation to the north and east of the site. However, the surrounding landscape to the north and northwest of the site is highly modified and dominated by introduced pasture, which mitigates the bushfire risk to the site.

The Bushfire Hazard Site Assessment identified the development is capable of achieving BAL-12.5 defensible space and construction in accordance with Column A of Table 2 to Clause 52.47-3, in response to the bushfire threat from Woodland vegetation to the north and east of the site. A drainage basin is proposed for the northern section of the site, which will assist with defensible space requirements.

It is considered that the bushfire risk to the south and west will be mitigated from the future proposed residential development, which eliminates the requirement for defensible space in this area. However, no detailed design of the subdivision was available at the time of assessment; therefore, building envelopes or lot layouts have not been provided.

Site access has not been identified at this stage. Briody Drive connects to Messmate Road to the west. Access for emergency service vehicles will need to comply with requirements of Table 5 of Clause 52.47-3. The static water requirement for each lot will need to be designed in accordance with Clause 52.47-3 (according to lot size), to the satisfaction of the Surf Coast Shire Council.

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SURF COAST PLANNING SCHEME

This Briody Drive West Development Plan complies with the requirements of Clause 43.04 of the Surf Coast Planning Scheme

Approval Number: 15/0446

Date: 7/12/2017 Sheet No: 4 of 29

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1 Introduction

1.1 Background

Okologie Consulting was engaged by St Quentin Consulting to prepare a Bushfire Management Statement for the property at 150 Briody Drive, Torquay.

The property is partially subject to the Bushfire Management Overlay (BMO) under the Surf Coast Planning Scheme (DELWP 2016a). The Bushfire Management Statement has been prepared to support a development plan that will facilitate the future subdivision of the property. While no detailed design of the subdivision is available at this stage, the assessment was undertaken to inform the bushfire risk and management response to reduce this risk to appropriate levels.

The Bushfire Management Statement responds to the application requirements of Clause 44.06 *BMO* and associated Clause 52.47 *Planning for Bushfire*. The application pathway for the proposed subdivision follows Clause 52.47-2 (DELWP 2016a).

This statement comprises:

- A bushfire hazard site assessment, which calculates the defensible space from the bushfire hazard as informed by the methodology of AS 3959-2009 *Construction of buildings in bushfire prone areas* (Australian Standard 2009).
- A bushfire hazard landscape assessment including a plan that describes the bushfire hazard of the general locality more than 150 metres from the site.
- Bushfire management statement that shows how the development responds to the bushfire hazard site assessment and applies the objectives and approved measures in Clause 52.47 and requirements of Clause 44.06.

PLANNING & ENVIRONMENT ACT 1987
SURF COAST PLANNING SCHEME

This Briody Drive West Development Plan complies with the requirements of Clause 43.04 of the Surf Coast Planning Scheme

Approval Number: 15/0446
Date: 7/12/2017 Sheet No: 5 of 29

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2 Site Description

2.1 Site Details

The site is located at 150 Briody Drive, Torquay (Lot 3 LP219180) (Figure 1). The property covers approximately 3.3 hectares and is bounded by Briody Drive to the south, and private property to the north, east and west.

The development proposal is to subdivide the land into >10 lots; however, no detailed design of the subdivision was available at the time of assessment.

The site has been previously cleared for agricultural use, and comprises open pasture with planted windrows and scattered trees. Land to the north and east contains low-density residential properties surrounded by established gardens and woodland vegetation, which extends along Deep Creek to the east. Land to the south generally comprises open pasture with planted windrows and scattered trees. Land west of the site contains low-density residential properties surrounded by established gardens and woodland vegetation.

The site occurs within the Surf Coast Shire municipality and is zoned General Residential Zone – Schedule 1. It is subject to Vegetation Protection Overlay – Schedule 1, Development Plan Overlay and the BMO and under the Surf Coast Planning Scheme (DELWP 2016a).

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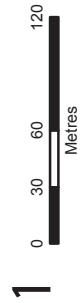
Date: 7/12/2017 Sheet No: 6 of 29

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Figure 1
Site Location 150
Briody Drive,
Torquay

Legend

-  Subject Site
-  150m Assessment Area



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 This Briody Drive West Development Plan complies with the requirements of Clause 43.04 of the Surf Coast Planning Scheme

Approval Number: 15/0446
 Date: 7/12/2017 Sheet No: 7 of 29

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3 Methodology

3.1 Desktop Assessment

The desktop assessment included a review of relevant literature and database information, including:

- Planning Schemes Online for site planning information (DELWP 2016a).
- Clause 44.06 BMO Planning Provision (DELWP 2016b).
- Clause 52.47 Planning for Bushfire (DELWP 2016c).
- Practice Note 65: Preparing and Assessing a Planning Application Under the Bushfire Provisions in Planning Schemes (DTPLI 2014).
- The Biodiversity Interactive Map for information relating to the mapped extent of vegetation, topography and bushfire history within the locality (DELWP 2016d).
- The Australian Standard: *AS 3959-2009 Construction of buildings in bushfire prone areas* (Australian Standards 2009).
- Aerial photographs of the site and surrounding areas.

3.2 Bushfire Hazard Site Assessment

A bushfire hazard site assessment was undertaken on 29 March 2016. The assessment involved determining the classifiable vegetation and effective slope within a 150-metre radius of the proposed development using the method described by AS3959-2009 (Australian Standards 2009). The results of the site assessment were used to inform the requirement for defensible space and building construction under Clause 52.47 (DELWP 2016c).

3.3 Vegetation

For the purposes of determining the defensible space and construction requirements under the BMO, classified vegetation is vegetation that constitutes a bushfire hazard within 150 metres of the development in accordance with the classification system of AS 3959-2009 (Australian Standards 2009) and Table 1 or Table 2 of Clause 52.47-3 (DELWP 2016c). If more than one classified vegetation type is present the 'worst case scenario' is applied to determine the BAL (Standards Australia 2009).

Areas of low threat vegetation are described as:

- Non-vegetated areas, including waterways, roads, footpaths, buildings and rocky outcrops.
- Low threat vegetation, including grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and

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SURF COAST PLANNING SCHEME

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Approval Number: 15/0446

Date: 7/12/2017 Sheet No: 8 of 29

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parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks (Standards Australia 2009).

Modified vegetation refers to vegetation that is different from the other vegetation types shown in AS3959 and Table 1 and Table 2 of Clause 52.47-3 (DELWP 2016c).

3.4 Topography

The site topography was assessed within the 150-metre assessment area, to determine the effective slope under classified vegetation in accordance with AS 3959-2009 (Australian Standards 2009).

Topography (or slope) influences the rate of spread and intensity of a bushfire. Fire burns faster uphill as the slope increases so does the speed of the fire and its intensity. As a general rule, for every 10° slope, the fire will double its speed. Fires tend to move more slowly as the slope decreases, and for every 10° of downhill slope, the fire will halve its speed (CFA 2012).

3.5 Bushfire Attack Level

The BAL is calculated by identifying classifiable vegetation type, the effective slope under classifiable vegetation and distances between vegetation (the hazard) and the proposed development. The higher the BAL, the higher the exposure to the effects of flame, radiant heat and ember attack from a bushfire (Plate 1).

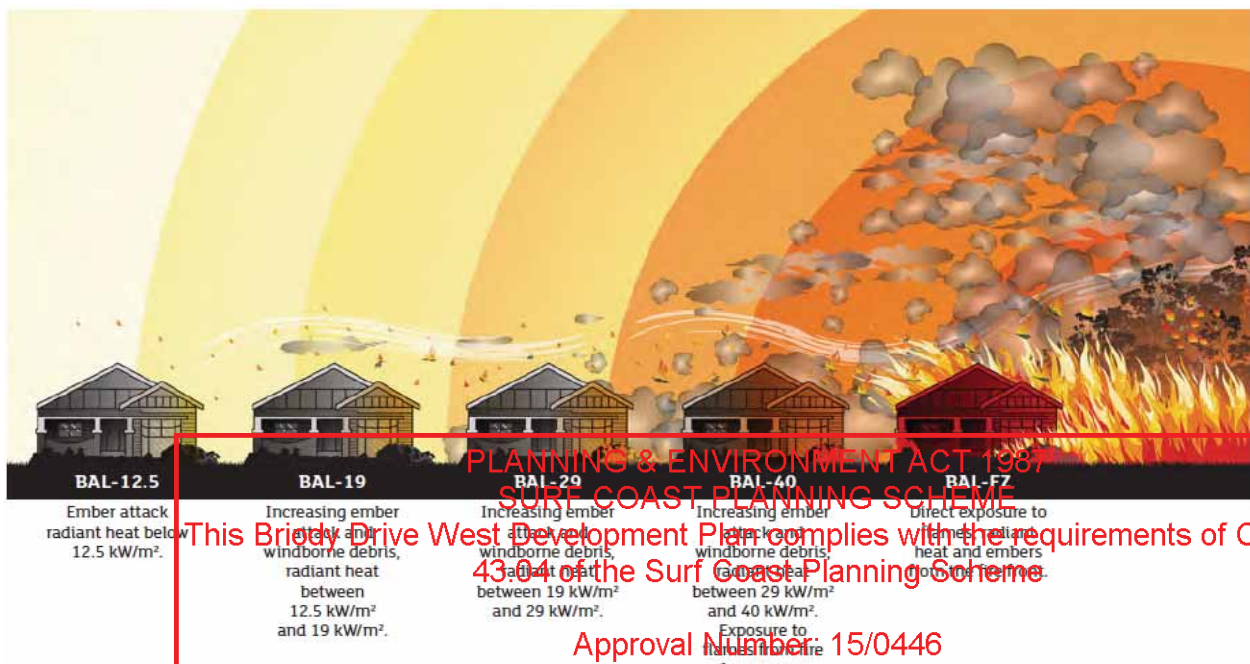


Plate 1. Bushfire Attack Levels and hazards associated with bushfire threats (Source: CFA 2012).

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SURF COAST PLANNING SCHEME

This Briody Drive West Development Plan complies with the requirements of Clause 43.04 of the Surf Coast Planning Scheme.

Approval Number: 15/0446

Date: 7/12/2017 Sheet No: 9 of 29

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3.6 Defendable Space

Defendable space is an area of land around a building where vegetation is modified and managed to reduce the effects of flame contact, radiant heat and embers associated with bushfire. Flame contact, radiant heat and embers are the way a bushfire attacks a building (DTPLI 2014) (Plate 2).

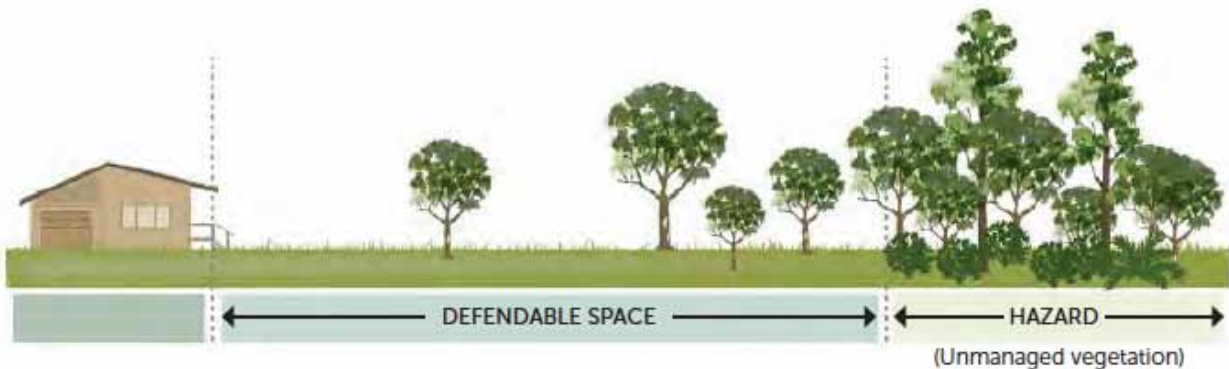


Plate 2. Defendable space around a proposed dwelling (Source: DTPLI 2014c).

3.7 Construction Standards

Construction requirements for buildings relating to a calculated BAL are prescribed in AS3959-2009 (Standards Australia 2009). Building construction and design can be used to minimise the impacts of ember attack and radiant heat on a building. The materials and design of a building can be used to prevent the accumulation of debris and entry of embers. Appropriate construction helps the building to withstand the potential exposure from a bushfire as the fire front passes (CFA 2012).

3.8 Bushfire Hazard Landscape Assessment

The bushfire hazard landscape assessment provides information on the bushfire hazard more than 150 metres away from a development site (DTPLI 2014). The assessment included review of aerial photographs to determine the vegetation extent in the broader locality; the proximity of the site to township areas or fire refuges; the bushfire history and consideration of the likely bushfire scenarios.

3.9 Limitations

The information outlined in this report relies on the accuracy of GIS layers and spatial imagery. To this end, the most current available data was obtained from relevant sources. The bushfire hazard level within the site was determined from interpretation of aerial photography, as access to all private property was not available. Determination of vegetation classification was based on relevant standards and guidelines, and the vegetation condition and extent observed during the site assessment.

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Approval Number: 15/0416
Date: 7/12/2017 Sheet No: 10 of 29

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4 Bushfire Hazard Landscape Assessment

4.1 Site and Landscape Context

The property is located within a General Residential Zone approximately three kilometres northwest of the Township of Torquay. Briody Drive is a two-way unsealed road that extends west to Messmate Road, which connects to Coombes Road to the north and Grossmans Road to the south. The Township of Torquay contains predominantly residential development. It does not have a neighbourhood safer place; however, it contains areas of parkland and ovals that may provide protection from the impact of extreme fire conditions.

4.2 Vegetation Extent in the Locality

The site has been previously cleared for agricultural use, and comprises open pasture with planted windrows and scattered trees. Land to the north and east contains low-density residential properties surrounded by established gardens and woodland vegetation, which extends along Deep Creek to the east (Figure 2).

An area of native woodland, which covers approximately four hectares, is located to the north of Coombes Road; however, the surrounding landscape north of this vegetation is highly modified and dominated by crops and open pasture. The land south of Grossmans Road generally comprises open pasture with planted windrows and scattered trees. Land west of Messmate Road contains low-density residential properties surrounded by established gardens and woodland vegetation (Figure 2).

4.3 Recent Bushfire History

The Biodiversity Interactive Map (DELWP 2016a) contains data on the bushfire history for the local area from 1970. The most recent wildfire occurred approximately nine kilometres west and seven kilometres south of the site during the 1983 Ash Wednesday fires. A prescribed burn was undertaken approximately 10 kilometres west of the site in 2012 (DELWP 2016a).

4.4 Potential Bushfire Scenario

The bushfire risk to the site has been assessed at the landscape scale by identifying likely bushfire scenarios and mechanisms of a bushfire that may impact the proposed development. The mechanisms of bushfire attack on a building can be a combination of sparks and embers, direct flame contact or radiant heat (CFA 2012).

Approval Number: 15/0446

Date: 7/12/2017 Sheet No: 11 of 29

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Generally the assessment of bushfire risk only considers the existing conditions in regard to that application. However, as this statement has been prepared to inform the development plan that will facilitate the future subdivision, it is considered appropriate to also review the potential bushfire scenarios on the future proposed residential development within the immediate surrounds (Figure 4).

Note this approach does not exempt the requirement to prepare a bushfire management statement at the point of future subdivision.

Bushfire Scenario 1

The potential bushfire scenario with the highest probable impact on the site involves a four-hectare area of woodland, located approximately 200 metres north of the site, which is contiguous with woodland vegetation south of Coombes Road (Figure 2). The effective slope under the woodland vegetation is upslope/flat land.

There is potential that bushfire could be driven towards the site from a northerly direction. Northerly or northwesterly winds generally associated with high-threat or extreme bushfire conditions, and the area of woodland located to the north of the site represents a potential threat to the site under these conditions.

However, the fire runs in areas of woodland is less than 500 metres, and the presence of a road and managed vegetation in residential land moderates the bushfire threat to the site (also taking into account the strategically identified residential development in the immediate surrounds in Figure 4). This type of fire would most likely result from local ignition, and ember attack represents the greatest type of threat to the site under this bushfire scenario.

Bushfire Scenario 2

Grassland vegetation is located south/southwest of Grossmans Road and extends north towards the site. Strong wind changes from the southwest direction are associated with high bushfire risk weather. The site could potentially be impacted by a grassfire approaching from the southwest that would likely result from local ignition. Potential fire runs to the southwest exceed one kilometre; however, presence of roads and managed (low-risk) vegetation between unmanaged Grassland to the southwest and the site would reduce the potential for direct flame contact (Figure 2). Ember attack represents the main bushfire threat to the site under this bushfire scenario.

However, as future residential development is strategically identified and planned for the vacant land on Briody Drive West, development of the site will comply with the requirements of Clause 43.04 of the Surf Coast Planning Scheme to mitigate the bushfire risk to the site under this scenario.

4.5 Landscape Type

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Surf Coast Strategically Identified

This Brody Drive West Development Plan complies with the requirements of Clause

43.04 of the Surf Coast Planning Scheme

Approval Number: 15/0446

Date: 7/12/2017 Sheet No: 12 of 29

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The site corresponds to Broader Landscape Type One as specified in Practice Note 65 (DTPLI 2014).

- There is little high-threat vegetation beyond 150 metres of the site (predominantly grasslands and low-threat vegetation, with modified patches of woodland).
- Extreme bushfire behaviour is not possible due the modified condition of the surrounding landscape.
- The type and extent of vegetation is unlikely to result in neighbourhood-scale destruction of property (predominantly grasslands and low-threat vegetation, with modified patches of woodland).
- Immediate access is available to a place that provides shelter from bushfire (parks, ovals and residential areas).

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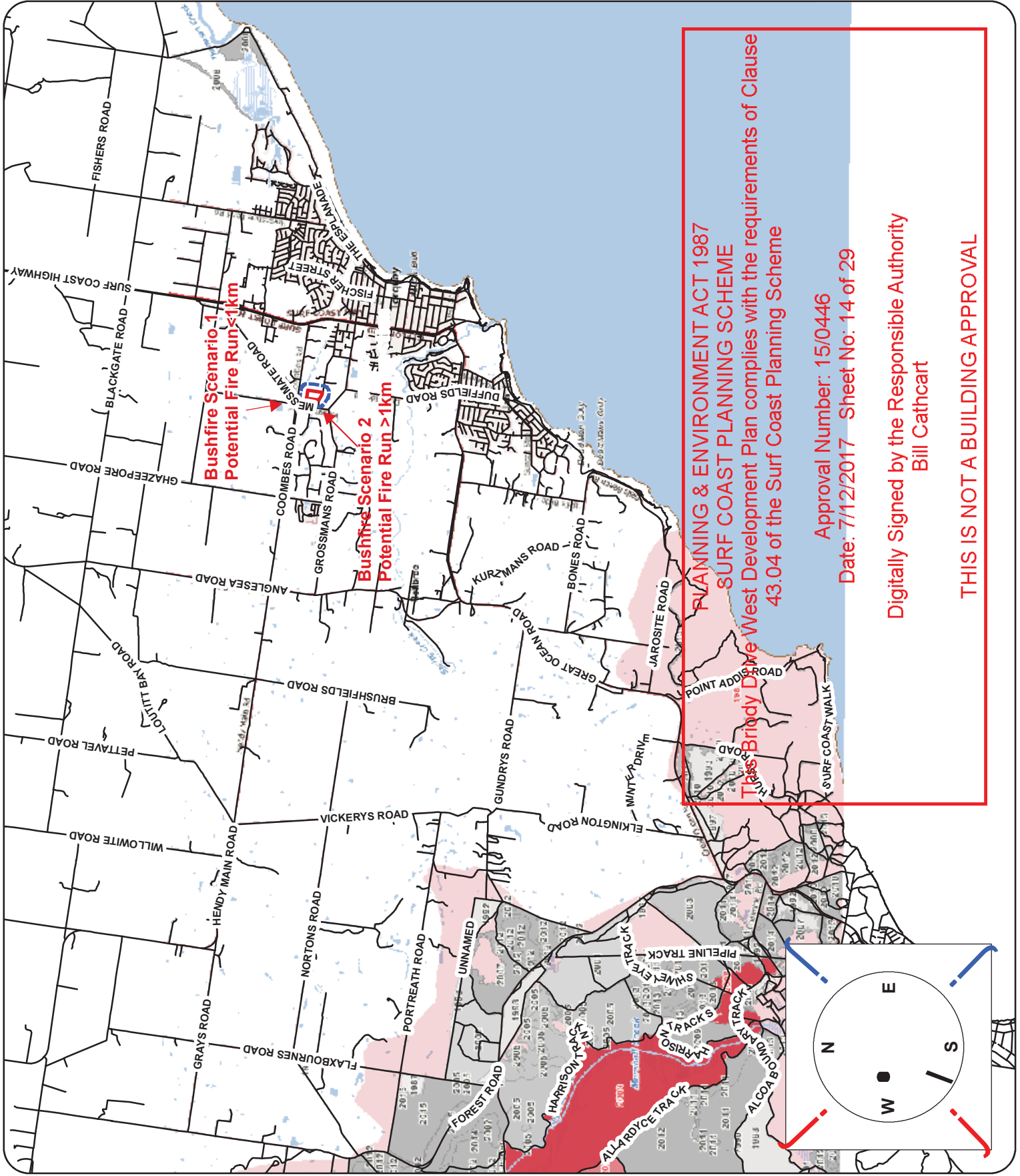
Date: 7/12/2017 Sheet No: 13 of 29

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Figure 2
Bushfire Landscape
Assessment
150 Briody Drive,
Torquay

Legend

-  Subject Site
-  150m Assessment Area
-  Prescribed Burns
-  Wildfire Events



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SURF COAST PLANNING SCHEME
Tassal Briody Drive West Development Plan complies with the requirements of Clause
43.04 of the Surf Coast Planning Scheme

Approval Number: 15/0446
 Date: 7/12/2017 Sheet No: 14 of 29

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5 Bushfire Hazard Site Assessment

5.1 Vegetation

Two classifiable vegetation types were recorded within the 150-metre assessment area, which met the AS 3959-2009 classification of 'Woodland' and 'Grassland' (Australian Standards 2009) (Figure 3). Vegetation within assessment area also included 'Low-threat Vegetation' that consists of low threat slashed grassland, cultivated gardens and non-vegetated areas (i.e. roads) (Figure 3). A description of the vegetation types within the 150-metre assessment area is outlined below.

Woodland Vegetation

Native vegetation to the north, east and south of the site meets the AS 3959-2009 classification of Woodland as the overstorey was between 10 to 30 metres high, the foliage cover between 10-30% dominated by eucalypts, with a grassy and shrubby understorey (Standards Australia 2009).

The vegetation was dominated by Messmate Stringybark *Eucalyptus obliqua*, with a shrubby understorey of Golden Wattle *Acacia pycnantha*, Myrtle Wattle *Acacia myrtifolia*, Prickly Tea-tree *Leptospermum continentale*, Varnish Wattle *Acacia verniciflua* and Hedge Wattle *Acacia paradoxa* also present. The ground layer comprised indigenous ferns, grasses, sedges and herbs including Austral Bracken *Pteridium esculentum*, Weeping Grass *Microlaena stipoides*, Black-anther Flax-lily *Dianella admixta* and Kidney Weed *Dichondra repens* (Plates 3 and 6) (Figure 3).

Grassland Vegetation

Areas of introduced pasture throughout the site and within the 150-metre assessment area meet the AS 3959-2009 classification of 'Grassland'. The vegetation was dominated by exotic pasture species such as Yorkshire Fog-grass *Holcus lanatus* and Perennial Ryegrass *Lolium perenne*, with scattered indigenous trees also present (Plates 4 and 5).

Low-threat Vegetation

Areas comprising maintained lawn and planted trees and shrubs in windrows, and surrounding houses meet the criteria of low-threat vegetation (Figure 3).

5.2 Topography

The effective slope under Woodland vegetation to the north and east was classified as 'Upslope and flat land 0 degrees' category. Areas of Grassland vegetation to the south and west were classified as 'Upslope and flat land 0 degrees'. Note: the site contains a moderate down slope (5-10 degrees) in grassland vegetation towards the north, which changes to upslope under Woodland vegetation to the north (Figure 3).

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Approval Number: 15/0448

Date: 7/12/2017 Sheet No: 15 of 29

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Plate 3: Grassland and Woodland vegetation - northerly aspect



Plate 4: Grassland vegetation - easterly aspect



Plate 5: Grassland vegetation - southerly aspect



Plate 6: Woodland vegetation - westerly aspect

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This Briody Drive West Development Plan complies with the requirements of Clause
43.04 of the Surf Coast Planning Scheme

Approval Number: 15/0446
Date: 7/12/2017 Sheet No: 16 of 29

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5.3 Bushfire Hazard Site Assessment

The Bushfire Hazard Site Assessment process is used to determine how far away from unmanaged vegetation a building would need to be to receive less than a certain level of radiant heat (e.g. a building constructed to BAL-12.5 has been designed to withstand a radiant heat flux of 12.5 kW/m²). This analysis is used to determine the most appropriate combination of defensible space and BAL construction standard for the proposed development (CFA 2012).

The defensible space and construction requirements for BAL 12.5 have been provided from Column A of Table 2 to Clause 52.47-3 for a subdivision that creates 10 or more lots (Table 1). The highest BAL threat is from Woodland vegetation to the north and east, located immediately adjacent to the property boundary (Figure 3).

It should be noted that the future subdivision could also potentially achieve BAL 19 from Column B of Table 2 to Clause 52.47-3 (Table 2); however, only BAL 12.5 is shown on Figures 3 and 4.

Table 1. Bushfire Hazard Site Assessment Results (BAL 12.5)

Orientation	Classified Vegetation	Effective Slope	Distance to Classified Vegetation*	Defendable Space*	BAL
North	Woodland	Flat/Upslope	0 metres	35 metres	12.5
East and Southeast	Woodland	Flat/Upslope	0 metres	35 metres	12.5
South	Grassland	Flat/Upslope	30 metres	19 metres	12.5
West	Grassland	Flat/Upslope	30 metres	19 metres	12.5

*Distance from the property boundary

Table 2. Bushfire Hazard Site Assessment Results (BAL 19)

Orientation	Classified Vegetation	Effective Slope	Distance to Classified Vegetation*	Defendable Space*	BAL
North	Woodland	Flat/Upslope	0 metres	24 metres	19
East and Southeast	Woodland	Flat/Upslope	0 metres	24 metres	19
South	Grassland	Flat/Upslope	30 metres	13 metres	19
West	Grassland	Flat/Upslope	30 metres	13 metres	19

*Distance from the property boundary






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SURF COAST PLANNING SCHEME
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Approval Number: 15/0446
Date: 7/12/2017 Sheet No: 17 of 29




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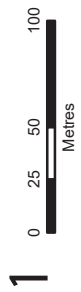
Figure 3
Bushfire Hazard
Site Assessment
150 Briody Drive,
Torquay

Legend

-  Subject Site
-  150m Assessment Area
-  BAL 12.5 (33m in from Boundary)
-  Proposed Development Plan
-  Basin Reserve

Classified Vegetation

-  Grassland
-  Woodland
-  Low Threat Vegetation





6 Bushfire Management Statement

6.1 Application Requirements

This bushfire management statement demonstrates the way in which the application meets the relevant objectives, approved measures, alternative measures and decision guidelines of Clause 52.47. The application pathway for the proposed subdivision follows Clause 52.47-2 (DTPLI 2014a).

Table 2. Clause 52.47 Requirements

Clause	Approved Measure	Application Requirement
Clause 52.47-1 Dwellings in existing settlements – Bushfire protection objective	AM 1.1	Not applicable
	AM 1.2	Not applicable
	AM 1.3	Not applicable
Clause 52.47-2.1 Landscape, siting and design objectives	AM 2.1	Addressed under AM 5.1
	AM 2.2	Addressed under AM 5.1
	AM 2.3	Not applicable
Clause 52.47-2.2 Defendable space and construction objectives	AM 3.1 AM 3.2	Not applicable
	AltM 3.3 to AltM 3.6	Not applicable
Clause 52.47-2.3 Water supply and access objectives	AM 4.1	Addressed under AM 5.1 & AM 5.2
	AM 4.2	Not applicable
Clause 52.47-2.4 Subdivision objectives	AM 5.1	Applicable to this application
	AM 5.2	Applicable to this application
	AM 5.3	Applicable to this application
	AM 5.4	Applicable to this application
	AM 5.5	Not applicable

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Approval Number: 15/0446

Date: 7/12/2017 Sheet No: 19 of 29

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Table 2. Response to Approved Measures

Approved Measure	Requirement	Response
<p>AM 5.1</p>	<p>Clause 52.47-2.4 Subdivision Objectives</p> <p>An application to subdivide land, other than where AM 5.2 applies, demonstrates that each proposed lot is capable of meeting:</p> <ul style="list-style-type: none"> • The defendable space in accordance with Column A, B or C of Table 2 to Clause 52.47-3. • The approved measures in Clause 52.47-2.1 and Clause 52.47-2.3. 	<p>Clause 52.47-3 Defendable Space</p> <p>The development proposal is to subdivide the land into >10 lots; however, no detailed design of the subdivision was available at the time of assessment. Therefore, building envelopes or lot layouts have not been provided.</p> <p>The Bushfire Hazard Site Assessment identified the development is capable of achieving BAL-12.5 defendable space and construction in accordance with Column A of Table 2 to Clause 52.47-3, in response to the bushfire threat from Woodland vegetation to the north and east of the site. A drainage basin is proposed for the northern section of the site, which will assist with defendable space.</p> <p>The bushfire risk from Grassland to the south and southwest is mitigated by the presence of roads and managed (low-risk) vegetation between unmanaged Grassland to the southwest and the site (>19 metres), which eliminates the requirement for defendable space in this area.</p> <p>Subdivision is capable of managing the bushfire risk within the property boundary, as the defendable space can be wholly contained on the subject land. It is recommended that building envelopes be sited as far from the bushfire hazard as practicable. Design elements such as a perimeter road can be used to separate defendable space from the bushfire hazard.</p> <p>The required defendable space in relation to the property boundary is shown in the attached site plan. The property management plan complies with the requirements of Clause 43.04 of the Surf Coast Planning Scheme.</p> <p>Clause 52.47-2.1 Approval Number: 15/0446 Landscaping Approved Measure Sheet No: 20 of 29</p> <p>The surrounding landscape was identified as Broader Landscape. The site involves a four-hectare area with the highest probable impact on the site is from the nearby Bm Catchment.</p>

This Briefly Developed Development Plan complies with the requirements of Clause 43.04 of the Surf Coast Planning Scheme
PLANNING & ENVIRONMENT ACT 1987
SURF COAST PLANNING SCHEME
Development Plan complies with the requirements of Clause 43.04 of the Surf Coast Planning Scheme
Approval Number: 15/0446
Date: 7/12/2017
Sheet No: 20 of 29
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Approved Measure	Requirement	Response
AM 5.2	<p>An application to subdivide land zoned for residential or rural residential purposes must be accompanied by a plan that shows:</p> <ul style="list-style-type: none"> A building envelope for a single dwelling on each lot that complies with AM 2.2 and provides defensible space in accordance with: <ul style="list-style-type: none"> Columns A or B of Table 2 to Clause 52.47-3 for a subdivision that creates 10 	<p>of woodland, located approximately 200 metres north of the site, which is contiguous with woodland vegetation south of Coombes Road. However, the majority of the surrounding landscape (i.e. within 10 kilometres) to the north and northwest of the site is highly modified and dominated by introduced pasture, which reduces the fire threat to the site.</p> <p>The bushfire risk to the development from the landscape beyond the site can be mitigated to an acceptable level, as the defensible space occurs in Grassland vegetation within the property boundary. The required vegetation management measures will be implemented with the ongoing use of the land (slashing/mowing).</p> <p>Site access has not been identified at this stage. Briody Drive connects to Messmate Road to the west. Access for emergency service vehicles will need to comply with the requirements of Table 5 of Clause 52.47-3 (See Appendix 2).</p> <p>Lots of >1000sqm will be required to maintain a static water supply of 10,000 litres specifically for fire fighting purposes that meets the specifications of Table 4 under Clause 52.47-3. The water supply may be in the same tank as other water supplies provided that a separate outlet is reserved for fire fighting water supply. Lots of 500-1000sqm will require a static water supply of 5000 litres and lots <500sqm will require a static water supply of 2500 litres that does not require fire authority fittings or access to tanks.</p>
		<p>Building Design - Approved Measure 2.3 PLANNING & ENVIRONMENT ACT 1987 START COAST PLANNING SCHEME</p> <p>This Briody Drive West Development Plan complies with the requirements of Clause 43.04 of the Surf Coast Planning Scheme 10</p> <p>No design elements are required at the subdivision stage.</p> <p>The development of this subdivision and lots; however, no detailed design of the subdivision was available at the time of assessment. The Bushfire Hazard Site Assessment identified the development is capable of achieving BAL-12.5 defensible space and is located in Column A of Table 2 to Clause 52.47-3.</p> <p>The subdivision is capable of managing the bushfire risk within Digitally Signed by the Responsible Authority Bill Cairncart</p>



Approved Measure	Requirement	Response
	<ul style="list-style-type: none"> • or more lots; or • Columns A, B or C of Table 2 to Clause 52.47-3 for a subdivision that creates less than 10 lots. • Defendable space wholly contained within the boundaries of the proposed subdivision. • Vegetation management requirements, including inner zone standards (as appropriate), to implement and maintain the defendable space required under this approved measure. • Water supply and vehicle access that complies with AM 4.1. 	<p>the property boundary, as the defendable space can be wholly contained on the subject land (Figure 4). The required vegetation management measures will be implemented with the ongoing use of the land (slashing/mowing).</p> <p>Access for emergency service vehicles will need to comply with the requirements of Table 5 of Clause 52.47-3 (Appendix 2).</p> <p>Lots of >1000sqm will be required to maintain a static water supply of 10,000 litres specifically for fire fighting purposes that meets the specifications of Table 4 under Clause 52.47-3. The water supply may be in the same tank as other water supplies provided that a separate outlet is reserved for fire fighting water supply. It should be noted that opportunities for communal water supplies are encouraged, although the location of the shared water supplies needs to meet the requirements of the relevant fire authority.</p> <p>Lots of 500-1000sqm will require a static water supply of 5000 litres and lots <500sqm will require a static water supply of 2500 litres that does not require fire authority fittings or access to tanks.</p> <p>Clause 44.06-3 specifies a Section 173 Agreement for bushfire protection measures as a mandatory permit condition for each lot. The Section 173 Agreement is registered on the title of each lot created in the subdivision.</p>
AM 5.3	An application to subdivide land to create 10 or more lots provides a perimeter road adjoining the hazardous vegetation to support fire fighting.	It is recommended that the detailed design incorporate perimeter road. This has the benefit of separating the bushfire hazard from the residential development and providing access to defend the subdivision.
AM 5.4	A subdivision manages the bushfire risk to future development from existing or proposed landscaping, public open space and communal areas.	<p>Clause 44.06-3 specifies a Section 173 Agreement for bushfire protection measures as a mandatory permit condition for each lot. The Section 173 Agreement is registered on the title of each lot created in the subdivision.</p> <p>It is recommended that the detailed design incorporate perimeter road. This has the benefit of separating the bushfire hazard from the residential development and providing access to defend the subdivision.</p> <p>Clause 44.06-3 specifies a Section 173 Agreement for bushfire protection measures as a mandatory permit condition for each lot. The Section 173 Agreement is registered on the title of each lot created in the subdivision.</p>

PLANNING & DEVELOPMENT SERVICES
SURF COAST PLANNING SCHEME

This Briefly Developed Subdivision Plan Complies with the Requirements of Clause 43.04 of the Surf Coast Planning Scheme

Approval Number: 15/0446
Date: 12/07/2016
Sheet No: 22 of 29

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Figure 4

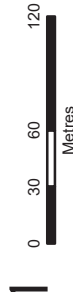
Bushfire Management Plan 150 Briody Drive, Torquay

Legend

- Subject Site
- 150m Assessment Area
- BAL 12.5 (33m in from Boundary)
- Proposed Development Plan
- Basin Reserve

Classified Vegetation

- Grassland
- Woodland
- Low Threat Vegetation



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Defendable Space Management

Fuel in the area of defendable space should be managed to the following conditions:

- Within 10 metres of a building flammable objects such as plants, mulches and fences must not be located close to the vulnerable parts of the building such as windows, decks and eaves.
- Trees must not overhang the roofline of the building, touch walls or other elements of a building.
- Grass must be no maintained at or less than 5 centimetres in height, and all leaves and vegetation debris must be removed at regular intervals.
- Shrubs should not be planted under trees.
- Plants greater than 10 centimetres in height at maturity must not be placed in front of a window or other glass feature.
- Tree canopy separation of 2 metres and overall canopy cover of no more than 15% at maturity.

Water Supply and Access

- Each lot will be required to maintain a static water supply of 10,000 litres specifically for fire fighting purposes. The water supply may be in the same tank as other water supplies provided that a separate outlet is reserved for fire fighting water supply.

There are no access design and calculation requirements of Clause 43.04 of the Surf Coast Planning Scheme if the access is less than 30 metres.

Construction Requirements

- Dwellings are to be constructed to BAL-19 in accordance with AS3959 requirements.

Landscaping

- Any landscaping of the subdivision will conform to the CFA Landscaping Bushfire Guidelines to reduce the bushfire risk.



7 Conclusion

The Bushfire Management Statement has been prepared to support a development plan that will facilitate the future subdivision of the property; however, future subdivision will be required to comply with the relevant objectives and approved measures of Clause 52.47-2.

The Bushfire Hazard Site Assessment identified the development is capable of achieving BAL-12.5 defensible space and construction in accordance with Column A of Table 2 to Clause 52.47-3 in response to the bushfire threat from Woodland vegetation to the north and east of the site.

A drainage basin is proposed for the northern section of the site, which will assist with defensible space. The bushfire risk from Grassland to the south and southwest is mitigated by the presence of roads and managed (low-risk) vegetation between unmanaged Grassland to the southwest and the site (>19 metres), which eliminates the requirement for defensible space in this area.

It is recommended that:

- The building envelopes are sited as far from the bushfire hazard as practicable.
- A perimeter road is incorporated into the detailed design.
- Access for emergency service vehicles comply with the requirements of Table 5 of Clause 52.47-3.
- The static water requirement for each lot is designed in accordance with Clause 52.47-3 (according to lot size), to the satisfaction of the Surf Coast Shire Council.

PLANNING & ENVIRONMENT ACT 1987
SURF COAST PLANNING SCHEME

This Briody Drive West Development Plan complies with the requirements of Clause 43.04 of the Surf Coast Planning Scheme

Approval Number: 15/0446

Date: 7/12/2017 Sheet No: 24 of 29

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8 References

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CFA 2012. *Planning For Bushfire: Guidelines for meeting Victoria's bushfire planning requirements*. Country Fire Authority.

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DEWLP 2016b. Clause 44.06 Bushfire Management Overlay. Department of Environment, Water, Land and Planning: <http://planningschemes.dpcd.vic.gov.au>

DEWLP 2016c. Clause 52.47 Planning for Bushfire. Department of Environment, Water, Land and Planning: <http://planningschemes.dpcd.vic.gov.au>

DEWLPd. Biodiversity Interactive Map. Department of Environment, Water, Land and Planning: <http://mapshare2.dse.vic.gov.au>

DTPLI 2014. *Practice Note 65: Preparing and Assessing a Planning Application Under the Bushfire Provisions in Planning Schemes*. Department of Transport, Planning and Local Infrastructure.

Standards Australia 2009. *Australian Standard: Construction of buildings in bushfire-prone areas AS 3959 – 2009*. Published by Standards Australia, Sydney, NSW.

PLANNING & ENVIRONMENT ACT 1987
SURF COAST PLANNING SCHEME
This Briody Drive West Development Plan complies with the requirements of Clause
43.04 of the Surf Coast Planning Scheme

Approval Number: 15/0446
Date: 7/12/2017 Sheet No: 25 of 29

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Appendix 1: Vegetation management requirements

Fuel in the area of defensible space should be managed to the following conditions:

- Within 10 metres of a building flammable objects such as plants, mulches and fences must not be located close to the vulnerable parts of the building such as windows, decks and eaves.
- Trees must not overhang the roofline of the building, touch walls or other elements of a building.
- Grass must be no maintained at or less than 5 centimetres in height, and all leaves and vegetation debris must be removed at regular intervals.
- Shrubs should not be planted under trees.
- Plants greater than 10 centimetres in height at maturity must not be placed in front of a window or other glass feature.
- Tree canopy separation of 2 metres and overall canopy cover of no more than 15% at maturity.

Any landscaping of the subdivision will conform to the 'CFA Landscaping for Bushfire Guidelines' and Surf Coast Shire Council's publication 'Landscaping Your Surf Coast Garden for Bushfire' to reduce the bushfire risk.

PLANNING & ENVIRONMENT ACT 1987
SURF COAST PLANNING SCHEME

This Briody Drive West Development Plan complies with the requirements of Clause 43.04 of the Surf Coast Planning Scheme

Approval Number: 15/0446

Date: 7/12/2017 Sheet No: 26 of 29

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Appendix 2: Access Requirements

The proposed length of the driveways from the road to the building and water supply outlet (including gates, bridges and culverts) is less than 30 metres (Figure 4).

The minimum design requirements for the driveway are:

- Curves in driveway must have a minimum inner radius of 10 metres.
- The average grade must be no more than 1 in 7 (14.4) (8.1°) with a maximum of no more than 1 in 5 (20) (11.3°) for no more than 50 metres.
- Dips must have no more than a 1 in 8 (12.5) (7.1°) entry and exit angle.

The driveway must:

- Be designed, constructed and maintained for a load limit of at least 15 tonnes and be of all-weather construction.
- Be clear of encroachments at least 4 metres vertically.
- Provide a minimum trafficable width of 3.5 metres and be substantially clear of encroachments for at least 0.5 metres on each side (see Plate 7).

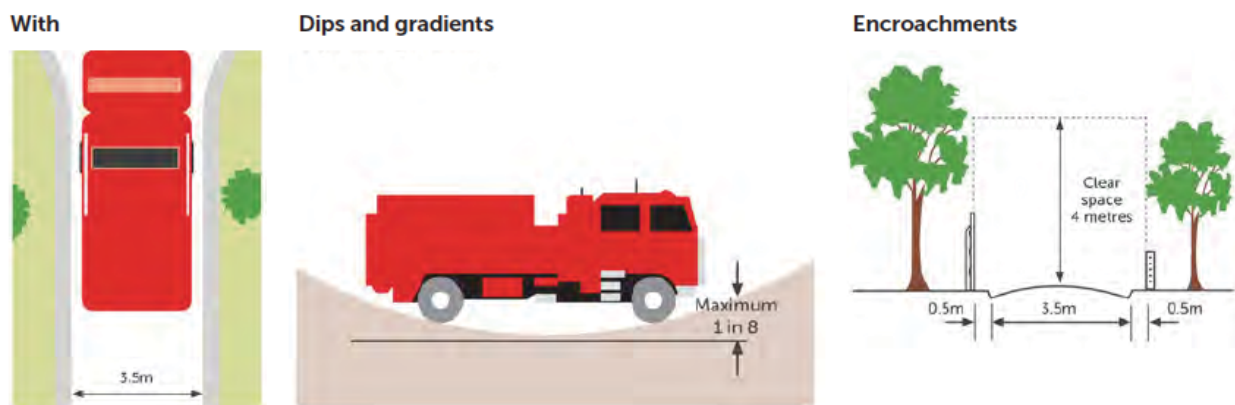


Plate 7: Vehicle clearance requirements (Source: CFA 2012)

PLANNING & ENVIRONMENT ACT 1987
SURF COAST PLANNING SCHEME
This Briody Drive West Development Plan complies with the requirements of Clause
43.04 of the Surf Coast Planning Scheme

Approval Number: 15/0446
Date: 7/12/2017 Sheet No: 27 of 29

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Appendix 3: Water Supply Requirements

The water supply is required to meet the following specifications:

- The water supply must be stored in an above ground water tank constructed of concrete, steel or corrugated iron.
- The water supply must be located within 60 metres of the outer edge of the building (including any obstructions).
- The water supply outlet/s must be fixed to the water tank.
- All pipework between the water supply and the outlet/s must be 64 millimetres (minimum) nominal bore (Plate 8).
- All fixed above-ground water pipelines and fittings must be of non-corrodible and non-combustible materials.
- Be located so that fire brigade vehicles are able to get to within 4 metres of the water supply outlet and the outlet must face away from the building if located less than 20 metres from the building to enable access during emergencies.
- Incorporate an additional 64 millimetres (minimum) gate or ball valve and 64 millimetres (fixed size), 3 threads per inch, male fitting to suit a CFA coupling.
- Incorporate a vortex inhibitor or additional water must be provided to ensure that the volume of water available is not restricted by a vortex.
- The water supply outlet must incorporate a ball or gate valve to provide access to the water by the resident of the dwelling.

All below-ground water pipelines must be installed to at least the following depths:

- subject to vehicle traffic: 300 millimetres
- under dwellings or concrete slabs: 75 millimetres
- all other locations: 225 millimetres.

The water supply must be readily identifiable from the building or appropriate signage must be provided (Plate 9) which:

- has an arrow pointing to the location of the water supply.
- has dimensions of not less than 310 millimetres high and 400 millimetres long.
- is red in colour, with a blue reflective marker attached.
- is labelled with a 'W' that is not less than 15 centimetres high and 3 centimetres thick.

PLANNING & ENVIRONMENT ACT 1987
SURF COAST PLANNING SCHEME
This Briody Drive West Development Plan complies with the requirements of Clause
43.04 of the Surf Coast Planning Scheme

Approval Number: 15/0446
Date: 7/12/2017 Sheet No: 28 of 29

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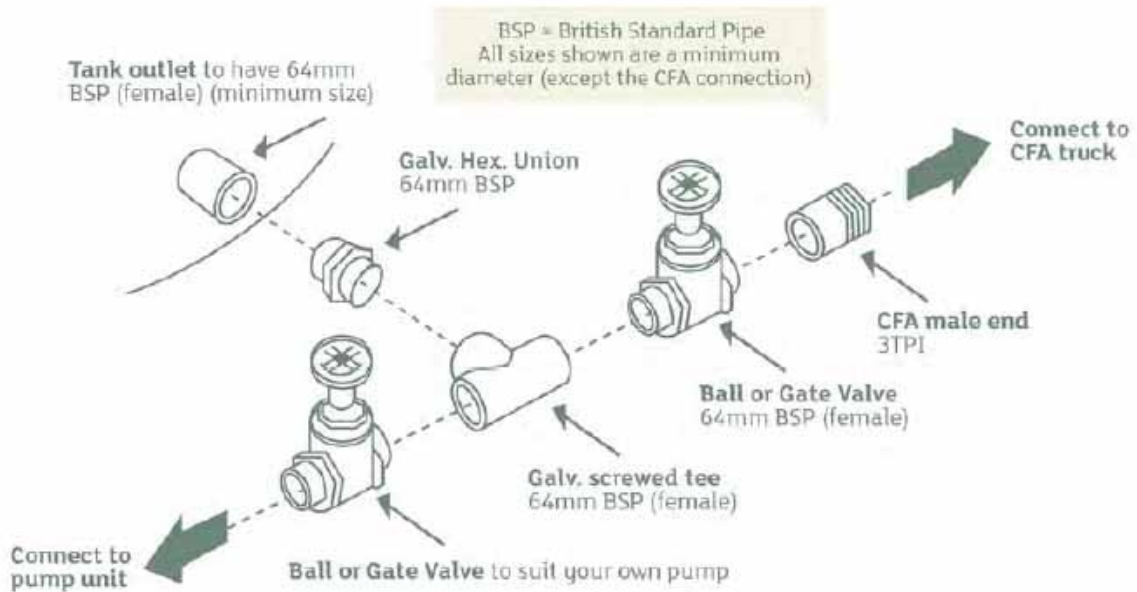


Plate 8: Water supply outlet, pipework and valve requirements (Source: CFA 2012a)

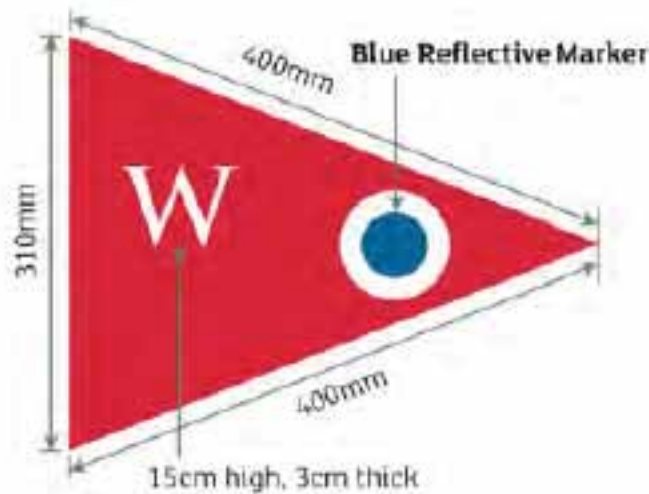


Plate 9: Water supply identification requirements (Source: CFA 2012)

PLANNING & ENVIRONMENT ACT 1987

SURF COAST PLANNING SCHEME

This Briody Drive West Development Plan complies with the requirements of Clause 43.04 of the Surf Coast Planning Scheme

Approval Number: 15/0446

Date: 7/12/2017 Sheet No: 29 of 29

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