

Bushfire Assessment  
Proposed Residential Subdivision  
Lot 95 DP 753149, Lot 7 DP 1069956  
Banyula Drive, Old Bar



Prepared For  
Riverside & Oyster  
Reach Estate Pty Ltd

12 April 2007



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# Bushfire Assessment

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<b>Project:</b>	<i>Banyula Drive, Old Bar</i>
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Orogen Pty Ltd and the authors responsible for the preparation and compilation of this report declare that we do not have, nor expect to have a beneficial interest in the study area of this project and will not benefit from any of the recommendations outlined in this report.

The preparation of this report has been in accordance with the project brief provided by the client and has relied upon the information, data and results provided or collected from the sources and under the conditions outlined in the report.

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Orogen Pty Ltd accepts no responsibility for any loss, damage suffered or inconveniences arising from, any person or entity using the plans or information in this study for purposes other than those stated above.

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## Glossary

Term/abbreviation	Definition
LEP	Local Environmental Plan
LES	Local Environment Study
PBP	<i>Planning for Bush Fire Protection 2006. A Guide for Councils, Planners, Fire Authorities and Developers.</i>
SFPP	Special Fire Protection Purposes
NP	National Park
ha.	Hectares
FDI	Fire Danger Index
LGA	Local Government Area
APZ	Asset Protection Zone
IPA	Inner Protection Area
OPA	Outer Protection Area

# Introduction

## 1.1 Background

Riverside & Oyster Reach Estate Pty Ltd has engaged Orogen Pty Ltd to prepare a Bushfire Assessment for the proposed development of land identified in the Old Bar Local Environmental Study.

## 1.2 Purpose of This Report

This Bushfire Assessment has been prepared to support a Part 3A Major Project Application and identify the bushfire protection measures for the proposed development. It has been prepared in consideration of the *Planning for Bush Fire Protection 2006* (PBP) prepared by the NSW Rural Fire Service in cooperation with the Department of Planning.

## Site Details

### 2.1 Overview

The subject site comprises Lot 95 DP 753149 and Lot 7 DP 1069956 which have a combined area of approximately 50 ha.

It is proposed to develop approximately 24 ha (48 %) of the subject site however, it is proposed to retain the majority of the native vegetation communities occurring within the subject site. This bushfire report assesses the potential bushfire risk posed to the proposed development area, which is primarily from the retained vegetation within the subject site. The proposed development layout is shown in **Appendix A**.

The site is multi-zoned, with developable areas zoned 2(a) Residential, while the undeveloped areas are zoned 6(a) Open Space Recreation and 7(a) Environmental Protection Habitat under the provisions of Greater Taree Local Environmental Plan 1995.

### 2.2 Topography

Site topography is generally characterised as flat with slopes between 0 – 5 ° across the subject site and adjoining lands. A relative high point is located at the southern boundary, and the land gently slopes from this rise to the north, east and west.

### 2.3 Vegetation

Part of the subject site is classified as bushfire prone on Greater Taree City Council's (GTCC) Bushfire Prone Lands Map. The vegetation associated with the Banyula Creek within the east of the subject site is not mapped as bushfire prone on Greater Taree City Council's mapping. The vegetation associated with this creek is therefore not considered a hazard and is excluded from analysis in this report. Site inspections have confirmed this vegetation is primarily comprised of saltmarsh and mangrove vegetation and is unlikely to pose a potential bush fire hazard.

The vegetation mapped as bushfire prone on GTCC's mapping is generally associated with Oyster Creek, located at the west of the subject site. Given the range in dominant floristic structure and hydrology, the vegetation communities associated within this creek pose a varying level of bushfire threat to the proposed development area. Much of this vegetation is, however saline wetland vegetation.

In accordance with the PBP, the classification of vegetation on land mapped as bushfire prone by GTCC is provided in **Table 2.1** below. In accordance with the PBP, Saline Wetlands are not considered to pose a bushfire threat.

The proposed development area has been subject to historic clearing for agriculture and grazing. As such the proposed development area is dominated by exotic grass species. Remnant trees including Eucalypts and *Syncarpia* are scattered throughout this area. The majority of the land to the south of the proposed development area is comprised of such vegetation, or is developed.

**Table 2.1 - Vegetation classification of bush fire prone mapped areas.**

Vegetation community	PBP Classification
<i>Eucalyptus robusta</i> / <i>Melaleuca quinquenervia</i> Swamp Forest	Forested Wetlands
<i>Casuarina glauca</i> / <i>Melaleuca quinquenervia</i> Swamp Forest	Forested Wetlands
Saltmarsh	Saline Wetlands
Mangrove	Saline Wetlands

## 2.4 Development Description

Proposed development of the site is for a residential subdivision. The proposed development includes the establishment of on site stormwater detention basins and open space areas. The detention basins and open space areas will be located between the retained vegetation, and the proposed residential lots. In addition the proposed road network includes perimeter road between the detention basins and the proposed lots. Building envelopes within lots will be set at DA Stage All Asset Protection Zones are contained within the proposed subdivision.

# Hazard Protection Requirements

## 3.1 Asset Protection Zone Setback Requirements

The subject site is located within Greater Taree Local Government Area. In accordance with **Table A2.3** in the PBP, an FDI rating of 80 is therefore applicable to the subject site for determining the category of potential bushfire attack and APZ setbacks.

Calculation of APZ's are based on vegetation type measured over a distance of 140 m from the asset being protected (**Table 3.1**). From **Table 3.1**, the minimum required APZ's can be accommodated within the proposed development area. The maximum APZ that can be accommodated by the defensible space between the hazard and front boundary of adjacent lots is greater 34 m. Therefore, in relation to this distance and the vegetation types, the maximum construction standard for the dwellings would be Level 1 AS 3959-1999

**Table 3.1 - Asset Protection Zone Details**

Vegetation Community	PBP Classification	Effective Slope*	Minimum APZ# (Level 3 Construction)
<i>Eucalyptus robusta/Melaleuca quinquenervia</i> Swamp Forest	Forested Wetlands	> 0° – 5° downslope	20 m
<i>Casuarina glauca/Melaleuca quinquenervia</i> Swamp Forest	Forested Wetlands	> 0° – 5° downslope	20 m
Saltmarsh	Saline Wetlands	> 0° – 5° downslope	No setbacks required
Mangrove	Saline Wetlands	> 0° – 5° downslope	No setbacks required

\* Slope averaged over 100 m      # - FDI 80 Fire Area

## 3.2 Construction Standards

Construction standards in accordance with AS 3959-1999 will be applicable to any dwellings constructed on the site. The category of bushfire attack relevant to dwellings within the proposed development area is based on an FDI rating of 80 and the criteria provided in **Table A3.4** of the PBP. Calculations are based on the distance from building envelopes to the bushfire threat (*ie.* vegetation category) and relevant ground slope.

As building envelopes have not been set and will be determined at DA Stage, no detailed information on construction standards applicable to individual lots is provided in this report. Notwithstanding, an assessment, of the fire behaviour regarding the potential bushfire attack from the retained vegetation has been made. In addition, the potential exposure of each lot to a 'Flame Zone' category of bushfire attack has been made for all lots. **Table 3.3** demonstrates the category of potential bushfire attack posed by the retained vegetation and the minimum setbacks required for Level 1 and Level 2 construction standards at the proposed development area.

The assessment has determined that the proposed subdivision layout does not expose any lots to a 'Flame Zone' category of attack, as defined in **Table A3.4** of the PBP. Therefore, all lots in the proposed subdivision layout are able to support dwellings that would be within the scope of AS3959-1999. As discussed in **Section 3.1**, the defensible areas are accommodated by the proposed subdivision layout (eg roads, detention basins) such that no lots would be required to satisfy higher than Level 1 construction. Despite this, assessment of construction standards for individual lots would be provided to Council at DA stage.

**Table 3.2 - Determination of construction standards for the proposed subdivision**

Vegetation Community	PBP Classification	Slope*	Level 2 (High)	Level 1 (Medium)
<i>Eucalyptus robusta/Melaleuca quinquenervia</i> Swamp Forest	Forested Wetlands	> 0° - 5° downslope	24 - < 34 m	34 - 100 m
<i>Casuarina glauca/Melaleuca quinquenervia</i> Swamp Forest	Forested Wetlands	> 0° - 5° downslope	24 - < 34 m	34 - 100 m
Saltmarsh	Saline Wetlands	> 0° - 5° downslope	Not Required	Not Required
Mangrove	Saline Wetlands	> 0° - 5° downslope	Not Required	Not Required

\* Slope averaged over 100 m      # - FDI 80 Fire Area

### 3.3 Land Title Considerations

All lots created within the proposed subdivision would be Torrens Title. Statutory responsibility to manage the fire risk on site in accordance with Section 63 (2) of the *Rural Fires Act (1997)* will apply to the lands within the proposed subdivision. The APZ's will be located on public open space areas and detention basins and as such will be managed by Council.

# Bushfire Risk Management

## 4.1 Overview

The following management measures are accepted as best management practice and should be implemented for any proposed development on the site to minimise the risk of bushfire attack to life and property.

The assessment provided in this report indicates that proposed lots on the subject site are subject to varying levels of bushfire threat. Accordingly, the minimum APZ's vary across the proposed development area from 0 – 20 m. With reference to the vegetation types and category of potential of bushfire attack, a the defendable area of at least 34 m is accommodated by the proposed subdivision layout (eg roads, detention basins) such that no lots would be burdened with an APZ to satisfy Level 2 construction. In relation to this distance and the vegetation types, the maximum construction standard for the dwellings would therefore be Level 1 AS 3959-1999.

While individual lots will not require formal APZ's, it is recommended that certain precautions be undertaken to protect any dwellings constructed on the site from risk of airborne embers that may originate from bushfires in the vicinity of the site. These include:

- Dwellings to comply with Level 1 construction in accordance with AS 3959-1999.

## 4.2 Perimeter Fire Trails

The road network proposed for the subdivision includes a perimeter road that would be constructed above the specifications for perimeter fire trails outlined in the PBP.

## 4.3 Open Space Areas

Grounds and managed gardens within the proposed subdivision should be maintained so that all non-retardant understorey plants, leaf litter, branches and other fuel are cleared. Suitable grasses or other fire retardant species may be planted in this area.

## 4.4 Vegetation Management

An important consideration in relation to bushfire risk management is post-development vegetation management.

While the proposed development area is generally clear of native vegetation at present, established gardens can pose significant risks if not managed in an appropriate manner.

Suggested measures for management of gardens to reduce risks are:

- Low cut lawn to be maintained adjacent to dwellings;
- Areas under fences and gates to be maintained free of fuel;
- Trees and shrubs should not overhang dwelling roofs;
- Tree canopies should not be continuous;
- Gutters and valleys to be kept clear of leaves at all times;
- Plant densely foliated deciduous or fire resistant evergreen trees;
- Plant smooth barked as opposed to rough barked trees;
- Minimise mulched areas; and
- Keep gardens well watered.

## References

NSW Rural Fire Service (2006). Planning for Bush Fire Protection – A guide for Councils, Planners, Fire Authorities, and Developers. Prepared by the NSW Rural Fire Service in cooperation with the Department of Planning

# Appendix A

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## PROPOSED DEVELOPMENT LAYOUT