

## **BUSHFIRE ASSESSMENT REPORT**

**PROPOSED REZONING  
LOT 1 DP 112876, LOT 1 DP 342364,  
LOT 1 DP 375642 & LOT 16 DP 225197  
WALKER STREET  
HELENSBURGH**

**OCTOBER 2011  
(REF 1181B/3)**

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## **Conacher Environmental Group**

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## **PREFACE**

This document provides an assessment of the bushfire attack potential and the necessary bushfire protection strategies for the proposed rezoning and possible future development of the subject site at Walker Street, Helensburgh. Aspects considered in relation to the Bushfire Assessment Report include; vegetation type, slopes, water supplies, entry and egress access, provision of defendable space, maintenance of defendable space, responsibilities for the upkeep of defendable space and construction standards for proposed buildings following subdivision of the site.

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# SECTION 1

## BACKGROUND DETAILS

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### 1.1 INTRODUCTION

This Bushfire Assessment Report has been prepared by *Conacher Environmental Group* for the proposed rezoning and existing development within the subject site at Helensburgh.

The objectives of this Report are to:

- i) Detail the assessment of the site in relation to bushfire hazard and attack;
- ii) Address the relevant requirements of Planning for Bushfire Protection (Rural Fire Service, 2006);
- iii) Identify if the development complies with the aims and objectives of Planning for Bushfire Protection (RFS, 2006);
- iv) Prepare a Report that supplies the relevant information for the Rural Fire Service and Council prior to granting, a rezoning approval, a Bushfire Safety Authority (RFS) or development approval (Council).

### 1.2 DESCRIPTION OF THE PROPERTY

#### ***Location***

The property is located at N<sup>o</sup>s 159, 161, 165 and 169 Walker Street, Helensburgh. The site covers the following Lots:

Lot 1 DP 342364;  
Lot 1 DP 112876;  
Lot 16 DP 255197;  
Lot 1 DP 375642;

#### ***Surrounding Land Use***

Current land use is as a resource recovery centre and rural residential dwellings. The site adjoins bushland areas of the Royal National Park and contains large areas of forest in the eastern part of the site.

#### ***Vegetation***

Vegetation within the site consists of grassed areas gardens, scattered trees and forested land in the eastern part of the site.

### 1.3 PROPOSED DEVELOPMENT

The site has been rezoned E3 Environmental Management in the Wollongong Local Environment Plan 2009 which was adopted in 2010. It is proposed to amend the zoning of the subject site to allow for the retention of the existing dwellings and ongoing operation of the existing resource recovery facility within an appropriate zoning. No new buildings are proposed as part of this rezoning application.

## SECTION 2

### BUSHFIRE ATTACK ASSESSMENT

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#### 2.1 BUSHFIRE ASSESSMENT CRITERIA

##### ***Bushfire Prone Land Map***

Council's Bushfire Prone Land Map shows that the western part of the subject site is classified as buffer to Category 1 Vegetation with Category 1 vegetation located in the eastern part of the site and on land to the north and south east of the site. A small area of Category 1 Vegetation is also mapped in the north-west corner of the site. However an onsite inspection identified that this area comprises canopy trees only with a cleared/ disturbed understorey and should not be mapped as Category 1 vegetation.

##### ***Forest Fire Danger Index***

The subject site is located within Wollongong City Council Local Government Area in the Illawarra Shoalhaven Fire Area. The Forest Fire Danger Index for the Illawarra Shoalhaven Fire Area is rated at 100 for use in determining asset protection zone requirements, defensible space and categories for bushfire attack.

##### ***Vegetation Classification***

The vegetation to be retained within the site and the adjoining area is classified as a Forest Vegetation Formation according to the vegetation classification criteria used in Planning for Bushfire Protection (RFS 2006).

##### ***Development Category***

The proposal is for rezoning to provide for the ongoing operation of a resource recovery centre within the subject site. This is not classified as a residential subdivision, an infill or a Special Fire Protection Purpose development under Chapter 4 of Planning for Bushfire Protection (RFS, 2006). Development consent following rezoning is required from Council for this development and the Rural Fire Service should be consulted with regards to the application and Bushfire Assessment Report.

##### ***Planning for Bushfire Protection (RFS, 2006)***

Due to the application being a rezoning for an industrial type development, and the fact that part of the site and adjoining areas contain land mapped as Bushfire Prone Land, a Bushfire Assessment Report has been prepared in accordance with the requirements of *Planning for Bushfire Protection* (RFS, 2006).

##### ***State Legislation***

Future development proposals would be subject to Section 79 BA of the Environmental Planning and Assessment Act which requires the consent authority (Council) to consider the requirements of Planning for Bushfire Protection (RFS, 2006).

In relation to the Rural Fires Act, Section 100B of this Act does not apply to the proposed rezoning as the proposal is not for a subdivision. This will not require an application to the RFS for a Bushfire Safety Authority. However the Rural Fire Service should be consulted by Council in relation to this development application.

##### ***Adjoining and Surrounding Development***

Current land use on land to the north, south and west is rural residential. The Royal National Park is located to the east of the site.

## 2.2 BUSHFIRE ATTACK ASSESSMENT

As the proposed development is not for a residential building the assessment of Categories of bushfire attack and level of building construction according to the AS3959 and Building Code of Australia is not required for the industrial type buildings.

The existing buildings associated with the resource recovery facility are a Class 6 building classification under the provisions of the Building Code of Australia. Class 6 buildings are not covered by the provisions of Planning for Bushfire Protection (RFS 2006) or by AS3959-2006 Construction of Buildings in Bushfire Prone Areas. Planning for Bushfire Protection (RFS 2006) identifies (pg 3) that for Class 5 and Class 6 buildings *“the provisions under the BCA for fire safety will be accepted for bushfire purposes where the aim and objectives of PBP can be met”*.

As the existing development is of an industrial type development, not residential, a combination of defendable space and/or fire resistant construction materials is most often employed to protect against the impact of a bush fire. A summary of the defendable space between the possible future development and the bush fire threat is provided in Table 2.1.

TABLE 2.1 DEFENDABLE SPACE BETWEEN THE BUSHFIRE THREAT AND THE EXISTING INDUSTRIAL DEVELOPMENT			
Direction	Vegetation Classification (greatest threat within 140m)	Effective Slope (within 100m)	Existing or proposed Defendable Space (m)
North	Forest	0-5° upslope	10 m
South	Managed Land	0-5° downslope	None required
East	Forest Vegetation	10-15° downslope	20 metres
West	Managed Land	0-5° upslope	None required

In relation to the subject site and the proposed future development, the principal direction of bushfire attack is from the Forest vegetation to the east, with a reduced level of attack from the upslope vegetation to the north.

The existing dwellings and sheds are located within cleared areas with the land surrounding these buildings managed to the condition of an inner protection zone to provide protection from possible bushfire attack from the forested areas to the north and east.

The existing dwellings are located within cleared areas which are managed to the level of an inner asset protection zone. An assessment of the bushfire hazard and existing asset protection zones for the existing dwellings indicates that dwellings beyond 100 metres from the forest areas are not required to meet any construction levels identified in AS3959-2009. The relevant construction levels for any future dwellings (or extensions to existing dwellings) are identified in Table 2.2.

<b>TABLE 2.2</b> <b>BUILDING CONSTRUCTION LEVELS FOR POSSIBLE</b> <b>FUTURE DWELLINGS</b> <b>(from AS3959-2009)</b>						
<b>Direction</b>	<b>Vegetation Classification (greatest threat within 140m)</b>	<b>Effective Slope (within 100m)</b>	<b>Bushfire Attack Levels</b> <b>Recommended Distance from Bushfire Hazard (metres)</b>			
			<b>BAL-40</b>	<b>BAL-29</b>	<b>BAL-19</b>	<b>BAL-12.5</b>
<b>North</b>	Forest	0-5° upslope	19-25	25-35	35-48	48-100
<b>South</b>	Managed Land	0-5° downslope	NR	NR	NR	NR
<b>East</b>	Forest Vegetation	10-15° downslope	39-49	49-64	64-82	82-100
<b>West</b>	Managed Land	0-5° upslope	NR	NR	NR	NR
NR – No requirement as no bushfire hazard present BAL – Bushfire Attack Levels						



## SECTION 3

### BUSHFIRE PROTECTION MATTERS

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#### 3.1 ASSET PROTECTION ZONE AND BUSHFIRE HAZARD MANAGEMENT

An Asset Protection Zone (APZ) as defined in PBP (RFS 2006) is not required in the strictest sense for an industrial development. It is considered that the surrounding rural lands to the south and west provide a sufficient defensible space from any bushfire hazard in these directions as shown in Figure 1.

A defensible space of 20 metres width (east) and 10 metres (north) should be implemented between the forested areas and industrial use buildings within the site.

This area of land will provide a space which can be maintained to prevent accumulation of rubbish and vegetative materials and which can be accessed if required after a local bushfire event to undertake any maintenance or property protection actions.

The landscaped areas, curtilage or hard standing areas within the proposed development are to be maintained as an Inner Protection Area (IPA) in accordance with the standards described in PBP (RFS, 2006). The responsible party for the inspection and maintenance of the gardens or curtilage areas will be the owners of the land (or their agents).

#### 3.2 SPECIFIC BUSHFIRE PROTECTION REQUIREMENTS

##### 3.2.1 *Building Construction Level*

Construction Levels in relation to AS3959-1999 are applicable to dwellings but are not applicable to industrial developments such as this resource recycling facility.

Future industrial use buildings within the site are likely to be constructed from fire-resistant materials such as precast concrete panels, masonry and/or metal sheeting.

In relation to the existing dwellings within the site no details are available as to the construction levels of the dwellings and the construction requirements identified in AS3959-2009. Any additions to the existing dwellings or new dwellings would need to be assessed in accordance with the specific requirements of Planning for Bushfire Protection (RFS 2006) and AS3959-2009.

##### 3.2.2 *Additional Bushfire Protection Measures*

Due to the presence of the retained forest vegetation in close proximity to the northern and eastern forested areas, it is considered that additional safeguards against ember and flame attack are warranted. Some specific measures to reduce the potential for damage from ember attack during a bushfire event include:

- i) Maintenance of the retained areas of curtilage or hard standing areas within the development as an inner Asset Protection Zone in accordance with PBP (RFS 2006);
- ii) The installation of adequate water supply infrastructure where hydrant spacing, sizing and pressures comply with AS2419.1-2005 including strategically placed fire hydrants around the proposed development;

- iii) Provision of an onsite water supply of 20,000 litres in a concrete or metal tank and fitting of appropriate plumbing and fire fighting hoses for use in a bushfire emergency;
- iv) This report should be referred to the Rural Fire Service for their review and comment.

### **3.3 ACCESS**

Section 4.2.7 – Access / Internal Roads in Planning for Bushfire Protection (RFS, 2006) states that :-

*“The public road system in a bush fire prone area should provide alternative access or egress for firefighters and residents during a bush fire emergency if part of the road system is cut by fire.”*

The existing development has ingress and egress routes directly to a public road, and then to the local area public road network. Within the existing development and adjoining areas there are areas such as car parking, or hard standing areas that will enable adequate access and turning areas for fire appliances. These facilities in combination with the existing public road system will provide an adequate ingress and egress route and will enable the safe evacuation of people while simultaneously enabling access for emergency services.

In general it is expected that the external public road system within the local area will comply with the requirements for access for fire fighting appliances and will be adequate for use in any fire emergency.

### **3.4 WATER SERVICES**

The existing development throughout the local area has reticulated water mains. It is expected that any future developments will use the existing water reticulation from the surrounding infrastructure therefore a supplementary form of water supply will not be necessary for fire fighting purposes. This water supply arrangement is in compliance with ‘Planning for Bushfire Protection, 2006’ in respect of water supply. The reticulated water supply, fire hydrant spacing, sizing and pressure is to comply with the requirements of AS2419.1 – 2005. A certification or test report from the Water Supply Authority is to be provided to demonstrate that the requirements of AS2419.1-2005 can be achieved during a bushfire event. Due to the location of the site, type of activity undertaken and presence of the downslope forest bushfire hazard the provision of an onsite water supply for bushfire protection is recommended.

Planning for Bushfire Protection (RFS 2006) requires the following measures to be implemented in relation to on-site water supply for bushfire protection:

- A dedicated water supply of 20,000 litres stored in a concrete or metal tank;
- Water tanks to be fitted with a 65mm Storz outlet with a gate or ball valve;
- Provision of a mobile water tank, pump and fire fighting hoses for use in an bushfire emergency situation;
- A sign displayed on the property entry point that a static water supply is available for bushfire control purposes.

## SECTION 4

### CONCLUSIONS AND RECOMMENDATIONS

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#### 4.1 AIM AND OBJECTIVES OF PLANNING FOR BUSHFIRE PROTECTION

*“The aim of Planning for Bushfire Protection is to use the NSW development assessment system to provide for the protection of human life and to minimise impacts on property from the threat of bushfire, while having due regard to development potential, on site amenity and protection of the environment” (PBP pg 1).*

The preparation of this Bushfire Assessment Report and subsequent assessment by Council and/or the Rural Fire Service ensures compliance with the aim of Planning for Bushfire Protection.

The following comments are provided in relation to satisfying the objectives of PBP.

##### *Objective 1*

- (i) *afford occupants of any building adequate protection from exposure to a bush fire;*

Measures have been identified which should be implemented within the existing development in regard to fire protection. Any future buildings associated with the resource recovery facility should be constructed from fire resistant materials such as precast concrete panels, masonry and/or sheet metal. This will provide adequate protection from exposure to a bush fire within the forest vegetation to the north and east.

##### *Objective 2*

- (ii) *provide for a defensible space to be located around buildings;*

An adequate defensible space is provided by the existing surrounding development and infrastructure within the existing development as shown in Figure 1. A defensible space of between 10 metres is proposed to the forest vegetation to the north of the site and 20 metres from the forested areas to the east.

##### *Objective 3*

- (iii) *provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent direct flame contact and material ignition;*

Adequate separation is provided by the existing surrounding development and cleared lands to the west and south. This separation distance and the recommended defensible space areas of 10m (north) and 20m (east) in combination with other measures such as fire resistant construction materials, adequate supply of water and the provision of adequate access will provide appropriate separation between the hazard and buildings which will prevent direct flame contact and material ignition.

##### *Objective 4*

- (iv) *ensure that safe operational access and egress for emergency service personnel and residents is available;*

It is expected that the existing sealed public road system within the local area is designed and constructed in accordance with PBP as described in Section 4.1.2 (RFS, 2006). This will ensure multi-path safe operational ingress for emergency services and also simultaneous safe egress for workers and the public during an emergency.

#### *Objective 5*

- (v) *provide for ongoing management and maintenance of bush fire protection measures, including fuel loads in the asset protection zone (APZ);*

The owners (or their agents) will undertake regular inspections and undertake management of the grounds including any gardens, curtilage or hard standing areas within the proposed development. This will include maintenance of the vegetation and fuel loads within the whole of the site as an Inner Protection Area (IPA) in accordance with PBP (RFS, 2006).

#### *Objective 6*

- (vi) *ensure that utility services are adequate to meet the needs of fire fighters (and others assisting in bush fire fighting)*

With respect to the adequate supply of water services the proposed development is expected to comply as the area has a reticulated water supply installed. It is expected that the internal fire fighting infrastructure is connected to the existing external reticulated water supply and is constructed and installed according to AS 2419.1 – 2005. It is recommended that a fire hydrant be installed at the western end of the development. A certification or tests report from the Water Supply Authority it to be provided to demonstrate that the requirements of AS2419.1 – 2005 can be achieved during a bushfire event. The installation of an on-site water storage of 20,000 litre tank and appropriate fittings is recommended to be implemented as part of the proposed development.

## **4.2 CONCLUDING COMMENTS**

The existing development area has a forest bushfire threat located to the north and east. Bushfire protection is to be achieved by the use of existing managed lands providing separation distance and defensible space to the west, south and east. The bushfire attack from the forest vegetation to the north and east will be decreased by the use of fire resistant construction materials such as precast concrete panels, masonry and/or sheet metal for any future buildings associated with the resource recovery facility.

With the implementation of the measures recommended, and outlined in Section 3 of this Report, the overall aims and objectives of Planning for Bushfire Protection (RFS, 2006) can be achieved for the proposed development.

## **4.3 RECOMMENDATIONS**

The following recommendations are provided in relation to reducing the potential for loss of life and property by the impact of bushfire:

- i. Provision of defensible space area of 20 metres to the east and 10 metres to the north;
- ii. Use of cladding materials for the external surfaces for future industrial type buildings which are fire retardant materials such as metal sheeting, pre-cast cement panels or masonry.
- iii. Regular inspections and maintenance of the Managed Lands or curtilage / gardens / hard standing areas within the site is to be undertaken by the owners (or their agents) according to PBP (RFS, 2006).
- iv. Maintenance of any retained areas of Managed Lands or curtilage / gardens within the site as an Inner Protection Area (IPA) in accordance with PBP (RFS 2006).
- v. This report should be referred to the Rural Fire Service for their review and comment;
- vi. Provision of additional onsite water supply of 20,000 litres and a mobile water tank, pump and appropriate fittings for use in a bushfire emergency.

## REFERENCES

Rural Fire Service (2006) Planning for Bushfire Protection

Standards Australia (2009 Australian Standard (AS3959-2009) Construction of Buildings in Bushfire Prone Areas.