



Bushfire Threat Assessment – Lower Hunter Lands

Nords Wharf

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(REF: Coal & Allied-LHL-001)

Report No: 24530-1

Version/Date: Final, September 2010

Document Status

| <i>Version</i> | <i>Purpose of Document</i> | <i>Orig</i> | <i>Review</i> | <i>Review Date</i> | <i>Format Review</i> | <i>Approval</i> | <i>Issue Date</i> |
|----------------|-----------------------------|---------------|---------------|--------------------|----------------------|-----------------|-------------------|
| <i>Final</i> | <i>Final for Submission</i> | <i>SC/ MD</i> | <i>MD</i> | <i>8-10-10</i> | <i>JH 12-10-10</i> | <i>MD</i> | <i>12-10-10</i> |
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Executive Summary

INTRODUCTION

RPS Australia East Pty Ltd (RPS) has been engaged by Coal & Allied Industries Limited (Coal & Allied) to undertake a Bushfire Threat Assessment (BTA) over land at Nords Wharf. The Nords Wharf area comprises a single developable estate of land that encompasses an area of approximately 10.18ha within the Lake Macquarie (LGA) now referred to in this report as the Development Estate. The Development Estate plus the conservation lands are referred to in this report as 'Entire Land Holdings'.

This BTA report will assist in the concept planning phase of the Development Estate, taking into consideration the surrounding bushfire threats. This assessment will inform an Environmental Assessment (EA) submission and provides information on measures that will enable the development to comply with 'Planning for Bushfire Protection' (RFS, 2006) (hereafter referred to as 'PBP') and Australian Standard 3959 – Building in Bush Fire Prone Areas. This assessment aims to consider and assess the bushfire hazard and associated potential threats relevant to this proposal, and to outline the mitigative measures that would be required in accordance with the provisions of the *Environmental Planning and Assessment Amendment (Planning for Bush Fire Protection) Regulation 2007* and the *Rural Fires Amendment Regulation 2007 (RF Amendment Regulation, 2007)*. This assessment has been made based on the bushfire hazards in and adjacent to the Development Estate.

VEGETATION

The vegetation in and around the Development Estate boundaries, to a distance of 140m, has been assessed in accordance with PBP (RFS, 2006). The vegetation in all directions from the Development Estate is classified as Open Forest. A linear strip of vegetation will be retained in the drainage line within the Development Estate. This type of vegetation is assessed as Rainforest vegetation in accordance with PBP 2006.

SLOPE

Elevation across the Development Estate ranges from 44m AHD in the north-east corner of the Development Estate to 2m AHD in the south-west where the Development Estate adjoins the foreshore reserve of Lake Macquarie. Slope to the north and south of the Development Estate is either flat or cross-slope. To the west of the Development Estate the land is downslope between 0 and 5 degrees and to the east the land is upslope.

ASSET PROTECTION ZONES

Asset Protection Zone's (APZ's) from 20 metres to 25 metres will be required from vegetation external to the Development Estate. The Concept Plan indicates that proposed roadways provide a buffer between the adjacent vegetation and the Development Estate and vegetation to be retained within the site, including foreshore parks, riparian buffers and vegetation buffers. The proposed perimeter and public roads within the Development Estate are therefore likely to provide either the

entire or majority of the required APZs, with the remainder of the APZ being able to be accommodated within the allotments if required.

WATER SUPPLY

Following any kind of development upon the land, it is expected that water mains will be extended into the Development Estate. Access to this supply should be provided for fire-crews in the form of readily accessible and easily located fire hydrants. Fire hydrant spacing, sizing and pressure should comply with AS 2419.1 – 2005. Where this cannot be met, the RFS will require a test report of the water pressures anticipated by the relevant water supply authority. In such cases, the location, number and sizing of hydrants shall be determined using fire engineering principles. Hydrants are not located within any road carriageway. All above ground water and gas service pipes external to the building are metal, including and up to any taps.

ACCESS / EGRESS

PBP (RFS, 2006) recommends a perimeter road be designed for any future residential development. The Concept Plan indicates that a perimeter road has been proposed for the majority of the Development Estate. This complies with PBP 2006. The perimeter road will allow a defensible space between vegetation and housing whilst also acting as an APZ. The exception to this occurs on the central northern border where a cul-de-sac is proposed. The proposed cul-de-sac complies with the requirements of PBP 2006 as it will incorporate a turning circle diameter of 12m and is not greater than 200m in length.

The Concept Plan provides for five internal public roads within the Development Estate. Four of the proposed internal public roads are through roads, thereby providing two points of access/ egress for both fire fighters and residents evacuating their dwelling. These roads will comply with PBP 2006. A single dead end road is proposed along the northern boundary of the Development Estate. According to PBP 2006 dead end roads should be not more than 200m in length, incorporate a minimum 12m turning circle and should be clearly sign posted as a dead end. The proposed dead end road is less than 200m in length, will incorporate a 12m turning circle and be signposted as a dead end road. The proposed design of the road network will comply with the requirements of PBP 2006.

DWELLING DESIGN AND CONSTRUCTION

Assessment of the proposed Concept Plan in accordance with AS3959-2009 Construction of Buildings in Bushfire-prone Areas (AS3959-2009) has indicated that future dwellings within the proposed allotments will be able to comply with this standard if the required APZs are established.

SUMMARY OF RECOMMENDATIONS

In summary, the following key recommendations have been generated to ensure that the Concept Plan for the Development Estate meets the relevant legislative requirements:

- APZ's from 20metres to 25 metres will be required between the bushland and urban interface (dwellings). A Perimeter road has been implemented between bushfire hazards and future dwellings, this will form all or part of the required APZ's. Any

remaining part of the APZ will be established within allotments if required.

- Any proposed development should be linked to the existing mains pressure water supply and that suitable hydrants be clearly marked and provided for the purposes of bushfire protection. Fire hydrant spacing, sizing and pressure should comply with AS2419.1, 2005.
- Roads should be constructed in accordance with section 4.1.3 (1), PBP 2006 as outlined in section 6 of this report.
- Any future dwelling within the Development Estate should have due regard to the specific considerations given in the BCA, which makes specific reference to the Australian Standard (AS3959 – 2009) construction of buildings in bushfire prone areas. Assessment of the Concept Plan in accordance with AS3959-1999 has shown that future dwellings within the Development Estate will be able to comply with this standard.
- It is recommended that a Fuel Management Plan (FMP) be prepared for the development estate. This plan will detail the required strategies to create the required APZ's and management of these APZ's in such a manner as to preserve the natural and cultural features of the development estate, while reducing the risk of bushfire.

Terms & Abbreviations

| Abbreviation | Meaning |
|------------------------------|--|
| APZ | Asset Protection Zone |
| AS2419.1-2005 | Australian Standard – Fire Hydrant Installations |
| AS3959-1999 | Australian Standard – Construction of Buildings in Bush Fire Prone Areas |
| BCA | Building Code of Australia |
| BFPA | Bushfire Prone Area |
| BFPL | Bushfire Prone Land |
| BFPLM | Bushfire Prone Land Map |
| BFPA | Bushfire Prone Areas |
| BFPB | Bushfire Protection Measures |
| Coal & Allied | Coal & Allied Industries Limited |
| Conservation OR Offset Lands | Land proposed for dedication to NSW Government |
| CRZ | Core Riparian Zone |
| Development Estate | Proposed Development Lands |
| DECCW | Department of Environment, Climate Change and Water |
| DGEAR's | Director General's Environmental Assessment Requirements |
| DoP | NSW Department of Planning |
| EA | Environmental Assessment |
| EAR | Ecological Assessment Report |
| EMP | Environmental Management Plan |
| EPA Act | <i>NSW Environmental Planning and Assessment Act 1979</i> |
| FMP | Fuel Management Plan |
| ha | hectare |
| IPA | Inner Protection Area |
| LGA | Local Government Area |
| LHRS | Lower Hunter Regional Strategy |
| LMCC | Lake Macquarie City Council |
| NSWG | NSW Government |
| OPA | Outer Protection Area |
| PBP | Planning for Bushfire Protection 2006 |
| RF Amendment Regulation | Rural Fire Amendment Regulation 2007 |
| RPS | RPS Australia East Pty Ltd |
| SSS | State Significant Site |

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I Introduction

RPS has been engaged by Coal & Allied Industries Limited (Coal & Allied) to undertake a Bushfire Threat Assessment (BTA) over land at Nords Wharf. The Nords Wharf site is a single developable estate of land that encompasses an area of approximately 10.18 ha within the Lake Macquarie (LGA) hereafter referred to as the 'Development Estate'. The Development Estate plus the conservation lands are referred to in this report as 'Entire Land Holdings'. The proposal encompasses a residential subdivision and conservation land transfer.

This BTA report will assist in the concept planning phase of the Development Estate, taking into consideration the surrounding bushfire threats. This assessment will inform an Environmental Assessment (EA) submission and provides information on measures that will enable the development to comply with PBP 2006 and Australian Standard 3959 – Building in Bush Fire Prone Areas (AS3959 –2009).

This assessment aims to consider and assess the bushfire hazard and associated potential threats relevant to such a proposal, and to outline the minimum mitigative measures which would be required in accordance with the provisions of the *Environmental Planning and Assessment Amendment (Planning for Bush Fire Protection) Regulation 2007* and the *Rural Fires Amendment Regulation 2007 (RF Amendment Regulation, 2007)*. This assessment has been made based on the bushfire hazards in and around the Development Estate at the time of the site inspection (June 2007). The aim of PBP is to use the NSW development assessment system to provide for the protection of human life (including fire-fighters) and to minimise impacts on property from the threat of bush fire, while having due regard to development potential, on site amenity and protection for the environment.

More specifically, the objectives are to:

- Afford occupants of any building adequate protection from exposure to a bush fire;
- Provide for a defendable space to be located around buildings;
- Provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent direct flame contact and material ignition;
- Ensure that safe operational access and egress for emergency service personnel and residents is available;
- Provide for ongoing management and maintenance of bush fire protection measures, including fuel loads in the asset protection zone (APZ); and
- Ensure that utility services are adequate to meet the needs of fire fighters (and others assisting in bush fire fighting).

In circumstances where the aim and objectives as detailed are not met, then the construction requirements for bushfire protection will need to be considered. Some of the proposed future uses for the site will require referral to Rural Fire Services at DA stage. Child care or a hotel/motel are defined as special fire protection purposes and as such will

need to be assessed under Planning for Bushfire Protection 2006 (NSW Rural Fire Service, 2006) (hereafter referred to as 'PBP 2006').

In order to determine whether the proposed development is bushfire-prone, and if so, which setbacks and other relevant Bush Fire Protection Measures (BFPM) will be appropriate, this assessment adheres to the methodology and procedures outlined in PBP 2006.

1.1 Description of the Proposal

It is proposed that the entire Coal & Allied owned Nords Wharf site be rezoned/listed as a 'State Significant Site' (SSS) in Schedule 3 of State Environmental Planning Policy (Major Development). A draft Schedule 3 listing will be prepared with the Concept Plan Application.

The development and conservation of the C&A land holdings, has been collectively classified into 'Southern Lands' and 'Northern Lands'. The Southern Lands encompass the Catherine Hill Bay (Middle Camp), Nords Wharf and Gwandalan Development Estates and associated Conservation Estates. Refer to Figure 1-1: Coal & Allied Surplus Lands and Figure 1-2: Northern Lands.

The Concept Plan for a residential subdivision and conservation land transfer of the Nords Wharf site will apply to the entire 127ha Nords Wharf site. The key parameters for the future development of the site are as follows:

- Dedication of 116.6ha of conservation land to the New South Wales Government (NSWG) that is identified in the Lower Hunter Regional Strategy and Lower Hunter Regional Conservation Plan, comprising approximately 92% of the Nords Wharf site.
- Maximum dwelling yield of 90 dwellings over 10.18ha.
- Indicative development staging. Depending on market forces, it may be decided to release the lots in 3-4 stages of 25-30 lots each.
- The provision of associated infrastructure.
- Torrens title subdivision and boundary realignment of the Nords Wharf site.

The Torrens title subdivision and boundary realignment of Coal & Allied land will enable land 116.6ha in area that is owned by Coal & Allied to be excised and dedicated to NSWG for conservation purposes.

Approval will not be sought under the Concept Plan for a specific lot or road layout. An indicative lot layout will indicate how the maximum dwelling yield of 90 dwellings could be achieved on the site.

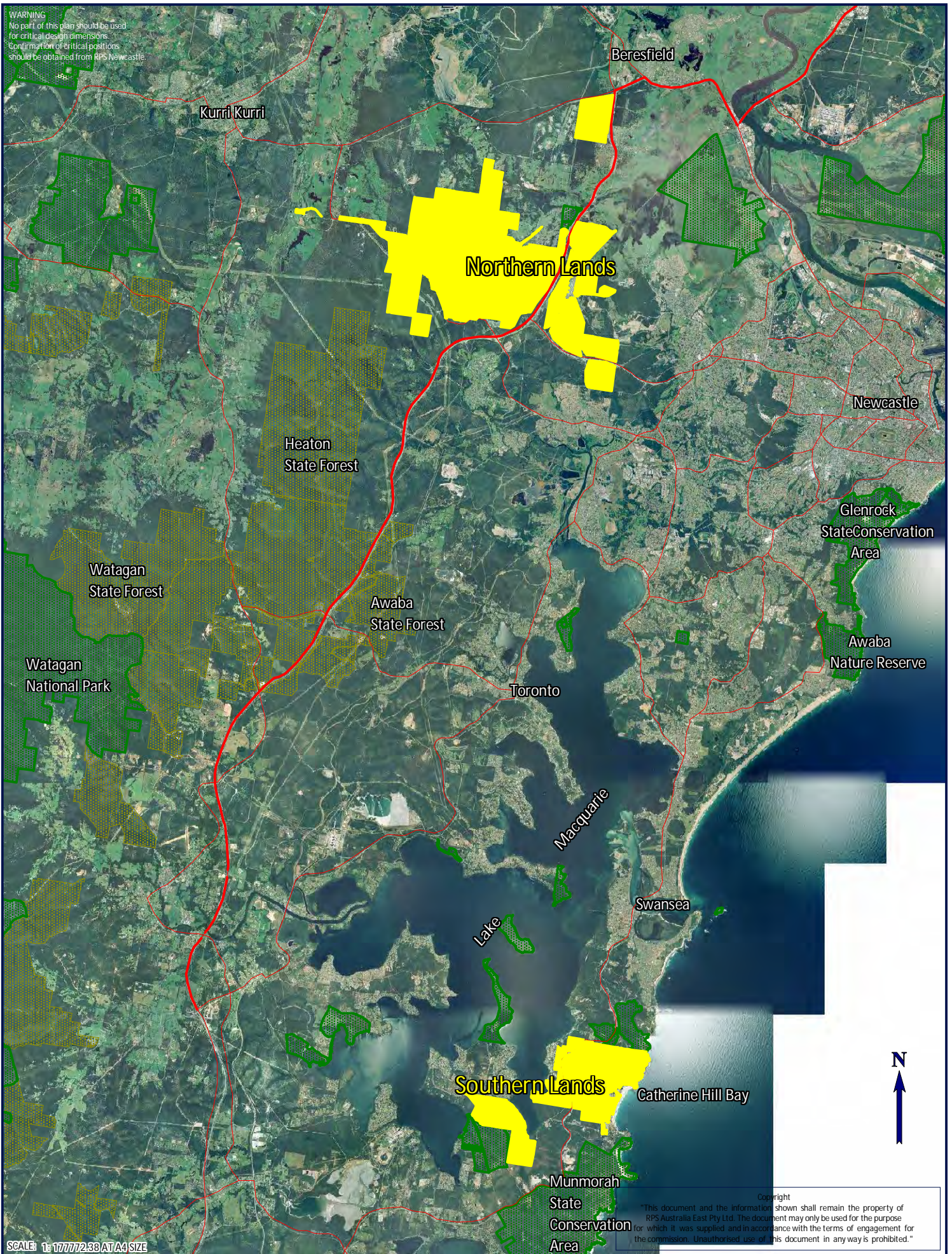
Similarly, approval will not be sought under the Concept Plan for subdivision or construction of individual houses. However, the desired future character of the proposed concept plan will be included in Urban Design Guidelines. Urban Design Guidelines will be prepared to inform the Concept Plan in respect of urban form, built form, open space

and landscape, access and movement and visual impact for the site.

It is proposed to dedicate land for conservation purposes as part of the Major Project Application via a Voluntary Planning Agreement (VPA) between Coal & Allied and the NSWG in accordance with s.93F of the Environmental Planning & Assessment Act, 1979 (EP&A Act).

A Concept Plan has been prepared for Nords Wharf which will enable key site parameters associated with land use, infrastructure delivery and timing, and environmental conservation to be resolved up front, with subsequent detailed stages being submitted for approval progressively. Refer to Figure 1-3: Concept Plan and Figure 1-4: Land Transfer Plan.

WARNING
No part of this plan should be used
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Confirmation of critical positions
should be obtained from RPS Newcastle.



TITLE: FIGURE 1-1 C & A SURPLUS LANDS

LOCATION: HUNTER REGION

DATUM: DATUM
PROJECTION: MGA ZONE 56 (GDA 94)

DATE: 8/3/2010
PURPOSE: EAR

24\DRAWING\ECOLOGY\SOUTHERN LANDS\ALL WORKSPACES\2010
LAYOUT REF: 24530 FIG 1-1 SURPLUS LANDS
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TITLE: FIGURE 1-2 SOUTHERN LANDS

LOCATION: SOUTHERN LAND HOLDINGS

DATUM: DATUM
PROJECTION: MGA ZONE 56 (GDA 94)

DATE: 10/3/2010
PURPOSE: EAR

J:\JOBS\24K\24530 HUNTER VALLEY\DRAWING\ECOLOGY\SOUTHERN LANDS
LAYOUT REF: VALL WORKSPACES\2010 NEW TEMPLATE WORKSPACES\FIG 3-1 STH LAND
VERSION (PLAN BY): A (A.P - M.D)

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