



# **BUSHFIRE CONSTRAINTS REPORT**

**FOR THE**

**SOUTH EAST REGIONAL HOSPITAL,**

**TATHRA ROAD,**

**BEGA**

**PREPARED FOR**

**NSW GOVERNMENT HEALTH INFRASTRUCTURE**

**MAY 2012.**

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|--------------------------|-----------------|-----------------------------|-----------------------|---------------------------|
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## EXECUTIVE SUMMARY

*Australian Bushfire Protection Planners Pty Limited* has been commissioned by NSW Government Health Infrastructure to prepare a Bushfire Constraints Report for the construction of the South East Regional Hospital on proposed Lot 1 created in the subdivision of Lots 1, 2 & 3 in DP 827161 and Lot 9 in DP 750190, Tathra Road, which is land located on the south-eastern outskirts of the township of Bega.

The proposed Hospital site, within proposed Lot 1, is located within the western/south-western portion of Lots 1, 2 & 3 in DP 827161 and Lot 9 in DP 750190 with frontage to Tathra Road. The rear boundary to these lots is formed by the alignment of the Bega River and the land contains an operational Dairy.

The land to the northwest, north, northeast, east, southeast and south of the proposed Hospital forms part of the Bega Valley Dairy Industry and contains operational Dairies.

The land to the southwest and west of the proposed Hospital site contains farming land and rural residential development.

The vegetation within the riparian corridor to the Bega River has been mapped by Bega Valley Shire Council, under the provisions of Section 146 of the *Environmental Planning & Assessment Act*, as Category 1 Bushfire Prone Vegetation with a smaller pocket of Category 2 Bushfire Prone Vegetation located within the central north-eastern portion of the property. The buffer zones to this vegetation also impact upon the property however this impact does not extend onto the proposed Lot 1 in the subdivision of the land for the Hospital site.

However, Section 91(1) of the *Environmental Planning & Assessment Act* requires that when land is identified as containing Bushfire Prone Vegetation a Consent Authority must obtain a Bushfire Safety Authority, from the Commissioner of the NSW Rural Fire Service, as defined by Section 100B of the *NSW Rural Fires Act*.

This Bushfire Constraints Report examines the accuracy of the Bega Valley Bushfire Prone Land Map, examines the potential bushfire risk to the proposed Hospital and examines the need, or otherwise, of establishing Asset Protection Zones and provides advice on fire fighting access and water supplies and land management for the 'Special Protection' [Hospital] development.



Graham Swain  
Managing Director  
***Australian Bushfire Protection Planners Pty Limited***

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## SECTION 1

### INTRODUCTION

#### 1.1 The Brief.

This Bushfire Constraints Report has been prepared to determine the potential impacts of bushfire protection measures that may be required to address the statutory provisions relating to bushfire protection to the proposed South East Regional Hospital on proposed Lot 1 created in the subdivision of Lots 1, 2 & 3 in DP 827161 and Lot 9 in DP 750190, Tathra Road, Bega.

#### 1.2 Aim of this Report.

The aim of this report is to:

- Determine the classification of the vegetation on and surrounding the site in accordance with the vegetation classification system contained in *Planning for Bushfire Protection 2006*;
- Review the accuracy of the Certified Bega Valley Shire Council Bushfire Prone Land Map;
- Undertake an assessment to determine the slope of the land on and surrounding the development site;
- Determine bushfire protection strategies for the construction of the proposed Hospital that address the following matters:
  - (I) The provision of building setbacks (Asset Protection Zones) [if required];
  - (II) Fire fighting water supplies;
  - (III) Access requirements for emergency service vehicles;
  - (IV) Land management responsibilities;
  - (V) Evacuation management.

#### 1.3 Statutory Requirements.

As the land upon which it is proposed to erect the Hospital is recorded as being bushfire prone this report has been prepared having regard to the following legislative and planning requirements:

### 1.3.1 Legislation.

#### **(a) *Environmental Planning and Assessment Act (EPA Act)***

Planning and development within NSW is regulated by the *Environmental Planning & Assessment Act, 1997* (EPA Act). This Act was amended in August 2002 by the *Rural Fires & Environmental Assessment Legislation Amendment Act, 2002*. In relation to bushfire planning for new residential, rural residential and 'special fire protection purpose' developments [Hospitals] located in bushfire prone areas in NSW, the following section of the EPA Act applies:

- Section 91(1) defines the subdivision of Bushfire Prone Land for residential and rural residential subdivision and the construction of 'special protection purpose' developments that are located in a Bushfire Prone Area as integrated development, which requires authorization under Section 100B of the *Rural Fires Act 1997*.

#### **(b) *Rural Fires Act 1997***

The objectives of the *Rural Fires Act* are to provide:

- The prevention, mitigation and suppression of fires;
- Coordination of bushfire fighting and prevention;
- Protection of people and property from fires; and
- Protection of the environment.

The *Rural Fires Act* was amended in August 2002 by the *Rural Fires & Environmental Assessment Legislation Amendment Act, 2002*. In relation to bushfire planning for new residential, rural residential and 'special fire protection purpose' developments in bushfire prone areas in NSW, the following section of the Act applies:

- Section 100B provides for the issue, by the Commissioner of the NSW Rural Fire Service, of a Bushfire Safety Authority for development which creates the subdivision of bushfire prone land for residential and rural residential development and construction of special fire protection developments located within a Bushfire Prone Area.

Application for a *Bushfire Safety Authority* must be lodged as part of the development application process and must demonstrate compliance with *Planning for Bushfire Protection 2006* and other matters which are considered necessary, by the Commissioner, to protect persons, property and the environment from the impact of bushfire.

In relation to the management of bushfire fuels on public and private lands within NSW, the following section of the Act applies:

- Sections 63(1) and 63(2) require public authorities and owners / occupiers of land to take all practicable steps to prevent the occurrence of bushfires on, and to minimize the danger of, the spread of bushfires.

**(c) *Rural Fires Regulation 2008.***

Section 44 of the *Rural Fires Regulation 2008* provides details of the matters that are required to be addressed for the issue of a *Bushfire Safety Authority* under Section 100B of the *Rural Fires Act*.

**(d) *Threatened Species Conservation Act 1995 (TSC Act).***

The TSC Act aims to protect and encourage the recovery of threatened species, populations and communities as listed under the Act. The TSC Act is integrated with the EP&A Act and requires consideration of whether a development or an activity (such as the implementation of hazard reduction and asset protection) is likely to significantly affect threatened species, populations and ecological communities or their habitat.

**(e) *Native Vegetation Act (NV Act).***

The *Native Vegetation Act* states indigenous vegetation within 20 metres of the bed or bank of a river or lake, or on slopes over 18 degrees, requires clearing consent under the *NV Act*, unless during an emergency fire event as authorized under the *Rural Fires Act 1997*.

### **1.3.2 Planning Policies.**

***Planning for Bushfire Protection – 2006 (Rural Fire Service).***

*Planning for Bushfire Protection 2006* provides guidance on the planning and development control processes in relation to bushfire protection measures for residential subdivision and ‘*Special Protection Purpose*’ developments in bushfire prone areas.

#### **1.4 Documentation Reviewed in the Preparation of this Report.**

The following documentation was reviewed in the preparation of this report:

- Copy of the Certified Bega Valley Shire Council Bushfire Prone Land Map;
- Land Titles information;
- Plan of proposed Subdivision;
- Masterplan;
- Aerial Photograph of Development Site;
- *Planning for Bushfire Protection 2006* prepared by the NSW Rural Fire Service/Planning N.S.W.

#### **1.5 Site Inspection.**

Graham Swain of *Australian Bushfire Protection Planners Pty. Limited* inspected the development property on the 24<sup>th</sup> April 2012 to assess the topography of the land and the classification of the vegetation within and external to the site.

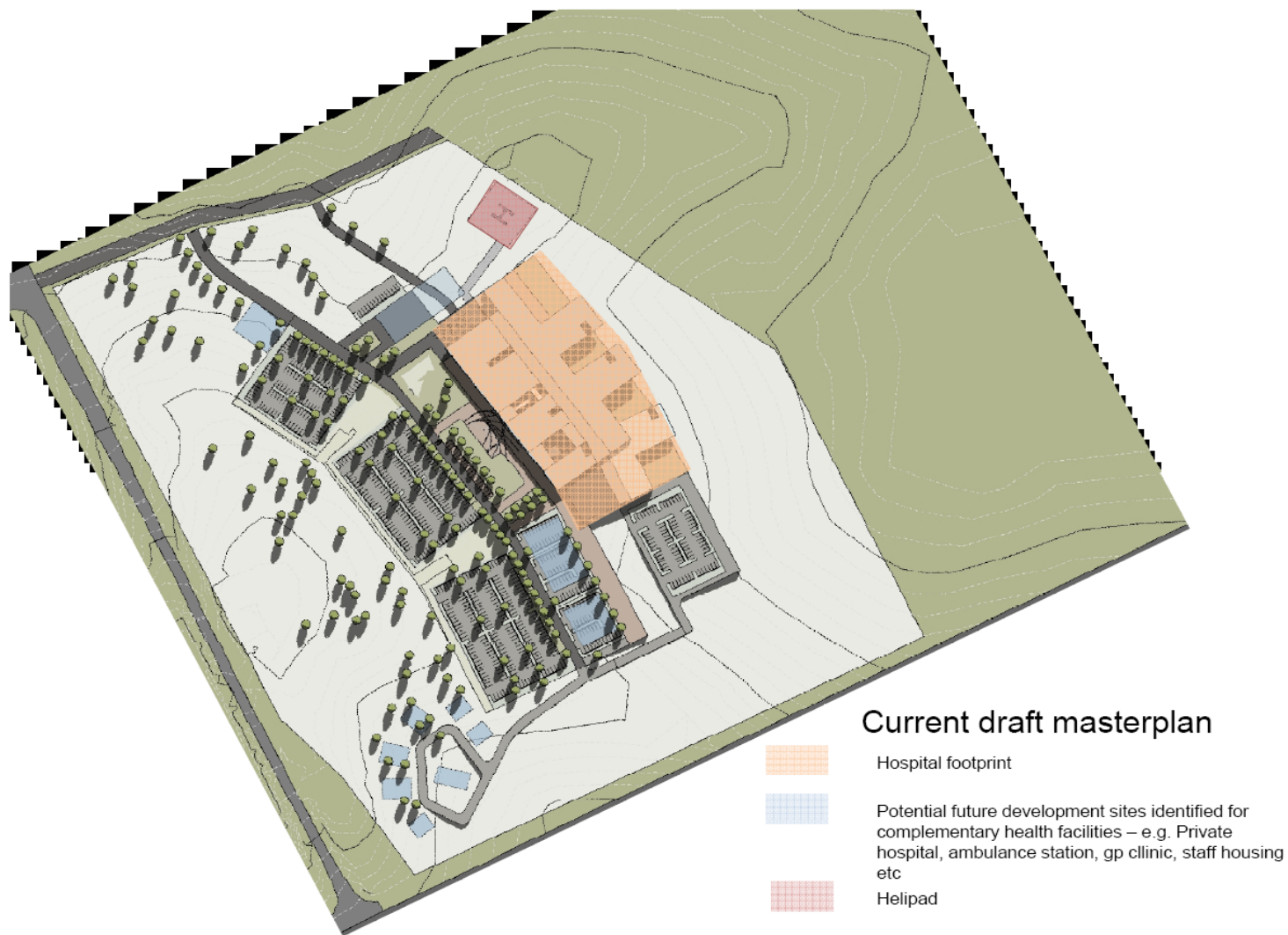
The inspection also examined the adjoining landuse and the location of vegetation which could be lawfully recorded on a Bushfire Prone Land Map as either Category 1 or Category 2 Bushfire Prone Vegetation in accordance with the NSW Rural Fire Service's *Guideline for Bushfire Prone Land Mapping* and the vegetation classification provided by Keith in '*Ocean Shores to Desert Dunes*'.

#### **1.6 Proposed Development.**

NSW Health Infrastructure plan to construct the South East Regional Hospital on Lot 1 created in the subdivision of Lots 1, 2 & 3 in DP 827161 and Lot 9 in DP 750190, Tathra Road, Bega.

The Master Plan for the proposed is shown in Figure 1, below.

**Figure 1 – Proposed Master Plan for the South East Regional Hospital.**



## **SECTION 2**

### **DESCRIPTION OF THE DEVELOPMENT SITE**

#### **2.1 Location & Landuse.**

The proposed South East Regional Hospital site occupies approximately 17.5 hectares of land within proposed Lot 1 in the subdivision of Lots 1, 2 & 3 in DP 827161 and Lot 9 in DP 750190, located on the eastern side of Tathra Road, to the south-east of the village of Bega.

The current land use within Lots 1, 2 & 3 in DP 827161 and Lot 9 in DP 750190 consists of an operational Dairy with an existing dwelling and associated Dairy and farm sheds located within Lot 9 in DP 750190 – within the northern portion of the original land parcel.

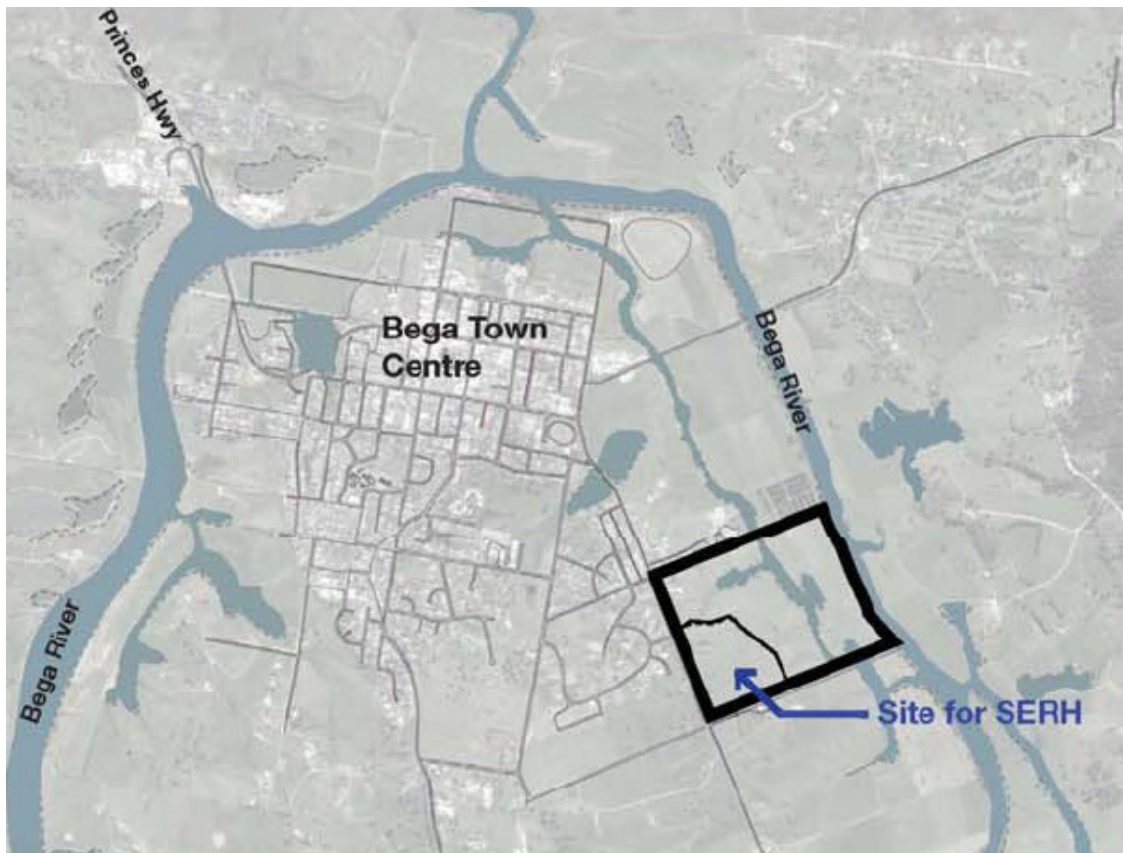
These facilities will remain, along with the operational Dairy, within proposed Lot 2 in the subdivision of the land which will adjoin the eastern, north-eastern and northern boundaries of the proposed Hospital site within proposed Lot 1 created in the subdivision of Lots 1, 2 & 3 in DP 827161 and Lot 9 in DP 750190.

The land to the southeast/south of the Hospital site contains the unmade section of Boundary Road, which forms the access to the adjoining Jerang Dairy, which is an operational Dairy. The land to the west/southwest the property, beyond Tathra Road, contains an existing dwelling and associated rural sheds which form part of a large rural land holding used for grazing.

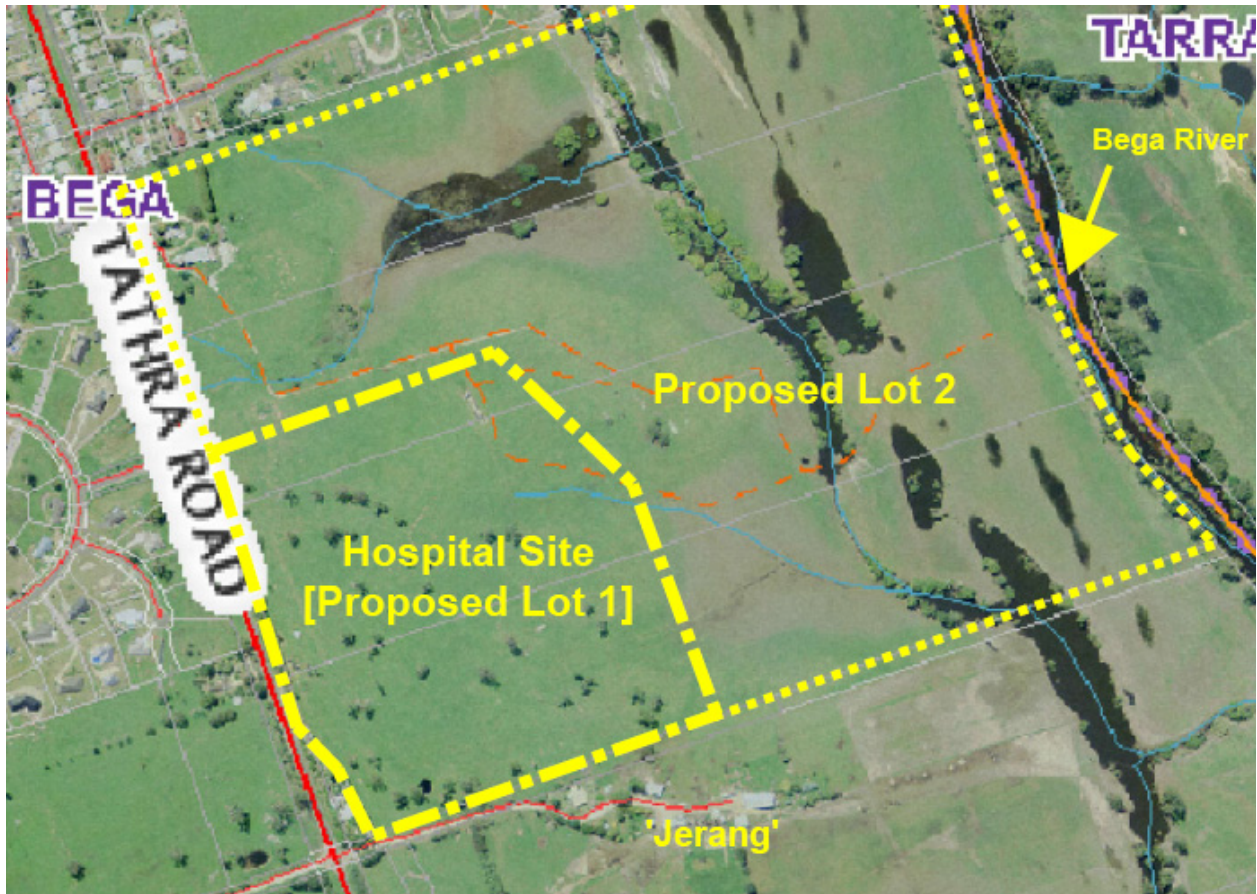
Rural residential development extends to the west and northwest of the northern portion of the Hospital site, beyond Tathra Road.

Refer to Figure 2 below.

**Figure 2 – Location of the proposed South East Regional Hospital.**



**Figure 3 – Aerial Photograph of the proposed South East Regional Hospital site.**



## **2.2 Topography.**

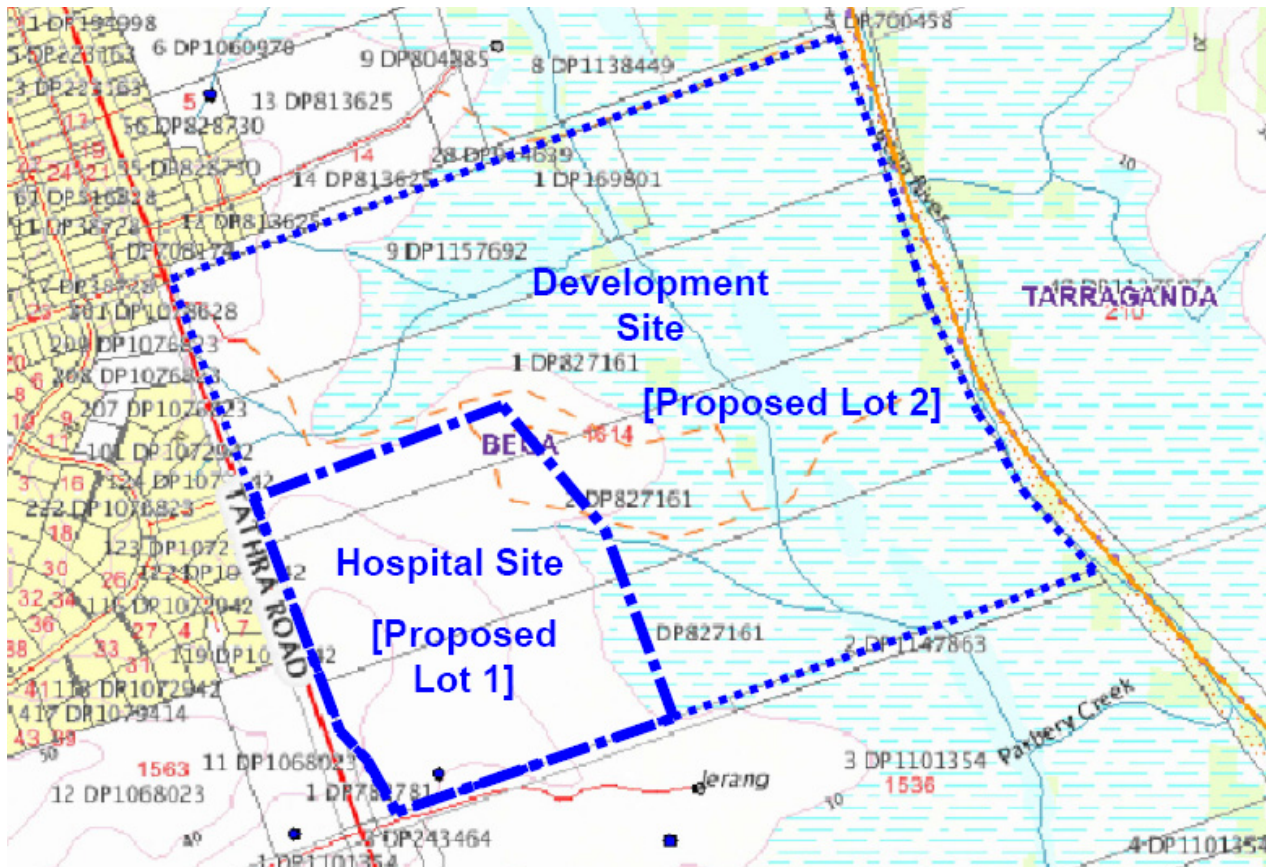
The topography of the land within the Hospital site [proposed Lot 1] consists of a broad knoll which extends from Tathra Road into the site before falling to the north at 7 degrees and to the northeast, east and southeast at 5 degrees.

The land within proposed Lot 2, beyond the Hospital site, continues to fall to the Bega River and its tributaries at less than 5 degrees.

The land to the southeast and south of the Hospital site, being the land within the Jerang Dairy, falls to the southeast at less than 5 degrees.

The farm land to the west of the site rises to the west along a broad ridgeline and the residential land to the west of the northern portion of the Hospital site also rises to the west.

**Figure 4 – Cadastre Plan showing proposed Hospital site, adjoining lots and contours.**



Contour interval 10m

### **2.3 Vegetation Communities within the Development Site.**

The predominant vegetation within the development site is pasture grass with remnant pockets of trees along the Bega River and tributaries within the development site.

The predominant vegetation within the Hospital site is grassland with scattered shade trees – refer to Figure 3 – Aerial Photograph.

### **2.4 Vegetation Communities on Land Adjoining the Hospital Site.**

The predominant vegetation on land adjoining the Hospital site consists of pasture grass with scattered trees on the farming land within proposed Lot 2; across the adjoining Jerang Dairy to the south and southeast and within the farming land to the west of Tathra Road.

The rural residential development to the west of Tathra Road contains managed landscaped gardens and lawns.

## 2.5 Site Photographs.



***Photograph 1 – Taken looking to the southeast across the northern portion of the Hospital site.***



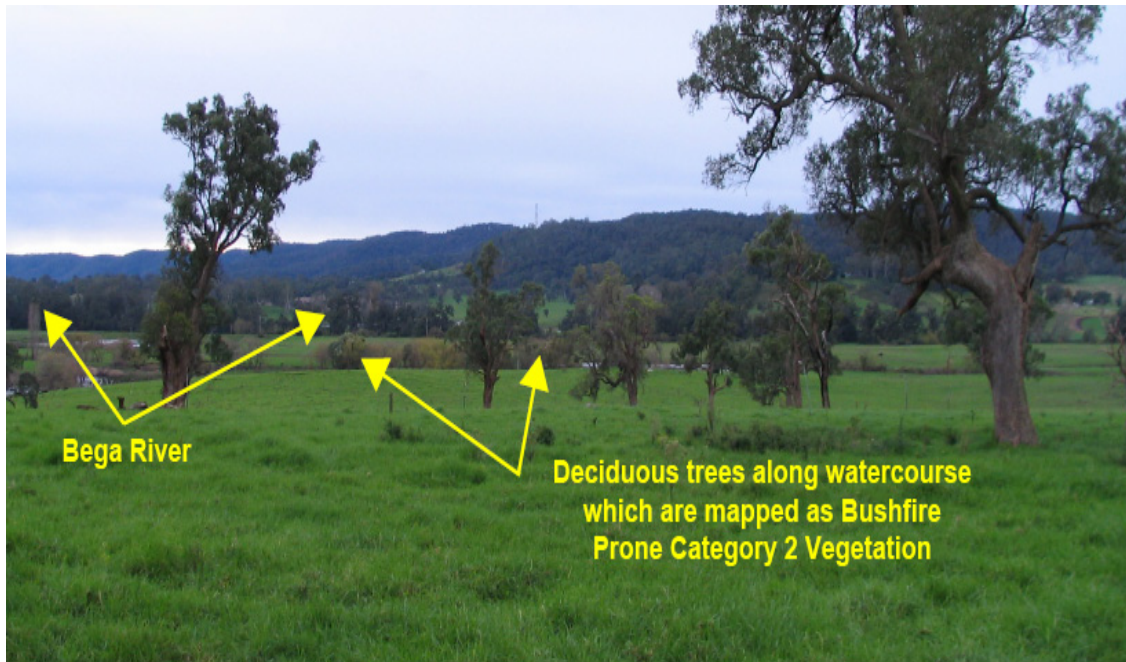
***Photograph 2 – Taken looking to the east across the Hospital site.***



***Photograph 3 – Taken from Tathra Road looking to the northeast to Billabong and showing the exotic tree species which are mapped as being Category 2 Bushfire Prone Vegetation – the Bega River corridor is in the background.***



***Photograph 4 – Taken from the Hospital site looking to the north across the adjoining Dairy Farm [within proposed Lot 2].***



***Photograph 5 – Taken from the Hospital site looking to the northeast showing the deciduous trees which are mapped as Category 2 Bushfire Prone Vegetation.***



***Photograph 6 – Taken from the Hospital site looking to the west showing the existing Rural Residential Development to the west of Tathra Road.***



***Photograph 7 – Taken from the Hospital site looking to the southeast showing the Jerang Dairy.***



***Photograph 8 – Taken from Tathra Road looking to the northwest across the farming land to the west of the Hospital Site.***

## SECTION 3

### REVIEW OF BUSHFIRE PRONE LAND MAP

#### 3.1 Introduction.

Bushfire Prone Land Maps provide a trigger for the various development assessment provisions of the *Environmental Planning & Assessment Act 1979* and the *Rural Fires Act 1997*.

The identification of Bushfire Prone Areas in NSW is required under Section 146 of the *Environmental Planning & Assessment Act 1979*.

Under this Act, the Commissioner of the NSW Rural Fire Service designates, through separate guidelines, what will constitute a Bushfire Prone Area and how it is to be mapped.

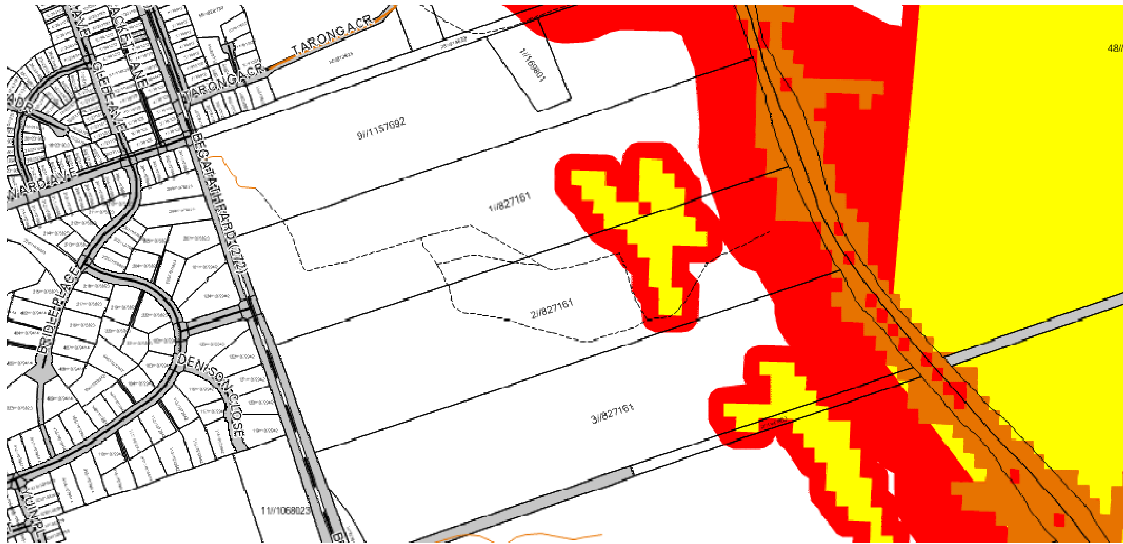
Councils are then required to prepare a Bushfire Prone Land Map for their Local Government Area in accordance with the guidelines, and submit the map for approval and certification by the Commissioner. The Bushfire Prone Land Map is to be updated at least every five (5) years.

#### 3.2 Review of Certified Bega Valley Council Bushfire Prone Land Map.

##### (a) *Vegetation within the Development Site [Lots 1, 2 & 3 in DP 877161 and Lot 9 in DP 750190]:*

- The Bega Valley Bushfire Prone Land Map records the trees located on the banks of the Bega River as Category 1 Bushfire Prone Vegetation within the 100 metre wide buffer zone extending into proposed Lot 2 created in the subdivision of the land within the development site.
- The map also records Category 2 Bushfire Prone Vegetation along the banks of the river tributary which flows across proposed Lot 2 with the 30 metre wide buffer zone affecting land along both side of the tributary – refer to Figure 5 below – Extract from the Bega Valley Council Bushfire Prone Land Map.

**Figure 5 – Extract from the Bega Valley Council Bushfire Prone Land Map showing the extent of Category 1 & 2 Bushfire Prone Vegetation identified as being located within the Development Site.**



The NSW Rural Fire Service Guideline for Bushfire Prone Land Mapping states, under Section 5.2(d):

Vegetation as defined in this clause is **excluded** from vegetation Groups 1 – 3, if the vegetation is an area of “**managed grassland**”, including grassland on grazing land.

The Category 1 and Category 2 Bushfire Prone Vegetation recorded on the Bega Valley Bushfire Prone Land Map in fact consist of remnant trees beneath which is “**managed grassland**”.

In accord with Section 5.2(d) of the NSW Rural Fire Service Guideline for Bushfire Prone Land Mapping this vegetation is not deemed to constitute vegetation which is deemed to be bushfire prone.

Therefore, the Bega Valley Bushfire Prone Land Map inaccurately maps the vegetation within the development site as Category 1 and Category 2 Bushfire Prone Vegetation.

An examination of the vegetation within the proposed Hospital site [Lot 1] confirms that the Bushfire Prone Land Map accurately records the grassland vegetation as non-bushfire prone vegetation.

### **3.3 Conclusion.**

Irrespective of the in-accuracy of the Bega Valley Bushfire Prone Land Map, the development site [Lots 1, 2 & 3 in DP 827161 and Lot 9 in DP 750190] is recorded as containing Bushfire Prone Vegetation and therefore development occurring within triggers the requirements of the *Environmental Planning & Assessment Act 1979* and the *Rural Fires Act 1997*.

**Note:**

***Should the land within the development site be subdivided into Lots 1 & 2 prior to the lodgment of an application to construct the proposed Hospital and as proposed Lot 1 does not contain vegetation which has been recorded on the Bega Valley Bushfire Prone Land Map or is impacted by a buffer zone to Bushfire Prone Vegetation, there is no requirement to satisfy the provisions of Environmental Planning & Assessment Act 1979 and the Rural Fires Act 1997 in respect to the provision of bushfire protection measures to the Hospital development.***

However, if this is not the case, this report examines the bushfire protection measures required to the proposed Hospital based on the assumption that the accuracy of the Bushfire Prone Land Map is not in question and that the development site includes that part of the land which will contain the proposed Hospital.

## SECTION 4

### BUSHFIRE PROTECTION MEASURES

#### 4.1 Introduction.

Planning and development in NSW is regulated by the *Environmental Planning & Assessment Act 1979* [EP&A Act].

On the 1<sup>st</sup> August 2002 the *Rural Fires and Environmental Assessment Legislation Amendment Act 2002* commenced in New South Wales. The provisions of this Act amended both the *EP&A Act* and the *Rural Fires Act 1997* to enhance bushfire protection through the development assessment process.

Section 91 of the *Environmental Planning & Assessment Act* [in combination with the *Rural Fires Act* requirements for a Section 100B Bushfire Safety Authority] classes the following types of Development Application as “Integrated Development”:

- Residential & rural residential subdivision;
- Special Fire Protection Purposes [Retirement Homes; Child Care Centres; Schools; Seniors Living Developments, Hospitals etc.].

If a development site is on bushfire prone land, or is impacted by the buffer zone to the bushfire prone vegetation, then the requirements of the NSW Rural Fire Services’ *Planning for Bushfire Protection 2006* apply to any future development.

The following recommendations are based on the bushfire protection measures required to satisfy the deemed-to-comply provisions of *Planning for Bushfire Protection 2006* – relevant to a ‘*Special Fire Protection Purpose Development [Hospital]*’.

#### 4.2 Provision of Asset Protection Zones.

Appendix 2 of the *Planning for Bushfire Protection 2006* provides a methodology for determining the widths of Asset Protection Zones required for a ‘*Special Fire Protection Purpose Development [Hospital]*’ located within a bushfire prone area.

Section 3 of this report examines the accuracy of the Bega Valley Bushfire Prone Land Map and concludes that the map does not accurately record the true extent of Bushfire Prone Vegetation within the development site.

Section 3 of the report also identifies that, irrespective of the accuracy of the Bushfire Prone Land Map, the land within the Hospital site does not contain, nor has an affectation as to being bushfire prone from vegetation on adjoining lands – including the mapped Bushfire Prone Vegetation within proposed Lot 2 as the boundary of the Hospital site is located more than 100 metres from the inaccurately mapped Category 2 Bushfire Prone Vegetation said to be located along the tributary to the Bega River.

As the Hospital site is located beyond the maximum width of separation [Asset Protection Zone] required by Appendix 2 of *Planning for Bushfire Protection 2006* and the adjoining Dairy operation will continue to manage the grassland vegetation to the north, northeast, east, southeast and south of the Hospital site, there is no requirement to provide complying Asset Protection Zones to any of the Hospital buildings or associated assets.

#### **4.3 Access for Firefighting Operations.**

Section 4.2.7 of *Planning for Bushfire Protection 2006* provides specifications on public road access for firefighting operations within ‘*Special Fire Protection Purpose*’ developments and requires compliance with the deemed-to-satisfy provisions of Section 4.1.3(1) – Public Road Access as defined by *Planning for Bushfire Protection 2006*.

The primary access requirement is the provision of perimeter road access between the asset/s and the bushfire hazard. However in this case a bushfire hazard does not exist adjacent to the Hospital site and therefore this requirement is not relevant in the layout of the Hospital road network.

What is relevant is the need to provide adequate internal access for emergency service vehicles including Fire and Rescue NSW and NSW Rural Fire Service Appliances. The following specifications apply to the internal road design:

- The use of speed humps and chicanes to control traffic is restricted;
- The capacity of the road surfaces shall be sufficient to carry a 15 tonne vehicle in reticulated water supply areas;
- Internal road widths shall comply with A.S. 2890.2 – 2002 with a minimum width of 6.5 metres and ‘*No Parking*’ to one side with services located on this side of the road to ensure accessibility to reticulated water supply hydrants;
- Curves of roads (other than perimeter roads) are a minimum inner radius of 6.3 metres with an outer radius of 12.0 metre;

- For public roads that are between 6.5 – 8.0 metres wide provide No Parking on one side with services [hydrants] located opposite parking side to ensure accessibility to reticulated water;
- Single lane one way access roads shall be no less than 3.5 metres in width and provide parking within parking bays and locate services outside of the parking bays to ensure accessibility to reticulated water for fire suppression;
- Parking bays to be a minimum of 2.6 metres wide from kerb edge to road pavement. No services shall be located within the parking bays.

#### **4.4 Bushfire Construction Standards to the Hospital Buildings/Assets.**

This report has determined that the proposed Hospital site is located more than 100 metres from the Category 2 Bushfire Prone Vegetation which is mapped as being located adjacent to the watercourse located within the central north-eastern portion of the development site – within proposed Lot 2.

This separation width removes the need to apply bushfire construction standards to the proposed Hospital buildings/assets are required by A.S. 3959 – 2009.

#### **4.5 Services – Water, Electricity and Gas.**

Fire Hydrant spacing, sizing and pressures of mains shall comply with A.S. 2419.1 – 2005.

Where compliance with the standard can not be met, Fire & Rescue NSW and the Rural Fire Service will require a test report from the water supply authority on the water pressures anticipated and may require the system to be augmented with storage tanks strategically.

If a Booster Valve assembly is required to be installed there shall be provided a layby parking space adjacent to the Booster Valve in order to maintain unobstructed access to the Hospital.

#### **4.6 Evacuation.**

The proposed Hospital site is unlikely to come under bushfire attack and therefore not requirement exists for the preparation of a specific Evacuation Plan that addresses a bushfire emergency.

However, there shall be prepared an Evacuation Plan which establishes the relevant protocols for the management of other specific emergencies including a fire in a building; severe storm and storm damage; hazardous material incident within the Hospital or on surrounding land, etc.

## SECTION 5.

### CONCLUSION

This report examines the requirements of Section 91 of the *Environmental Planning & Assessment Act 1979* and Section 100B of the *Rural Fires Act 1997* in respect to the proposed construction of the South East Regional Hospital on proposed Lot 1 in the subdivision of Lots 1, 2 & 3 in DP 827161 and Lot 9 in DP 750190, being land located on Tathra Road, southeast of the existing village of Bega.

The site inspection confirmed that the vegetation within the development site, being Lots 1, 2 & 3 in DP 827161 and Lot 9 in DP 750190, does not constitute bushfire prone vegetation as defined by the NSW Rural Fire Service's '*Guideline to Bushfire Prone Land Mapping 2006*' and the Bega Valley Bushfire Prone Land Map does not accurately record vegetation which could lawfully be recorded on the Certified Bushfire Prone Land Map as either Category 1 or Category 2 Bushfire Prone Vegetation.

Examination of the vegetation within proposed Hospital site, being land within proposed Lot 1 created in the subdivision of Lots 1, 2 & 3 in DP 827161 and Lot 9 in DP 750190, and on the land within 100 metres of proposed Lot 1, has found that there is no affection on the site from bushfire prone vegetation or the buffer zone to bushfire prone vegetation and therefore the Hospital site is not deemed to be bushfire prone.

In conclusion, there is no requirement to provide Asset Protection Zones to the Hospital buildings and other assets or any requirement to comply with the bushfire construction standards as required by the Building Code of Australia and Australian Standard A.S. 3959 - 2009.

This report however provides recommendations on the provision of fire-fighting access and water supply requirements and evacuation requirements.

## REFERENCES:

- N.S.W Rural Fire Service – Planning for Bushfire Protection 2006;
- *Environmental Planning & Assessment Act – 1979;*
- *Rural Fires Act – 1997;*
- *Rural Fires and Environmental Assessment Legislation Amendment Act 2006;*
- *Rural Fires Regulation 2008;*
- NSW Rural Fire Service – *Guideline for Bushfire Prone Land Mapping 2006;*
- *Threatened Species Conservation Act 1995;*
- *Native Vegetation Act;*
- *Bushfire Environmental Assessment Code 2006;*
- Building Code of Australia;
- Australian Standard A.S 3959-2009 “*Construction of Buildings in Bushfire Prone Areas*”;
- *Bega Valley City Bushfire Prone Land Map.*

**APPENDIX 1 – Aerial photograph of the Hospital Site showing the separation distance to the non-bushfire prone vegetation along the watercourse.**

