

BUSHFIRE PROTECTION ASSESSMENT

FOR THE CONSTRUCTION

OF THE PROPOSED

MAGNETIC RESONANCE IMAGING [MRI] FACILITY,

HUNTER MEDICAL RESEARCH INSTITUTE [HMRI]

ON

LOT 201 in DP 1176551

No. 2 LOOKOUT ROAD,

NEW LAMBTON HEIGHTS



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Assessment Number	Document	Preparation Date	Issue Date	Directors Approval
B131943	Final	29.4.2013	1.5.2013	<i>G.L. Swain</i>

EXECUTIVE SUMMARY

Australian Bushfire Protection Planners Pty Limited, at the request of the Hunter Medical Research Institute Pty Ltd, has undertaken the bushfire consultancy to inform the preparation of the Development Application on the bushfire protection measures required for the construction of the proposed Magnetic Resonance Imaging facility, Hunter Medical Research Institute [HMRI] on Lot 201 in DP 1176551, No. 2 Lookout Road at New Lambton Heights.

The existing HMRI building contains an East and 'West Wing' with the East Wing running to the northeast whilst the West Wing runs to the west, north of the existing Kookaburra Cottages. A Carpark is located to the south-east of the 'East Wing'.

The new MRI facility forms a separate building which is located to the north and parallel to the existing HMRI building, with passageway links to the existing building.

The Newcastle Bushfire Prone Land Map indicates that the site contains Bushfire Prone Vegetation. The development is therefore required to address the provisions of *Planning for Bushfire Protection 2006*.

The NSW Rural Fire Service originally classified the HMRI complex as being a 'Special Fire Protection Purpose' development. However, whilst being located on the Hospital land, the HMRI complex does not form part of the Hospital functions and is not a 'core' hospital landuse and is therefore not deemed to be a 'Special Fire Protection Purpose' development.

This matter was discussed with the NSW Rural Fire Service Development Control Department with confirmation received that the Rural Fire Service considers the HMRI complex not to be a 'Special Fire Protection Purpose' development.

Further advice has been sought from the NSW Rural Fire Service on the classification of the proposed MRI facility with following advice confirmed via email dated 23.4.2013:

"Following on from your enquiry re. the addition of an MRI unit onto or within the approved research facility building, I have discussed the proposal with my team leader.

It is assumed that for such a facility patient numbers would be limited and likely to be in direct care of hospital staff, as well as not providing any long term stay or overnight accommodation.

Accordingly then the MRI unit could be considered on its merits and similarly to the research facility building and not be subject to SFPP APZs requirements".

This report therefore undertakes an assessment to address the deemed-to-satisfy bushfire protection requirements for the proposed MRI facility, in accordance with the 'infill development' provisions of *Planning for Bushfire Protection 2006*, and provides recommendations on the provision of Asset Protection Zones to the building; emergency access/egress; fire-fighting access and water supplies; construction standards of the building, the management of the Asset Protection Zones/residual vegetation and evacuation protocols necessary to address the bushfire risk to the occupants of the MRI facility, in accordance with the advice provided by the NSW Rural Fire Service that the proposed facility is not a '*Special Fire Protection Purpose*' development.



Graham Swain,
Managing Director,
Australian Bushfire Protection Planners Pty Limited.

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INTRODUCTION

The development proposal is for the construction of an extension to the Hunter Medical Research Institute [HMRI] on Lot 201 in DP 1176551, No. 2 Lookout Road, New Lambton Heights to house a Magnetic Resonance Imaging [MRI] Facility.

Access to the existing building is via pedestrian links.

Figure 1 – Site Plan of the existing Hunter Medical Research Institute building.

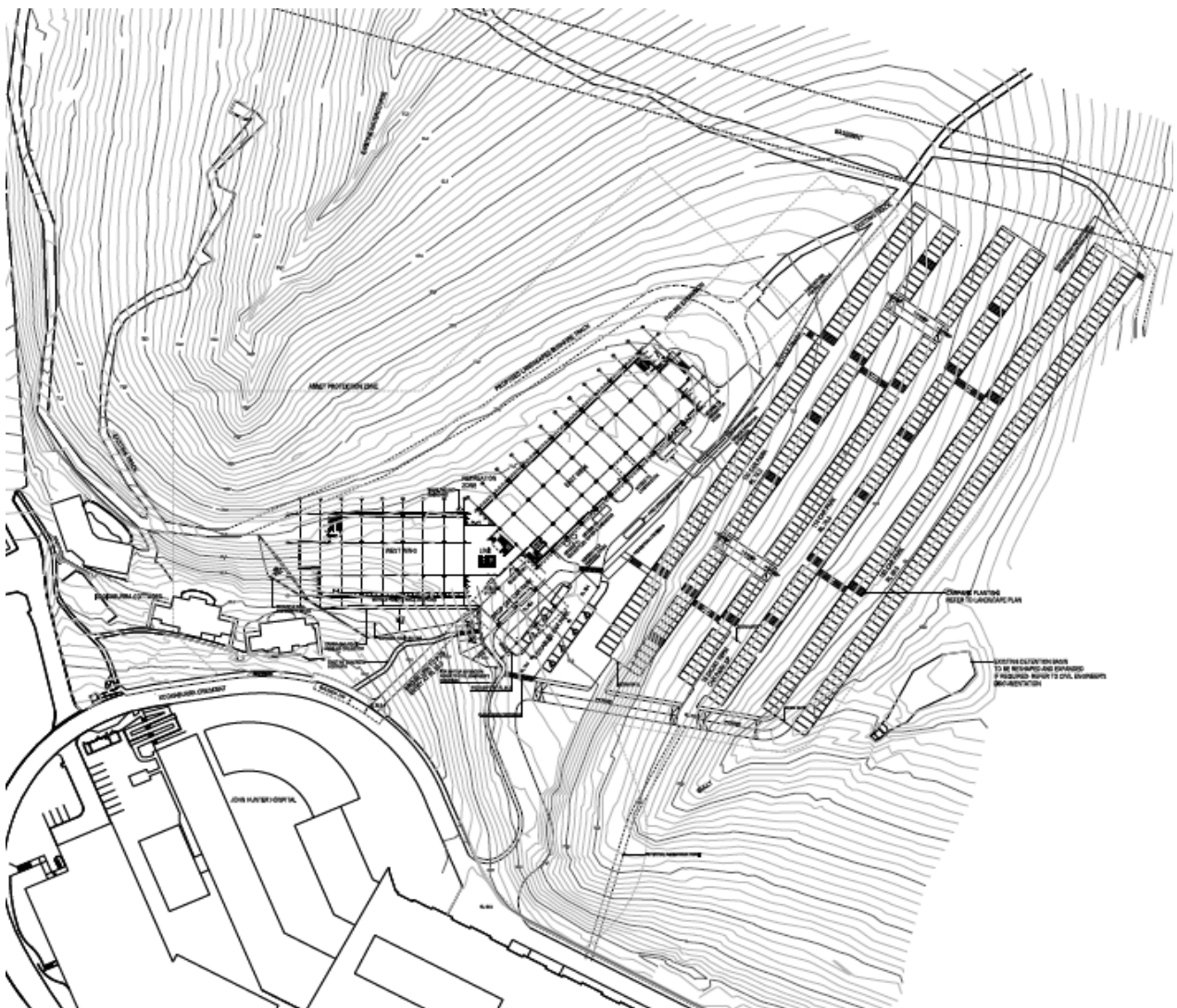
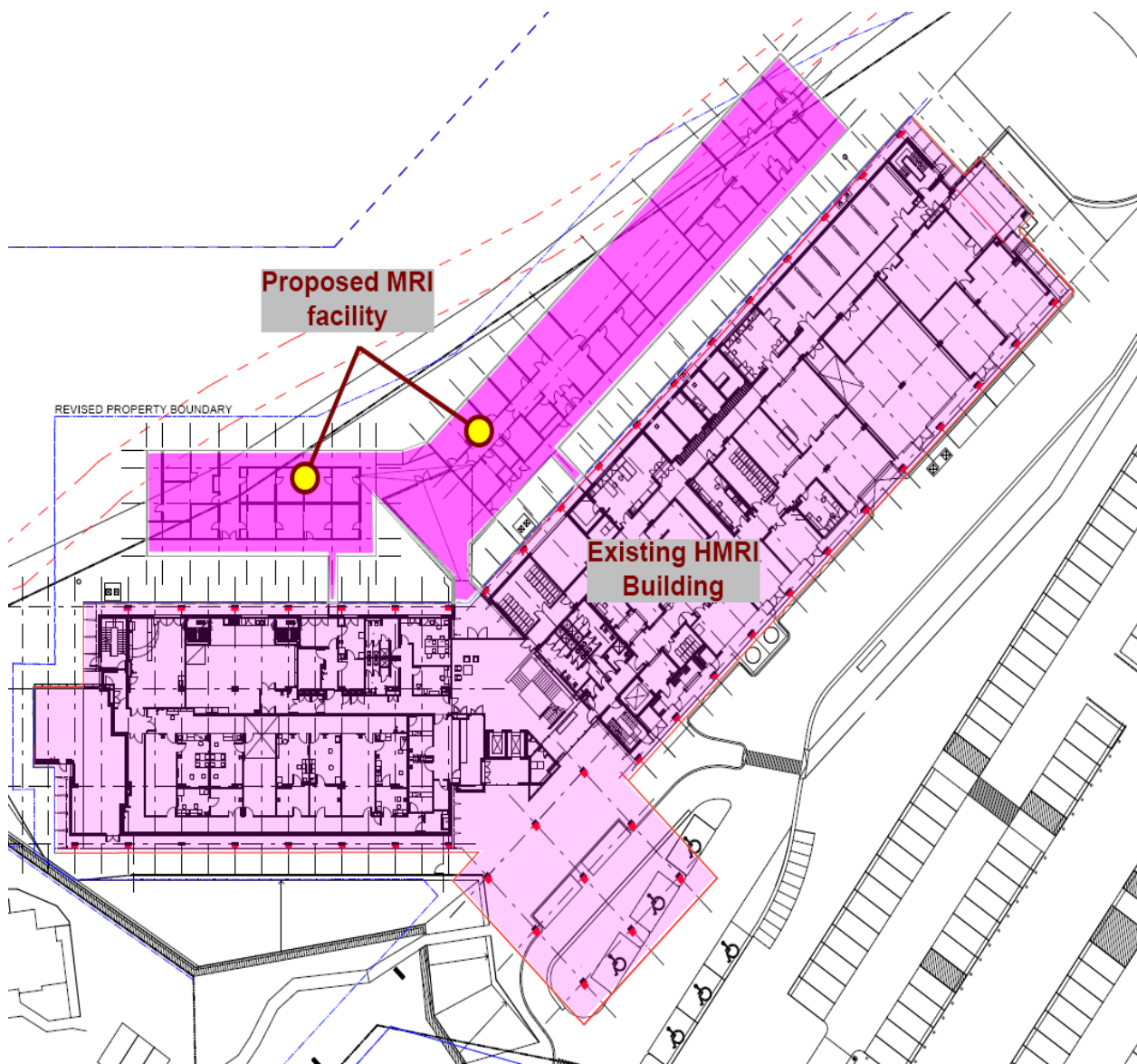


Figure 2 – Site Plan of existing Hunter Medical Research Institute building and the location of the proposed MRI facility.



1.2 Aim of this Report.

The aim of this report is to address the requirement so Section 79BA of the *Environmental Planning & Assessment Act 1979* and the deemed to satisfy provisions of *Planning for Bushfire Protection 2006*.

1.3 Statutory Requirements.

This report has been prepared having regard to the following legislative and planning requirements:

1.3.1 Legislation.

Environmental Planning and Assessment Act - 1979 (EPA Act)

Planning and development within NSW is regulated by the *Environmental Planning & Assessment Act, 1979* (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 developments in bushfire prone areas in NSW, the following sections of the Act apply:

(i) Section 79BA:

Section 79BA requires a consent authority to determine if a proposed development that is located within a designated Bushfire Prone Area, or the buffer zone to the Bushfire Prone Land, complies with *Planning for Bushfire Protection 2006*.

(ii) Section 79C(1) states:

“In determining a development application, a consent authority is to take into consideration such of the following matters as are of relevance to the development the subject of the development application:

- *The likely impacts of the development (e.g. natural hazards such as bushfire threat);*
- *The suitability of a site for development (e.g. bushfires)*

1.3.2 Planning Policies.

Planning for Bushfire Protection – 2006. [Rural Fire Service]

This document provides guidance on the planning and development control processes in relation to bushfire protection measures for rural residential and residential subdivision, “*Special Fire Protection*” and Class 5 – 8 and 10 buildings in bushfire prone areas.

The document provides deemed-to-satisfy specifications on the provision of Asset Protection Zones to residential and “*Special Fire Protection*” developments; defensible space requirements to other developments and access/water supply provisions for developments in bushfire prone areas.

Provision for the assessment of construction standards to buildings and management / maintenance of the Asset Protection Zones/defensible space to buildings is also provided.

1.4 Documentation reviewed in this Assessment.

To achieve the aim of this report, a review of information relevant to the property was undertaken. Information sources reviewed included the following documents:

- Letter from the NSW Rural Fire Service to the Department of Planning, dated 7th January 2009;
- Email from the NSW Rural Fire Service confirming that the proposed MRI facility is not deemed to be a '*Special Fire Protection Purpose Development*';
- Site Plan prepared by Suters Architects;
- *Planning for Bushfire Protection 2006* prepared by the NSW Rural Fire Service/Planning N.S.W;
- Australian Standard AS3959 *Construction of Buildings in Bushfire Prone Areas*;
- Newcastle City Council *Certified Bushfire Prone Land Map*.

1.5 Site Inspection.

Graham Swain of **Australian Bushfire Protection Planners Pty Limited** inspected the development site on the 22nd of April 2013 to re-examine management of the site and in particular, the provision of the existing Asset Protection Zone and Fuel Management Zone.

1.6 Authority Consultation.

In order to confirm the NSW Rural Fire Services advise that the MRI facility was not deemed to be a '*Special Fire Protection Purpose Development*', pursuant to Section 100B of the *Rural Fires Act 1997*, communication between Mr Garth Bladwell, Development Assessment Officer and Mr Graham Swain preceded an email for Mr Bladwell confirming that in the opinion of the NSW Rural Fire Service, the proposed MRI facility is not deemed to be a '*Special Fire Protection Purpose Development*'.

SECTION 2

PROPERTY DESCRIPTION

2.1 Location & Description.

The site on which it is proposed to construct the addition to the HMRI complex is located to the northwest of the 'east wing' and to the north of the 'west wing' of the existing HMRI building which forms part of the John Hunter Hospital site and is located to the north of the existing Hospital precinct, east of the large Hospital Carpark.

Figure 3 – Location of the HMRI Development Site.

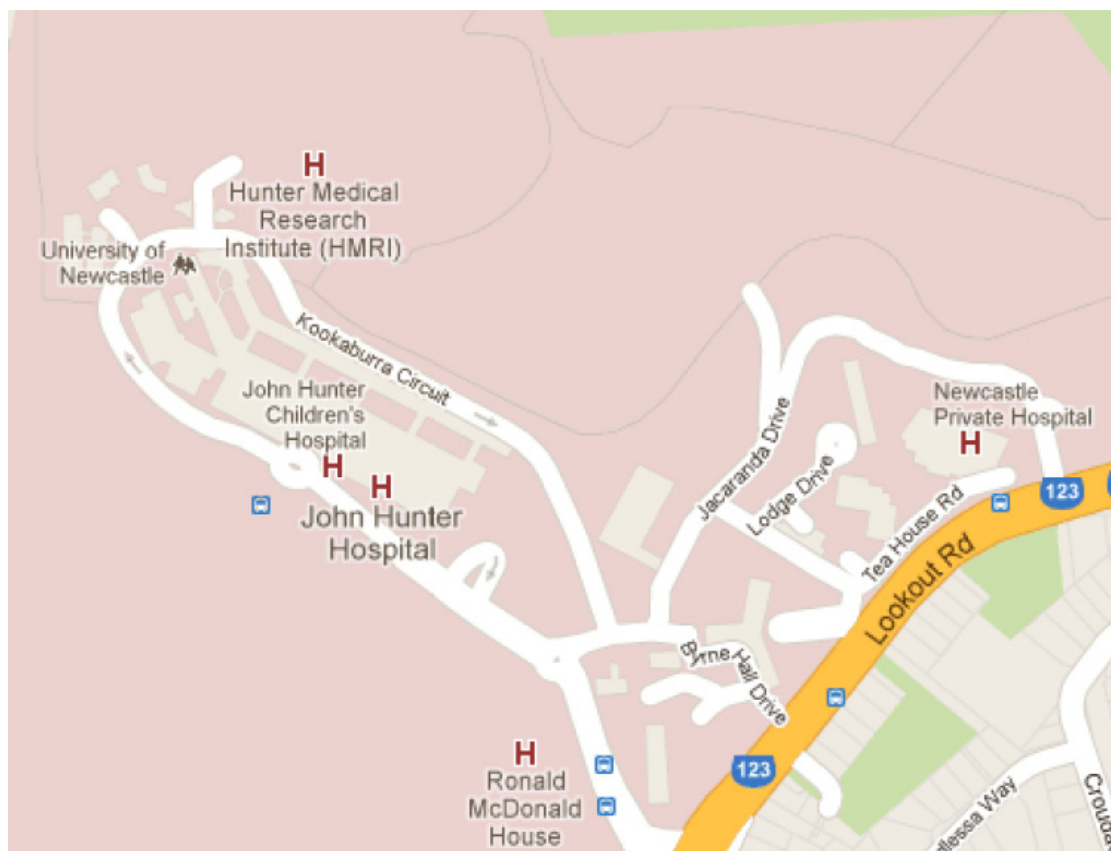


Figure 4 – Aerial photograph of Location of the HMRI/MRI Development Site.



2.2 Existing Land Use.

The HMRI development site contains the existing HMRI Building, Carpark, Asset Protection Zone and Fuel Management Zone.

2.3 Surrounding Land Use.

The landuse adjoining the HMRI/MRI development site is as follows – refer to Figure 5 – Aerial Photograph of HMRI site and adjoining lands on following page:

a) North & Northwest

The land to the north & north-west of the HMRI/MRI complex is vacant land within the Hospital site.

b) East

The land to the east of the HMRI/MRI complex is vacant land within the Hospital site.

c) South

The land to the south of the HMRI/MRI complex contains the John Hunter Hospital.

Figure 5 – Aerial Photograph of the HMRI/MRI site & adjoining lands.



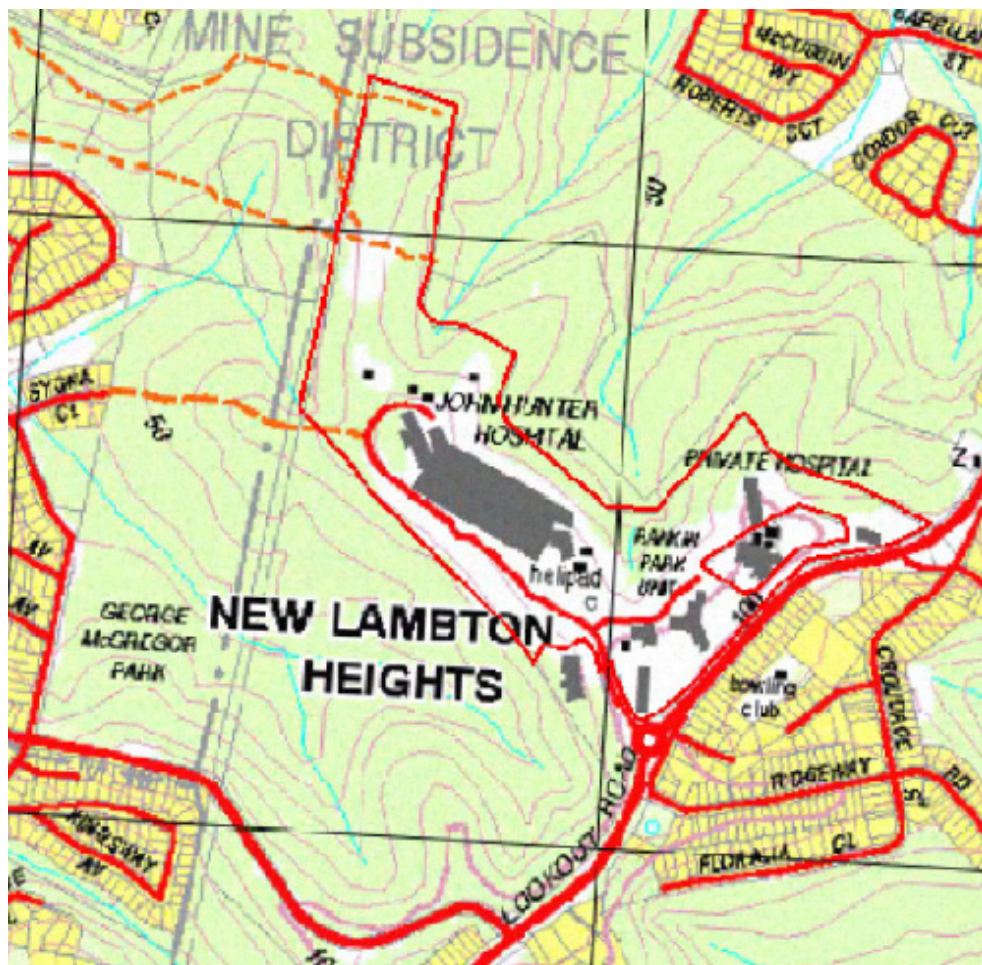
2.4 Topography.

Appendix 2 of *Planning for Bushfire Protection 2006* states that slopes should be assessed, over a distance of at least 100m from a development site, and that the gradient of the land should be determined which will most significantly influence the fire behaviour on the site.

The HMRI/MRI development site is located on the crest of a flat spur that runs in a north-easterly direction from the perimeter road to the Hospital precinct.

The spur falls to the northeast at 2 – 3 degrees whilst the side slopes fall to the northwest and southeast into gully lines at 8 – 10 degrees.

Figure 6 – Topographic Map.



2.5 Vegetation.

Appendix A2.3 of *Planning for Bushfire Protection 2006* provides a methodology for determining the predominant bushfire prone vegetation for at least 140 metres in all directions from the proposed building.

Vegetation is classified using Table A2.1 of *Planning for Bushfire Protection 2006*, which classifies vegetation types into the following groups:

- (a) Forests [wet & dry Sclerophyll forests];
- (b) Woodlands;
- (c) Plantations – being pine plantations not native plantations;
- (d) Forested Wetlands;
- (e) Tall Heaths;
- (f) Freshwater Heaths;
- (g) Short Heaths;
- (h) Alpine Complex;
- (i) Semi – arid Woodlands;
- (j) Arid Woodlands; and
- (k) Rainforests.

The vegetation within the HMRI/MRI site consists of managed and unmanaged Dry Sclerophyll Low Open Forest. The managed vegetation is located within the Asset Protection Zone to the east, north and west of the existing HMRI building. Further to the north and northeast a Fuel Managed Zone extends to the Power Line Easement beyond which Dry Sclerophyll Low Open Forest occupies the land that extends to the north.

The predominant vegetation within 140 metres of the HMRI complex is therefore Dry Sclerophyll Low Open Forest to the northwest, north and northeast of the site.

2.6 Significant Environmental Features on the Development Site.

The development site does not contain areas of Geological interest; Land slip areas or National Parks Estate, SEPP 14 Wetland, SEPP 44 Koala Habitat or Steep Lands [>18 degrees] however a riparian corridor to a watercourse exists in the gully to the northwest of the HMRI complex.

The extent of the bushfire protection measures does not impact on this corridor.

2.7 Known Threatened Species, population or ecological community within the Development Site.

The vegetation within the development site and on land to the west, north and east of the site has been examined by Ecobiological. This examination has recorded the existence of a patch of *Tetratheca Juncea*, listed under Schedule 2 of the NSW Threatened Species Conservation Act, to the northeast of the proposed Carpark.

The extension of the Asset Protection Zone to the HMRI/MRI complex will not have an impact on this threatened species.

2.8 Details and location of Aboriginal relics or Aboriginal place.

No known Aboriginal relics or place has been recorded on the development site.

SECTION 3

FIRE MANAGEMENT RESPONSIBILITIES

Fire management within the development site is the responsibility of:

3.1 Newcastle City Council.

Newcastle City Council has responsibility, under Section 66 of the *Rural Fires Act*, to issue a notice in writing requiring an owner / occupier of any land within the LGA to carry out bushfire hazard reduction works on that land.

Section 100E of the *Rural Fires Act* requires Council to issue bushfire hazard reduction certificates for hazard reduction to be undertaken on private lands.

3.2 New South Wales Rural Fire Service.

The NSW Rural Fire Service (RFS) has the responsibility for undertaking fire suppression activities, hazard management activities and other functions relative to emergency management, within its areas of operation. *Section 73* of the *Rural Fires Act (1997)* enables the Commissioner to carry out bush fire hazard reduction works on any land as required by a bush fire risk management plan if the work has not been carried out satisfactorily. Incurred costs can be recovered as a debt owed to the Crown.

3.3 Fire & Rescue New South Wales.

The Fire & Rescue NSW has the responsibility for undertaking fire suppression activities, and other functions relative to emergency management, within its area of operation and through Mutual Aid Agreements, provide assistance to the NSW Rural Fire Service, particularly for structural fire operations within the NSW Rural Fire Brigade Districts. Hazmat management within New South Wales is the responsibility of Fire & Rescue NSW.

3.4 Newcastle Bush Fire Management Committee.

The Newcastle Bushfire Management Committee has the responsibility for planning for coordinated fire fighting activities / hazard management activities on a local government level. It is not an operational organization, a fire fighting organization or a funding source for fire management activities.

The Bush Fire Management Committee is supported by the following provisions of the Rural Fires Act 1997:

- **Section 52** requires each Bush Fire Management Committee to prepare a draft bush fire management plan for their local areas which includes a plan of operations and a bush fire risk management plan.

- **Section 54** of the Act specifies that a draft bush fire risk management plan is to 'set out schemes for the reduction of bush fire hazards in the rural fire district or other part of the State'. A draft bush fire risk management plan may also restrict or prohibit the use of fire or other fire hazard reduction activities in all or specified circumstances or places to which the plan applies.

3.5 Public Authorities & owners/occupiers of land.

The Rural Fires Act, 1997 provides several legislative opportunities to require Public Authorities, land owners and occupiers to manage hazardous fuels. These are listed below:

- **Section 63(1)** states that it is the duty of a public authority to take any practicable steps to prevent the occurrence of bushfires on, and to minimise the danger of the spread of a bushfire on or from:
 - (a) any land vested in or under its control or management, or
 - (b) any highway, road, street, land or thoroughfare, the maintenance of which is charged on the authority.
- **Section 63(2)** states that 'it is the duty of the owner or occupier of land to take the notified steps (if any) and any other practicable steps to prevent the occurrence of fires on, and to minimise the danger of the spread of fires on or from that land'.
- **Section 65A** states that the 'Commissioner may nominate a member of the Service as a hazard management officer'.
- **Section 65(2)** states that 'an authorised person may, with the permission of the fire fighting authority or other authority responsible for unoccupied Crown land or managed land or a person nominated by the authority to give such permission, enter the land and carry out bushfire hazard reduction work with the assistance of such other persons as the authorised person considers to be necessary for the purpose'.
- **Section 65(3)** states that 'the authority responsible for unoccupied Crown land or managed land is to be taken to have given the permission under this section to the extent necessary to give effect to a bushfire risk management plan'.
- **Section 65(4)** states that 'if permission under this section is given subject to conditions, the conditions must be complied with'.

- **Section 66(1)** states that *‘a hazard management officer may, by notice in writing, require the owner or occupier [not being a public authority] of any land to carry out bushfire hazard reduction work specified in the notice on the land’.*
- **Section 66(2)** states that *‘a hazard management officer must serve a notice under this section if required to do so by a bushfire risk management plan applicable to the land that is in force’.*
- **Section 66(3)** states that *‘a hazard management officer must issue a bushfire hazard reduction certificate in respect of any bushfire hazard reduction work required by a notice issued in accordance within section (2)’.*
- **Section 66(6)** states that *‘the requirements and conditions so specified must include any requirements in a bushfire risk management plan that is applicable to the land and is in force and may include a requirement or condition that the burning of fire breaks or of combustible material;*

(a) must in fire district constituted under the Fire Brigades Act 1989 be carried out by or under the supervision of the fire brigade or an officer in charge of the fire brigade;

(b) must outside a fire district, be carried out by or under the supervision of the rural fire brigade specified in the notice or an appropriate officer of the rural fire brigade or any hazard management officer.
- **Section 66(7)** states that *‘a notice requiring the establishment of a firebreak cannot require an occupier or owner to kill or remove any trees that are reasonably necessary for shade, shelter, windbreak or fodder purposes or the protection of threatened species, populations, ecological communities or critical habitats within the meaning of the ‘Threatened Species Conservation Act 1995’.*
- **Section 66(8)** states that *‘an occupier or owner to whom a bushfire hazard reduction notice is given must, despite the fact that a fire permit has not been granted under Division 5, comply with the requirements specified in the notice’.*
- **Section 70(2)** states that *‘if within the time specified in the relevant notice the owner or occupier to whom it is given fails to comply with any requirement of the notice, the Commissioner may, without prejudice to liability of the owner or occupier, enter on the land and carry out the bushfire hazard reduction work the owner or occupier was required to do under the notice’.*

- **Section 70(3)** states that *‘any costs incurred by the Commissioner in carrying out such work may be recovered from the owner or occupier of the land as a debt due to the Crown in a court of competent jurisdiction’*.
- **Section 87** allows the removal of hazards in the bush fire danger period by the provision of a permit system. The permits are valid for 21 days, excluding TOBAN days.

Section 10 permits are not required to adhere to *Part V* provisions of the EPA Act 1979 in the assessment of impact, except for public authorities. An owner/occupier of private land must obtain from the NSW Rural Fire Service, a bushfire hazard reduction certificate before undertaking hazard reduction works on that land (Section 100E of the *Rural Fires Act 1997*).

3.6 Fuel Management within the Hunter Medical Research Institute.

The HMRI/MRI complex contains managed landscaped gardens, Asset Protection Zones and fuel managed native vegetation. The management of this vegetation will remain the responsibility of HMRI and will be maintained in accordance with a Fire Management Plan prepared for the facility.

A Positive Covenant, created under the provisions of the Conveyancing Act of 1919, is in place on the title of the land to ensure compliance with the management prescriptions detailed in the Fire Management Plan.

SECTION 4

BUSHFIRE PROTECTION ASSESSMENT

4.1 Introduction.

Planning for Bushfire Protection 2006 provides deemed-to-satisfy fire protection measures for residential development [Class 1, 2 & 3 buildings]; “Special Fire Protection Developments [Hospitals, Nursing Homes / Retirement Villages / Schools / Childcare Centres & Tourist Accommodation]; Industrial / Commercial Development and residential and Special Fire Protection “infill” development.

In reference to the construction of the proposed MRI facility, this building is classified as Class 9a Building – Healthcare Building, as defined by the Building Code of Australia [BCA].

Planning for Bushfire Protection 2006 identifies some Class 9 Buildings as ‘Special Fire Protection Purpose Developments’. However, the NSW Rural Fire Service has provided advised that the proposed MRI facility is not deemed to constitute a ‘Special Fire Protection Purpose Development.’

Chapter 1, Section 1.3 of *Planning for Bushfire Protection 2006* states that the construction of Class 5 – 10 buildings on bushfire prone land, or land impacted by bushfire prone vegetation, must meet the aim and objectives of the document.

Chapter 4, Section 4.3.6(f) discusses the bushfire protection to buildings of Class 5 to 8 and 10b of the Building Code of Australia and states:

“The Building Code of Australia does not provide for any bushfire specific performance requirements and as such AS 3959 -2009 does not apply as a set of “deemed-to-satisfy” provisions.

The general fire safety construction provisions [of the BCA] are taken as acceptable solutions, but the aim and objectives of Planning for Bushfire Protection 2006 apply in relation to other matters such as access, water and services, emergency planning and landscaping/vegetation management”.

“Where the aim and objectives of PfPFP [Section 1.1] are not met, then the construction requirements for bushfire protection will need to be considered on a case-by-case basis”.

“In many cases, these types of developments will require on-site parking and loading areas. In such cases, it is prudent to place these facilities in the most appropriate location in order to establish defensible space for fire-fighting purpose”.

The objectives of *Planning for Bushfire Protection 2006* are:

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

The document identifies six core bushfire protection requirements. These are:

- Provision of Asset Protection Zones / Defensible Spaces in accordance with the specific landuse, the predominant bushfire prone vegetation type within 140 metres of the development and the topography of the land containing the bushfire prone vegetation;
- Access for fire fighting operations;
- Water Supplies for fire fighting operations;
- Construction standards of buildings located within 100 metres of the bushfire hazard interface, dependant on specification landuse, the predominant bushfire prone vegetation type within 140 metres of the development and the topography of the land containing the bushfire prone vegetation;
- Emergency Planning;
- Landscape Management – in particular the management of the Asset Protection Zones / Defensible Spaces and residual bushfire prone vegetation.

Planning for Bushfire Protection 2006 provides a methodology to determine the Asset Protection Zones [defendable space] and Bushfire Attack [Construction Standards] required for **habitable buildings** in development for **residential purposes** that are designated as bushfire prone.

The document does not provide deemed to satisfy solutions for Class 5 – 10 buildings constructed in bushfire prone areas but states that where the aim and objectives of the document are not met, then the construction requirements for bushfire protection will need to be considered on a case by case basis.

Sections 4.2 and 4.3 of this report examine the Site Plan in relation to the provision of a suitable “defendable space” between the bushfire hazard located to the north of the Power Line Easement and the proposed MRI building and the protection against the potential impacts of a future fire occurrence in this vegetation and provides recommendations on the bushfire protection measures required to be implemented to mitigate the potential bushfire threat.

The provision of access and water supplies for fire-fighting operations, management of the defendable space [Asset Protection Zone] and evacuation planning are examined in Sections 4.4 – 4.9 of this report.

4.2 Provision of Asset Protection Zones / Defendable Spaces:

Appendix 2 of *Planning for Bushfire Protection 2006* provides a methodology to determine the Asset Protection Zones/Defendable Spaces for residential development and ‘*Special Fire Protection Purpose*’ developments that are located within or within 100 metres of bushfire prone vegetation.

However, *Planning for Bushfire Protection 2006* does not provide ‘deemed-to-satisfy’ widths of defendable spaces to Class 5 – 8 and Class 10 buildings however the NSW Rural Fire Service require that a ‘defendable space’ be provided which is determined as the tilted flame length of a fire burning in the bushfire prone vegetation adjoining the building. That is, the building must be located beyond the ‘flame zone’

The following section examines these prerequisites and provides a summary of this assessment and the resultant widths of the Asset Protection Zones / Defendable Spaces for the HMRI complex.

The Fire Danger Index [FDI] for the site is 100.

4.2.1 Determination of the Defendable Space to the HMRI Building.

The predominant bushfire prone vegetation within 140 metres of the building is the Dry Sclerophyll Low Open Forest to the northwest, north and northeast of the development site.

The effective slope of the land on which this vegetation is located is 8 – 10 degrees downslope to the northwest and 2 – 3 degrees downslope to the north and northeast.

Table 1 examines the required width of the defendable space to the proposed MRI building.

Table 1. Determination of the Defendable Space to the proposed MRI building. The Fire Danger Index [FDI] for the site is 100.

Aspect	Vegetation within 140m of development	Predominant Vegetation Formation Table A2.1 of Pf BFP 2006)	Effective Slope of Land	Width of Flame extension beyond unmanaged vegetation	Defendable Space width provided
North West	Low Open Forest	Forest	10 degrees downslope to the northwest	31 metres Flame Zone width for Forest vegetation	40 metres, measured from the MRI building
North	Low Open Forest	Forest	2 - 3 degrees downslope to the north	24 metres Flame Zone width for Forest vegetation	40 metres, measured from the MRI building
North East	Low Open Forest	Forest	2 - 3 degrees downslope to the northeast	24 metres Flame Zone width for Forest vegetation	40 metres, measured from the MRI building

The width of the defendable space [Asset Protection Zone] to the proposed MRI building exceeds the width of flame extension from the Low Open Forest vegetation surrounding the HMRI complex to the northwest, north and northeast.

Additional protection is provided by the maintenance of the existing Fuel Managed Zone which extends from the outer edge of the Defendable Space, up to the Power Line Easement.

The management of the fire protection zones shall be undertaken in accordance with an updated Fire Management Plan prepared for the site.

4.3 Access for Fire-fighting Operations.

Access to the HMRI/MRI building and Carpark is via a two-way access ramp off the perimeter road to the Hospital. This provides suitable fire appliance access for structural fire events in the building.

Access for bushfire fighting operations is also provided via the access ramp, with an access road/fire trail provided to the northeast of the existing HMRI building, turning to the southwest to link to the existing fire trail that runs to the north of the existing Kookaburra Cottages. This fire trail links to the western Carpark access and also to the Power Line access track, providing a trail network which encircles the entire HMRI development precinct.

The existing fire trail will be relocated clear of the MRI building, therefore ensuring fire-fighting access is maintained to the perimeter of the HMRI/MRI complex.

The fire trail modification shall be constructed to comply with the provisions of Section 4.1.3(3) of *Planning for Bushfire Protection 2006* and shall have a minimum width of 4.0 metres within a cleared width of 6.0 metres. Passing bays shall be reinstated where required.

4.4 Water Supplies for Fire-fighting Operations.

A reticulated water supply and hydrants is installed to the HMRI complex in accordance with the Building Code of Australia and Australian Standard 2419.1 - 2005.

Fire hydrants are accessible and located such that a fire appliance can park within a maximum distance of 20 metres from the hydrant and located such that a fire at the furthest extremity of the building can be attacked by fire-fighters using two 30 metre hose lines and a 10 metre water jet. A clear unobstructed path between the hydrant and the most distant point of the building does not exceed 90 metres, in accordance with A.S. 2419.1 - 2005.

External Hydrants found to be located within the MRI building footprint/relocated fire trail shall be repositioned to comply with the requirements of A.S. 2419.1 – 2005.

4.5 Bushfire Construction Standards to Buildings.

The BCA does not specify deemed-to-comply construction standards for Class 5 – 10b buildings. However, the north-western elevation of the building shall be constructed to comply with the 29kW/m² radiant heat specifications as defined by A.S. 3959 – 2009.

The remainder of the building shall be constructed to comply with the 12.5kW/m² radiant heat specifications as defined by A.S.3959 – 2009.

4.6 Emergency Planning.

The existing Emergency Management Plan shall be updated to include the MRI facility and establishes the emergency management protocols to address the safety of staff and visitors during emergencies which occur within or external to the complex.

HMRI shall be responsible for establishing and maintaining an Emergency Management Committee [EMC] within the Institute. HMRI and the EMC shall be responsible for the daily management of the welfare of persons working in or visiting the Institute.

A copy of the updated Emergency Management Plan shall be provided to the Local Emergency Management Committee [LEMC] and the local Emergency Services.

4.7 Landscape Management - in particular the management of the Defendable Spaces, Landscaped Gardens and residual bushfire prone vegetation.

The intention of landscape management is to prevent flame contact with a structure, reduce radiant heat to below the ignition thresholds for various elements of a building, to minimize the potential for wind driven embers to cause ignition and to reduce the effects of smoke on staff, visitors and fire-fighters.

Careful attention shall be given to species selection of landscaping within the HMRI/MRI complex, their location relative to their flammability, avoidance of continuity of vegetation [separation horizontally and vertically] and ongoing maintenance to remove flammable fuels.

Methods of bushfire hazard management include mowing of lawns and manual removal of combustible material, particularly within the landscaped areas and hazard reduction burning within the residual vegetation on the site.

The landscaped gardens and requisite Defendable Spaces within the HMRI/MRI complex shall be maintained as an Inner Protection Area as defined by Appendix 5 of *Planning for Bushfire Protection 2006* and the Rural Fire Service's '*Specifications for Asset Protection Zones*'.

The residual land between the Defendable Space and the Power Line Easement, to the northwest of the building, shall be fuel managed to maintain a maximum dry litter weight of 8 – 10 tonnes/hectare.

An updated Fire Management Plan shall be prepared for the landscaped gardens, Defendable Spaces and residual vegetation within the development site.

Landscape management within the HMRI/MRI complex shall remain the responsibility of HMRI [or its successors] and the Positive Covenant created on the Title of the land to ensure compliance with the recommendations of the Fire Management Plan shall be modified to include the MRI facility.

SECTION 5

RECOMMENDATIONS

Recommendation 1:

Defendable Spaces to HMRI Building:

A Defendable Space of minimum 40 metre width shall be provided to the west, north, northwest and northeast of the MRI Building. *[Refer to Attachment A]*.

Recommendation 2:

Management of Defendable Space:

The Defendable Spaces shall be maintained as an Inner Protection Area in accordance with Appendix 5 *Planning for Bushfire Protection 2006* and the NSW Rural Fire Service's '*Specifications for Asset Protection Zones*'.

Recommendation 3:

Fuel Managed Area:

The area of retained vegetation between the building and the Power Line Easement shall be managed as a fuel reduced zone. *[Refer to Attachment A]*.

Recommendation 4:

Fire Management Plan for the Defendable Space/Fuel Managed Area:

There shall be an updated Fire Management Plan prepared for the Defendable Spaces and fuel managed area. The Fire Management Plan shall provide the protocols for the management of the bushfire fuels and the maintenance of the fire trail network.

Recommendation 5:

Covenant for the management of the Asset Protection Zones:

The existing 88b Covenant shall be amended to include the ongoing management of the modified Defendable Spaces/Fuel Managed Area and realigned Fire Trail.

Recommendation 6:

Construction Standards to the HMRI building:

The north-western elevation of the MRI building shall be constructed to comply with the 29kW/m² radiant heat specifications as defined by A.S. 3959 – 2009.

The remainder of the building shall be constructed to comply with the 12.5kW/m² radiant heat specifications as defined by A.S.3959 – 2009.

Recommendation 6:

Access for fire-fighting operations:

The existing fire trail shall be relocated clear of the MRI building to ensure fire-fighting access is maintained to the perimeter of the HMRI/MRI complex.

The fire trail modification shall be constructed to comply with the provisions of Section 4.1.3(3) of *Planning for Bushfire Protection 2006* and shall have a minimum width of 4.0 metres within a cleared width of 6.0 metres. Passing bays shall be reinstated where required.

Recommendation 7:

Water Supply for fire-fighting operations:

External Hydrants found to be located within the MRI building footprint/relocated fire trail shall be repositioned to comply with the requirements of A.S. 2419.1 – 2005.

Recommendation 8:

Evacuation Plan:

The existing Emergency Evacuation Plan shall be amended to include the emergency management protocols to address the safety of staff, visitors and patients attending the MRI facility during emergencies which occur within or external to the HMRI/MRI complex.

HMRI shall be responsible for establishing and maintaining an Emergency Management Committee [EMC] within the Institute. HMRI and the EMC shall be responsible for the daily management of the welfare of persons working in or visiting the Institute.

A copy of the updated Emergency Evacuation Plan shall be provided to the Local Emergency Management Committee [LEMC] and the local Emergency Services.

SECTION 6

CONCLUSION

Approval is being sought for the development of the construction of a new Magnetic Resonance Imaging facility as an extension to the existing Hunter Medical Research Institute [HMRI] on Lot 201 in DP 1176551, No. 2 Lookout Road, New Lambton Heights.

The development site is recorded on the Newcastle Bushfire Prone Land Map as containing Category 1 Bushfire Prone Vegetation, triggering the Legislative requirements for bushfire protection under the *Environmental Planning & Assessment Act 1979* and the *NSW Rural Fires Act 1997*.

Advice has been received that the proposed development is not considered to be a '*Special Fire Protection Purpose Development*' and therefore Section 91(1) of the *Environmental Planning & Assessment Act 1979* or Section 100B of the *Rural Fires Act 1997* do not apply to the application. However, Section 79BA of the *Environmental Planning & Assessment Act 1979* applies, requiring the Consent Authority [Newcastle City Council] to determine if the proposed development complies with *Planning for Bushfire Protection 2006*.

This report has therefore reviewed the proposed construction of the Magnetic Resonance Imaging facility extension to the of the Hunter Medical Research Institute [HMRI] against the deemed-to-satisfy provisions of *Planning for Bushfire Protection 2006* and the advice provided by the Development Control Officers of the NSW Rural Fire Service.

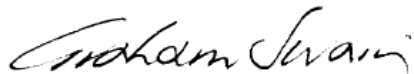
Table 2 summarises the extent to which the proposed development conforms to the deemed-to-satisfy specifications of *Planning for Bushfire Protection 2006* for a Class 9 building [as defined by the Building Code of Australia [BCA].

Table 2. Compliance with the deemed-to-satisfy provisions of *Planning for Bushfire Protection 2006*.

Bushfire Protection Measure	Compliance with deemed-to-satisfy provisions of <i>Planning for Bushfire Protection 2006</i>.
Provision of Defendable Space to the building	YES – widths of Defendable Spaces comply with, or exceed the minimum setback required for flame separation to the building
The siting and adequacy of water supplies for fire fighting	YES – Existing Hydrant supply to be modified, as required, to provide hydrants for bushfire fighting operations to the north of the new facility.
Design of Public Roads	YES – Existing internal access roads comply with the specifications of Section 4.1.3(1) of <i>Planning for Bushfire Protection 2006</i> .
Design of Fire Trail network	YES – Existing fire trail to be relocated to maintain fire operational access within the Defendable Space. Relocated Fire Trail to be constructed to comply with the performance standards of Section 4.1.3(3) of <i>Planning for Bushfire Protection 2006</i> .
Adequacy of emergency response access and egress	YES – Existing road network provides safe, two-way access/egress for emergency service vehicles.
Adequacy of bushfire maintenance plans and fire emergency procedures	YES – An updated Fire Management Plan shall be prepared for the land and maintained, under the provisions of a Positive Covenant, by the owners of the land.
Building construction standards	YES – North-western elevation of the new MRI building to comply with the 29kW/m ² construction standards as defined by AS3959 – 2009. Remainder of building shall comply with 12.5kW/m ² construction standards.
Adequacy of sprinkler systems and other fire protection measures to be incorporated into the development	Bushfire sprinkler systems not applicable. BCA fire protection measures to the building required.
Emergency Management	An updated Emergency Management Plan shall be prepared.

REFERENCES:

- N.S.W Rural Fire Service – *Planning for Bushfire Protection* 2006;
- *Environmental Planning & Assessment Act* – 1979;
- *Rural Fires Act* – 1997;
- NSW Rural Fire Service – *Guideline for Bushfire Prone Land Mapping* 2006;
- *Bushfire Environmental Assessment Code* 2006;
- Building Code of Australia;
- Australian Standard A.S 3959-2009 “*Construction of Buildings in Bushfire Prone Areas*”;
- *Newcastle City Council Bushfire Prone Land Map*.



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ATTACHMENT A – Site Plan showing Defendable Space/Fuel Managed Area – HMRI/MRI.

