DAVID PENSINI
Building Certification and
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BUSHFIRE PLANNING REPORT

PROPOSED REZONING

LOT 4 DP 825704 &
LOT 2 DP 601094
11 – 33 MUMFORD STREET,
PORT MACQUARIE

CLIENT:

EAST COAST SCREW PIERS

JUNE 2019

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This report has been prepared by David Pensini – Building Certification and Environmental Services with all reasonable skill, care and diligence for East Coast Screw Piers.

The information contained in this report has been gathered from discussions with representatives of East Coast Screw Piers, a review of the plans provided on behalf of East Coast Screw Piers and experience.

No inspection or assessment has been undertaken on other aspects of the proposed development outside the scope of this report.

This report does not imply, nor should it be implied, that the proposed development will comply fully with relevant legislation.

The report shall not be construed as relieving any other party of their responsibilities or obligations.

David Pensini – Building Certification and Environmental Services disclaims any responsibility East Coast Screw Piers and others in respect of any matters outside the scope of this report.

The report is confidential, and the writer accepts no responsibility of whatsoever nature, to third parties who use this report, or part thereof is made known. Any such party relies on this report at their own risk.

For and on behalf of David Pensini – Building Certification and Environmental Services.

Prepared by: *David Pensini*

Signed: 

Dated: *24th June 2019*

Version	**Date**	**Information relating to report**			
		Reason for issue			
1.0	17th November 2017		Draft		
2.0	14th December 2017		Issued to Client		
3.0	21st December 2017		Amendments to Table 1		
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5.0	24th June 2019		Updated to reflect changes in development concept and PfBP 2018		
			Prepared by	**Verified by**	**Approved by**
		Name	David Pensini		David Pensini
		Signature			

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1.0 INTRODUCTION

The land which comprises the subject site is known as Lot 4 DP 825704 and Lot 2 DP 601094, 11 – 33 Mumford Street, Port Macquarie.

It is proposed to rezone portion of the subject site so as to support the future development of the land.

This report is based on site assessments carried out on 13th December 2017 and 20th June 2019.

The purpose of this report is to demonstrate that the bushfire risk is manageable for the proposed rezoning of the subject site and to determine the bushfire protection management measures which are applicable to the future development of the subject site.

NOTE

The report has been prepared with all reasonable skill, care and diligence.

The information contained in this report has been gathered from field survey, experience and has been completed in consideration of the following legislation.

- Rural Fires Act 1997.
- Environmental Planning and Assessment Act 1979.
- Building Code of Australia.
- Council Local Environment Plans and Development Control Plans where applicable.
- NSW Rural Fire Services, Planning for Bushfire Protection, 2006.
- NSW Rural Fire Services, Planning for Bushfire Protection, 2018.
- AS 3959 - 2009 Construction of Buildings in Bushfire Prone Areas.
- AS 3959 - 2018 Construction of Buildings in Bushfire Prone Areas.

The report recognizes the fact that no property and lives can be guaranteed to survive a bushfire attack. The report examines ways the risk of bushfire attack can be reduced where the site falls within the scope of the legislation.

The report is confidential, and the writer accepts no responsibility of whatsoever nature, to third parties who use this report or part thereof is made known. Any such party relies on this report at their own risk.

This report has been based upon the vegetation characteristics observed at the time of site inspection. No responsibility is taken where the vegetation characteristics of the subject site or surrounding areas is changed or modified beyond that which is presented within this report.

1.1 Objectives

The objectives of this report are to:

- Ensure that the proposed rezoning of the land has measures sufficient to minimize the impact of bushfires; and
- Ensure that any development of the land has measures sufficient to minimize the impact of bushfires; and
- Reduce the risk to property and the community from bushfire.

1.2 Legislative Framework

On 1st August 2002, the Environmental Planning and Assessment Act 1979 and the Rural Fires Act 1997 were both amended to enhance bush fire protection through the development assessment process.

In broad terms, the planning considerations provide two main steps. These involve:

(a) Strategic Planning through;

• the mapping of bush fire prone;
• determining suitable bush fire requirements during the preparation of a Local Environmental Plan and/or Development Control Plan; and
• the identification of the extent to which land is bushfire prone.

(b) Development assessment through;

• obtaining a bush fire safety authority for residential or rural-residential subdivision and special fire protection purpose developments in bushfire prone areas from the Rural Fire Service (RFS);

• seeking advice from the RFS in relation to infill and other developments in bushfire prone areas that cannot comply with the requirements of NSW Rural Fire Service**, *Planning for Bushfire Protection***, 2006; and

• the application of additional requirements of the Building Code of Australia (BCA) in relation to construction standards for Class 1, 2, 3, 4 and some Class 9 buildings in bushfire prone areas.

It is noted that this report focuses upon the strategic planning processes associated with the proposed rezoning of portion of the subject site.

1.2.1 Strategic Planning Considerations

Local Environmental Plans, (LEP's), and Development Control Plans, (DCP's), are the best way of strategically achieving bush fire protection objectives. Inclusion of bush fire planning provisions in an LEP:

• gives weight to bush fire management planning principles, ensuring they are considered at subdivision and construction stages;

• can allow for sufficient space to be incorporated into land use zones for setbacks and adequate access for firefighting and evacuation; and

• controls inappropriate land uses in Bushfire Prone Areas.

LEP amendments that affect Bushfire Prone Areas are required to address the planning principles of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2006. Where appropriate the proposed land uses must be considered with respect to bush fire protection, (including appropriate setbacks).

If a proposed amendment to land use zoning or land use affects a designated Bushfire Prone Area, then the Section 117(2) Direction No 19 must be applied, (Section 117 of the Environmental Planning and Assessment Act, 1979) provides for the Minister for Planning to direct a council, in relation to the preparation of a draft LEP, to apply the planning principles specified in that direction. The Section 117 Direction No 19 requires councils to:

• *consult with the Commissioner of the Rural Fire Service (RFS) under section 62 of the Environmental Planning and Assessment Act, 1979, and to take into account any comments by the Commissioner; and*

• *have regard to the relevant planning principles of NSW Rural Fire Service, **Planning for Bushfire Protection**, 2006.*

If a council proceeds with a draft LEP that does not comply with the provisions in the Section 117 Direction, the council must obtain written advice from the Commissioner of the Rural Fire Service to the effect that the RFS does not object to that non-compliance.

The requirement to review LEP's in accordance with the Standard LEP is an opportunity to consider appropriate uses on Bush Fire Prone Land as well as exempt and complying development provisions.

1.2.2 Planning for Bushfire Protection Guideline 2006

It is noted that Planning for Bushfire Protection Guideline, 2006 is the current reference standard for bushfire threat management for new development in NSW.

Planning for Bushfire Protection Guideline, 2006 (PfBP 2006) applies to all "development applications" on land that is classified as "bush fire prone land" (BFPL), identified on a council's BFPL map.

The general principles underlying the document are:
• protection measures are governed by the degree of threat posed to a development;
• a minimum setback from a hazard is always required, i.e. a defendable space;
• the greater the setback from the hazard, the lower the subsequent bush fire protection construction standards required;
• the smaller the interface a development has fronting the bush fire threat, the less the opportunity for bush fire to threaten the development;
• bush fire protection measures (BPM's) are contained within the 'overall' development and not on adjoining lands, other than in exceptional circumstances; and
• no development in a bush fire prone area can be guaranteed to be entirely safe from bush fires.

For development on BPL specific controls apply to residential/rural residential subdivision and "Special Fire Protection Purposes" (SFPPs) – those types of development specified in the legislation as requiring particular attention (including mandatory involvement of the Rural Fire Service).

It is also noted that PfBP 2006 also provides guidance on the bushfire threat management requirements which are applicable to other forms of development, (e.g. commercial and industrial).

(i) Objectives for Special Fire Protection Purpose Developments

In accordance with NSW Rural Fire Services, ***Planning for Bushfire Protection***, 2006, alterations or additions to existing Special Fire Protection Purpose (SFPP) facilities (e.g. existing school), requires an appropriate combination of bushfire protection measures and compliance with the intent and performance criteria of each measure within Section 4.3.5 (infill development).

In cases where existing circumstances make the preferred standards difficult to achieve, the specific objectives in Section 4.2.3 of NSW Rural Fire Services, ***Planning for Bushfire Protection***, 2006 are to be followed.

The specific objectives for Special Fire Protection Purpose developments as provided for by NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2006 are to**;**

- provide for the special characteristics and needs of occupants. Unlike residential subdivisions, which can be built to a construction standard to withstand the fire event, enabling occupants and firefighters to provide property protection after the passage of fire, occupants of SFPP developments may not be able to assist in property protection. They are more likely to be adversely affected by smoke or heat while being evacuated.

- provide for safe emergency evacuation procedures. SFPP Developments are highly dependent on suitable emergency evacuation arrangements, which require greater separation from bush fire threats.

During emergencies, the risk to firefighters and other emergency services personnel can be high through prolonged exposure, where door-to-door warnings are being given and exposure to the bush fire is imminent.

The possible Special Fire Protection Purpose development of the existing school infrastructure which is the subject of this report must demonstrate that it is able to meet the above objectives together with the relevant acceptable solutions/standards which are applicable to any future development.

(ii) Objectives for Commercial/Industrial Developments

As set out in NSW Rural Fire Services, ***Planning for Bushfire Protection***, 2006;

'for other classes of building, (such as factories, shops and warehouses), bushfire protection measures will only apply at the Development Application stage. Consent will be developed on a case by case basis without the need to refer the development application to the RFS. However, if the council is concerned that the development does not meet the aim and objectives of NSW Rural Fire Services, ***Planning for Bushfire Protection****, 2006, then the matter may be referred to the RFS for advice. The provisions under the Building Code of Australia for fire safety will be accepted for bushfire purposes where the aims and objectives of NSW Rural Fire Services,* ***Planning for Bushfire Protection****, 2006 can be met'.*

It is noted that all non-residential and non-Special Fire Protection Purpose developments, (including industrial and commercial), within bushfire prone areas are required to meet the general aims and objectives of NSW Rural Fire Services, ***Planning for Bushfire Protection***, 2006 rather than meeting the specific bushfire threat management objectives which are relevant to residential subdivision, Special Fire Protection developments and infill developments.

The general aims and objectives of NSW Rural Fire Services, ***Planning for Bushfire Protection***, 2006 which are therefore relevant to any future commercial/industrial development on the subject site are as follows;

(i) afford occupants of any building adequate protection from exposure to a bush fire;
(ii) provide for a defendable 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 bush fire protection measures, including fuel loads in the asset protection zone (APZ); and
(vi) ensure that utility services are adequate to meet the needs of firefighters (and others assisting in bush firefighting).

1.2.3 Planning for Bushfire Protection Guideline 2018

It is noted that NSW Rural Fire Services, ***Planning for Bushfire Protection***, 2018 (PfPB 2018) is set to replace the 2006 Guideline as the bushfire threat management standards which are applicable in NSW. It is however noted that the new guideline has not as yet been formally adopted for implementation with PfBP 2006 remaining the appropriate bushfire threat management standard in NSW.

Not withstanding this the provisions of PfBP 2018 have been considered in this report as they are likely to apply to the future development of the land once the rezoning process has been finalized.

As with PfBP 2006, Planning for Bush Fire Protection 2018 provides the development standards for designing and building on BFPL in New South Wales (NSW). PfBP 2018 provides standards for:

- strategic land use planning to ensure that new development is not exposed to high bush fire risk;

- specific provisions for creating new residential and rural residential subdivision allotments;
- specific provisions for special fire protection purpose (SFPP) development taking account of occupant vulnerability;
- bush fire protection measures (BPMs) for new buildings;
- guidance in upgrading and maintaining existing development.

PfBP 2018 will be applicable to all development on BFPL in NSW. The general principles underlying this document are that:

- BPMs are required to reduce the impact of a bush fire;
- protection measures are governed by the degree of threat posed to a development and the vulnerability of occupants;
- reducing the interface of a development to the hazard reduces the bush fire risk to the development;
- good practice in planning, building and management reduces the risk to developments and their occupants and increases their resilience.

This report will also detail the relevant compliance issues associated with NSW Rural Fire Services, ***Planning for Bushfire Protection***, 2018 and AS 3959 - 2018 *Construction of Buildings in Bushfire Prone Areas* when legislated in NSW.

(i) Objectives for Special Fire Protection Purpose Developments

The specific objectives for SFPP developments are to:

- minimise levels of radiant heat, smoke and ember attack through increased APZ, building design and siting;
- provide an appropriate operational environment for emergency service personnel during firefighting and emergency management;
- ensure the capacity of existing infrastructure (such as roads and utilities) can handle the increase in demand during emergencies as a result of the development; and
- ensure emergency evacuation procedures and management which provides for the special characteristics and needs of occupants.

(ii) Objectives for Commercial/Industrial Developments

Under the building classification system within the National Construction Code (NCC), Class 5 to 8 buildings include offices, shops, factories, warehouses, public car parks and other commercial and industrial facilities. Class 10 includes non-habitable buildings and structures such as garages, carports, swimming pools and fences.

The NCC does not provide for any bush fire specific performance requirements for these particular classes of building. As such AS 3959 and the NASH Standard are not considered as a set of 'deemed to satisfy' provisions, however compliance with AS 3959 and NASH should be considered when meeting the aims and objectives of PfBP 2018.

Whilst bush fire is not captured in the NCC for Class 5-8 buildings, the following objectives will be applied in relation to access, water and services, and emergency and evacuation planning:

- to provide safe access to/from the public road system for firefighters providing property protection during a bush fire and for occupant egress for evacuation;
- to provide adequate services of water for the protection of buildings during and after the passage of bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building;
- to provide suitable emergency and evacuation (and relocation) arrangements for occupants of the development; and
- consideration of storage of hazardous materials away from the hazard wherever possible.

The general fire safety construction provisions of the NCC are taken as acceptable solutions however construction requirements for bush fire protection will need to be considered on a case-by-case basis

1.2.4 SFPPs as Infill

Both NSW Rural Fire Services, ***Planning for Bushfire Protection***, 2006 and 2018, provides that alterations and additions to existing SFPP developments can classified as infill development.

In accordance with NSW Rural Fire Services, ***Planning for Bushfire Protection***, 2006 and 2018, alterations or additions to existing SFPP facilities require an appropriate combination of bushfire protection measures and compliance with the intent and performance criteria of each measure within Section 6 of NSW Rural Fire Services, ***Planning for Bushfire Protection***, 2006 and 2018.

In cases where existing circumstances make the preferred standards difficult to achieve, the specific objectives in Sections 4.2.5 and 6.5 of NSW Rural Fire Services, ***Planning for Bushfire Protection***, 2006 and 2018 respectively are to be followed. The specific SFPP infill development objectives are to:

- provide an appropriate defendable space;
- site the building in a location which ensures appropriate separation from the hazard to minimise potential for material ignition;
- provide a better bush fire protection outcome for existing buildings;
- new buildings should be located as far from the hazard as possible and should not be extended towards or situated closer to the hazard than the existing buildings;
- ensure there is no increase in bush fire management and maintenance responsibility on adjoining landowners without their written confirmation;
- ensure building design and construction enhances the chances of occupant and building survival; and
- provide for safe emergency evacuation procedures including capacity of existing infrastructure (such as roads).

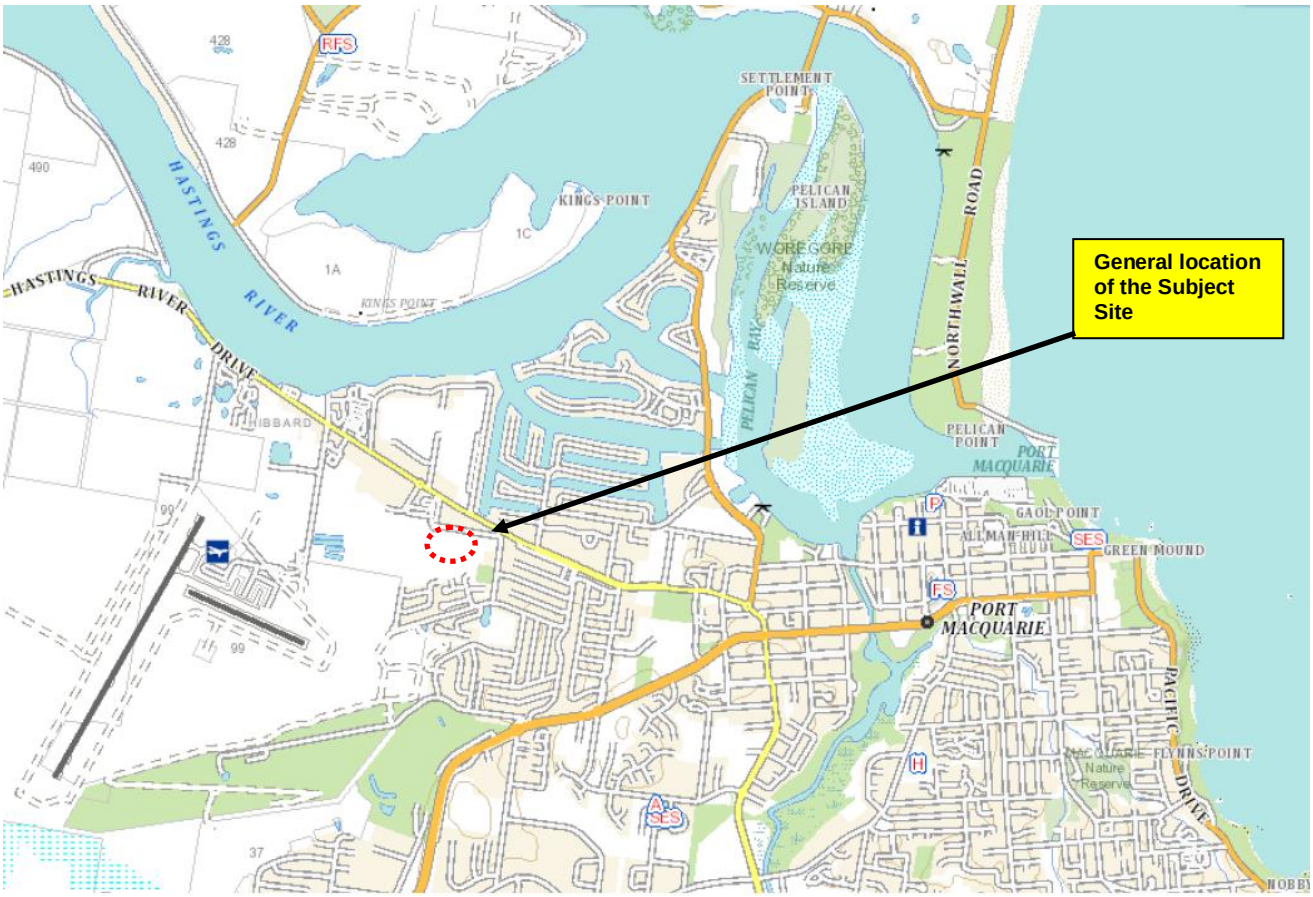
1.3 Location and Site Description

The subject site is known as Lot 4 DP 825704 and Lot 2 DP 601094, 11 – 33 Mumford Street, Port Macquarie and is situated within the Port Macquarie-Hastings local government area. With a population of approximately 45,000 Port Macquarie serves as the regional centre for the Port Macquarie-Hastings local government area.

The subject site is located approximately 2.2km west of the Port Macquarie CBD, within a geographic area known as Hibbard which is a historical urban area on the western fringes of the developed areas of Port Macquarie. Being located in a historical area land use in the locality is a mixture of residential, larger vegetated bushland lots and a mix of commercial and business and recreational uses.

It is noted that the subject site comprises two (2) separate Torrens Title allotments which share a common east/west property boundary; refer **Figure 1** below.

Figure 1 - Site Location



The character of the locality is that of a business fringe area with a mixture of residential, commercial, educational and open space areas of land. The subject site forms part of a historical subdivision with the majority of lots having been developed as part of the urban expansion of Port Macquarie. It is however noted that large undeveloped areas of land are present to the south and west of the subject site. A mixture of commercial, residential and recreational development is present to the north and east of the subject site.

The subject site is located within the flood plain of the Hastings River and accordingly the topography of the subject site and adjoining and adjacent land is relatively flat. However, reflecting the presence of extensive areas of wetland on adjoining and adjacent land to the south and west some very gentle north to south downslopes are present in the locality. It is noted that the topography of the subject site may have been altered over time with filling providing for more elevated land. Slope conditions on adjoining and adjacent land are similar to that of the subject site.

The subject site has been cleared of the majority of vegetation with grasslands and scattered and clusters of trees predominant over much of the subject site. It is however noted that an area of Forested Wetland is present in the north-western portion of Lot 4 DP 825704 whilst narrow remnants of Forested Wetland vegetation are also present adjacent to the southern boundaries of the subject site and the western boundary of Lot 2 DP 601094. Extensive areas of Forested Wetland are present on adjoining and adjacent land to the west and southwest whilst a narrow band of Forested Wetland vegetation separates Lot 2 DP 601094 from managed grasslands within developed residential properties in the southern eastern aspect. Vegetation associated with managed gardens and landscaping are present on adjoining and adjacent land to the north and east of the subject site.

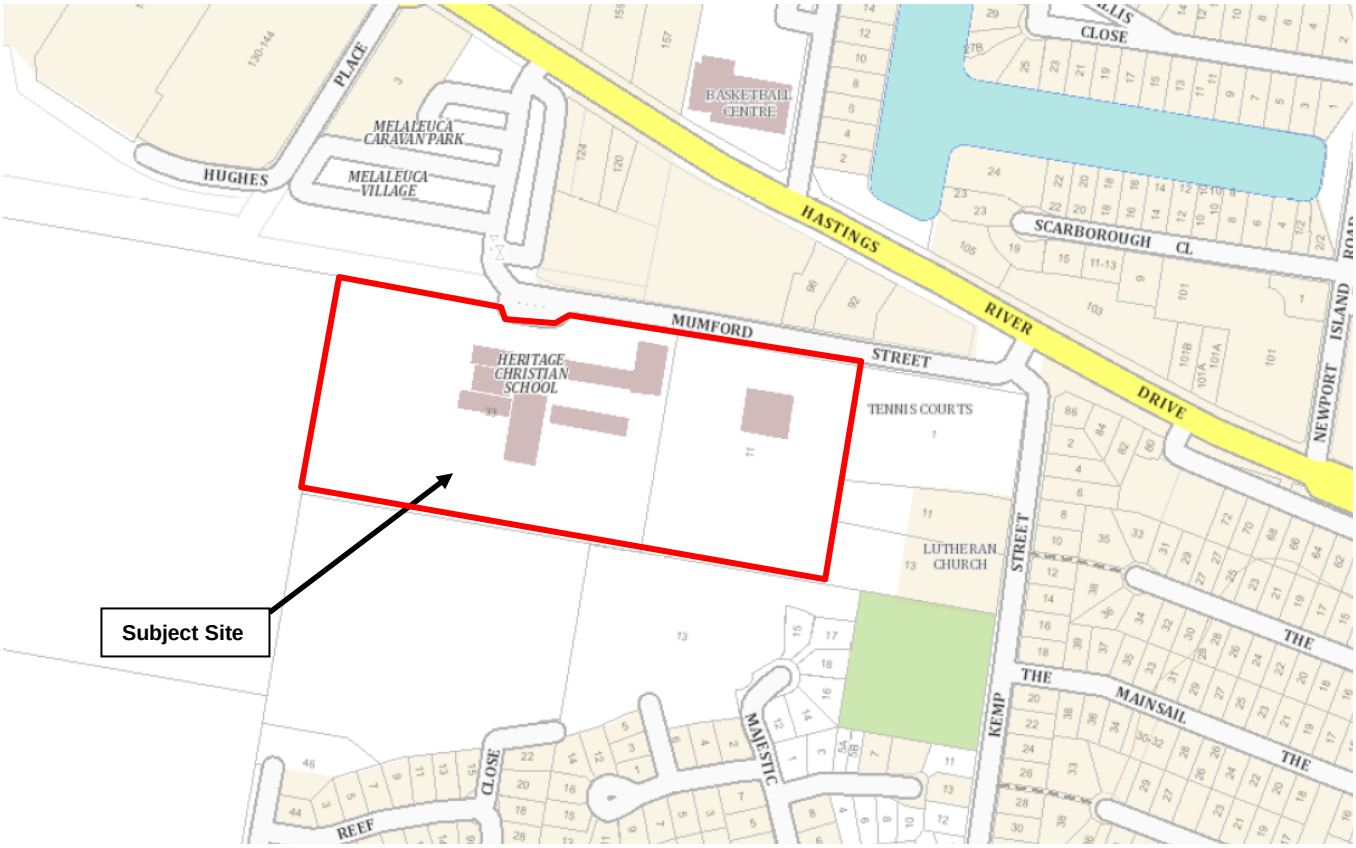
Access to the subject site is available via Mumford Street which adjoins the subject site to the north.

The closest Fire Service is located approximately 2km to the southeast of the subject site, (Port Macquarie Fire Brigade), with the closest Fire Control Centre being at Wauchope which is 21 kilometres west or 20 minutes by car from Port Macquarie.

1.4 Site History

The subject site comprises two Torrens Title lots each of which is rectangular in shape with a combined area of 6.23 hectares, refer to **Figure 2**.

Figure 2 – Subject Site



It is noted that the subject site has been developed for educational and religious purposes with Lot 4 DP 825704 supporting the operation of the Port Macquarie Heritage Christian School whilst Lot 2 DP 601094 supports the presence of a church building

Heritage Christian School on 33 Mumford Street, Port Macquarie

Church building on 11 Mumford Street, Port Macquarie

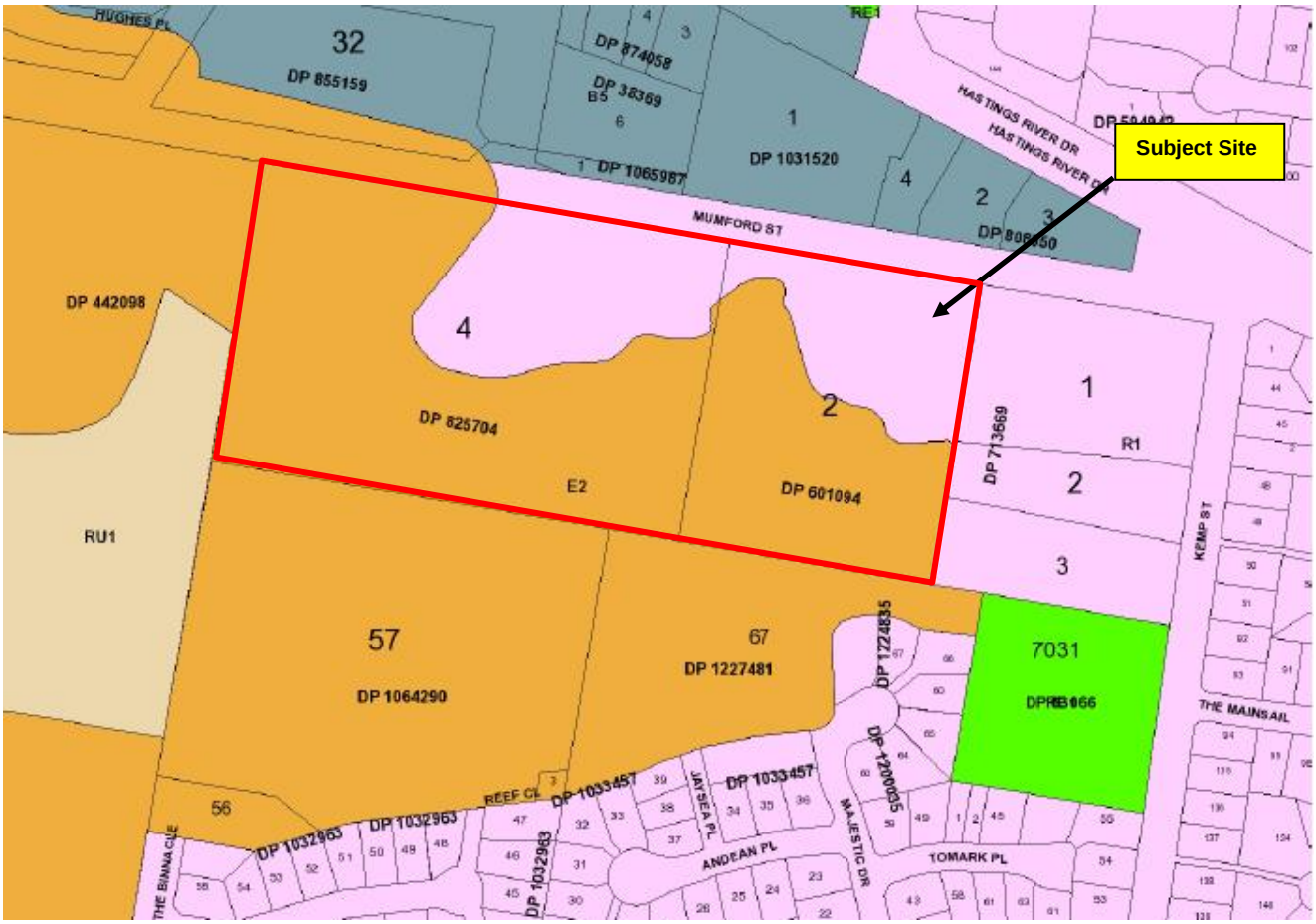
The subject site is positioned on the western fringe of the urbanized area of Port Macquarie in an area which is known locally as Hibbard. Being a historical area of Port Macquarie land use within the immediate area has not changed considerably although it is noted that some urban expansion has occurred on land to the south of the subject site whereby residential subdivision has occurred on what was historically rural land.

The character of the locality is that of a business fringe area with a mixture of residential, commercial, educational and open space areas of land. The subject site forms part of a historical subdivision with the majority of lots having been developed as part of the urban expansion of Port Macquarie. It is however noted that large undeveloped areas of land are present to the south and west of the subject site. A mixture of commercial, residential and recreational development is present to the north and east of the subject site.

The subject site is rectangular in shape and in accordance with Port Macquarie Hastings Local Environmental Plan 2011 has a mixed land use zoning comprising Residential (R1) along the northern central and eastern portions of the subject with an Environmental Conservation (E2) land use zoning applying to the remainder of the subject site. Business (B5) and Residential

(R1) land use zonings apply to adjoining and adjacent land to the north and east respectively whilst an Environmental Conservation (E2) land use zoning is present to the south and northwest of the subject site. A Rural (RU1) land use zoning is present to the southwest. The relationship of the subject site with surrounding land use is depicted in **Figure 3** below;

Figure 3 – Landuse Zoning

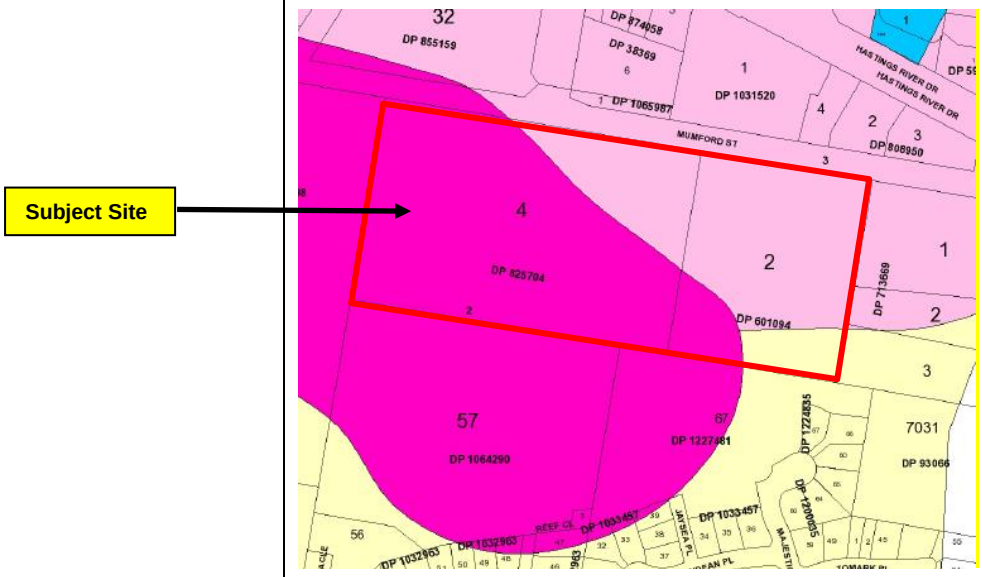


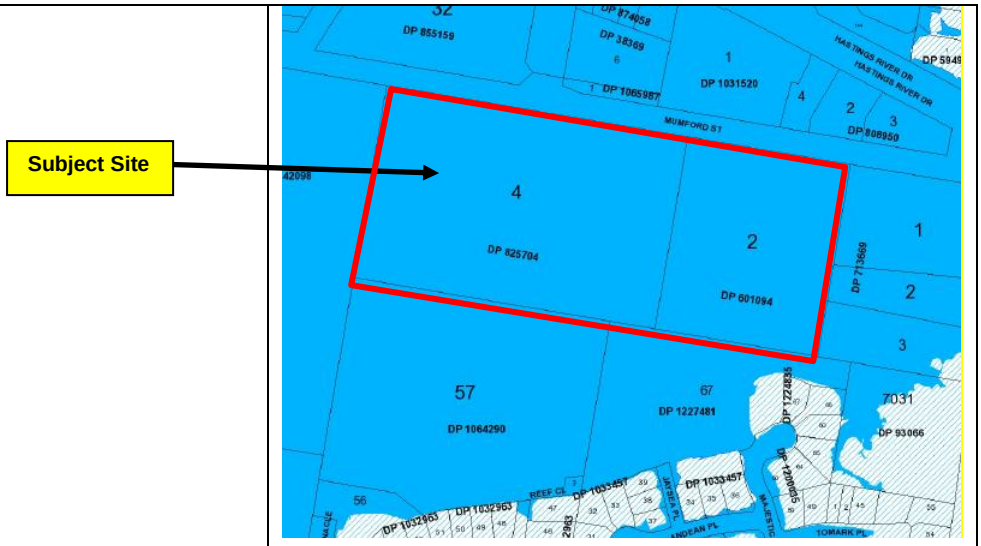
Fire has not recently occurred on the subject site or on adjoining and adjacent land.

The environmental and heritage features of the area of the subject site which forms the basis of this report are summarized as follows;

Table 1 – Environmental and Heritage Features

ENVIRONMENTAL/HERITAGE FEATURE	COMMENT
Riparian Corridors	The subject site does not contain any identified riparian corridors.
SEPP 14 – Coastal Wetland	The subject site is not identified as being subject to SEPP 14 – Coastal Wetlands.
SEPP 26 – Littoral Rainforest	The subject site is not identified as being subject to SEPP 26 – Littoral Rainforest.
SEPP 44 – Koala Habitat	Given the highly disturbed nature of the subject site areas of Potential Koala Habitat have been highly modified with the active use of the site a factor in assessing the extent and significance of habitat for Koalas. This issue is to be the subject of a separate specific

	assessment.
Areas of geological interest	The subject site is identified as potentially containing Class 2, 3 and 5 Acid Sulphate Soils in accordance with Port Macquarie - Hastings Local Environmental Plan, 2011.  Given that the subject site may have been historically filled and the nature of future development, the presence of Acid Sulphate Soils is not expected to be of any significance to the proposed rezoning or future development. Based upon previous land use it is expected that no land contamination issues will be relevant to the subject site.
Environmental Protection Zones	The northern central and north-eastern areas of the subject site subject site are zoned Residential (R1) with the remaining areas of the subject site zoned environmental conservation (E2), refer to **Figure 2** above.
Land slip	Given the gentle topography of the subject site and surrounding areas land slip is not considered to be an issue for the subject site.
Flood prone land	The subject site is identified as being flood prone land and as such is affected by the probable maximum flood level. As such the flood planning provisions of Port Macquarie-Hastings Councils LEP, 2011 are applicable to the subject site.

	 This issue is to be the subject of separate assessment.
National Park Estate or other Reserves	The subject land does not form part of the National Park Estate or other Reserves.
Threatened species, populations, endangered ecological communities and critical habitat	Threatened species, populations, endangered ecological communities and critical habitat are unlikely to be present as the subject site has been the subject of significant modification over time however this issue is to be the subject of separate assessment.
Ecologically Endangered Communities (EEC's)	Given the level of historic disturbance of the subject site in the areas of the proposed development it is unlikely to contain or support EEC's however this issue is to be the subject of separate assessment.
OEH Key Habitats and Corridors	The subject site in the area of the proposed development is unlikely to form part of OEH key habitats and corridors due to the level of historic habitat disturbance however this issue is to be the subject of separate assessment.
Aboriginal Heritage	Items of aboriginal heritage are unlikely to be present in the area of the proposed development as the subject site has been the subject of significant disturbance and alteration over time however this issue is to be the subject of separate assessment.

1.5 Development Proposal

It is proposed to rezone portion of the subject site in order to support the ongoing development of the general area.

The proposed rezoning reflects the continued operation of the existing school complex in the western and central portions of the subject site including the provision of new ancillary school infrastructure in the western portion of the school footprint whilst the existing church use of the subject site is to be converted to a commercial/business/light industrial use with an expansion of the development footprint associated with the proposed commercial/business/light industrial use. In this regard a development concept for the subject site is provided for in **Appendix 2**.

It is noted that the development concept provided in **Appendix 2** is considered to be indicative only with the ultimate development of the subject site requiring compliance with the relevant requirements of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2006.

The purpose of the development concept is to provide context to the identification of the relevant bushfire threat management requirements which are applicable to the subject site.

In this regard the rezoning of the land is required to demonstrate that there is sufficient land within the subject site in which to accommodate the minimum required bushfire threat management requirements which would be applicable to the future development and occupation of the subject site.

Access to subject site will be via the existing Mumford Street road reserve which adjoins the subject site to the north.

This report will focus upon identifying the bushfire threat management requirements which will be applicable to any future development, (using the development concept in **Appendix 2** for context), so as to allow for an assessment of the subject site's suitability for rezoning.

1.6 Fauna and Flora Issues

A fauna and flora evaluation have not been undertaken in conjunction with this bushfire planning assessment and as such issues pertaining to fauna and flora are outside the scope of this report.

2.0 BUSHFIRE HAZARD ASSESSMENT

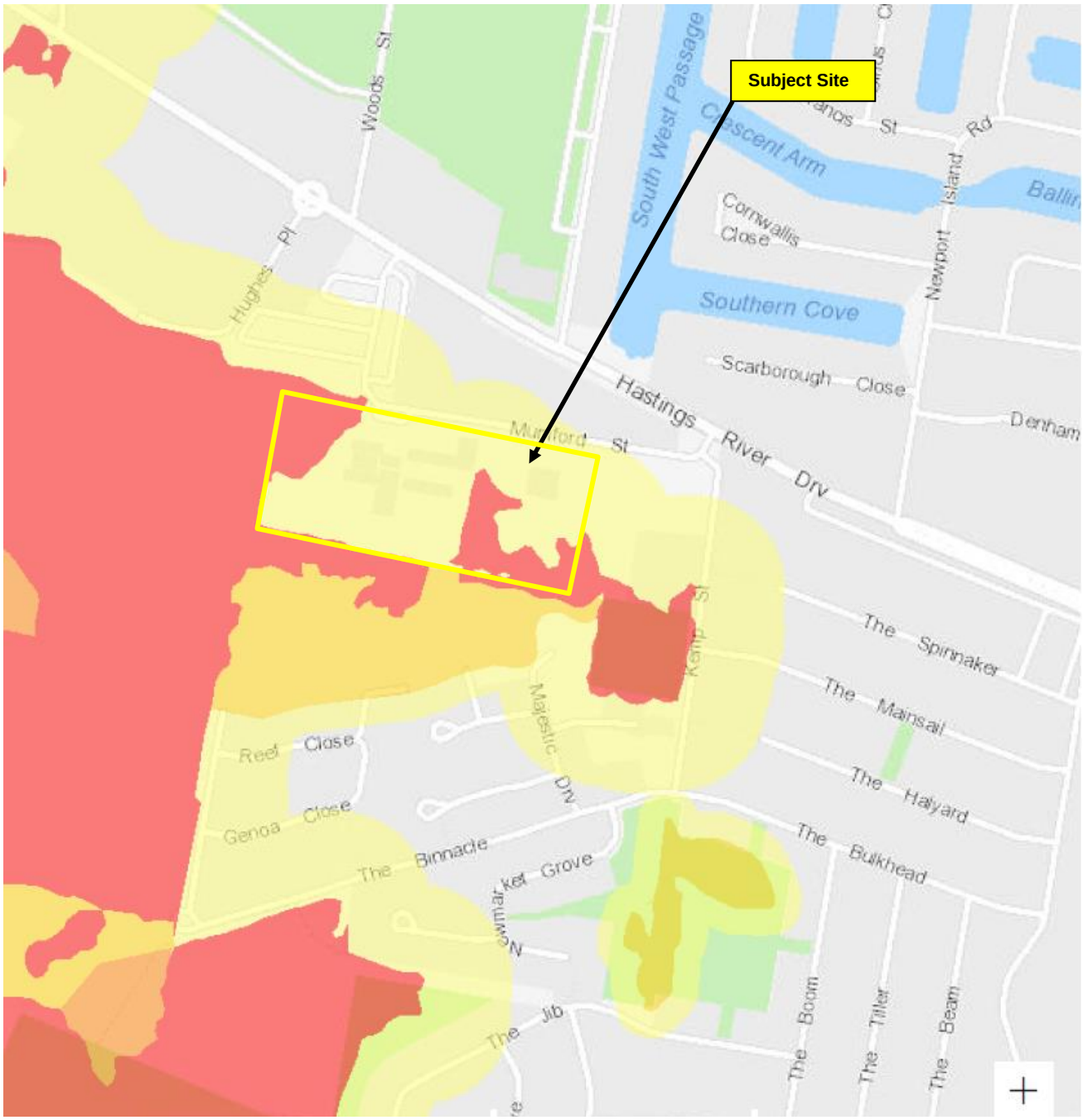
2.1 Procedure

Several factors need to be considered in determining the bushfire hazard for the proposed rezoning of the subject site being slope, vegetation type, distance from vegetation and access/egress. Each of these factors has been reviewed in determining a bushfire hazard rating for the subject site and proposed rezoning.

2.2 Hazard Vegetation

Bushfire Prone Land Risk Mapping provides that areas of Category 1 bushfire hazard vegetation are located in the north-western and central and south-eastern portions of the subject site and on adjoining and adjacent land to the west and southeast with the subject site being affected by the 100m buffer zone to the Category 1 vegetation. An area of Category 2 vegetation is also shown to be present to the south of the subject site; refer to **Figure 4**.

Figure 4 – Extract Bushfire Risk Mapping



The above vegetation associations were considered when assessing the required defendable spaces and indicative Bushfire Attack Levels, (BAL's), for any future development/s.

2.3 Slope Assessment

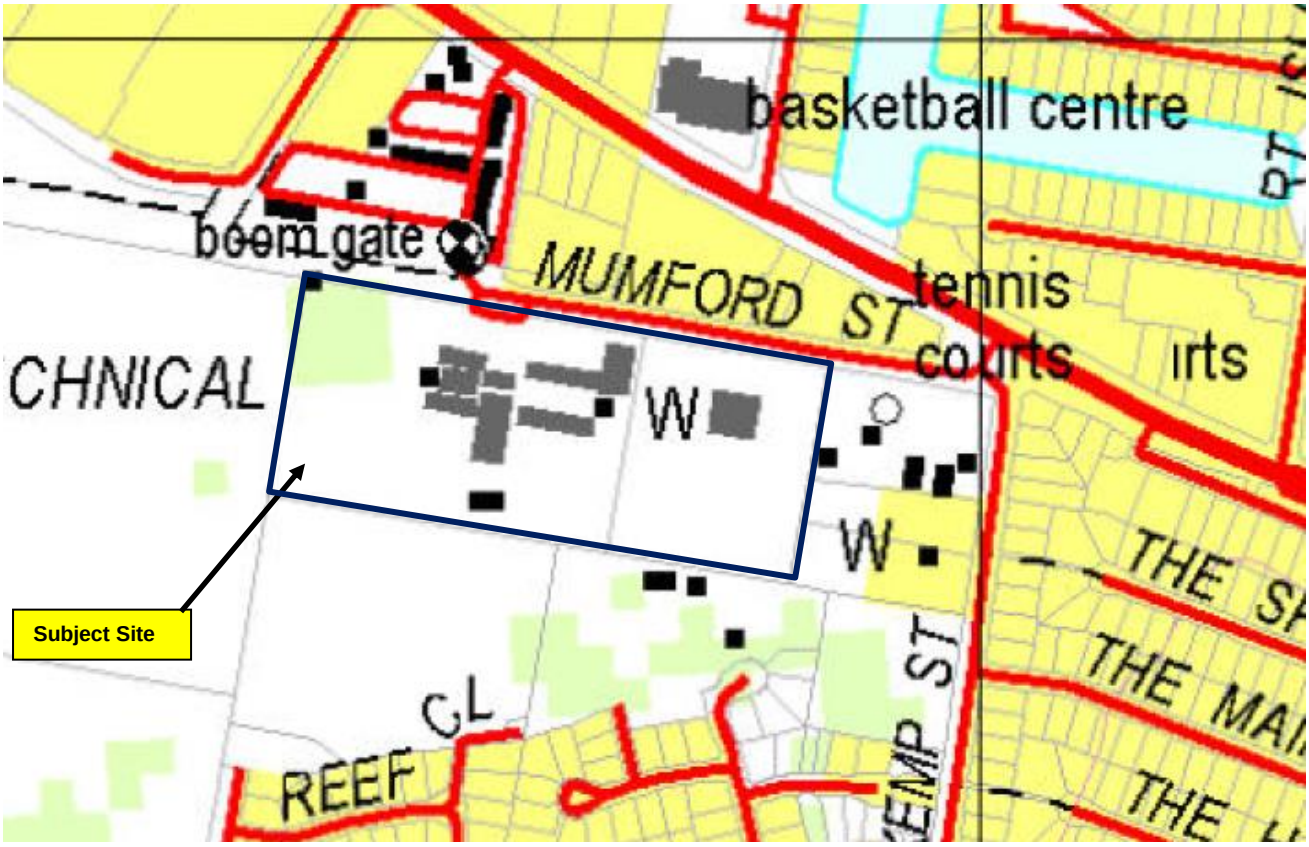
Slope is a major factor to consider when assessing the bushfire risk of any development which is subject to compliance with the requirements of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2006 and 2018. Therefore, the slope of the subject site and surrounding area, (to a distance of 100m), was measured using a Suunto PM-5/360 PC Clinometer.

The subject site is located within the flood plain of the Hastings River and accordingly the topography of the subject site and adjoining and adjacent land is relatively flat. However, reflecting the presence of extensive areas of wetland on adjoining and adjacent land to the south and west some very gentle north to south downslopes are present in the locality. It is noted that the topography of the subject site may have been altered over time with filling

providing for more elevated land. Slope conditions on adjoining and adjacent land are similar to that of the subject site.

The topographic features of the subject site and adjoining and adjacent land can be seen in **Figure 5** below;

Figure 5 – Topographic Conditions



The following table indicates the slopes measured within the vegetation affecting the site.

Table 2 - Slope Assessment Results

DIRECTION OF HAZARD	SLOPE degrees)	UPSLOPE/DOWN SLOPE
South	0˚ - 1˚	Down slope
West	0˚ - 1˚	Down slope

Note: In accordance with NSW Rural Fire Services, Planning for Bushfire Protection, 2006 and AS3959 – 2009 all upslope vegetation is considered to be 0˚.

The above slopes were considered when assessing the required defendable spaces and indicative Bushfire Attack Levels, (BAL's), for any future development/s.

2.4 Vegetation Assessment

The vegetation on and surrounding the subject site was assessed over a distance of 140m from the proposed development.

The vegetation formations were classified using the system adopted as per Keith (2004) and in accordance with Appendix 3 of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2006 and Table 2.3 of AS 3959 - 2009.

The following information is provided in relation to the floristic characteristics of the subject site and adjoining and adjacent land. In adopting a conservative approach to bushfire hazard assessment worst case vegetation characteristics have been identified.

2.4.1 Vegetation within Subject Site

The subject site has been cleared of the majority of vegetation with grasslands and scattered and clusters of trees predominating over much of the subject site. It is however noted that an area of Forested Wetland is present in the north-western portion of Lot 4 DP 825704 whilst narrow remnants of Forested Wetland vegetation are present adjacent to the southern boundary of the subject site, and the southern portion of the western boundary of Lot 2 DP 601094.

Narrow band of Forested Wetland adjacent to southern boundary of the subject site

Remnant areas of Forested Wetland on the subject site

Areas of Forested Wetland in north-western portion of the subject site

The development concept for the subject site provides that existing vegetation, (Forested Wetland), will be retained adjacent to the southern boundary of the subject site together with the area of Forested Wetland vegetation in the north-western portion of Lot 4 DP 825704. Given the width of the Forested Wetland vegetation which is present in the southern aspect of the subject site and the presence of regrowth vegetation on land to the south of the subject site a Forested Wetland specification has been adopted for this area of vegetation (south /south-eastern aspect). A Forested Wetland vegetation classification has been adopted for the north-western aspect of the subject site.

Managed vegetation to the southeast of the Forested Wetland vegetation adjacent to the southern boundary of the subject site

It is also noted that the development concept also provides for the construction of a vegetated stormwater quality detention basin. Whilst no floristic information is available in relation to the stormwater management infrastructure a specification similar to Rainforest has been adopted for the purposes of this assessment.

2.4.2 Vegetation on Adjoining and Adjacent Land to Subject Site

The following vegetation characteristics were identified as being relevant to the proposed rezoning having regard to the vegetation characteristics of adjoining and adjacent land.

Managed vegetation associated with the gardens and landscaping of the developed commercial and residential properties are present on adjoining and adjacent land to the north and east of the subject site for a distance in excess of 140mm. Accordingly no areas of bushfire hazard vegetation are present in these aspects.

Existing commercial development to the north of the subject site

Existing caravan park development to the northwest of the subject site

Existing tennis centre and motel development to the east of the subject site

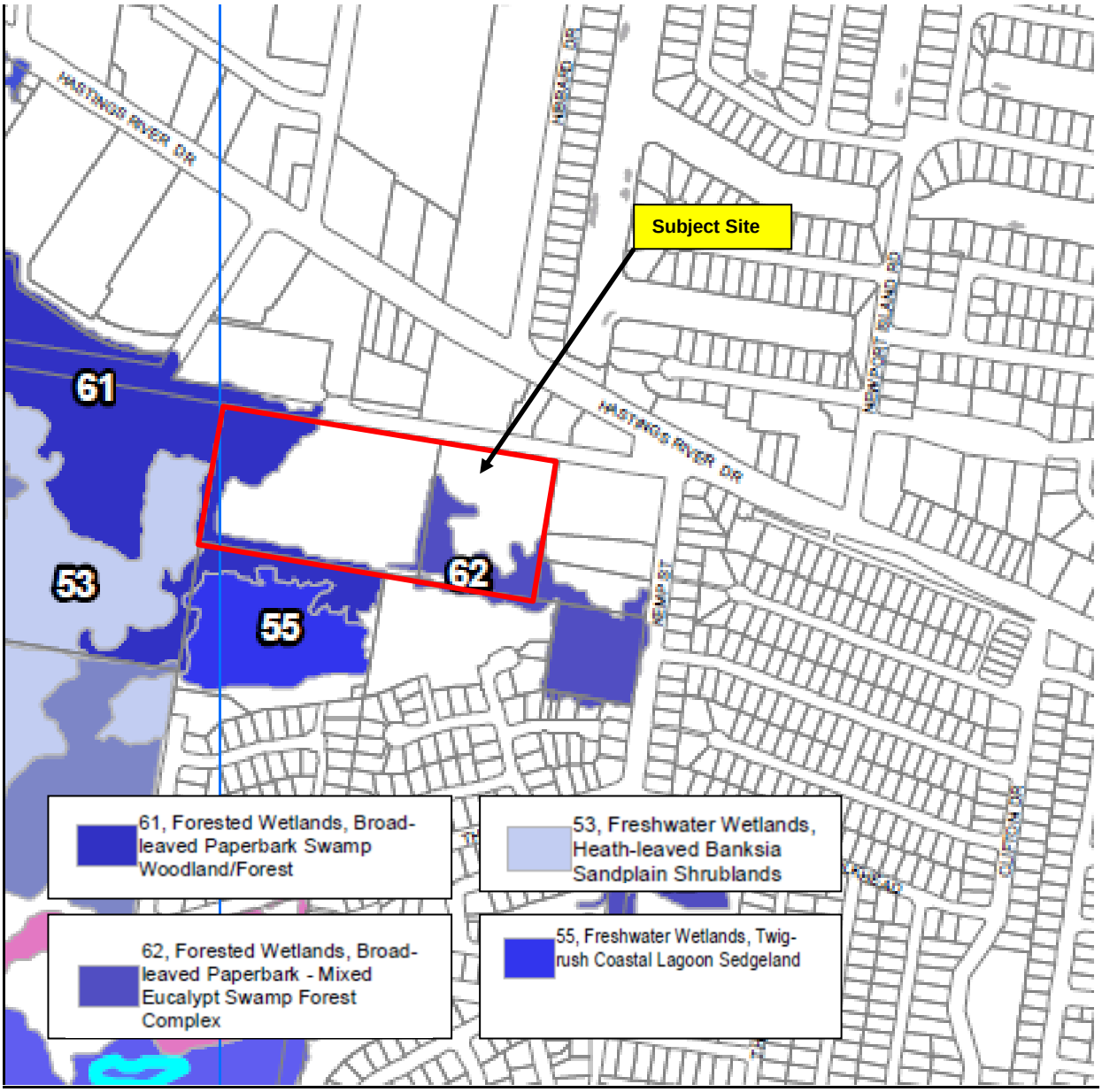
It is however noted that areas of remnant highly disturbed Forested Wetland vegetation are present on adjoining and adjacent land to the southeast of the subject site. In adopting a conservative approach to bushfire threat management, a Forest Wetland classification was considered to be relevant to this area of vegetation.

Extensive areas of Forested Wetland are present on adjoining and adjacent land to the west and southwest of the subject site.

Forested Wetland regrowth to the southwest of the subject site

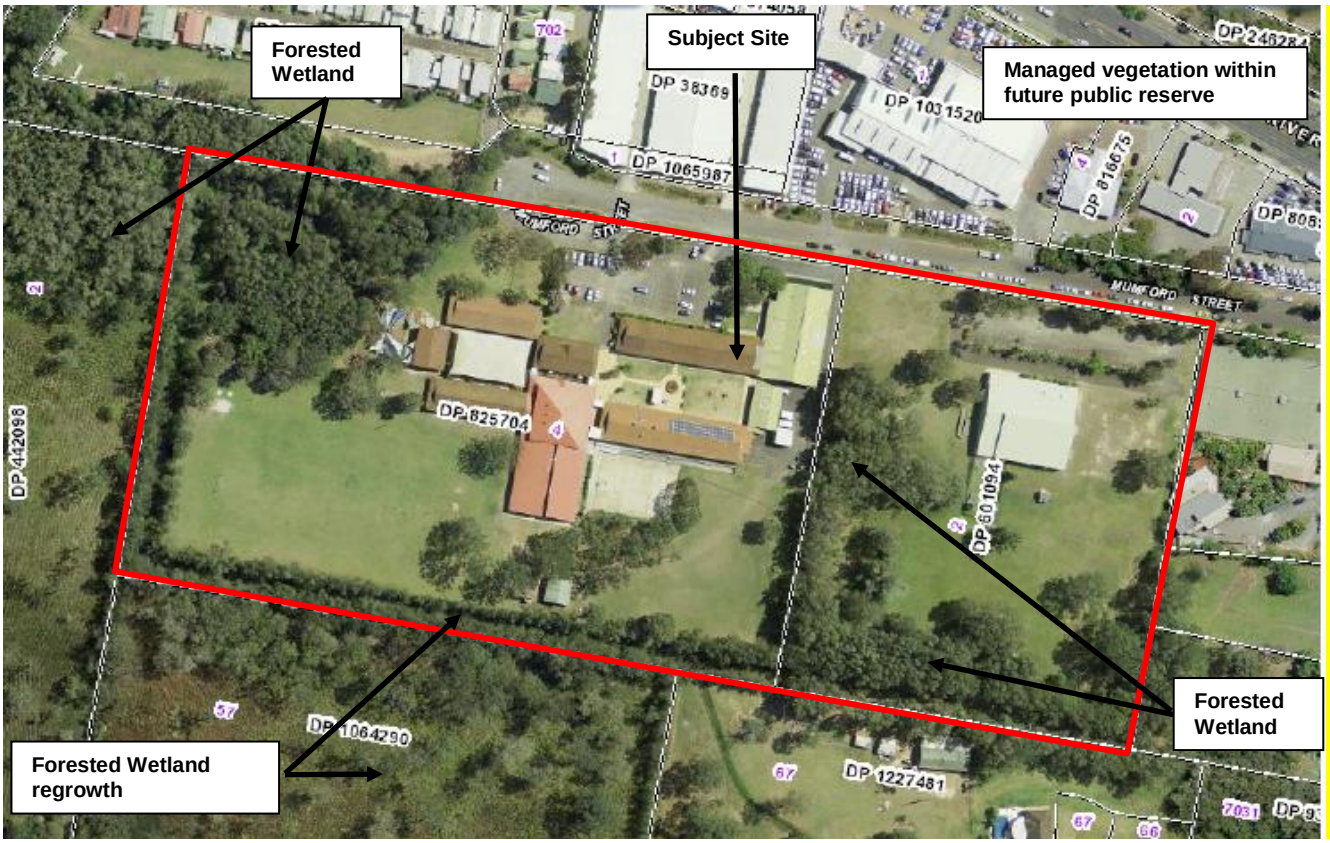
The initial and subsequent identification of vegetation of bushfire significance to the subject site and the individual residential allotments of land is consistent with the vegetation mapping which has been undertaken for the area by Port Macquarie Hastings Council, refer to **Figure 6**.

Figure 6 – Vegetation Mapping



An indication of the relationship of the vegetation of bushfire significance to the subject site and its future development is presented in **Figure 7** below.

Figure 7 - Vegetation Relationships to the Subject Land



The following table summarizes the various vegetation structures which are of bushfire significance to the proposed rezoning of the subject site.

Table 3 – Summary of Vegetation Characteristics

ASPECT	VEGETATION DESCRIPTION	VEGETATION CLASSIFICATION – (Keith, 2004)
South	Proposed vegetation within proposed stormwater quality management wetland	Similar in specification to Rainforest
South/Southeast	Forested Wetland on subject site	Forested Wetland
Southwest	Forested Wetland adjacent to southern boundary of the subject site.	Forested Wetland
West	Forested Wetland on subject site and on adjoining and adjacent land	Forested Wetland

2.5 Fire Danger Index

The fire weather for the site is assumed on the worst-case scenario. In accordance with NSW Rural Fire Services, ***Planning for Bushfire Protection***, 2006 and Table 2.1 of AS 3959 - 2009, the fire weather for the site is based upon the 1:50 year fire weather scenario and has a Fire Danger Index (FDI) of 80.

3.0 BUSHFIRE THREAT REDUCTION MEASURES

3.1 NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006 and 2018

The following issues and constraints have been identified through considering the requirements of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2006 as they

apply to the rezoning of portion of the subject site and the future development of the subject site.

3.1.1 Defendable Space/Asset Protection Zone

It is noted that the development concept for the proposed rezoning includes the following proposed building assets;

- Lot 4 DP 825704 (Heritage Christian School) – Proposed Maintenance Shed and an office/administration building;
- Lot 2 DP 601094 (Church) – addition to existing church building and change of use to commercial/industrial use and a new commercial/industrial building.

To ensure that the aims and objectives of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2006 and 2018 are achieved for the proposed rezoning, a Defendable Space/Asset Protection Zone (APZ) between the asset and the hazard should be provided.

An APZ provides for; minimal separation for safe fire fighting, reduced radiant heat, reduced influence of convection driven winds, reduced ember viability and dispersal of smoke. The APZ consists of an Inner Protection Area (IPA) and Outer Protection Area (OPA). The IPA is an area closest to the buildings that incorporates defendable space and is used for managing heat intensities at the building surface. The OPA is positioned adjacent to the hazard and the purpose of the OPA is to reduce the potential length of flame by slowing the rate of spread, filtering embers and suppressing the crown fire. It is noted that the requirements for APZ are relevant to the proposed addition to the existing administration building within the existing school. It is however noted that the APZ requirements are not relevant to the proposed maintenance shed as due to its NCC building classification (Class 8) this infrastructure is not subject to compliance with the APZ requirement of NSW Rural Fire Service**, *Planning for Bushfire Protection*,** 2009 and 2018. In this regard the proposed school maintenance shed would require the provision of a defendable space.

NSW Rural Fire Service**, *Planning for Bushfire Protection*,** 2018 provides that a defendable space is;

An area adjoining an asset that is managed to reduce combustible elements and is free from constructed impediments. It is a safe working environment in which active firefighting can be undertaken to defend the structure, before and after the passage of a bush fire.

It is noted that the requirements for a defendable space are relevant to any future maintenance shed and commercial/industrial buildings erected on the subject site.

The following assessment of APZ/defendable space requirements which are relevant to the proposed rezoning is provided as follows;

(i) Special Fire Protection Purpose Development

It is noted that the future development of the existing school infrastructure on the subject site provides for APZ's in accordance with Special Fire Protection Purposes (SFPP) requirements of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2006 and 2018. APZ's in SFPP situations must be such that radiant heat levels of greater than 10kW/m² will not be experienced by occupants or emergency workers entering or exiting a building.

The following table indicates the minimum 'deemed to satisfy' Asset Protection Zones required from the hazard vegetation to SFPP buildings. The table is based upon the vegetation type, slopes, and fire weather (FDI) which is applicable to this assessment.

Table 4 – Minimum SFPP Development Asset Protection Zone Requirements (PfBP 2006 and 2018)

NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006					
DIRECTION OF HAZARD	**VEGETATION TYPE**	**SLOPE**	**IPA**	**OPA**	**TOTAL REQUIRED APZ**
South/South east	Forested Wetland	0˚ - 1˚ Down slope	40m	20m	60m
West	Forested Wetland	0˚ - 1˚ Down slope	40m	20m	60m
NSW Rural Fire Service, *Planning for Bushfire Protection*, 2018					
DIRECTION OF HAZARD	**VEGETATION TYPE**	**SLOPE**	**IPA**	**OPA**	**TOTAL REQUIRED APZ**
South/South east	Forested Wetland	0˚ - 1˚ Down slope	20m	22m	42m
West	Forested Wetland	0˚ - 1˚ Down slope	20m	22m	42m

Having regards to the above the positioning of the proposed administration/office building must be such that compliance with the minimum APZ requirements provided for in **Table 4** can be achieved or alternatively any future development must demonstrate compliance with the performance objectives of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2006.

In this regard it is noted that it is possible to locate the proposed office/administration building on the subject site and comply with the relevant APZ performance requirements of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2006 and 2018 albeit that the final design and spatial relationship of the building will need to be confirmed.

The APZ performance criteria and acceptable solution provisions which would apply to any future Special Fire Protection Purpose development on the subject site are detailed in the following tables:

Table 5 – APZ SFPP Development Performance Requirements (PfBP 2006)

Intent of measures: to provide sufficient space for fire fighters and other emergency services personnel, ensuring radiant heat levels permit operations under critical conditions of radiant heat, smoke and embers, while supporting or evacuating occupants.		
Performance Criteria	**Acceptable Solutions**	**Compliance Comment**
The intent may be achieved where:		
Radiant heat levels of greater than 10kW/m² will not be experienced by occupants or emergency workers entering or exiting a building	An APZ is provided in accordance with the relevant tables/ figures in Appendix 2 of NSW RFS Planning for Bushfire Protection 2006	✔ To be complied with in relation to the design of future development
	Exits are located away from the hazard side of the building.	✔ To be complied with in relation to the design of future development
	The APZ is wholly within the boundaries of the development site. Exceptional circumstances may apply (see section 3.3 of	✔ To be complied with in relation to the design of future development

	NSWRFS Planning for Bushfire Protection 2006)	
Applicants demonstrate that issues relating to slope are addressed: maintenance is practical, soil stability is not compromised and the potential for crown fire is negated.	Mechanisms are in place to provide for the maintenance of the APZ over the life of the development.	✔ All APZ's can be maintained over the life of the development.
	The APZ is not located on lands with a slope exceeding 18 degrees.	✔ All APZ's can be located on land with slopes not exceeding 5 degrees.
APZs are managed and maintained to prevent the spread of fire towards the building.	In accordance with the requirements of Standards for Asset Protection Zones (RFS, 2005) *Note: A Monitoring and Fuel Management Program should be required as a condition of development consent.*	✔ The land within the subject site is to be managed to the standards which are applicable to Inner Protection Areas.
Vegetation is managed to prevent flame contact and reduce radiant heat to buildings, minimise the potential for wind driven embers to cause ignition and reduce the effect of smoke on residents and fire fighters.	Compliance with Appendix 5.	✔ Future landscaping and vegetation management will comply with the requirements of Appendix 5.

Table 6 – APZ SFPP Development Performance Requirements (PfBP 2018)

Intent of measures: to provide suitable building design, construction and sufficient space to ensure that radiant heat levels do not exceed critical limits for firefighters and other emergency services personnel undertaking operations, including supporting or evacuating occupants.		
Performance Criteria	**Acceptable Solutions**	**Compliance Comment**
The intent may be achieved where:		
Radiant heat levels of greater than 10kW/m² (calculated at 1200K) are not experienced by emergency service personnel and occupants during firefighting and emergency management.	The building is provided with an APZ in accordance with Table A1.12.1 (see Appendix 1)	✔ The minimum required asset protection zones can be in accordance with Table A1.12.1 – refer to Table 4 above.

Issues relating to slope are addressed: maintenance is practical, soil stability is not compromised and the potential for crown fires is negated	The APZ is not located on lands with a slope exceeding 18°	✔ All APZ's can be maintained over the life of the development.
		✔ All APZ's are to be located on gently sloping land.
APZs are managed and maintained to prevent the spread of a fire towards the building	The APZ is managed in accordance with the requirements of Appendix 4 of this document, and is wholly within the boundaries of the development site,	✔ APZ's will need to be created and maintained to the standards which are applicable to Inner and Outer Protection Areas.
	Mechanisms are in place to provide for the maintenance of the APZ over the life of the development,	✔ The grounds of the existing aged care facility are under active maintenance
	Other structures located within the APZ need to be located further than 6m from the refuge building	✔ Other structures located within the APZ are located further than 6m from the subject building.
Landscaping is managed to minimise flame contact, reduce radiant heat levels, minimise embers and reduce the effect of smoke on residents and firefighters	Landscaping is in accordance with 'Asset protection zone standards' (see Appendix 4)	✔ Existing and future landscaping and vegetation management will comply with the requirements of Appendix 4.
The proposed building can withstand bush fire attack in the form of wind, smoke, embers, radiant heat and flame contact	A construction level of BAL-12.5 under AS 3959 or NASH and Table 7.4b is applied.	✔ Refer to Sections 7.1.7 and 7.2 of this report

It is further noted that as the proposed school office/administration building would be classified as infill development opportunities exist to demonstrate compliance with the relevant infill development performance objectives rather than providing for an APZ in strict compliance with the requirements of **Table 4** above.

Given the ability to pursue merit/performance based solutions in accordance with both NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2006 and 2018, particularly given that any additional school building infrastructure would be considered Infill Special Fire Protection Purpose development, it is considered that there are opportunities to position future buildings within the school complex so as to comply with the relevant requirements of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2006 and 2018 and accordingly the proposed rezoning of the subject site to allow for future development is appropriate as it will be necessary to demonstrate compliance with the APZ requirements in relation to any specific future development proposal.

(ii) Industrial/Commercial Development

NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2006 and 2018 do not prescribe acceptable solutions for the provision of a defendable space in relation to commercial and industrial development with the acceptable solutions provided for by Section 4.1.3 and Section 6 of NSW Rural Fire Service**,** ***Planning for Bushfire Protection*****,** 2006 and 2018 respectively

applying only to residential and Special Fire Protection Purpose developments. Accordingly, the provision of a defendable space to any future commercial/industrial development on the subject site must satisfy the general objectives of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2006 or 2018.

In this regard the following objectives derived from both are NSW Rural Fire Service**, *Planning for Bushfire Protection*,** 2006 and 2018 are considered to be relevant to the provision of a defendable space to any future commercial/industrial development on the subject site;

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

It is noted that neither NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2006 or 2018, provides a methodology as to how a performance-based approach to meeting the above objectives is to be determined nor assessed. Accordingly, the development of a development specific approach to meeting the objectives must have regard to qualifying the bushfire risk posed to future commercial/industrial buildings utilizing the "Deemed-to-Satisfy' provisions of the National Construction Code as the basis of determining a buildings resistance to the spread of fire. This approach recognizes that both NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2006 and 2018 provides that the provisions under the Building Code of Australia/NCC are taken as acceptable solutions where the aims and objectives of NSW Rural Fire Services, ***Planning for Bushfire Protection***, 2006 and 2018 can be met.

In this regard given the development specific nature of the determination of defendable space requirements for commercial/industrial development, the determination of the spatial requirements for any future building development on the subject site will be the subject of development specific determination as a combination of bushfire threat management measures could be utilized so as to satisfy the performance objectives of NSW Rural Fire Service**, *Planning for Bushfire Protection*,** 2006 or 2018. Notwithstanding this, reference to the BCA/NCC suggests that a 6m - 10m area between a building and a fire source is acceptable for property protection purposes. Reference to Clause 3.2.2.2 of Australian Standard 2419.1 – 2005, (by virtue of Clause E1.3 of the BCA), provides that a 10m separation distance to a fire source is required for firefighting activities and is generally accepted by the NSW Fire Brigade as being sufficient to allow for firefighting in relation to industrial/commercial buildings. Lessor distances are permitted however additional measures are required so as to protect fire fighters from the effects of fire.

It is therefore considered that there are opportunities to position future commercial/industrial buildings on the subject site so as to comply with the relevant requirements of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2006 or 2018 and accordingly the proposed rezoning of the subject site to allow for future development is appropriate as it will be necessary to demonstrate compliance with the defendable space requirements in relation to any specific future development proposal.

Based upon the size and shape of the subject site it is considered that the intent of the requirement for the provision of Asset Protection Zones and Defendable Spaces as required by NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006 and 2018 can be satisfied for the future development of the subject site albeit that the location, nature and form of construction of future development must reflect the performance objectives of NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006.

As such redesign of any future development proposal on the subject site may be required in order to achieve compliance.

It is however recommended that in order to reduce the requirements for the provision of Asset Protection Zones/Defendable Spaces a Vegetation Management Plan should be prepared for the vegetation within the proposed stormwater management wetland such that the vegetation

meets the standard which is applicable to an APZ. This can assist in reducing the implications of providing compliant APZ's/Defendable Spaces in relation to future development.

3.1.2 Defendable Space/Asset Protection Zone Management

Areas identified as forming part of the minimum APZ/Defendable Space requirements for any future developments on the subject site must be created and managed so as to comply with the standards which are applicable to Asset Protection Zones as follows;

(i) Inner Protection Area (IPA)

An IPA should provide a tree canopy cover of less than 15% and should be located greater than 2 metres from any part of the roofline of a building.

Garden beds of flammable shrubs are not to be located under trees and should be no closer than 10m from an exposed window or door.

Trees should have lower limbs removed up to a height of 2 metres above the ground.

(ii) Outer Protection Area (OPA)

An OPA should provide a tree canopy cover of less than 30% and should have the understorey managed (mowed) to treat all shrubs and grasses on an annual basis in advance of the fire season (usually September).

3.1.3 Operational Access and Egress

Access to the subject site will be via the existing Mumford Street road reserve which adjoins the subject site to the north.

Mumford Street is a tar sealed all weather two-way public road which terminates in a cul de sac turning head adjacent to the western extent of the Heritage Christian School development footprint. In this regard travel is available to and from the subject site in an easterly/westerly direction along Mumford Street. Areas, which would be protected from the impact of bushfire, are present to the north and east of the subject site. Travel for a distance of 250m to the east of the subject site provides for connection with Hastings River Drive which is a major east to west connecting road which services the western urban area of Port Macquarie.

Mumford Street – immediately adjoining the northern boundary of the subject site

Hastings River Drive – to the north of the subject site

The existing public road infrastructure in the immediate area therefore provides for a number of access and egress options to and from areas that would be protected from any bushfire threat. Having regard to the relatively short travel distances involved to areas that would be protected from the effects of fire and the variety in access and egress options to and from the subject site it is considered that adequate access and egress is available.

The development concept for the subject site provides for the existing public and internal access road systems to service the existing and proposed school developments on the subject site. It is however noted that the development concept for the commercial/industrial development on the subject site will provide for the provision of new internal road infrastructure. It will therefore be necessary to construct all new internal access roads within the subject site associated with any future commercial/business/industrial development so as to comply with the relevant performance objectives/acceptable solution requirements of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2006 or 2018. It this regard, the following compliance requirements are considered to be relevant to the design and construction of new internal road infrastructure;

Table 7 - Acceptable Solutions (Access/Internal Roads) PfBP 2006

Intent of measures: to provide safe access to/from the public road system for fire fighters providing property protection during a bushfire and for occupants faced with evacuation.		
Performance Criteria	**Acceptable Solutions**	**Compliance Comment**
The intent may be achieved where:		
to provide safe access to/from the public road system for firefighters providing property protection during a bush fire and for occupant egress for evacuation;	At least one alternative property access road is provided for individual dwellings (or groups of dwellings) that are located more than 200 metres from a public through road	N/A
The capacity of road surfaces and bridges is sufficient to carry fully loaded fire fighting vehicles.	Bridges clearly indicate load rating and pavements and bridges are capable of carrying a load of 15 tonnes.	✔ To be complied with in relation to the design of future development

All weather access is provided.		No bridges are likely to be required.
	Roads do not traverse a wetland or other land potentially subject to periodic inundation (other than a flood or storm surge).	✔ To be complied with in relation to the design of future development
Internal road widths and design enable safe access for emergency services and allow crews to work with equipment about the vehicle	Internal roads are two-wheel drive, sealed, all weather roads. Internal perimeter roads are provided with at least two traffic lane widths (carriageway 8 meters minimum kerb to kerb) and shoulders on each side, allowing traffic to pass in opposite directions; Roads are through roads. Dead end roads are not more than 100m in length from a through road, incorporate a minimum 12 meters outer radius turning circle, and are clearly signposted as a dead end; Traffic management devices are constructed to facilitate access by emergency service vehicles; A minimum vertical clearance of four meters to any overhanging obstructions, including tree branches, is provided; Curves have a minimum inner radius of six meters and are minimal in number to allow for rapid access and egress; . The minimum distance between inner and outer curves is six meters; Maximum grades do not exceed 15 degrees and average grades are not more than 10 degrees; Cross fall of the pavement is not more than 10 degrees; Roads do not traverse through a wetland or any other land potentially subject to periodic inundation (other than flood or storm surge); Roads are clearly sign posted and bridges clearly indicate load ratings; The internal road surfaces and bridges have a capacity to carry fully loaded fire fighting vehicles (15 tonnes).	✔ The design and construction of access roads is to provide for compliance with the relevant design and construction provisions.

Table 8 - Acceptable Solutions (Access/Internal Roads) PfBP 2018

***Intent of measures:* to provide safe operational access for emergency services personnel in suppressing a bush fire, while residents are accessing or egressing an area.**		
Performance Criteria	**Acceptable Solutions**	**Compliance Comment**
The intent may be achieved where:		
Firefighting vehicles are provided with safe, all-weather access to structures and hazard vegetation	SFPP access roads are two-wheel drive, all-weather roads, and	✔ To be complied with in relation to the design of future development .
	access is provided to all structures and hazard vegetation	
	traffic management devices are constructed to not prohibit access by emergency services vehicles	
	access roads must provide suitable turning areas in accordance with Appendix 3	
The capacity of access roads is adequate for firefighting vehicles	the capacity of road surfaces and any bridges/ causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes); bridges and causeways are to clearly indicate load rating	✔ No bridges are required.
		✔ Roads are to be all weather in design and construction.
There is appropriate access to water supply	hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression, and	✔ The design and construction of roads is to provide for compliance with the relevant design and construction provisions. The design of the internal road system is to provide for a through road configuration.
	hydrants are provided in accordance with AS 2419.1:2005	
	there is suitable access for a Category 1 fire appliance to within 4m of the static water supply where no reticulated supply is available	
Perimeter access roads are designed to allow safe access and egress for medium rigid firefighting vehicles while occupants are evacuating as well as providing a safe operational environment	there are two-way sealed roads, and	✔ To be complied with in relation to the design of future development .
	8m carriageway width kerb to kerb, and	
	parking is provided outside of the carriageway width, and	

for emergency service personnel during firefighting and emergency management on the interface	hydrants are to be located clear of parking areas, and	
	there are through roads, and these are linked to the internal road system at an interval of no greater than 500m, and	
	curves of roads have a minimum inner radius of 6m, and	
	the maximum grade road is 15° and average grade is 10°, and	
	the road crossfall does not exceed 3°, and	
	a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided	
Non-perimeter access roads are designed to allow safe access and egress for medium rigid firefighting vehicles while occupants are evacuating	inimum 5.5m width kerb to kerb, and	✔ To be complied with in relation to the design of future development .
	parking is provided outside of the carriageway width, and	
	hydrants are located clear of parking areas, and	
	there are through roads, and these are linked to the internal road system at an interval of no greater than 500m, and	
	curves of roads have a minimum inner radius of 6m, and	
	e maximum grade road is 15° and average grade is 10°, and	
	the road crossfall does not exceed 3°, and	
	a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.	

Given the existing nature of the public road infrastructure and the nature of the proposed future development of the subject site it is considered that access and egress arrangements for the future development of the subject site can be consistent with the relevant performance and acceptable solution requirements of NSW Rural Fire Services**, *Planning for Bushfire Protection***, 2006 or 2018.

3.1.4 Services - Water, Gas and Electricity

NSW Rural Fire Services**, *Planning for Bushfire Protection***, 2006 and 2018 requires that new developments in bushfire prone areas must maintain a water supply reserve dedicated to firefighting purposes.

Given that the proposed rezoning provides for Special Fire Protection Purpose and commercial/business/industrial development, any future buildings will have access to the reticulated water supply, the extension of which will be required by Port Macquarie-Hastings

Council to service development within an urban context. It is however noted that the determination of a guaranteed water supply is to be made by the water supply authority where mains water supply is available.

Electricity supply is available and will be accessible to the future development of the land.

Reticulated gas services are not available in the locality and are therefore not available to the subject site.

The incorporation into any future development of the subject site of the relevant provisions of NSW Rural Fire Services**, *Planning for Bushfire Protection***, 2006 or 2018 will ensure compliance with the intent for the provision of services to any future development of the subject site. In this regard the following provisions are considered to be relevant to any Special Fire Protection Purpose Development;

Table 9 – Service Provision Requirements (PfBP 2006)

Intent of measures: to provide adequate services of water for the protection of buildings during and after the passage of a bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building		
Performance Criteria	**Acceptable Solutions**	**Compliance Comment**
The intent may be achieved where:		
Reticulated water supplies Reticulated water supplies are easily accessible and located at regular intervals	Access points for reticulated water supply to SFPP developments incorporate a ring main system for all internal roads. Fire hydrant spacing, sizing and pressures 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, once development has been completed. In such cases, the location, number and sizing of hydrants shall be determined using the fire engineering principles. No services or hydrants are located within the parking bays	✔ Future development will have access to the reticulated water supply which services the urban area. The water supply is to be designed and constructed so as to comply with the relevant requirements.
Electricity Location of electricity services will not lead to ignition of surrounding bushland or the fabric of buildings or risk to life from damaged electrical infrastructure	Electrical transmission lines are underground	✔ To comply.
Gas Location of gas services will not lead to ignition of surrounding bushland or the fabric of buildings	Reticulated or bottled gas is installed and maintained in accordance with AS 1596 and the requirements of relevant	✔ Reticulated gas supplies are not available within the area.

	authorities. Metal piping is to be used. All fixed gas cylinders are kept clear of all flammable materials to a distance of 10 metres and shielded on the hazard side of the installation. If gas cylinders need to be kept close to the building, the release valves are directed away from the building and at least 2 metres away from any combustible material, so that they do not act as a catalyst to combustion. Connections to and from gas cylinders are metal. Polymer sheathed flexible gas supply lines to gas meters adjacent to buildings are not used.	Gas bottles and other sources of ignition are stored away from the hazard and in positions to reduce the risk.

Table 10 - Service Provision Requirements (PfBP 2018)

Intent of measures:* *to provide adequate services of water for the protection of buildings during and after the passage of a bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building.		
Performance Criteria	**Acceptable Solutions**	**Compliance Comment**
The intent may be achieved where:		
A water supply is provided for firefighting purposes	reticulated water is to be provided to the development, where available, or	✔ Future development will have access to the reticulated water supply which services the urban area. The water supply is to be designed and constructed so as to comply with the relevant requirements.
	a 10,000 litres minimum static water supply dedicated for firefighting purposes is provided for each occupied building where no reticulated water is available.	
water supplies are located at regular intervals; the water supply is accessible and reliable for firefighting operations	fire hydrant spacing, design and sizing comply with the Australian Standard AS2419.1:2005, and	✔ To comply.
	hydrants are not located within any road carriageway, and	
	reticulated water supply to SFPPs uses a ring main system for areas with perimeter roads, and	
flows and pressure are appropriate	fire hydrant flows and pressures comply with AS2419:2005, and	✔ Reticulated gas supplies

		are not available within the area. Gas bottles and other sources of ignition are stored away from the hazard and also in positions to reduce the risk.
the integrity of the water supply is maintained	all above-ground water service pipes external to the building are metal, including and up to any taps, and	✔ To comply.
a static water supply is provided for firefighting purposes in areas where reticulated water is not available	a connection for firefighting purposes is located within the IPA or non-hazard side and away from the structure; a 65mm Storz outlet with a ball valve is fitted to the outlet, and	✔ To comply where relevant.
	ball valve and pipes are adequate for water flow and are metal, and	
	supply pipes from tank to ball valve have the same bore size to ensure flow volume, and	
	underground tanks have an access hole of 200mm to allow tankers to refill direct from the tank, and	
	a hardened ground surface for truck access is supplied within 4m of the access hole, and	
	above-ground tanks are manufactured from concrete or metal, and	
	raised tanks have their stands constructed from non-combustible material or bush fire-resisting timber (see Appendix F AS 3959), and	
	unobstructed access can be provided at all times, and	
	tanks on the hazard side of a building are provided with adequate shielding for the protection of firefighters, and	
	underground tanks are clearly marked, and	
	all exposed water pipes external	

	to the building are metal, including any fittings, and	
	where pumps are provided, they are a minimum 5hp or 3kW petrol or diesel-powered pump, and are shielded against bush fire attack; any hose and reel for firefighting connected to the pump shall be 19mm (internal diameter), and	
	fire hose reels are constructed in accordance with AS/NZS 1221:1997 Fire hose reels, and installed in accordance with AS 2441:2005 Installation of fire hose reels	
location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings	where practicable, electrical transmission lines are underground, and	✔ To comply where relevant.
	where overhead, electrical transmission lines are proposed as follows: • lines are installed with short pole spacing (30m), unless crossing gullies, gorges or riparian areas, and • no part of a tree is closer to a power line than the distance set out in accordance with the specifications in ISSC3 Guideline for Managing Vegetation Near Power Lines	
location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings	reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 and the requirements of relevant authorities, and metal piping is used, and	✔ To comply where relevant.
	all fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side, and	
	connections to and from gas cylinders are metal, and	
	if gas cylinders need to be kept close to the building, safety valves are directed away from the building and at least 2m away	

	from any combustible material, so they do not act as a catalyst to combustion, and	
	polymer-sheathed flexible gas supply lines to gas meters adjacent to buildings are not used, and	
	above-ground gas service pipes external to the building are metal, including and up to any outlets.	

It is noted that neither NSW Rural Fire Services**, *Planning for Bushfire Protection***, 2006 or 2018 prescribe any specific acceptable solutions with respect to commercial/industrial development. In this regard it will be necessary to demonstrate that any future commercial/ industrial development on the subject site is provided with adequate services of water for the protection of buildings during and after the passage of a bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building.

Given that the subject site is serviced by a reticulated water, has access to the electricity supply which services the area and the flexibility which exists in relation to the location of any gas supplies it will be possible for any future commercial/industrial development to be provided with services which comply with the relevant requirements of either NSW Rural Fire Services**, *Planning for Bushfire Protection***, 2006 or 2018.

3.1.5 Emergency Evacuation Planning

Special Fire Protection Purpose developments should have suitable management arrangements and structures capable of developing and implementing an Emergency Plan.

Before occupation of any future Special Fire Protection Purpose development on the subject site an Emergency Evacuation Plan incorporating bushfire evacuation will be required to be produced for the proposed development.

Compliance with the following acceptable solutions will ensure compliance with the intent for Emergency Evacuation Planning before the occupation of any future Special Fire Protection Purpose development on the subject site.

Table 11 - Acceptable Solutions for Emergency and Evacuation (PfBP 2006)

Intent of measures: to provide suitable emergency and evacuation (and relocation) arrangements for occupants of special fire protection purpose developments		
Performance Criteria	**Acceptable Solutions**	**Compliance Comment**
The intent may be achieved where:		
An Emergency and Evacuation Management Plan is approved by the relevant fire authority for the area.	An emergency evacuation plan is prepared consistent with the RFS Guidelines for the preparation of *Emergency/Evacuation Plan*. Compliance with AS 3745-2002 'Emergency control organization and procedures for buildings, structures and workplaces for residential accommodation.'	✔ To comply
Suitable management arrangements are established for	An Emergency Planning Committee is established to consult with residents (and their	✔ To comply

consultation and implementation of the emergency and evacuation plan.	families in the case of schools) and staff in developing and implementing an Emergency Procedures Manual. Detailed plans of all Emergency Assembly Areas including "onsite" and "offsite" arrangements as stated in AS 3745-2002 are clearly displayed, and an annual (as a minimum) trial emergency evacuation is conducted.	

Table 12 - Acceptable Solutions for Emergency and Evacuation (PfBP 2018)

Intent of measures: to provide suitable emergency and evacuation arrangements for occupants of SFPP developments.		
Performance Criteria	**Acceptable Solutions**	**Compliance Comment**
The intent may be achieved where:		
A bushfire emergency and evacuation management plan is prepared	bush fire emergency management and evacuation plan is prepared consistent with the: • The NSW RFS document: *A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan*, • NSW RFS Schools Program Guide (where applicable) • Australian Standard AS 3745:2010 *Planning for emergencies in facilities*, and • Australian Standard AS 4083:2010 *Planning for emergencies – Health care facilities* (where applicable), and	✔ To comply
	The emergency and evacuation management plan should include a mechanism for the early relocation of occupants. Note: A copy of the bush fire emergency management plan should be provided to the Local Emergency Management Committee for its information prior to occupation of the development.	
Stable management arrangements are established for consultation and implementation of the bush fire emergency and evacuation management plan.	an Emergency Planning Committee is established to consult with residents (and their families in the case of aged care accommodation and schools) and staff in developing and implementing an Emergency Procedures Manual, and	✔ To comply

	detailed plans of all emergency assembly areas including 'on-site' and 'off-site' arrangements as stated in AS 3745 are clearly displayed, and an annual (as a minimum) trial emergency evacuation is conducted.	

It is noted that neither NSW Rural Fire Services**,** ***Planning for Bushfire Protection***, 2006 or 2018 prescribe any specific emergency or evacuation acceptable solutions with respect to commercial/industrial development. In this regard it will be necessary to demonstrate that any. future commercial/industrial development on the subject site is provides suitable emergency and evacuation (and relocation) arrangements for occupants of the development.

Given the opportunities which will exist to require and develop development specific emergency and evacuation (and relocation) arrangements for future development it will be possible for future development to comply with the relevant emergency evacuation planning requirements of either NSW Rural Fire Services**,** ***Planning for Bushfire Protection***, 2006 or 2018.

3.1.6 Landscaping

Landscaping is a major cause of fire spreading to buildings, and therefore any landscaping proposed in conjunction with the future development of the subject site will need consideration when planning, to produce gardens that do not contribute to the spread of a bushfire.

When planning any future landscaping surrounding any future development on the subject site, consideration should be given to the following:

- The choice of vegetation – consideration should be given to the flammability of the plant and the relation of their location to their flammability and ongoing maintenance to remove flammable fuels.
- Trees as windbreaks/firebreaks – Trees in the landscaping can be used as windbreaks and also firebreaks by trapping embers and flying debris.
- Vegetation management – Maintain a garden that does not contribute to the spread of bushfire.
- Maintenance of property – Maintenance of the property is an important factor in the prevention of losses from bushfire.

Appendix 5 of NSW Rural Fire Services**,** ***Planning for Bushfire Protection***, 2006 and Appendix 4 of NSW Rural Fire Services**,** ***Planning for Bushfire Protection***, 2018 contain standards that are applicable to the provision and maintenance of landscaping.

Any landscaping proposed to be undertaken in conjunction with any future development of the areas which are the subject of this report is to comply with the principles contained in Appendix 5 of NSW Rural Fire Services**,** ***Planning for Bushfire Protection***, 2006 or upon its adoption Appendix 4 of NSW Rural Fire Services**,** ***Planning for Bushfire Protection***, 2018**.**

Compliance with Appendix 5 of NSW Rural Fire Services**,** ***Planning for Bushfire Protection***, 2006 or Appendix 4 of NSW Rural Fire Services**,** ***Planning for Bushfire Protection***, 2018 will satisfy the intent of the bush fire protection measures that are applicable to the provision of landscaping.

3.1.7 Construction Requirements

(i) NSW Rural Fire Services, Planning for Bushfire Protection, 2006

It is noted that Appendix 3 of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2006 contains specific construction requirements which the NSW Rural Fire Service will seek to impose, through the development control process, in addition to the construction requirements contained within AS3959 – 2009.

Accordingly, the determination of the construction requirements which will be applicable to any specific future Special Fire Protection Purpose development proposal will need to have regard to the construction requirements nominated in Appendix 3 of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2006 in addition to the requirements of AS3959 – 2009.

It is however noted that due to the unknown nature and extent of the future Special Fire Protection Purpose development of the subject site the application of the requirements of Appendix 3 of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2006 is not considered relevant at this stage of the planning process.

Notwithstanding the above based upon the size of the subject site and the spatial relationship with areas of bushfire hazard vegetation it is considered that the requirements of NSW Rural Fire Services**, *Planning for Bushfire Protection***, 2006 for the siting, design and construction of any future Special Fire Protection Purpose buildings can be satisfied**.** The relevant requirements of NSW Rural Fire Services**, *Planning for Bushfire Protection*,** 2006, are summarized as follows;

Table 13 – Building Siting and Design Requirements (PfBP 2006)

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
in relation to siting and design: • buildings are sited and designed to minimize the risk of bush fire attack.	• buildings are designed and sited in accordance with the siting and design principles
in relation to construction standards: • it is demonstrated that the proposed building can withstand bush fire attack in the form of wind, smoke, embers, radiant heat and flame contact	• construction determined in accordance with Appendix 3 and the *Requirements for attached garages and other structures*

(ii) NSW Rural Fire Services, Planning for Bushfire Protection, 2018

It is noted that with the adoption of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2018 in NSW, AS 3959 – 2018 will become the relevant construction standard in relation to Special Fire Protection Purpose developments.

Importantly NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2018 requires the determination of the Bushfire Attack Levels which are relevant to Special Fire Protection Purpose development to be determined in accordance with Table A1.12.6 of Appendix 1 of the Guideline rather than using AS 3959. Accordingly the determination of the Bushfire Attack Level/s which will be applicable to any specific future development proposal for the subject site will need to have regard to the BAL tables provided for in Appendix 1 of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2018 as a replacement to the requirements of 3959 - 2018.

It is also noted that Section 7.5 of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2018 contains specific construction requirements which the NSW Rural Fire Service will seek to impose, through the development control process, in addition to the construction requirements contained within AS3959 –2018. These measures are over and above AS 3959 - 2018.

Accordingly, the determination of the construction requirements which will be applicable to any specific future Special Fire Protection Purpose development proposal for the subject site will need to have regard to the construction requirements of AS 3959 as amended by the requirements of Section 7.5 of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2018 upon commencement of the Guideline.

It is further noted that neither of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2006 or 2018 contain any specific construction requirements in relation to commercial/ industrial buildings. In this regard both guidelines provide that the general fire safety construction provisions (of the NCC) are taken as acceptable solutions. As such AS 3959 and the NASH Standard are not considered as a set of 'deemed to satisfy' provisions, however compliance with AS 3959 and NASH should be considered when meeting the aims and objectives of PfBP 2006 or 2018.

Given the flexibility which will exist in relation to future building design and construction it will be possible for future development to comply with the relevant construction requirements of either NSW Rural Fire Services**,** ***Planning for Bushfire Protection***, 2006 or 2018.

3.2 Construction of Buildings in Bushfire Prone Areas

3.2.1 General

In NSW, the bushfire protection provisions of the National Construction Code, (NCC), are applied to Class 1, 2, 3, Class 4 parts of buildings, some Class 10 buildings and Class 9 buildings that are Special Fire Protection Purposes (SFPP's). It is noted that both NSW Rural Fire Services**,** ***Planning for Bushfire Protection***, 2006 and 2018 provide that AS3959 is the relevant construction standard for Class 1, 2, 3, Class 4 parts of buildings, some Class 10 buildings and Class 9 with AS 3959 – 2009 being the current construction standard in NSW. The form adoption of NSW Rural Fire Services**,** ***Planning for Bushfire Protection***, 2018 will however result in AS 3959 – 2018 becoming the relevant construction standard in NSW.

It is however noted that both NSW Rural Fire Services**,** ***Planning for Bushfire Protection***, 2006 and 2018 seek to modify certain provisions of the relevant reference AS 3959 standards.

It is also noted that the NCC does not provide for any bush fire specific construction requirements in relation to other non-residential or SFPP development and as such AS 3959 does not apply as a set of 'deemed to satisfy' provisions. The general fire safety construction provisions of the NCC are taken as acceptable solutions. This would be specifically relevant where commercial/business/industrial developments are undertaken on the subject site as a consequence of the proposed rezoning.

Notwithstanding the above the following preliminary assessment of Bushfire Attack Levels is provided as it applies to Special Fire Protection Purpose developments on the subject site. This assessment is based upon the provision of the minimum required APZ as provided for by **Table 4** of this report.

3.2.2 Vegetation

To complete the assessment under AS 3959 (2009) the vegetation, as originally assessed in accordance with Keith, has to be converted to Specht. The following table shows the conversion:

Table 14 – Summary of Vegetation Characteristics

ASPECT	VEGETATION CLASSIFICATION – (Keith, 2004)	VEGETATION CLASSIFICATION – PfPB 2006	VEGETATION CLASSIFICATION – PfPB 2018
South/southeast	Forested Wetland	Forest	Forested Wetland
West	Forested Wetland	Forest	Forested Wetland

3.2.3 AS3959 – 2009/2018 Construction of Buildings in Bushfire Prone Areas

The following construction requirements in accordance with AS 3959 – 2009 and AS 3959 – 20018 *Construction of Buildings in Bushfire Prone Areas* is required for the bushfire attack level categories.

Table 15 – Bushfire Attack Levels

BUSHFIRE ATTACK LEVEL (BAL)
No construction requirements under AS 3959-2009 or AS 3959-2018
BAL - 12.5
BAL - 19
BAL - 40
BAL - FZ

Based upon the information presented in Section 2 of this report the worst-case Bushfire Attack Levels pursuant to AS3959 – 2009 and AS AS3959 – 2018, (as modified by NSW Rural Fire Services**,** ***Planning for Bushfire Protection***, 2018) have been determined as being applicable to any future Special Fire Protection Purpose development of the subject site.

It is noted that the following BAL assessment has been based upon the provision of the required Asset Protection Zones to Special Fire Protection Purpose development as provided for by **Table 4**.

Table 16 – Worst Case Bushfire Attack Levels for Nominated Vegetation Classifications and Slopes (SFPP Development)

NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006				
ASPECT	**VEGETATION CLLASSIFICATION**	**DISTANCE** (of proposed Lot from Hazard Vegetation)	**SLOPE**	**BUSHFIRE ATTACK LEVEL (BAL)**
South/Southeast	Forest	60m	0˚ - 1˚ Down slope	BAL 12.5
West	Forest	60m	0˚ - 1˚ Down slope	BAL 12.5
NSW Rural Fire Service, *Planning for Bushfire Protection*, 2018				
ASPECT	**VEGETATION CLLASSIFICATION**	**DISTANCE** (of proposed Lot from Hazard Vegetation)	**SLOPE**	**BUSHFIRE ATTACK LEVEL (BAL)**
South/Southeast	Forested Wetland	42m	0˚ - 1˚ Down slope	BAL 12.5
West	Forested Wetland	42m	0˚ - 1˚ Down slope	BAL 12.5

The information presented in the above table indicates that where the minimum required APZ's are provide in accordance with **Table 4** of this report, future Special Fire Protection Purpose development would be subjected to a worst-case Bushfire Attack Level of BAL 12.5. This is consistent with the acceptable solution requirements of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2006 and 2018.

It is noted that the general fire safety construction provisions of the NCC are taken as acceptable solutions where commercial/business/industrial developments are undertaken on the subject site and accordingly the requirements of AS3959 – 2009 or AS 3959 – 2018 would not be specifically applicable to future commercial/business/industrial buildings constructed on the subject site although consideration of construction standards maybe applicable in the identification of development specific bushfire threat management strategies for future commercial/business/industrial developments on the subject site.

4.0 SUMMARY OF FINDINGS

The following recommendations are provided in response to the proposed rezoning of land known as Lot 4 DP 825704 and Lot 2 DP 601094, 11 – 33 Mumford Street, Port Macquarie having regard to the development concept provided as **Appendix 2**.

(i) Adopt Landscaping principals in accordance with Section 3.1.4 of this report.

(ii) Asset Protection Zones are to be provided in accordance with this report. Specifically;

- The positioning of any future Special Fire Protection Purpose developments on the subject site must demonstrate compliance with the relevant performance objectives of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2006; and

- Defendable Spaces to any future commercial/industrial buildings on the subject site are to be the subject of individual assessment in accordance with the general objectives of NSW Rural Fire Services**,** ***Planning for Bushfire Protection***, 2006

(iii) Water and other services are to be provided to the subject site in accordance with the requirements detailed in Section 3.1.3 of this report.

(iv) The determination of the Bushfire Attack level (BAL) and corresponding construction standards for any future development of the subject site should be the subject of an individual bushfire hazard assessment conducted in conjunction with the development of the subject site.

(v) Where internal access road infrastructure is required, its design and construction must comply with the relevant requirements of NSW Rural Fire Services**,** ***Planning for Bushfire Protection***, 2006 or 2018.

(vi) The development of a Vegetation Management Plan for the vegetation within the proposed stormwater management wetland such that the vegetation meets the standard which is applicable to an APZ can assist in reducing the implications of providing compliant APZ's/Defendable Spaces in relation to future commercial/industrial development on the subject site.

5.0 CONCLUSION

It is considered that the proposed rezoning of land known as Lot 4 DP 825704 and Lot 2 DP 601094, 11 – 33 Mumford Street, Port Macquarie is at risk of bushfire attack; however, it is in our opinion that with the implementation of the bushfire threat reduction measures and consideration of the recommendations in this report, the bushfire risk is manageable for the proposed rezoning albeit that the design and construction of any future development will need to demonstrate compliance with the relevant requirements of NSW Rural Fire Service**,** ***Planning for Bushfire Protection*****,** 2006 or 2018, (depending upon the Guideline which is adopted at the time)**.**

Given the ability to pursue merit/performance based solutions, it is considered that there are opportunities to position future infill school and commercial/industrial buildings on the subject site so as to comply with the relevant requirements of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2006 or 2018 and accordingly the proposed rezoning of the subject site to allow for future development is appropriate as it will be necessary to demonstrate compliance with the bushfire threat management requirements in relation to any specific future development proposal.

With the implementation of the recommendations it is considered that it will be possible for the future development of the subject site to meet the applicable performance objectives and acceptable solutions as provided for in NSW Rural Fire Service**,** ***Planning for Bushfire Protection*****,** 2006 or 2018**.**

This report is however contingent upon the following assumptions and limitations.

Assumptions

(i) For a satisfactory level of bushfire safety to be achieved regular inspection and testing of proposed measures, building elements and methods of construction, specifically nominated in this report, is essential and is assumed in the conclusion of this assessment.

(ii) There are no re-vegetation plans in respect to hazard vegetation and therefore the assumed fuel loading will not alter.

(iii) It is assumed that the building works will comply with the DTS provisions of the NCC including the relevant requirements of Australian Standard 3959 – 2009 or Australian Standard 3959 – 2018.

(iv) Any future developments are constructed and maintained in accordance with the risk reduction strategy in this report.

(v) The vegetation characteristics of the subject site and surrounding land remains unchanged from that observed at the time of inspection.

(vi) The information contained in this report is based upon the information provided for review, refer to **Appendix 2.**

No responsibility is accepted for the accuracy of the information contained within the above plans.

Limitations

(i) The data, methodologies, calculations and conclusions documented within this report specifically relate to the building and must not be used for any other purpose.

(ii) A reassessment will be required to verify consistency with this assessment if there is building alterations and/or additions, change in use, or changes to the risk reduction strategy contained in this report

6.0 REFERENCES

NSW Rural Fire Services, ***Planning for Bushfire Protection***, 2006

NSW Rural Fire Services, ***Planning for Bushfire Protection***, 2018

AS 3959-2009, ***Construction of Buildings in Bushfire Prone Areas***

AS 3959-2018, ***Construction of Buildings in Bushfire Prone Areas***

Keith David 2004, Ocean ***Shores to Desert Dunes, The Native Vegetation of New South Wales and the ACT***, Department of Environment and Conservation

NSW State Government***, Rural Fires Act***, 1997

Port Macquarie-Hastings Councils, ***Bushfire Prone Land Mapping***

NSW Rural Fire Service, ***Guideline for Bushfire Prone Land Mapping***, 2002

Australian Building Codes Board, ***National Construction Code***, 2019

NSW Rural Fire Service – *Guideline for Bushfire Prone Land Mapping 2002*

Disclaimer

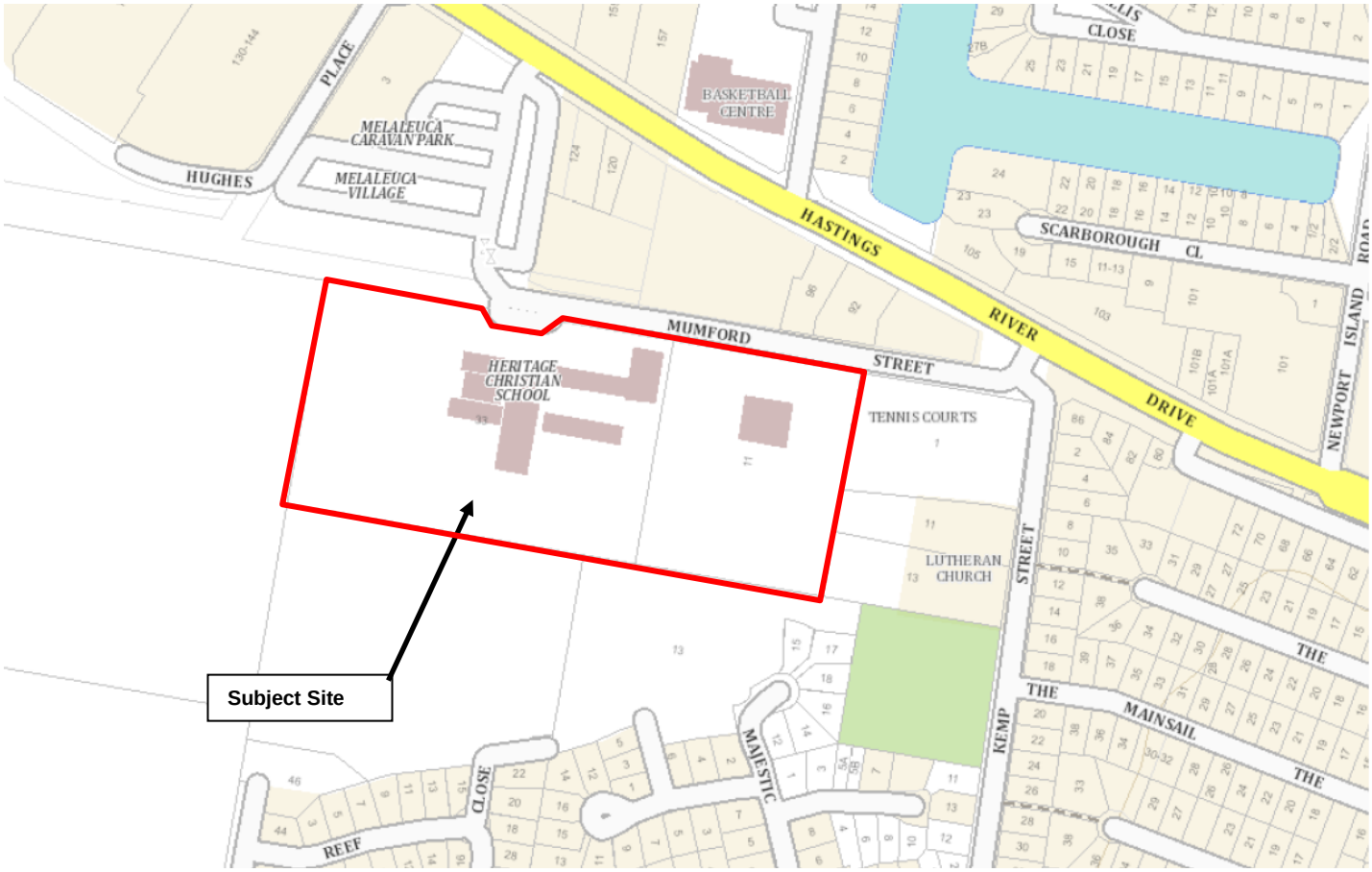
The findings referred to in this report are those which, in the opinion of the author, are required to meet the requirements of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2006 or 2018. It should be noted that the Local Authority having jurisdiction for the area in which the property is located may, within their statutory powers, require different, additional or alternative works/requirements to be carried out other than those referred to in this report.

This report has been prepared partially on information provided by the client. Information provided by the client in respect of details of construction.

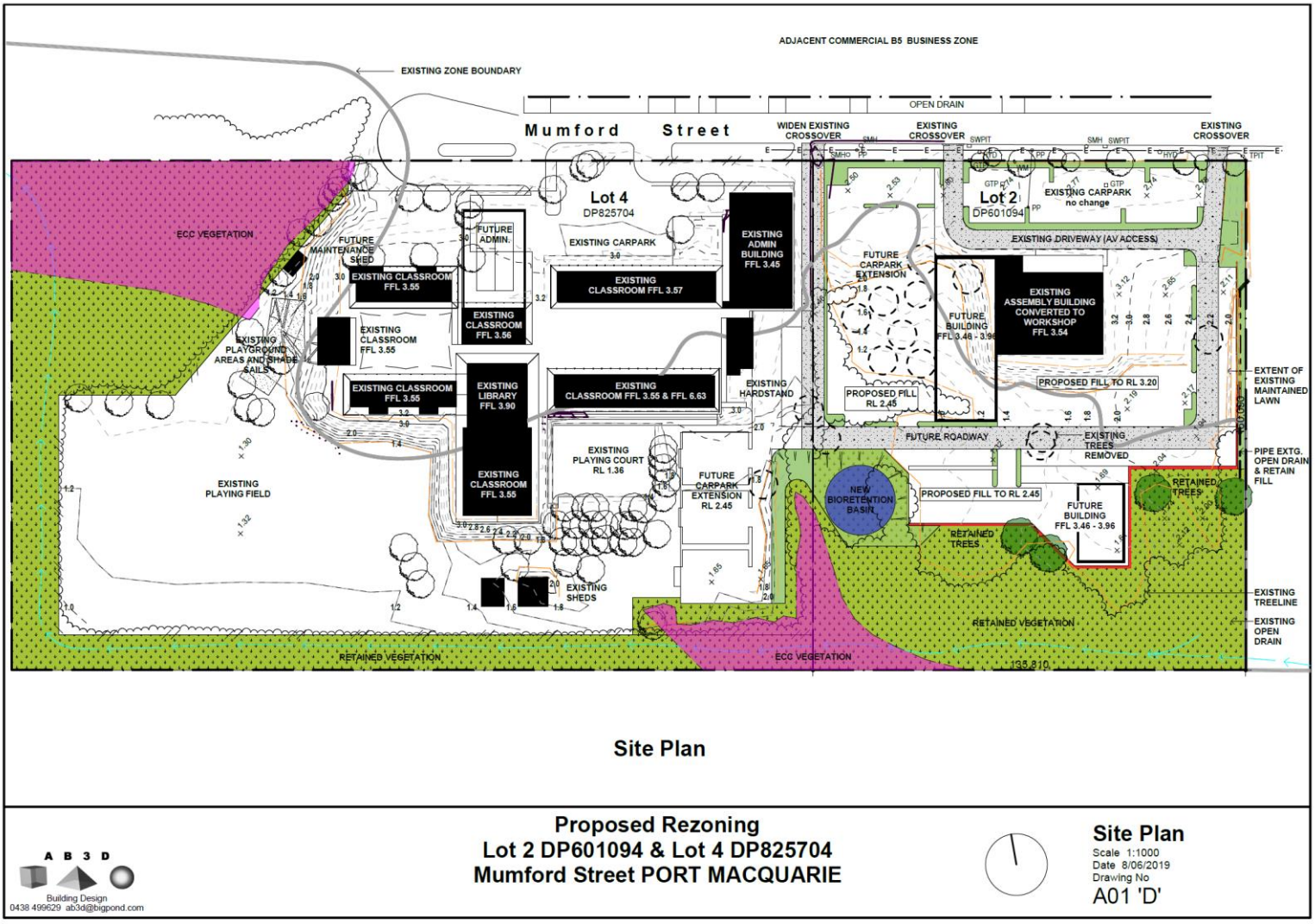
The author denies any legal liability for action taken as a consequence of the following:

- The Local Authority requiring alternative or additional requirements to those proposed or recommended in this report.
- Incorrect information, or misinformation, provided by the client with regard the proposed development which is in good faith included in the strategies proposed in this report and later found to be false.

APPENDIX 1
Subject Site



APPENDIX 2
Indicative Development Concept



Site Plan

A B 3 D
Building Design
0438 499629 ab3d@bigpond.com

Proposed Rezoning
Lot 2 DP601094 & Lot 4 DP825704
Mumford Street PORT MACQUARIE

Site Plan
Scale 1:1000
Date 8/06/2019
Drawing No
A01 'D'