Williamtown Special Activation Precinct

Bushfire Report

7 February 2022

Project No.: 0574306

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Document details	
Document title	Williamtown Special Activation Precinct
Document subtitle	Bushfire Report
Project No.	0574306
Date	7 February 2022
Version	01
Author	Joanne Woodhouse
Client Name	Department of Planning and Environment

Document history

				ERM approval to issue		
Version	Revision	Author	Reviewed by	Name	Date	Comments
Draft	00	Joanne Woodhouse	Karie Bradfield	Karie Bradfield	21/05/2021	Draft for DPE review
Draft	01	Joanne Woodhouse	Karie Bradfield	Karie Bradfield	24/11/2021	Revised draft based on updated structure plan for DPE review
Final	01	Joanne Woodhouse	Karie Bradfield	Karie Bradfield	7/02/2022	Final based on DPE review

Signature Page

7 February 2022

Williamtown Special Activation Precinct

Bushfire Report

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EXECUTIVE SUMMARY

This Bushfire Assessment has been prepared for the Department of Planning and Environment (DPE) to support the development of the Williamtown Special Activation Precinct (SAP) Masterplan. It has been designed to test the structure plan that was developed as part of a series of Enquiry by Design Workshops and aims to establish the relevant specifications and requirements to assist in the development of the masterplan.

This assessment considers the bushfire landscape, land use, access and egress and emergency services capacity. Based on these factors it is anticipated that new development within the precinct can be designed to meet the requirements of Planning for Bush Fire Protection 2019. Of particular note is the importance of future development to consider existing access and egress routes across the locality with key consideration of the Williamtown RAAF Base, Newcastle Airport and existing Special Fire Protection assets (retirement villages, schools and tourist attractions) surrounding the precinct to enable compliance with Planning for Bush Fire Protection 2019.

To streamline future building construction works it is intended to maximise the type and number of developments which can occur through complying development pathways under State Environmental Planning Policy (Activation Precincts) 2020 (the Activation Precincts SEPP). Complying development will not be applicable to all land use types or where a referral to the NSW RFS is required. The remaining commercial and industrial type development can addressed within the masterplan through the aims and objectives of Planning for Bush Fire Protection 2019. Specifically:

- Complying development is only permitted on lower risk bushfire prone land (BAL-29 or lower);
- Where hazardous industries are proposed, consultation with the NSW RFS and preparation of a performance based solution will be required. These development types will not be considered for complying development;
- developments classified as special fire protection purpose (SFPP) would trigger referral to the NSW Rural Fire Service under s100b Rural Fires Act 1997 and will not be considered complying development; and
- Other land uses such as places of public worship and other public assembly buildings (i.e. function centres) also require referral to the NSW RFS under s.4.14 of the EP&A Act. Any buildings used for public assembly with a floor space area of greater than 500m² will be treated as SFPP and complying development is not permitted.

Noting that the legislative pathway for the development of the masterplan includes a potential State Significant Development application, this may facilitate the development of SFPP as ‘complying development’ subject to meeting the relevant consent conditions. This would create a simplified pathway to support new development within the SAP, noting that a BAL certificate and Activation Precinct Certificate will still be required to accompany any application for development consent or complying development certification.

At a strategic level, the structure plan has taken into consideration the bushfire prone land mapping and new development within the precinct can be designed to meet the requirements of Planning for Bush Fire Protection 2019. This includes the creation of a central Environmental Protection Area which corresponds with the areas high bushfire hazard, and the provision of defendable space along its full perimeter (within the boundary of the SAP). These areas of defendable space include the perimeter road network, drainage channels and maintained public open space. All drainage channels, wetlands and landscaped areas should be designed and managed to meet the requirements of an APZ, and must be maintained in perpetuity to ensure ongoing protection from the impact of bush fires, particularly in advance of the bush fire season.

The development of the structure plan has also considered the application of suitable Asset Protection Zones across the precinct to result in a Bushfire Attack Level of:

- BAL 29 or lower to all the future building envelopes;
- BAL 12.5 or lower to all SFPP; and
- BAL 12.5 or lower to all potential hazardous industry.

The SAP may also require the creation of APZs that need to be maintained sequentially until the final phase of development is completed to afford each stage of the development the appropriate level of bush fire protection.

Key specifications and requirements to assist in the development of the masterplan are provided in Table E.1.

Table E.1 Proposed Performance Criteria – Bushfire

Performance Criteria No.	Performance Criteria Description
1	Asset Protection Zones are managed and maintained to prevent the spread of a fire within the precinct in accordance with the requirements of Appendix 4 of Planning for Bushfire Protection 2019 to result in a Bushfire Attack Level of BAL 29 or lower (not BAL 40 or BAL FZ) to all future building envelopes that are being assessed as complying development. This includes part of a staged or partial development of the Precinct.
2	Where referral to NSW RFS is required (SFPP, hazardous development and/or places of public worship), Asset Protection Zones should be managed and maintained to result in a Bushfire Attack Level of BAL 12.5 or lower (not BAL 29, BAL 40 or BAL FZ). These developments will not be assessed as complying development.
3	All landscaping is to comply with Appendix 4 of Planning for Bushfire Protection 2019 and relevant environmental approvals required under the NSW Biodiversity Conservation Act 2016 and/or Commonwealth Environment Protection and Biodiversity Conservation Act 1999. Where environmentally sensitive vegetation such as endangered ecological communities or threatened species habitat are to be cleared, the proposals will need to be carefully considered and may no longer be consistent with complying development.
4	Access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating as well as providing a safe operational environment for emergency service personnel during firefighting and emergency management on the interface. The requirements for access identified in Planning for Bushfire Protection 2019 must be met for all stages of development within the Special Activation Precinct.
5	Adequate water supplies are provided for firefighting purposes. Hydrants are to be installed to achieve compliance with AS 2419.1 – 2005 Fire Hydrant Installations - System Design, Installation and Commissioning (AS 2419) and must be located less than 70m from each building envelope.
6	The 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.
7	The location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings and must comply with requirements of Planning for Bushfire Protection 2019.

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Acronyms and Abbreviations

Name	Description
APZ	Asset Protection Zones
Asset	anything valued by the community which includes houses, crops, heritage buildings and places, infrastructure, the environment, businesses, and national parks, that may be at risk from bushfire.
Astra Aerolab	Astra Aerolab Business and Technology Park
AS 3959-2018	*Australian Standard 3959 - 2018 Construction of Buildings in Bushfire-prone Areas*
BAL	Bushfire Attack Level
Bushfire Hazard	the potential severity of a bushfire, which is determined by fuel load and topography under a given climatic condition
Bushfire Prone Land	**Vegetation Category 1** is considered to be the highest risk for bush fire. This vegetation category has the highest combustibility and likelihood of forming fully developed fires including heavy ember production. A 100m buffer is applied. **Vegetation Category 2** is considered to be a lower bush fire risk than Category 1 and Category 3 but higher than the excluded areas. This vegetation category has lower combustibility and/or limited potential fire size due to the vegetation area shape and size, land geography and management practices. A 30m buffer is applied. **Vegetation Category 3** is considered to be medium bush fire risk vegetation. A 30m buffer is applied.
Bushfire Prone Land Map	A map prepared in accordance with the NSW RFS Guide For Bush Fire Prone Land Mapping (2015) and certified by the Commissioner of the NSW RFS under section 146(2) of the Environmental Planning and Assessment Act 1979.
Bushfire Risk	the chance of a bushfire igniting, spreading and causing damage to the community or the assets they value
DAREZ	Defence and Aerospace Related Employment Zone
DPE	Department of Planning and Environment
EP&A Act	*NSW Environmental Planning and Assessment Act 1979*
ERM	Environmental Resources Management Australia Pty Ltd
GIS	Geographic Information System
ha	Hectare
kW/m^2	Kilowatts per metre squared
LGA	Local Government Area
NASH	National Association of Steel-framed Housing
NCC	National Construction Code
NSW	New South Wales
NPWS	National Parks and Wildlife Service
NSW RFS	NSW Rural Fire Service

Name	Description
PBP	Planning for Bushfire Protection 2019
RAAF	Royal Australian Air Force
RF Act	*NSW Rural Fires Act 1997*
RFS	Rural Fire Service
SAP	Special Activation Precinct
SFPP	"special fire protection purpose" means the purpose of the following: (a) a school, (b) a child care centre, (c) a hospital (including a hospital for the mentally ill or mentally disordered), (d) a hotel, motel or other tourist accommodation, (e) a building wholly or principally used as a home or other establishment for mentally incapacitated persons, (f) seniors housing within the meaning of State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 , (g) a group home within the meaning of State Environmental Planning Policy No 9--Group Homes , (h) a retirement village, (i) any other purpose prescribed by the regulations.

Note:

Despite the mitigation measures and treatments that are put in place, it is noted that some bushfire risk will always remain and that some of the infrastructure may be subject to direct flame contact. The absence of any identified hazard or asset within the Williamtown SAP should not be interpreted as a guarantee that such hazards or impacts do not exist. It will be important that a Bushfire Emergency Management Plan is prepared as part of the future masterplan in conjunction with relevant stakeholders, including local fire services, NSW RFS, NSW Fire and Rescue, RAAF Base Williamtown, Newcastle Airport, and adjoining property owners and employees.

Disclaimer:

Any representation, statement of opinion, or advice expressed or implied in the bushfire assessment will be made in good faith on the basis that ERM employees and / or agents are not liable (whether by reason of negligence, lack of care or any other reason) to any person, company or their agents for any damage or loss whatsoever which has occurred or may occur in relation to that person taking (or not taking) action in respect of any representation, statement or advice provided within the bushfire assessment.

1. INTRODUCTION

Environmental Resources Management Australia Pty Ltd (ERM) has been engaged by the Department of Planning and Environment (DPE) to undertake a program of environmental and heritage studies to support the development of the Williamtown Special Activation Precinct (SAP) Masterplan. This report addresses the bushfire planning considerations and identifies the constraints and opportunities for the future development of the SAP (refer to Figure 1.1)

It has been designed to test the structure plan that was developed as part of a series of Enquiry by Design Workshops and aims to establish the relevant specifications and requirements to assist in the development of the masterplan. This document is for design purposes only and has not been prepared to support any development application process.

1.1 Project Background

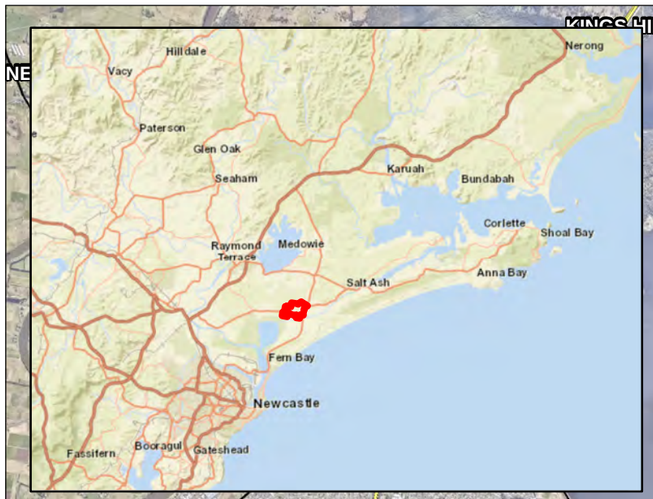
Funded by the Snowy Hydro Legacy Fund, a Special Activation Precinct is a dedicated area in regional NSW identified by the NSW Government as places where business will thrive. They will create jobs, attract investors and fuel development. The precincts will support industries in line with the competitive advantages and economic strengths of each area.

The new Williamtown SAP will help to create a defence and aerospace hub, boost the local economy and generate thousands of new jobs for the region. It will build on the Hunter region's history of supporting Australia's defence industry and emerging aerospace industry around the Royal Australian Air Force (RAAF) base as well as its proximity to air, road, rail and sea transport.

It aims to build on the NSW Government's existing investment into the Astra Aerolab and create highly-skilled, long-term job opportunities that will attract investors, and strengthen the region's economy. The Special Activation Precinct planning process will deliver coordinated and precinct-wide approach to addressing historical land constraints including flooding and drainage, which have acted as a barrier to development in the past.

The new State Environmental Planning Policy – Activation Precincts SEPP and the masterplan will replace existing planning instruments. It will provide for environmental protection and performance, land uses and planning pathways. The goal is to undertake upfront assessment at a strategic level so industry and the community have certainty and clarity about what types of land uses and development can occur where. The draft masterplan is expected to go on public exhibition for comments and feedback in the first half of 2022.

It is important to note that despite the mitigation measures and treatments that are put in place, some bushfire risk will always remain and that some of the infrastructure may be subject to direct flame contact. It will be important that a Bushfire Emergency Management Plan is prepared as part of the masterplan in conjunction with relevant stakeholders, including local fire services, NSW RFS, NSW Fire and Rescue, Williamtown RAAF Base, Newcastle Airport and adjoining property owners and employees.



KINGS HILL

NE

Medowie State Conservation Area

MEDOWIE

Moffats Swamp Nature Reserve

Gir-um-bit State Conservation Area

Gir-um-bit National Park

OYSTER COVE

TILLIGERRY CREEK

BOBS FARM

Tilligerry National Park

RAYMOND TERRACE

CAMPVALE

Tilligerry State Conservation Area

HEATHERBRAE

TOMAGO SANDBEDS

SALT ASH

Worimi National Park

WILLIAMTOWN

TOMAGO

Worimi State Conservation Area

FULLERTON COVE

Hunter Wetlands National Park

Worimi Regional Park

FERN BAY

Legend

- Structure Plan Boundary
- Highway
- Main Road
- Minor Road
- National Park
- Nature Reserve
- Regional Park
- State Conservation Area

Source:
Port Stephens LGA DCBD, DTBD 2020
Imagery - Nearmap November 2021
ESRI World Street Map

Locality

F1-1

Drawing No:	0574306s_WSAP3_BF_G008_R1.mxd		Williamtown SAP
Date:	02/02/2022	Drawing Size: A3	
Drawn By:	VN	Reviewed By: JW	Client: Department of Planning, Industry and

Coordinate System: GDA 1994 MGA Zone 56

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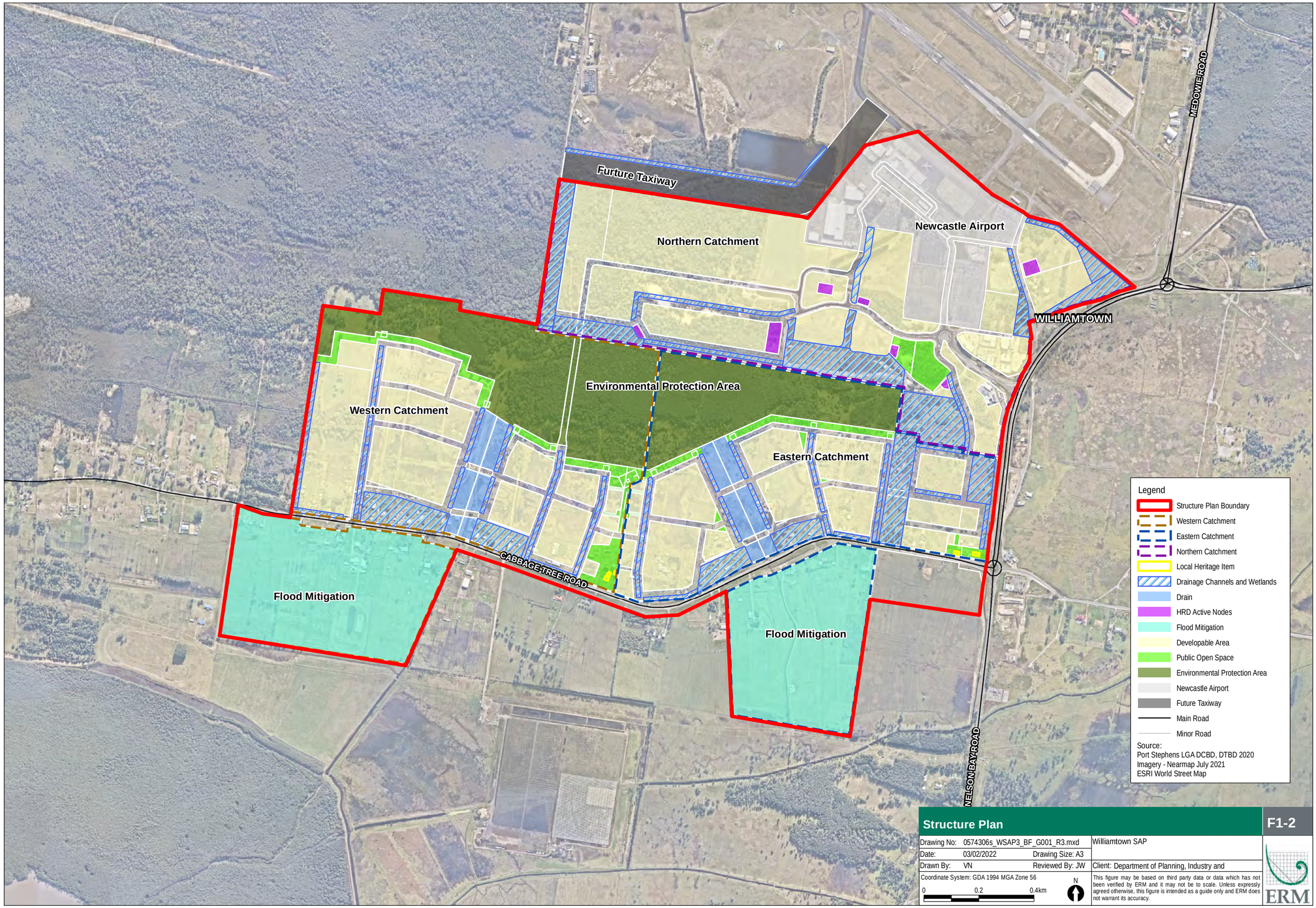
1.2 Structure Plan

The Williamtown SAP Structure Plan has been defined through detailed assessment by ERM ecologists, noise and air quality specialists as well as engineers, stakeholders and urban planners. In close collaboration with DPE these technical experts and stakeholders tested and refined scenarios and ideas, and worked through each site constraint in order to create the Structure Plan (refer to Figure 1.2).

The Williamtown SAP covers 395.4 hectares (ha) of land within the Port Stephens Local Government Area (LGA). It is centred on the Williamtown Aerospace Precinct and includes:

- Newcastle Airport;
- The DAREZ (Defence and Aerospace Related Employment Zone):
  - Astra Aerolab Business and Technology Park (Astra Aerolab);
  - Williamtown Aerospace Centre including 1 Technology Place and Precinct 52;
- Rural and agricultural land; and
- Small residential clusters (Williamtown).

Key land uses that would be included within each of the precincts as considered in this assessment are listed in Section 4.



Structure Plan

F1-2

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Drawn By:	VN	Reviewed By: JW	Client: Department of Planning, Industry and

Coordinate System: GDA 1994 MGA Zone 56

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1.3 Strategic Bushfire Planning

Bushfire presents a threat to human life and assets and can adversely impact ecological values. In planning for the use of land in the rural or urban context, it is important to consider the potential threat from bushfire. Bushfire risk is a major constraint to future development, and with the impacts of climate change already being observed, the need to address these issues as early as possible within the planning process is critical.

In accordance with the Section 4 of NSW RFS Planning for Bushfire Protection 2019, in bushfire prone areas strategic planning should provide for the exclusion of inappropriate development. Development should be avoided as follows:

- Where a development area is exposed to a high bushfire risk;
- Where a development is likely to be difficult to evacuate during a bushfire due to its siting in the landscape, access limitations, fire history and/or size and scale;
- Where the development will adversely affect other bushfire protection strategies or place existing development at increased risk;
- Where density of existing development may cause evacuation issues for both existing and new occupants; and
- Where the development has environmental constraints to the area which cannot be overcome.

This report provides an overview of the bush fire landscape, and also broadly identifies how the preferred scenario for the proposed masterplan can be designed to satisfy the aims and objectives of Planning for Bush Fire Protection 2019.

2. LEGISLATIVE AND POLICY CONTEXT

The NSW land use planning framework provides two main phases: strategic planning (the structure plan currently being assessed) and development assessment (future development in line with the delivery plan). The NSW RFS Planning for Bushfire Protection 2019 provides the foundation for bushfire protection during both of these phases of planning for development.

Of particular relevance to this assessment is consideration of complying and exempt development. It is understood that to streamline future building construction works it is intended to maximise the type and number of developments which can occur through complying development pathways under State Environmental Planning Policy (Activation Precincts) 2020 (the Activation Precincts SEPP).

The Activation Precincts SEPP requires a masterplan and delivery plan to be prepared prior to development commencing. The legislative pathway for the development of the Williamtown SAP also includes a potential State Significant Development application to support the delivery plan.

The Williamtown SAP will be included in the Activation Precinct SEPP as its own Schedule.

2.1 Section 100B Rural Fires Act 1997

Note: Section 100B Rural Fires Act 1997 would not be triggered if the delivery plan is approved as a State Significant Development under the EP& A Act.

Development for the purposes of residential accommodation is prohibited within the Williamtown SAP. Accordingly, subdivision that could lawfully be used for residential and or rural residential purposes will not occur, ensuring that the requirement for a Section 100b Certificate will not be triggered for that purpose.

Development of bushfire prone land for a Special Fire Protection Purpose (SFPP) also triggers referral to the NSW Rural Fire Service under s100b Rural Fires Act 1997 and cannot be considered ‘complying development’ under any environmental planning instrument in a bush fire prone area.

"Special Fire Protection Purpose" means the purpose of the following:

a) a school,

b) a child care centre,

c) a hospital (including a hospital for the mentally ill or mentally disordered),

d) a hotel, motel or other tourist accommodation,

e) a building wholly or principally used as a home or other establishment for mentally incapacitated persons,

f) seniors housing within the meaning of State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004,

g) a group home within the meaning of State Environmental Planning Policy No 9--Group Homes,

h) a retirement village,

i) any other purpose prescribed by the regulations.

Note: Section 100B Rural Fires Act 1997 would not be triggered if the delivery plan is approved as a State Significant Development (and not integrated development) under the EP& A Act. This would facilitate the development of SFPP as ‘complying development’ subject to meeting the relevant consent conditions. This would create a simplified pathway to support new development within the SAP.

Under Section 63 of the RF Act, owners and occupiers of land have a duty to take practicable steps to prevent the occurrence of bushfires on, and to minimise the danger of the spread of bushfires on, or from, that land. This obligation will extend to the Williamtown SAP irrespective of the planning pathway.

2.2 Planning for Bushfire Protection 2019

Planning for Bushfire Protection 2019 (NSW Rural Fire Service, 2019) (PBP 2019) is a planning document to link responsible planning and development control with the protection of life, property and the environment. PBP 2019 was legislatively adopted in the Environmental Planning & Assessment Regulations 2000 on 1 March 2020. PBP 2019 is the culmination of significant investment in scientific research and policy development to provide appropriate bush fire protection whilst still having due consideration for development potential and economic sustainability.

Therefore, during development of the masterplan, consideration is given to the overall aims and objectives of PBP 2019 and the expectation will be that the future development will be able to comply with PBP 2019 at the project delivery stage.

2.3 Biodiversity Conservation Act 2016

Projects determined by a statutory authority of the NSW State Government are required to be assessed in accordance with the NSW Environmental Planning and Assessment Act 1979 (EP&A Act) and the Biodiversity Conservation Act 2016 (BC Act).

The BC Act requires the consideration of threatened species and their habitats in the developmental planning process and a responsibility of the proponent to determine potential impacts on listed species and Endangered Ecological Communities. Schedule 3 of the BC Act lists Key Threatening Processes for species, populations and ecological communities within NSW. 'Clearing of native vegetation', 'high frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition', and 'removal of dead wood and dead trees', are listed by the BC Act as Key Threatening Processes and need to be carefully considered and managed when implementing fire management activities.

2.4 Australian Standard 3959 –2018 Construction of buildings in bushfire-prone areas

Australian Standard 3959 –2018 Construction of buildings in bushfire-prone areas (AS3959:2018) provides for six (6) levels of building construction these being BAL -Low, BAL -12.5, BAL -19, BAL -29, BAL -40 and BAL -FZ. The Australian Standard 3959 specifies construction standards for buildings as determined by the Bushfire Attack Levels.

3. THE BUSHFIRE ENVIRONMENT (LANDSCAPE ASSESSMENT)

In accordance within Planning for Bush Fire Protection 2019, this landscape assessment considers the likelihood of a bushfire, its potential severity and intensity and the potential impact on life and property in the context of the broader surrounding landscape and includes consideration of vegetation, topography, weather, history of bushfire in the area; and the difficulty in accessing and suppressing a fire.

3.1 Bushfire Prone Land Mapping

Bushfire prone land is land that has been identified by local council which can support a bushfire or is subject to bushfire attack. Bushfire prone land maps are prepared by local council and certified by the Commissioner of the NSW RFS. A review of the Port Stephens Council mapping shows that the entire precinct (excluding the existing Newcastle Airport) is mapped as containing Category 1, 2 or 3 vegetation or their associated buffer zones (refer to Figure 3.1).

This map is the trigger for the consideration of bush fire protection measures for all development, including the Williamtown SAP.

3.2 Vegetation

Vegetation growth can be encouraged by periods of wet weather, increasing the amount of fuel available (grass, leaf litter, twigs, bark). When the weather is hot, the humidity is low, and there has been little recent rain, this vegetation dries out and becomes more flammable. A fire is more likely to start, and continue to burn, in hot, dry and windy weather.

For the purposes of this bushfire assessment, the vegetation within the precinct has been simplified in line with the vegetation formations as per Keith (2004). The vegetation types have been classified into fuel groups using the following parameters (refer to Table 3.1):

- frequency that the vegetation provides ‘available fire fuel’;
- structure of the vegetation and the ability of ground level fuels to carry fire into higher vegetation levels eg. from understorey into crown fire;
- arrangement of the fuel within the vegetation type, eg fine fuels that are elevated, such as in heath, contribute more to fire intensity than a similar quantity of leaf litter fuel; and
- amount of fuel that accumulates after a long period without fire.

Based on the layout of the structure plan as depicted in Figure 1.2, the vegetation that will have the greatest influence on bushfire behaviour within precinct is the areas of retained Coastal Swamp Forest within the central environmental protection area and the large areas of Forested Wetlands within the Hunter Water owned lands (and Tilligerry State Conservation Area) to the north and west (outside of the SAP). These areas tend to have continuous fuels that are available to burn during average seasons. They are highly combustible and the regional climatic conditions (see Section 0 - low rainfall, low humidity, high temperatures and high winds) may support crown fires.

While not identified as a native vegetation community, grassfires should not be underestimated and can start and spread quickly. They can travel up to 25 km per hour and pulse even faster over short distances. Grassfires tend to be less intense and produce fewer embers than bushfires, but still generate enormous amounts of radiant heat. Grassfires can also start earlier in the day than bushfires, because grass dries out more quickly when temperatures are high and humidity is low. It should be assumed that, under the most extreme weather, a fire would spread even in heavily grazed paddocks and embers may breach any asset protection zone.

Table 3.1 Description and Characteristics of Fuel Groups within the Precinct

PCT	PCT Name	Description and Fuel Characteristics*	surface fuel load* (t/ha)	total fuel load* (t/ha)
Keith (2004) Vegetation Formation: Coastal Dune Dry Sclerophyll Forest				
1646	Smooth-barked Apple - Blackbutt - Old Man Banksia woodland on coastal sands of the Central and Lower North Coast	Trees 30 m high; 30%–70% foliage cover (may include understorey of sclerophyllous low trees or shrubs). Typically dominated by eucalypts, melaleuca or callistemon (may include riverine and wetland environments) and callitris. Fuel accumulation is rapid in dry sclerophyll forest. Potential conflicts between management strategies for fuel reduction and biodiversity conservation in these forests can be resolved through careful landscape level planning.	22	36.1
1637	Scribbly gum - Wallum Banksia - Prickly-leaved Paperbark heathy coastal woodland on coastal lowlands			
Keith (2004) Vegetation Formation: Forested Wetland _Coastal Swamp Forest				
1724	Broad-leaved Paperbark - Swamp Oak - Saw Sedge swamp forest on coastal lowlands of the Central Coast and Lower North Coast	Trees 30 m high; 30%–70% foliage cover (may include understorey of sclerophyllous low trees or shrubs). Typically dominated by eucalypts, melaleuca or callistemon (may include riverine and wetland environments) and callitris. Fuel accumulation is rapid in dry sclerophyll forest. Potential conflicts between management strategies for fuel reduction and biodiversity conservation in these forests can be resolved through careful landscape level planning.	22	36.1
1729	Swamp Oak swamp forest on coastal lowlands of the Central Coast and Lower North Coast			
1725	Swamp Mahogany - Broad-leaved Paperbark - Swamp Water Fern - Plume Rush swamp forest on coastal lowlands of the Central Coast and Lower North Coast			
Keith (2004) Vegetation Formation: Forested Wetland				
1651	Parramatta red gum - Fern-leaved banksia - Melaleuca sieberi swamp woodland of the Tomaree Peninsula	Modified landscapes, coastal wetlands and riparian areas vary significantly in structure and composition, but are generally considered as bush fire hazards, with the exception of saline wetlands.	8.2	15.1

**Planning for Bushfire Protection (NSW Rural Fire Service, 2019)*

3.3 Topography

Steeper slopes significantly increase the rate of spread of fires, and the relationship of the steepness of slope, and whether a fire moves upslope or downslope, is vital to understanding bushfire behaviour potential. For every 10 degree slope, the fire will double its speed. Slope and wind are often the major factors determining the direction of fire spread.

The Precinct is characterised low lying relatively level topography that is not a major contributor to bushfire behaviour within the locality although it does still influence the classification and mapping of bushfire hazards. Generally the precinct was found to be located on relatively flat ground with some minor localised undulations around watercourses and high points. The slope that would most significantly affect bushfire behaviour must be assessed for at least 100 metres and is measured under the hazard (vegetation). For the purposes of this assessment, slope has been assessed as flat/upslope and 0-5 degrees (refer to Figure 3.3).

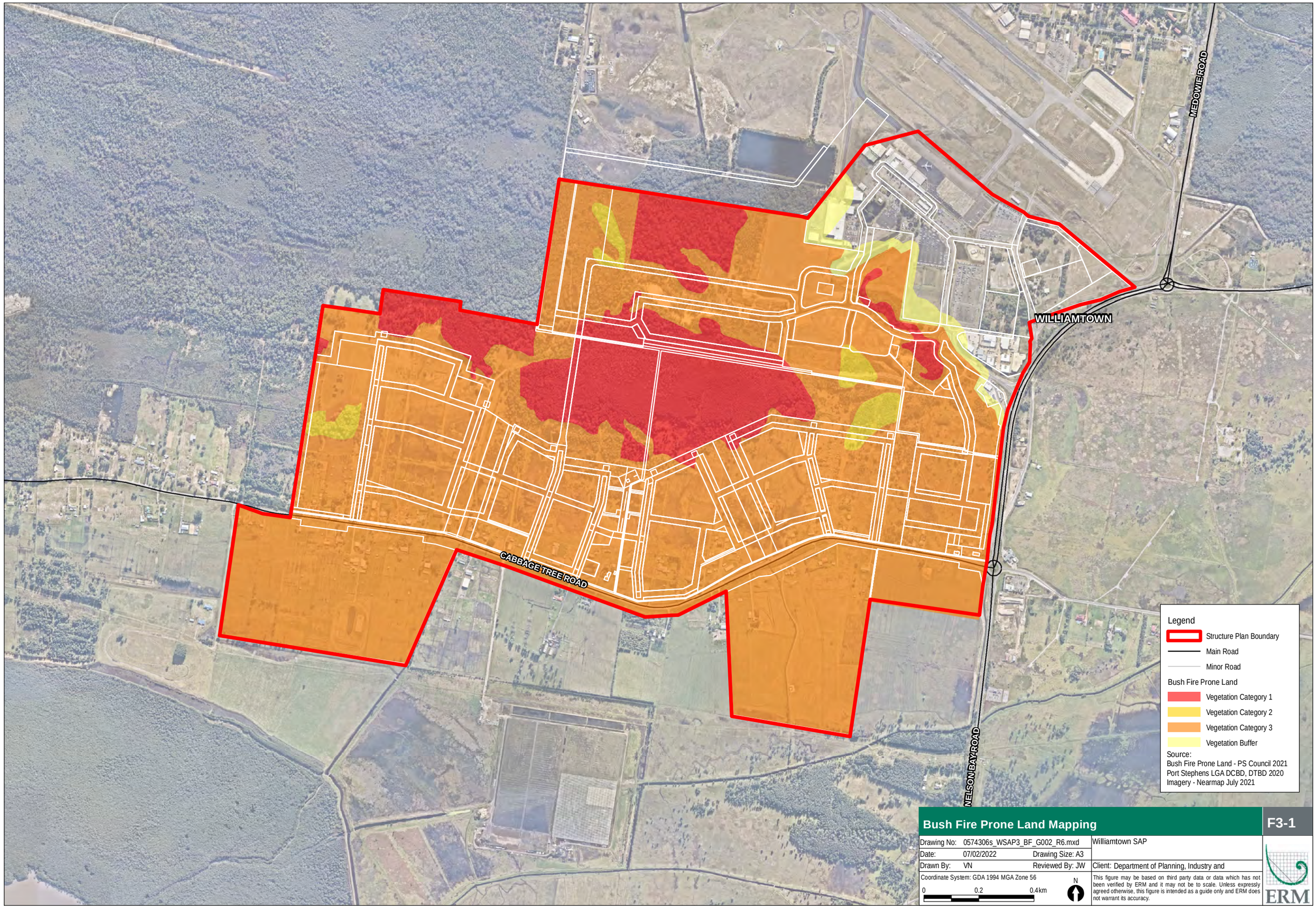
3.4 Fire History within the Landscape

Based on a review of the publically available information, bushfires occur in most years in this district, and natural ignitions such as lightning strikes are likely and historically common across the region. Human induced ignitions (both accidental and arson) are also known to occur across the region.

As reported by Lower Hunter BFRM (Lower Hunter Bushfire Management Committee, 2009), arson is on the increase and is common mainly in high visitation areas, and during school holidays. During summer months the population increases due to tourism and this, combined with urban growth, is a possible contributing factor.

The region has on average 200 bushfires per year, of which 3 on average can be considered to be major fires (Lower Hunter Bushfire Management Committee, 2009). A review of the NSW RFS Fire History Mapping available via SEED maps shows 32 fires within the broader landscape during the past 20 years (refer to Figure 3.4). Of these, five were greater than 1,000 hectares and burned for over 7 days.

A summary of the publically available information for all major fires within the surrounding landscape is presented in Appendix B.



Bush Fire Prone Land Mapping

F3-1

Drawing No:	0574306s_WSAP3_BF_G002_R6.mxd		Williamtown SAP
Date:	07/02/2022	Drawing Size: A3	
Drawn By:	VN	Reviewed By: JW	Client: Department of Planning, Industry and

Coordinate System: GDA 1994 MGA Zone 56

0 0.2 0.4 km

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Coastal Dune Dry Sclerophyll Forest

Coastal Swamp Forest

Freshwater Wetland

MEDOWIE ROAD

WILLIAMTOWN

CABBAGE TREE ROAD

NELSON BAY ROAD

Legend

- Structure Plan Boundary

Coastal Dune Dry Sclerophyll Forest

- 1637 Scribbly gum - Wallum Banksia - Prickly-leaved Paperbark heathy coastal woodland on coastal lowlands
- 1646 Smooth-barked Apple - Blackbutt - Old Man Banksia woodland on coastal sands of the Central and Lower North Coast
- 1647 Red Bloodwood - Smooth-barked Apple heathy woodland on coastal sands of the Central and lower North Coast

Coastal Swamp Forest

- 1724 Broad-leaved Paperbark - Swamp Oak - Saw Sedge swamp forest on coastal lowlands of the Central Coast and Lower North Coast
- 1725 Swamp Mahogany - Broad-leaved Paperbark - Swamp Water Fern - Plume Rush swamp forest on coastal lowlands of the Central Coast and Lower North Coast
- 1729 Swamp Oak swamp forest on coastal lowlands of the Central Coast and Lower North Coast

PCT_code

- 1718 Swamp Mahogany - Flax-leaved Paperbark swamp forest on coastal lowlands of the Central Coast
- 1721 Swamp Mahogany - Broad-leaved Paperbark - Saw Sedge - Yellow Marsh Flower swamp forest of coastal lowlands

Forested Wetland

- 1651 Parramatta red gum - Fern-leaved banksia - Melaleuca sieberi swamp woodland of the Tomaree Peninsula

Freshwater Wetland

- 1704 Fern-leaf Banksia - Prickly-leaved Paperbark-Tantoon - Leptocarpus tenax wet heath on coastal sands of the Central Coast and lower North Coast
- 1734 Wallum Bottlebrush - Leptocarpus tenax - Baloskion pallens Wallum sedge heath of the lower North Coast
- Main Road
- Minor Road

Source:
Vegetation - ERM 2021, Jacobs 2016
Port Stephens LGA DCBD, DTBD 2020
Imagery - Nearmap July 2021

Vegetation Classification

F3-2

Drawing No:	0574306s_WSAP3_BF_G003_R5.mxd		Williamtown SAP
Date:	03/02/2022	Drawing Size: A3	
Drawn By:	VN	Reviewed By: JW	Client: Department of Planning, Industry and

Coordinate System: GDA 1994 MGA Zone 56

0 0.2 0.4km

N

ERM

MEDOWIE ROAD

WILLIAMTOWN

10m

CABBAGE TREE ROAD

2m

2m

NELSON BAY ROAD

Legend

- Structure Plan Boundary
- Contours
- Main Road
- Minor Road
- Spotheight

Slope (degree)

- <0.5
- 0.5 - 1
- 1 - 2
- 2 - 5

Source:
Port Stephens LGA DCBD, DTBD 2020
Imagery - Nearmap July 2021

Topography and Elevation

F3-3

Drawing No:	0574306s_WSAP3_BF_G004_R5.mxd		Williamtown SAP
Date:	07/02/2022	Drawing Size: A3	
Drawn By:	VN	Reviewed By: JW	Client: Department of Planning, Industry and

Coordinate System: GDA 1994 MGA Zone 56

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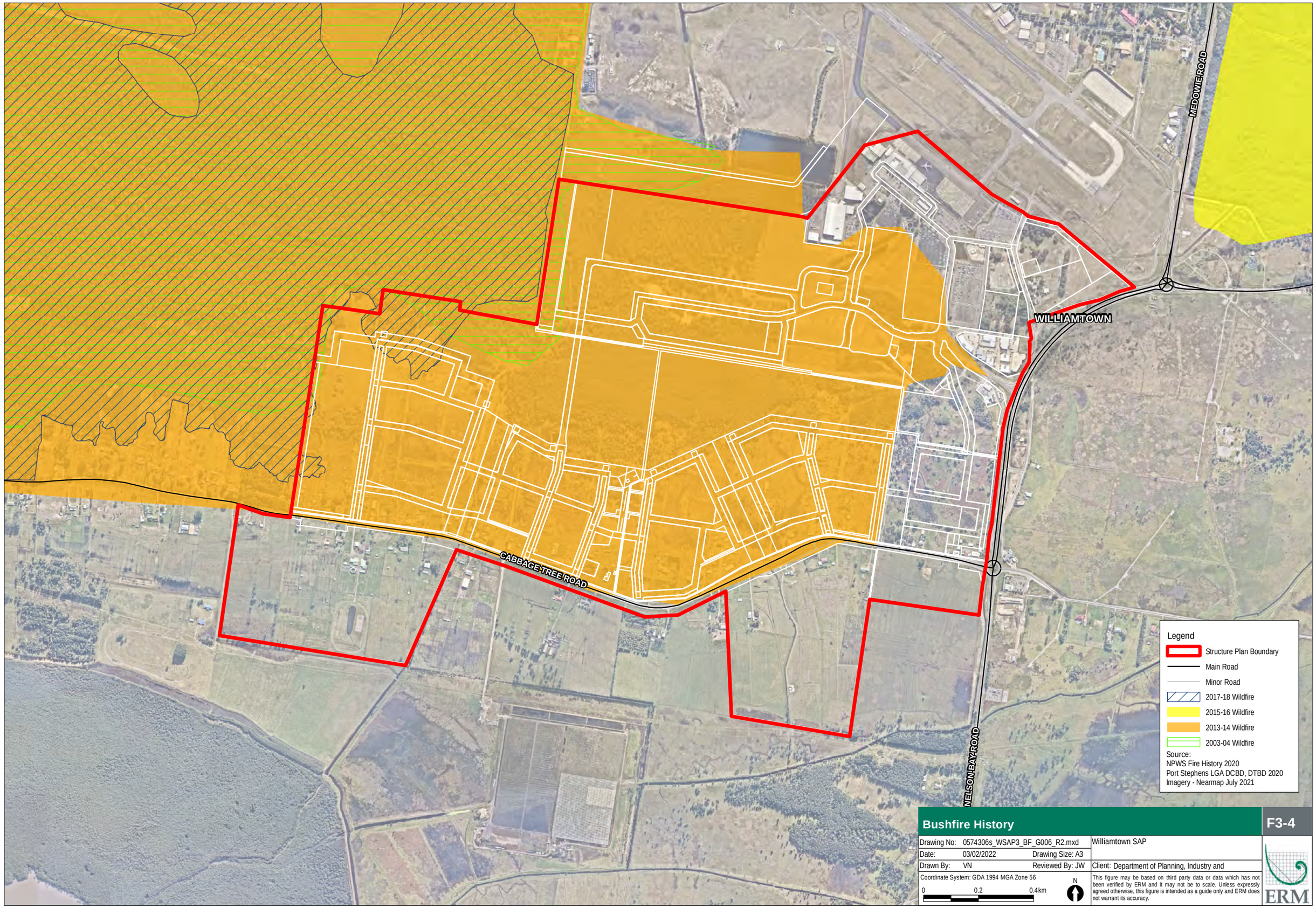
ERM



Bushfire History

F3-4

Drawing No:	0574306s_WSAP3_BF_G006_R2.mxd		Williamtown SAP
Date:	03/02/2022	Drawing Size: A3	
Drawn By:	VN	Reviewed By: JW	Client: Department of Planning, Industry and

Coordinate System: GDA 1994 MGA Zone 56

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3.5 Climate and Fire Weather

Weather conditions influence the size, intensity, speed, and predictability of bushfires and how dangerous they can be to the community. While bushfires can happen at any time of the year in Australia, the time of peak bushfire activity varies across the country with the changes in the seasonal weather patterns. As described by the Bureau of Meteorology (BOM) (2020), the greatest danger occurs following a dry winter and spring (as seen in 2019). The worst conditions occur when deep low-pressure systems near Tasmania bring strong, hot and dry, westerly winds to the coastal districts. The end of the fire season is determined by the onset of moister conditions, sometimes the result of a tropical cyclone developing near the Queensland coast.

Prevailing weather associated with the bushfire season, as reported by the Lower Hunter Bushfire Management Committee (BFMC) (BFMC, 2009), are north westerly winds accompanied by high daytime temperatures and low relative humidity during summer. There are also frequent dry lightning storms occurring throughout the region during the bushfire season. The winds during thunderstorms can make it hard to predict the behaviour and movement of a bushfire.

Strong gusty winds help fan the flames and cause a fire to spread faster across the landscape. Strong winds can carry hot embers long distances - these can start spot fires many kilometres ahead of the main fire front. Smoke attributed to bushfire can also have a major impact on various assets and the environment. Wind direction, fuel moisture content, and ignition source should be considered and managed to reduce the likelihood of smoke issues.

Data from the Bureau of Meteorology weather stations (Williamtown RAAF Station ID. 061078) confirms that both low humidity and high temperature occur within the bushfire season and would contribute to the fire hazard within this region (Figure 3.5).

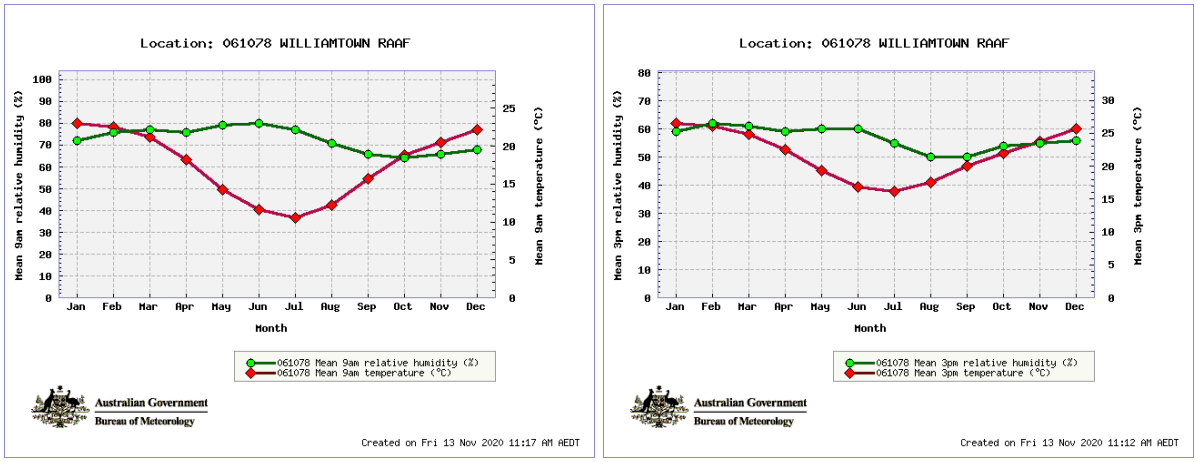


Figure 3.5 Low humidity and high temperature within the bushfire season (BOM, 2020)

3.6 Climate Change and Bushfires

Eastern Australia is documented to be one of the most bushfire-prone areas in the world. As reported by the Bureau of Meteorology (BOM 2020 http://www.bom.gov.au/weather-services/fire-weather-centre/bushfire-weather/index.shtml), human induced climate change is influencing the frequency and severity of dangerous bushfire conditions in Australia and other regions of the world, influencing temperature, environmental moisture, weather patterns, and fuel conditions. Observed changes in southern and eastern Australia include more extreme conditions during summer, as well as an earlier start to the bushfire season with dangerous weather conditions occurring significantly earlier in spring than they used to.

While climate change might not ignite the fire, it is giving fires the chance to turn into catastrophic fires by creating warmer temperatures, increasing the amount of fuel (dried vegetation) available, and reducing water availability due to higher evaporation. In relation to fire ignition, there is some indication that human induced climate change could also influence the risk of ignitions from dry-lightning (i.e., lightning that occurs without significant rainfall).

It is important to recognise within the Williamtown SAP masterplan that bushfire weather conditions in future years are projected to increase in severity for many regions including Port Stephens. This will result in:

- an earlier start to the bushfire season;
- reduced opportunities for fuel reduction burning;
- management of fire risk to property, people and biodiversity will become increasingly challenging; and
- an increase in the number of extreme fire danger days.

3.7 Suppression and fire response difficulties

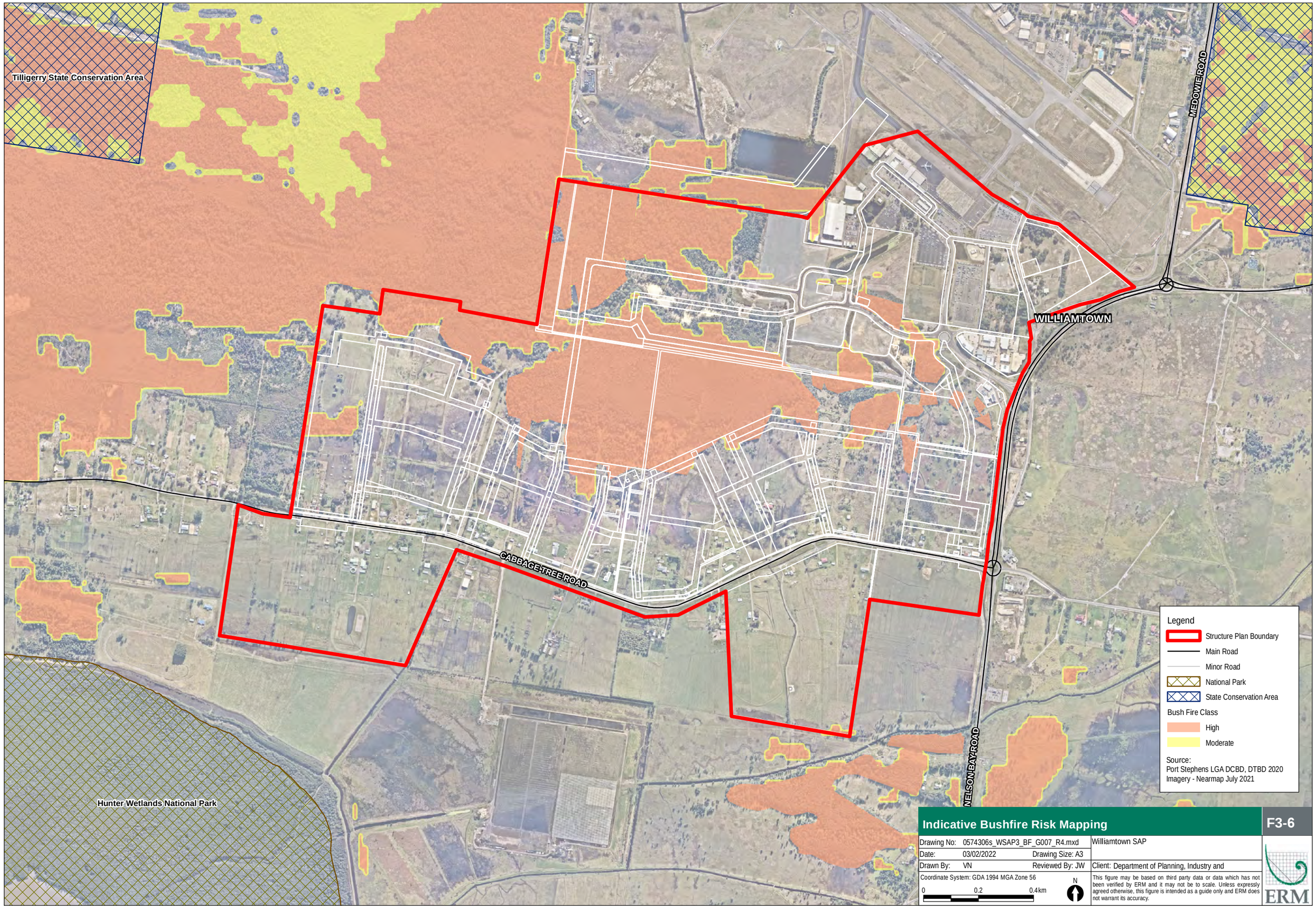
Fragmentation of the landscape due to existing disturbance and infrastructure provide fire suppression control options within the SAP. While not mapped at this scale, asset protection zones have been established around existing individual assets within the Newcastle Airport. They are also a requirement for all residential, special fire protection development and most other assets that require protection from bushfires. The landscape also includes the following major public roads that would be used in the event of an emergency evacuation (noting that other minor roads would also be used as required).

- Nelson Bay Road is a major connection between Newcastle and the Newcastle Airport, RAAF base, and Nelson Bay used by a large number of motorists each day (and increases during holiday periods); and
- Other major roads include Richardson Road, Cabbage Tree, Tomago Road, Masonite Road, and Lemon Tree Passage Road.

New fire ignitions are likely to be detected quickly due to the generally flat topography of the project area reducing visual barriers to observers, proximity to Newcastle airport, and the presence of a major roads.

3.8 Summary

The Williamtown SAP is located within a bushfire prone landscape with a history of major fire events. As identified in Figure 3.6, the vegetation that will have the greatest influence on bushfire behaviour within precinct is the areas of retained Coastal Swamp Forest within the central environmental protection area and the large areas of Forested Wetlands within the Hunter Water owned lands (and Tilligerry State Conservation Area) to the north and west (outside of the SAP). These areas tend to have continuous fuels that are available to burn during average seasons. They are highly combustible and the regional climatic conditions may support crown fires. To mitigate this identified bushfire risk and support other environmental objectives the majority of this high bushfire risk area within the SAP has been allocated for environmental protection with limited to no development occurring in these areas.



Indicative Bushfire Risk Mapping

F3-6

Drawing No:	0574306s_WSAP3_BF_G007_R4.mxd		Williamtown SAP
Date:	03/02/2022	Drawing Size: A3	
Drawn By:	VN	Reviewed By: JW	Client: Department of Planning, Industry and

Coordinate System: GDA 1994 MGA Zone 56

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4. LAND USE ANALYSIS

The design of central environmental protection corridor presents a clear, well defined interface between the hazard and potential development within the SAP. This interface will be the focus of the bushfire mitigation measures, land use considerations and required setbacks (asset protections zones) although it is noted that some bushfire risk will always remain and it will be important that a Bushfire Emergency Management Plan is prepared in conjunction with relevant stakeholders.

4.1 Complying Development

It is understood that to streamline future building construction works it is intended to maximise the type and number of developments which can occur through complying development pathways under State Environmental Planning Policy (Activation Precincts) 2020 (the Activation Precincts SEPP). It would be expected and encouraged that the Williamtown SAP will have similar considerations for assessing applications located on bushfire prone land as those described in Part 5A, Division 4, Clause 5A.29 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008, which include the following:

5A.29 Development standards for bush fire prone land

(1) This clause applies—

(a) to all development specified in clause 5A.2(1) for this code that is to be carried out on a lot that is wholly or partly bush fire prone land, and

(b) in addition to all other development standards specified for this code.

Note - See clause 1.19A for additional provisions relating to bush fire prone land.

(2) The development may be carried out on the lot only if—

(a) the development conforms to the specifications and requirements of Planning for Bush Fire Protection that are relevant to the development, and

(b) (Repealed)

(c) the lot has direct access to a public road or a road vested in or maintained by the council, and

(d) a reticulated water supply is connected to the lot, and

(e) a fire hydrant is located less than 70m from the location on the lot of the proposed development, and

(f) mains electricity is connected to the lot, and

(g) reticulated or bottled gas on the lot is installed and maintained in accordance with AS/NZS 1596:2014, The storage and handling of LP Gas and the requirements of relevant authorities (such as the requirement that metal piping be used), and

(h) any gas cylinders on the lot that are within 10m of a dwelling—

(i) have their release valves directed away from the dwelling, and

(ii) are enclosed on the hazard side of the installation, and

(iii) have metal connections to and from the cylinders, and

(i) there are no polymer sheathed flexible gas supply lines to gas meters adjacent to any dwelling on the lot or an adjoining lot.

Note - The requirements relating to the construction of buildings in bush fire prone areas set out in the Building Code of Australia also apply.

At this masterplan phase, one of the important items is the ability for future complying development to provide suitable Asset Protection Zones to result in a Bushfire Attack Level of BAL 29 or lower (not BAL 40 or BAL FZ) to the future building envelopes in accordance with the requirements of Planning for Bush Fire Protection 2019.

The identification, application and management of asset protection zones is further considered in Section 5.2 and the structure plan provides some suitable areas for complying development across the SAP and within all catchments,

4.2 Special Fire Protection Purpose Development

The 'commercial' and 'research and development' land uses can permit several Special Fire Protection Purpose (SFPP) uses which would attract larger minimum required Asset Protection Zones and more onerous Bushfire Protection Measures. **Examples of SFPP developments relevant to the Williamtown SAP and the proposed land uses within the SAP are child care facilities, serviced apartments and accommodation; and potentially Information and Education Facilities.**

Information and education facilities are defined in the Standard Instrument (Local Environmental Plans) Order 2006 as a building or place used for providing information or education to visitors, and the exhibition or display of items, and includes an art gallery, museum, library, visitor information centre and the like. For the purposes of this assessment and in accordance with Section 8.3.11 of Planning for Bush Fire Protection 2019, any buildings used for public assembly with a floor space area of greater than 500m² will be treated as SFPP.

Other land uses such as places of public worship and other public assembly buildings (i.e. function centres) are not defined as SFPP under section 100B of the Rural Fires Act but do require referral to the NSW RFS under s.4.14 of the EP&A Act. For the purposes of this assessment and as outlined above, any buildings used for public assembly with a floor space area of greater than 500m² will also be treated as SFPP.

Commercial and industrial development is also captured by EP&A Act s.4.14 only where a manager's residence is included. Where no residential component is included, commercial and industrial development is addressed through the aim and objectives of Planning for Bush Fire Protection 2019.

A SFPP development is one which is occupied by people who are considered to be at-risk members of the community. In a bushfire event, these occupants may be more susceptible to the impacts of bushfire. Evacuating at-risk members of the community is more challenging because they may be physically or psychologically less able to relocate themselves or are unfamiliar with their surroundings.

Due to the potential vulnerable nature of the occupants, there is more reliance on the provision of a wider APZ and emergency management. The specific objectives for SFPP developments are to:

- minimise levels of radiant heat, localised 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 accommodate 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.

The identification, application and management of increased asset protection zones is further considered in Section 5.2. Even with the application of greater setbacks to the hazard, the structure plan has been designed to ensure that the bushfire hazard alone does not preclude SFPP development within the SAP although it is noted that the location of these sensitive land uses will be defined by a number of additional restrictions such as access capabilities, air quality, noise impacts and consideration of other planned facilities (co-location). With the recommended location of potentially hazardous industry within the western catchment, and potential noise impacts to the north, the most suitable location for SFPP would be within the eastern catchment. This also provides potential access and evacuation opportunities to both Cabbage Tree Road and Nelson Bay Road (to be assessed on a case by case basis as part of any future development application).

It is also important to note that development of bushfire prone land for a Special Fire Protection Purpose (SFPP) triggers referral to the NSW Rural Fire Service under s100b Rural Fires Act 1997 and cannot be considered 'complying development' under any environmental planning instrument. This would not be triggered if the delivery plan is approved as a State Significant Development under the EP& A Act. This would facilitate the development of SFPP as 'complying development' subject to meeting the relevant consent conditions. This does not negate the need for increased bushfire protection measures or consultation with the NSW RFS. A BAL certificate and Activation Precinct Certificate will still be required to accompany any application for development consent or complying development certification.

4.3 Hazardous Industry

Some developments are considered by their very nature to be hazardous, as much for their ability to start bushfires as their susceptibility to bushfire impacts. New developments of this nature should be avoided on bushfire prone land. However, it is also recognised that the entire Williamtown SAP precinct (excluding the airport) is mapped as being bushfire prone land. Therefore, where hazardous industries are proposed, consultation with the NSW RFS and preparation of a performance based solution will be required. These development types will also not be considered for complying development within the Williamtown SAP.

Hazardous industries include but are not limited to:

- power generating works;
- sawmills;
- junk yards;
- liquid fuel depots;
- hazardous industries/storage;
- chemical industries/storage;
- service stations;
- ammunition storage/manufacture; and
- fireworks manufacture/storage.

Hazardous and offensive industries (including hazardous and offensive storage establishments) are prohibited land uses within the Special Activation Precincts. These are types of industries and storage establishments that cannot comply with the conditions of their EPA licence, and present a risk to life, property and the environment. Refer to the Williamtown SAP Land Use Safety Considerations Study (Sherpa Consulting 2022) for further discussion on hazardous developments that are not suitable for the SAP.

Potentially hazardous development such as service stations that can comply with their license and conditions of consent, may be permitted within the Special Activation Precincts. Environmental Planning Policy No 33 – Hazardous and Offensive Development (SEPP 33) will continue to apply. As reported by Sherpa Consulting (2022), the preferred location for higher risk (potentially hazardous industries) users is the western catchment, with a transition to lower risk industries in the east and north of the SAP. Consultation with the NSW RFS and preparation of a performance based solution will be required.

It is also noted that resource recovery facilities may also be permitted in the SAP. These are defined as a building or place used for the recovery of resources from waste, including works or activities such as separating and sorting, processing or treating the waste, composting, temporary storage, transfer or sale of recovered resources, energy generation from gases and water treatment, but not including re-manufacture or disposal of the material by landfill or incineration. Consultation with the NSW RFS and preparation of a performance based solution will be required. Any detailed bushfire assessment should also consider the applicability of the DPE Hazardous Industry Planning and Assessment Papers (HIPAPs).

These development types will not be considered for complying development within the Williamtown SAP.

4.4 Commercial / Industrial Development

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. The NCC does not provide for any bush fire specific performance requirements for these particular classes of buildings and as such Australian Standard 3959 'Construction of buildings in bushfire-prone areas' does not apply as a set of 'deemed to satisfy' provisions.

In this case (and as outlined within Section 8.3.1 of Planning for Bushfire Protection 2019), 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 suitable emergency and evacuation (and relocation) arrangements for occupants of the development;
- 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; and
- provide for the storage of hazardous materials away from the hazard wherever possible.

Construction requirements for bush fire protection will need to be considered on a case-by-case basis. Where a manager's residence is included in the proposal for a commercial and industrial development it is captured by s4.14 of the EP&A Act (refer to Section 4.2).

Where no residential component is included, commercial and industrial development is addressed through the objectives of Planning for Bush Fire Protection 2019, being:

i. afford buildings and their occupants 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, minimises material ignition;

iv. ensure that appropriate operational access and egress for emergency service personnel and residents is available;

v. provide for ongoing management and maintenance of BPMs; and

vi. ensure that utility services are adequate to meet the needs of firefighters.

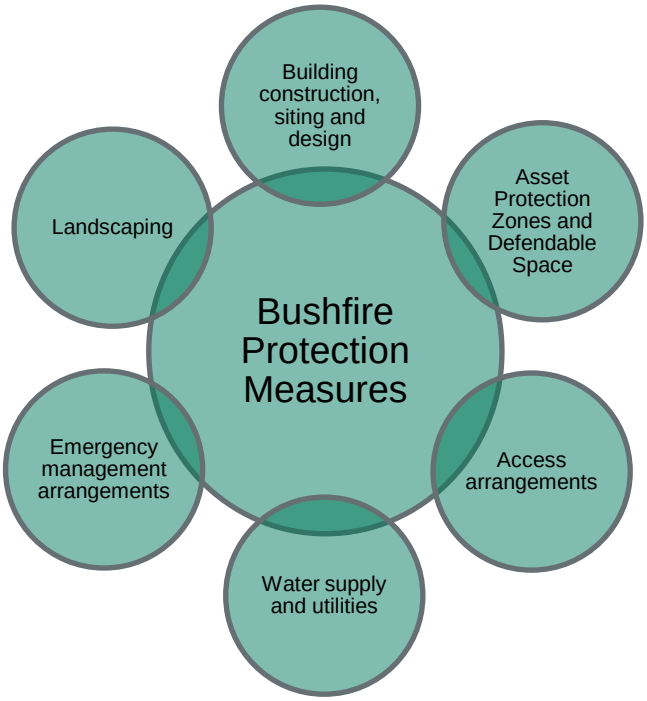
The scale of the development and numbers of people likely to be occupying the building will directly influence the bushfire protection measures. While there are no minimum required Asset Protection Zones applicable to commercial / industrial development to satisfy the aim and objectives of Planning for Bush Fire Protection 2019, the buildings must be located outside Flame Zone.

To satisfy the requirements of complying development, commercial and industrial development should have a Bushfire Attack Level of BAL 29 or lower (refer to Section 5.2).

5. OTHER CONSIDERATIONS

Development of the Williamtown SAP must ensure complementary bushfire management and mitigation strategies. Of particularly note is the importance to consider existing access and egress routes across the locality and ensure complementary management strategies with key consideration of the Williamtown RAAF Base, Newcastle Airport and existing Special Fire Protection assets (retirement villages, schools and tourist attractions) surrounding the precinct.

The capacity of the current road network to deal with increased traffic volumes associated with the development of the SAP including evacuating residents and workers is being addressed separately within the Traffic and Transport Report (Aurecon 2021).



5.1 Firefighter and Public Safety

The firefighters likely to respond to a bushfire in this area would be volunteers from the NSW RFS and/or individual property owners. Based on the locality of the site, NSW RFS may also work closely with the Fire and Rescue NSW, NSW NPWS and the Department of Defence in the event of any major fires in this area.

These agencies and groups work together through local bushfire management committees across NSW. Set up under the NSW RF Act, these committees coordinate fire management planning, prevention and suppression in local areas. As an example of the co-ordinated approach to bushfire management within this region, during the recent 2019/2020 fire season RAAF Base Williamtown was providing refuelling and water re-supply support to a large aerial tanker from the NSW RFS.

NSW Police, NSW Ambulance and the NSW State Emergency Services will also assist in active support roles in bush fire and emergency incidents. Emergency service capacity may need to expand to meet suppression requirements based on the type, nature and size of development within the SAP over the coming years. Once the scale and type of development is known, a decision to scale up emergency resources in the region may be required.

5.2 Asset Protection Zones and Defendable Space

An APZ is a buffer zone between a bushfire hazard and buildings, and is managed to minimise fuel loads and reduce potential radiant heat levels, flame, localised smoke and ember attack. The appropriate APZ distance is based on vegetation type, slope and the nature of the development (refer to Appendix A).

The APZ can include roads, fences, boardwalks, signage, seating or other passive recreational activities managed to be consistent with the NSW RFS document Standards for Asset Protection Zones. A fuel-reduced, physical separation between buildings and bushfire hazards is a key element in the suite of bushfire measures and has a major influence on the type of construction necessary to mitigate bushfire attack.

Irrespective of the bushfire prone land mapping, it is important to ensure that a defendable space is provided for the size and scale of the development. Proposed measures must operate in combination to minimise the impact of bushfire and ensure that access and services are adequate. At this stage of the masterplan process, it is important to highlight the need to provide suitable Asset Protection Zones across the precinct to result in a Bushfire Attack Level of:

- BAL 29 or lower to all the future building envelopes;
- BAL 12.5 or lower to all SFPP; and
- BAL 12.5 or lower to all hazardous industry.

As much of Precinct is located on the bush-urban interface, consideration should also be given to the DPE Fire Management Manual which highlights the complexities of managing fires along the interface.

5.3 APZs on Environmentally Protected Lands

Bushfire protection measures such as asset protection zones may not necessarily be compatible with environmental protection and conservation objectives. It must not be assumed that an asset protection zone can extend into an adjoining vegetated area, riparian corridor, wetland or estuary.

Where environmentally sensitive vegetation such as endangered ecological communities or threatened species habitat are to be cleared for the purposes of an APZ, the proposals will need to be carefully considered and may no longer be consistent with complying development.

5.4 Drainage Channels, Wetlands and Landscaped Areas

All landscaping is to comply with Appendix 4 of Planning for Bushfire Protection 2019 and relevant environmental approvals required under the NSW Biodiversity Conservation Act 2016 and/or Commonwealth Environment Protection and Biodiversity Conservation Act 1999.

All drainage channels, wetlands and landscaped areas should be designed and managed to meet the requirements of an APZ. These areas should be maintained in perpetuity to ensure ongoing protection from the impact of bush fires, particularly in advance of the bush fire season. As a minimum:

Trees

- tree canopy cover should be less than 30%; and
- canopies should be separated by 2 to 5m.

Shrubs

- shrubs should not form a continuous canopy; and
- shrubs should form no more than 20% of ground cover.

Grass

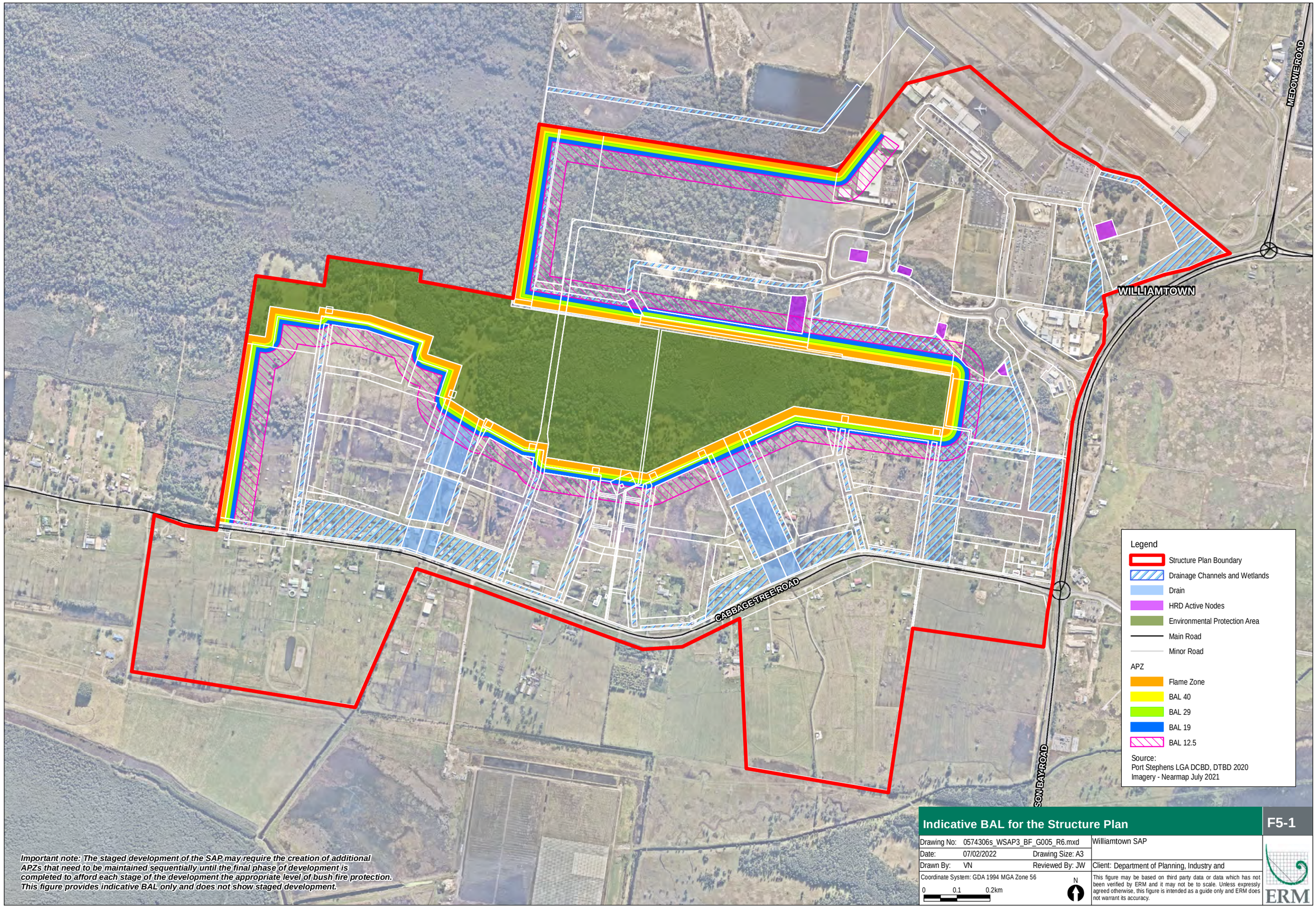
- grass should be kept mown to a height of less than 100mm; and
- leaf and other debris should be removed.

Provided that these areas are designed (and maintained) to comply with Appendix 4 of Planning for Bushfire Protection 2019, no additional asset protection zones need to applied to these areas.

5.5 Staged Development

As outlined within Planning for Bush Fire Protection 2019 and relevant to the Williamtown SAP, often a time lag can occur between one or more stages of development which can result in persons and property being unprotected in the event of a bush fire. The SAP may require the creation of APZs that need to be maintained sequentially until the final phase of development is completed to afford each stage of the development the appropriate level of bush fire protection.

The staged development will be outlined within the delivery plan. This is also applicable to other development adjacent to the SAP. For example, if a taxiway is constructed on the northern boundary of the SAP (subject to a separate planning approval process) an APZ would no longer be required or would be of reduced width.



Indicative BAL for the Structure Plan

F5-1

Drawing No:	0574306s_WSAP3_BF_G005_R6.mxd		Williamtown SAP
Date:	07/02/2022	Drawing Size: A3	
Drawn By:	VN	Reviewed By: JW	Client: Department of Planning, Industry and

Coordinate System: GDA 1994 MGA Zone 56

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5.6 Building Construction, Siting and Design

Construction measures should not be applied as a stand-alone mitigation solution, but will form part of a suite of bushfire management measures. Building design needs to ensure adequate protection of vulnerable building elements. Construction standards are outlined in AS 3959 and the NCC to provide various levels of protection for different building elements.

The NCC does not provide any bushfire specific performance requirements for Class 5 to 8 buildings including offices, shops, factories, warehouses, public car parks and other commercial and industrial facilities.

5.7 Access

Design of the internal road network must enable safe access and egress for occupants attempting to leave the area at the same time that emergency service personnel are arriving to undertake firefighting operations. In a bushfire prone area, the purpose of the road system is to:

- provide firefighters with access to structures, allowing more efficient use of firefighting resources;
- provide evacuation routes for firefighters and the public; and
- provide access to areas of bushfire hazard for firefighting and hazard mitigation purposes.

The structure plan in its current form provides multiple access points to Cabbage Tree Road to the south, Nelson Bay Road to the east, and Newcastle Airport to the north. The capacity of the current road network to deal with increased traffic volumes associated with the development of the SAP including evacuating residents and workers is being addressed separately within the Traffic and Transport Report (Aurecon 2022).

A perimeter road should be provided where possible to separate retained bushland from the development precincts, allowing more efficient use of firefighting resources. A perimeter road usually runs parallel to the bush land interface and provides space to conduct active firefighting operations and hazard reduction activities. Where this is not provided, the application of defendable space within each of the lots should be considered. This recommendation has been applied across SAP and the structure plan has been designed to ensure that no lots directly adjoin the retained environmental protection area. An area of defendable space is provided along the full perimeter of the retained environmental protection zone (within the boundary of the SAP).

Roads must provide sufficient width and other dimensions to ensure safe unobstructed access and allow firefighting crews to operate equipment around the vehicle. Road width is defined as the trafficable width from kerb to kerb or the inside edge of the table drain.

Dead-end roads should be avoided. However, where they are present, they must incorporate a sufficient turn-around area to minimise the need for vehicles to make multipoint turns.

Appendix C provides a summary of the design principles that will need to be considered the internal road network. Table 5.1 identifies the Acceptable Solutions under the Planning for Bush Fire Protection 2019.

Table 5.1 Acceptable Solutions for Access Roads (General)

Performance criteria	Acceptable solutions*
Firefighting vehicles are provided with safe, all-weather access to structures.	■ property access roads are two-wheel drive, all-weather roads; ■ traffic management devices are constructed to not prohibit access by emergency services vehicles; ■ maximum grades for sealed roads do not exceed 15 degrees and an average grade of not more than 10 degrees or other gradient specified by road design standards, whichever is the lesser gradient; ■ all roads are through roads; ■ dead end roads are not recommended, but if unavoidable, are not more than 200 metres in length, incorporate a minimum 12 metres outer radius turning circle, and are clearly sign posted as a dead end; ■ where kerb and guttering is provided on perimeter roads, roll top kerbing should be used to the hazard side of the road; ■ where access/egress can only be achieved through forest, woodland and heath vegetation, secondary access shall be provided to an alternate point on the existing public road system; and ■ one way only public access roads are no less than 3.5 metres wide and have designated parking bays with hydrants located outside of these areas to ensure accessibility to reticulated water for fire suppression.
The capacity of access roads is adequate for firefighting vehicles.	■ the capacity of perimeter and non-perimeter road surfaces and any bridges/causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes); bridges/ causeways are to clearly indicate load rating.
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; ■ hydrants are provided in accordance with the relevant clauses of AS 2419.1:2005; and ■ there is suitable access for a Category 1 fire appliance to within 4m of the static water supply where no reticulated supply is available.
Access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating as well as providing a safe operational environment for emergency service personnel during firefighting and emergency management on the interface.	■ are two-way sealed roads; ■ minimum 8m carriageway width kerb to kerb; ■ parking is provided outside of the carriageway width; ■ hydrants are located clear of parking areas; ■ are through roads, and these are linked to the internal road system at an interval of no greater than 500m; ■ curves of roads have a minimum inner radius of 6m; ■ the maximum grade road is 15 degrees and average grade of not more than 10 degrees; ■ the road crossfall does not exceed 3 degrees; and ■ a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.

**Planning for Bushfire Protection (NSW Rural Fire Service, 2019)*

5.8 Water Supply

An adequate supply of water is essential for firefighting purposes and suitable water supply arrangements must be provided for firefighting that meet the NSW RFS requirements. It is essential to ensure that any water sources are maintained at the appropriate capacity.

Where a non-reticulated water supply is provided or the reticulated water supply is deemed inadequate, an additional on site dedicated supply of water for firefighting will be required.

Any future development must comply with the water supply requirements detailed in Planning for Bush Fire Protection 2019. These requirements can be achieved in two ways, being:

- reticulated water is to be provided to the development, where available; and
- a static water supply is provided where no reticulated water is available.

Given the scale of the proposal it would be considered likely that any future development will be serviced by a hydrant system.

- The fire hydrant spacing, design and sizing must comply with the Australian Standard AS 2419.1:2005;
- hydrants are not located within any road carriageway;
- reticulated water supply uses a ring main system for areas with perimeter roads;
- fire hydrant flows and pressures comply with AS 2419.1:2005; and
- all above-ground water service pipes external to the building are metal, including and up to any taps.

5.9 Electricity and Gas

Planning for Bush Fire Protection also addresses the installation of services (i.e. electricity and gas) within bushfire prone areas. The following are the requirements for the relevant services:

- where practicable, electrical transmission lines are underground;
- 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;
- 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;
- all fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side;
- connections to and from gas cylinders are metal;
- polymer-sheathed flexible gas supply lines are not used; and
- above-ground gas service pipes are metal, including and up to any outlets.

6. CONCLUSION

This Bushfire Assessment has been prepared for the Department of Planning and Environment (DPE) to support the development of the Williamtown Special Activation Precinct (SAP) Masterplan. It has been designed to test the structure plan that was developed as part of a series of Enquiry by Design Workshops and aims to establish the relevant specifications and requirements to assist in the development of the masterplan.

The new Williamtown SAP will help to create a defence and aerospace hub, boost the local economy and generate thousands of new jobs for the region. It will build on the Hunter region's history of supporting Australia's defence industry and emerging aerospace industry around the Royal Australian Air Force (RAAF) base as well as its proximity to air, road, rail and sea transport.

To streamline future building construction works it is intended to maximise the type and number of developments which can occur through complying development pathways under State Environmental Planning Policy (Activation Precincts) 2020 (the Activation Precincts SEPP). Complying development will not be applicable to all land use types or where a referral to the NSW RFS is required. The remaining commercial and industrial type development can addressed within the masterplan through the aims and objectives of Planning for Bush Fire Protection 2019. Specifically:

- Complying development is only permitted on lower risk bushfire prone land (BAL-29 or lower);
- Where hazardous industries are proposed, consultation with the NSW RFS and preparation of a performance based solution will be required. These development types will not be considered for complying development;
- developments classified as special fire protection purpose (SFPP) would trigger referral to the NSW Rural Fire Service under s100b Rural Fires Act 1997 and will not be considered complying development; and
- Other land uses such as places of public worship and other public assembly buildings (i.e. function centres) also require referral to the NSW RFS under s.4.14 of the EP&A Act. Any buildings used for public assembly with a floor space area of greater than 500m² will be treated as SFPP and complying development is not permitted.

Noting that the legislative pathway for the development of the masterplan includes a potential State Significant Development application, this may facilitate the development of SFPP as 'complying development' subject to meeting the relevant consent conditions. This would create a simplified pathway to support new development within the SAP, noting that a BAL certificate and Activation Precinct Certificate will still be required to accompany any application for development consent or complying development certification.

At a strategic level, the structure plan has taken into consideration the bushfire prone land mapping and new development within the precinct can be designed to meet the requirements of Planning for Bush Fire Protection 2019. This includes creation of a central Environmental Protection Area which corresponds with the areas high bushfire hazard, and the provision of defendable space along its full perimeter (within the boundary of the SAP). These areas of defendable space include the perimeter road network, drainage channels and maintained public open space. No development areas directly adjoin the retained bushland.

The development of the structure plan has also considered the application of suitable Asset Protection Zones across the precinct to result in a Bushfire Attack Level of:

- BAL 29 or lower to all the future building envelopes;
- BAL 12.5 or lower to all SFPP; and
- BAL 12.5 or lower to all potential hazardous industry.

The SAP may also require the creation of additional APZs that need to be maintained sequentially until the final phase of development is completed to afford each stage of the development the appropriate level of bush fire protection.

Development of the Williamtown SAP must ensure complementary bushfire management and mitigation strategies. Of particularly note is the importance to consider existing access and egress routes across the locality and ensure complementary management strategies with key consideration of the RAAF Base, Newcastle Airport and existing Special Fire Protection assets (retirement villages, schools and tourist attractions) surrounding the precinct. Key specifications and requirements to assist in the development of the masterplan are provided in Table 6.1.

Table 6.1 Proposed Performance Criteria – Bushfire

Performance Criteria No.	Performance Criteria Description
1	Asset Protection Zones are managed and maintained to prevent the spread of a fire within the precinct in accordance with the requirements of Appendix 4 of Planning for Bushfire Protection 2019 to result in a Bushfire Attack Level of BAL 29 or lower (not BAL 40 or BAL FZ) to all future building envelopes that are being assessed as complying development. This includes part of a staged or partial development of the Precinct.
2	Where referral to NSW RFS is required (SFPP, hazardous development and/or places of public worship), Asset Protection Zones should be managed and maintained to result in a Bushfire Attack Level of BAL 12.5 or lower (not BAL 29, BAL 40 or BAL FZ). These developments will not be assessed as complying development.
3	All landscaping is to comply with Appendix 4 of Planning for Bushfire Protection 2019 and relevant environmental approvals required under the NSW Biodiversity Conservation Act 2016 and/or Commonwealth Environment Protection and Biodiversity Conservation Act 1999. Where environmentally sensitive vegetation such as endangered ecological communities or threatened species habitat are to be cleared, the proposals will need to be carefully considered and may no longer be consistent with complying development.
4	Access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating as well as providing a safe operational environment for emergency service personnel during firefighting and emergency management on the interface. The requirements for access identified in Planning for Bushfire Protection 2019 must be met for all stages of development within the Special Activation Precinct.
5	Adequate water supplies are provided for firefighting purposes. Hydrants are to be installed to achieve compliance with AS 2419.1 – 2005 Fire Hydrant Installations - System Design, Installation and Commissioning (AS 2419) and must be located less than 70m from each building envelope.
6	The 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.
7	The location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings and must comply with requirements of Planning for Bushfire Protection 2019.

Despite the mitigation measures and treatments that are put in place, it is noted that some bushfire risk will always remain and that some of the infrastructure may be subject to direct flame contact. The absence of any identified hazard or asset within the Williamtown SAP should not be interpreted as a guarantee that such hazards or impacts do not exist. It will be important that a Bushfire Emergency Management Plan is prepared as part of the future masterplan in conjunction with relevant stakeholders, including local fire services, NSW RFS, NSW Fire and Rescue, RAAF Base Williamtown, Newcastle Airport, and adjoining property owners and employees.

Any representation, statement of opinion, or advice expressed or implied in the bushfire assessment will be made in good faith on the basis that ERM employees and / or agents are not liable (whether by reason of negligence, lack of care or any other reason) to any person, company or their agents for any damage or loss whatsoever which has occurred or may occur in relation to that person taking (or not taking) action in respect of any representation, statement or advice provided within the bushfire assessment.

7. REFERENCES

ERM (2020) Williamtown Special Activation Precinct - Bushfire Baseline Analysis. Report prepared for DPE, December 2020.

NSW Rural Fire Service (2019) Planning For Bushfire Protection. A guide for councils, planners, fire authorities and developers. November 2019

Sherpa Consulting Pty Ltd (2022) Land Use Safety Considerations Study, Williamtown Special Activation Precinct. Report prepared for DPE, February 2022.

Standards Australia (2018) Australian Standard AS 3959 - 2009 Construction of Buildings in Bushfire Prone Areas.

APPENDIX A TABLES FOR DETERMINING MINIMUM DISTANCES FOR APZ, PLANNING FOR BUSHFIRE PROTECTION 2019

Minimum distances for APZs – SFPP developments (≤10kW/m², 1200K)

KEITH VEGETATION FORMATION	EFFECTIVE SLOPE				
	Up slopes and flat	>0°-5°	>5°-10°	>10°-15°	>15°-20°
	Distance (m) from the asset to the predominant vegetation formation				
Rainforest	38	47	57	69	81
Forest (wet and dry sclerophyll) including Coastal Swamp Forest, Pine Plantations and Sub-Alpine Woodland	67	79	93	100	100
Grassy and Semi-Arid Woodland	42	50	60	72	85
Forested Wetland (excluding Coastal Swamp Forest)	34	42	51	62	73
Tall Heath	50	56	61	67	72
Short Heath	33	37	41	45	49
Arid-Shrublands (acacia and chenopod)	24	27	30	34	37
Freshwater Wetlands	19	22	25	28	30
Grassland	36	40	45	50	55

Minimum distances for APZs – FFDI 100 areas (≤29kW/m2, 1090K)

KEITH VEGETATION FORMATION	EFFECTIVE SLOPE				
	Up slopes and flat	>0°-5°	>5°-10°	>10°-15°	>15°-20°
	Distance (m) from the asset to the predominant vegetation formation				
Rainforest	11	14	18	23	30
Forest (wet and dry sclerophyll) including Coastal Swamp Forest, Pine Plantations and Sub-Alpine Woodland	24	29	36	45	56
Grassy and Semi-Arid Woodland	12	16	20	25	32
Forested Wetland (excluding Coastal Swamp Forest)	10	12	16	20	26
Tall Heath	16	18	20	22	25
Short Heath	9	10	12	13	15
Arid-Shrublands (acacia and chenopod)	6	7	8	9	10
Freshwater Wetlands	5	6	6	7	8
Grassland	10	12	13	15	17

APPENDIX B FIRE HISTORY WITHIN THE BROADER LANDSCAPE (2000-2020)

Fire Name	Fire No	Label	Start Date	End Date	Area (ha)
Lavis Lane Fire	-	2001-02 Wildfire	2/01/2002	3/01/2002	758.09
Grahamstown	-	2003-04 Wildfire	<Null>	31/10/2003	1906.01
Grahamstown	-	2003-04 Wildfire	<Null>	31/10/2003	53.33
Bombing Range Fire	HUN04019	2004-05 Wildfire	9/01/2005	10/01/2005	232.77
Bush Alight Oyster Cove	RFS-18708	2006-07 Wildfire	28/10/2006	1/11/2006	35.00
Bush Alight Oyster Cove	RFS-18708	2006-07 Wildfire	28/10/2006	1/11/2006	35.91
Lower Hunter Complex	HUN07017	2007-08 Wildfire	30/09/2007	4/10/2007	809.82
Lower Hunter Complex	HUN07017	2007-08 Wildfire	30/09/2007	4/10/2007	5.92
Rookes Road Fire	HUN07002	2007-08 Wildfire	11/08/2007	14/08/2007	202.91
Lower Hunter Complex	21636	2007-08 Wildfire	1/10/2007	9/10/2007	0.01
Lower Hunter Complex	21636	2007-08 Wildfire	1/10/2007	9/10/2007	0.02
Lower Hunter Complex	21636	2007-08 Wildfire	1/10/2007	9/10/2007	0.40
Lower Hunter Complex	21636	2007-08 Wildfire	1/10/2007	9/10/2007	0.24
Weathertex	HN39	2009-10 Wildfire	29/11/2009	29/11/2009	760.23
Grahamstown Fire	HN11	2010-11 Wildfire	26/12/2010	27/12/2010	117.51
Sandhills Fire	HN08	2010-11 Wildfire	1/10/2010	1/10/2010	12.37
Samsons	13090276786	2013-14 Wildfire	2/09/2013	5/09/2013	49.21
Samsons Trail Medowie	13092278470	2013-14 Wildfire	22/09/2013	22/09/2013	0.54
Browns Road Fire	13101380324	2013-14 Wildfire	28/09/2013	30/09/2013	354.80
Hank Street	13101380389	2013-14 Wildfire	13/10/2013	4/11/2013	6014.19
Rookes Rd Fire	15031888915	2014-15 Wildfire	17/03/2015	23/03/2015	188.94
Station 11	15082801637	2015-16 Wildfire	28/08/2015	31/08/2015	520.52
Pump Station 9 Fire	15121811826	2015-16 Wildfire	18/12/2015	22/12/2015	742.39
Cabbage Tree Rd - Williamtown	16121346698	2016-17 Wildfire	13/12/2016	18/12/2016	0.02
Rookes Rd, Salt Ash	17091674645	2017-18 Wildfire	16/09/2017	16/09/2017	0.17
Masonite Road	18010986692	2017-18 Wildfire	8/01/2018	29/01/2018	2513.72
Salt Ash Fire	18081709864	2018-19 Wildfire	17/08/2018	25/08/2018	2145.94
Richardson Rd, Campvale	18112218897	2018-19 Wildfire	21/11/2018	29/11/2018	1988.40
Richardson Rd, Campvale	18112218897	2018-19 Wildfire	21/11/2018	29/11/2018	20.07
SF NSW HR burns	-	2001-02 Prescribed Burn	12/09/2001	<Null>	25.94
-	HB02/037	2001-02 Wildfire	1/07/2001	30/06/2002	225.64
Oyster Cove	-	2005-06 Wildfire	5/02/2006	8/02/2006	216.76

Fire Name	Fire No	Label	Start Date	End Date	Area (ha)
Scrub Fire Bobs Farm	-	2005-06 Wildfire	11/12/2005	14/12/2005	615.34
Pine Forest	RFS-19060	2006-07 Wildfire	23/11/2006	24/11/2006	37.78
Lower Hunter Complex	HUN07017	2007-08 Wildfire	30/09/2007	4/10/2007	917.36
Lower Hunter Complex	21636	2007-08 Wildfire	1/10/2007	9/10/2007	1.17
Lower Hunter Complex	21636	2007-08 Wildfire	1/10/2007	9/10/2007	0.14
Lower Hunter Complex	21636	2007-08 Wildfire	1/10/2007	9/10/2007	0.17
Lower Hunter Complex	21636	2007-08 Wildfire	1/10/2007	9/10/2007	0.20
Lower Hunter Complex	21636	2007-08 Wildfire	1/10/2007	9/10/2007	10.56
Lower Hunter Complex	21636	2007-08 Wildfire	1/10/2007	9/10/2007	4.86
Lower Hunter Complex	21636	2007-08 Wildfire	1/10/2007	9/10/2007	0.55
Lower Hunter Complex	21636	2007-08 Wildfire	1/10/2007	9/10/2007	2.02
Lower Hunter Complex	21636	2007-08 Wildfire	1/10/2007	9/10/2007	12.64
Lower Hunter Complex	21636	2007-08 Wildfire	1/10/2007	9/10/2007	3.32
Medowie South	HUN08/09	2008-09 Prescribed Burn	26/03/2009	<Null>	20.61
Tilligerry December	HUN08011	2008-09 Wildfire	20/12/2008	20/12/2008	5.96
Drop Zone	HN15	2010-11 Wildfire	24/02/2011	26/02/2011	97.78
Bobs Farm	12082352827	2012-13 Wildfire	23/08/2012	25/08/2012	645.56
Jenna Parade	12082853192	2012-13 Wildfire	28/08/2012	30/08/2012	269.06
Sandhills	12082252702	2012-13 Wildfire	22/08/2012	22/08/2012	0.41
Tanilba Bay	12090854331	2012-13 Wildfire	8/09/2012	10/09/2012	92.06
Fern Bay	12111558889	2012-13 Wildfire	15/11/2012	15/11/2012	1.48
Sand Hills Salt Ash	13110381995	2013-14 Wildfire	3/11/2013	7/11/2013	6.43
Old Swan Bay Rd - Swan Bay	14110176613	2014-15 Wildfire	1/11/2014	5/11/2014	1878.01
Rutile Road	15031989025	2014-15 Wildfire	19/03/2015	23/03/2015	219.18
Oakfield Rd, Salt Ash	17090572858	2017-18 Wildfire	5/09/2017	9/09/2017	165.01
HCCO - HUNC - Fern Bay Addition - HR	HR16021675875	2018-19 Prescribed Burn	25/04/2019	28/04/2019	89.39
HCCO - HUNC - Coxs South - HR	HR16050376681	2018-19 Prescribed Burn	20/05/2019	21/05/2019	188.09
HCCO - HUNC - Fern Bay Extension - Booral - HR	HR16012575717	2018-19 Prescribed Burn	25/04/2018	28/04/2018	45.93
Bombing Range Salt Ash	19052736877	2018-19 Wildfire	26/05/2019	1/06/2019	222.82
Seaside Bvd, Fern Bay	19010523456	2018-19 Wildfire	4/01/2019	9/01/2019	91.38
Fern Bay Access Trl, Fern Bay	19013126296	2018-19 Wildfire	30/01/2019	31/01/2019	0.35
Interloop Trail Fire	19112960758	2019-20 Wildfire	28/11/2019	5/12/2019	129.30

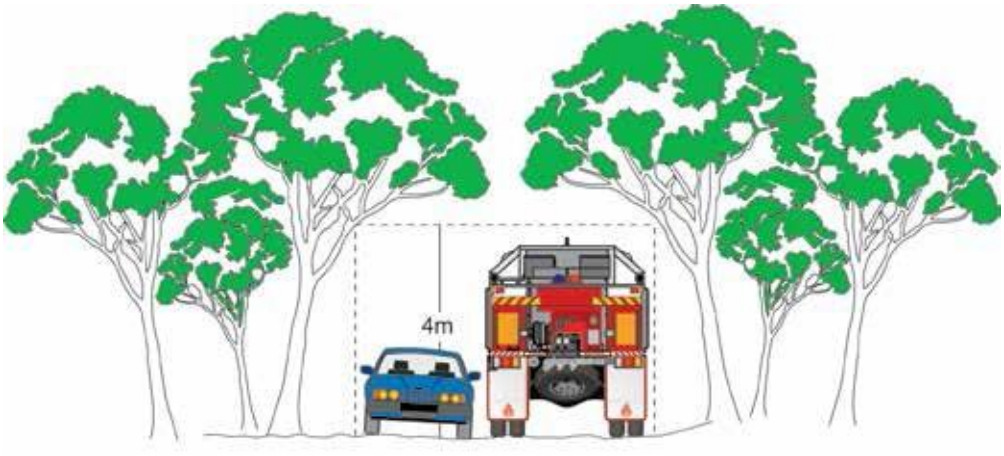
APPENDIX C DESIGN PRINCIPLES FOR EMERGENCY SERVICE VEHICLE ACCESS, PLANNING FOR BUSHFIRE PROTECTION 2019

ACCESS

This appendix provides design principles for emergency service vehicle access and is an extract from Appendix 4, Planning for Bushfire Protection 2019

Vertical clearance

An unobstructed clearance height of 4 metres should be maintained above all access ways including clearance from building construction, archways, gateways and overhanging structures (e.g. ducts, pipes, sprinklers, walkways, signs and beams). This also applies to vegetation overhanging roads.



Vehicle turning requirements

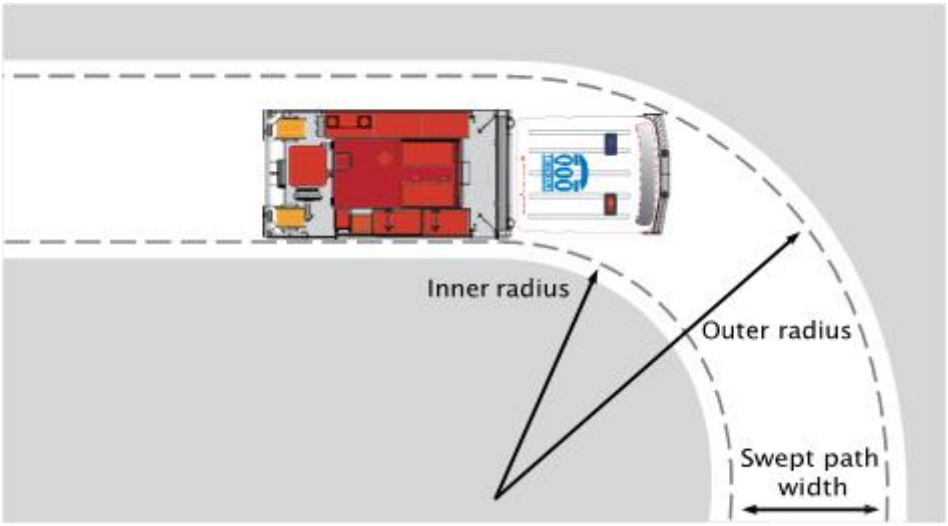
Curved carriageways should be constructed using the minimum swept path as outlined in the Table below:

Minimum curve radius for turning vehicles.

Curve radius (inside edge in metres)	Swept path (metres width)
< 40	4.0
40 - 69	3.0
70 - 100	2.7
> 100	2.5

Swept path width for turning vehicles.

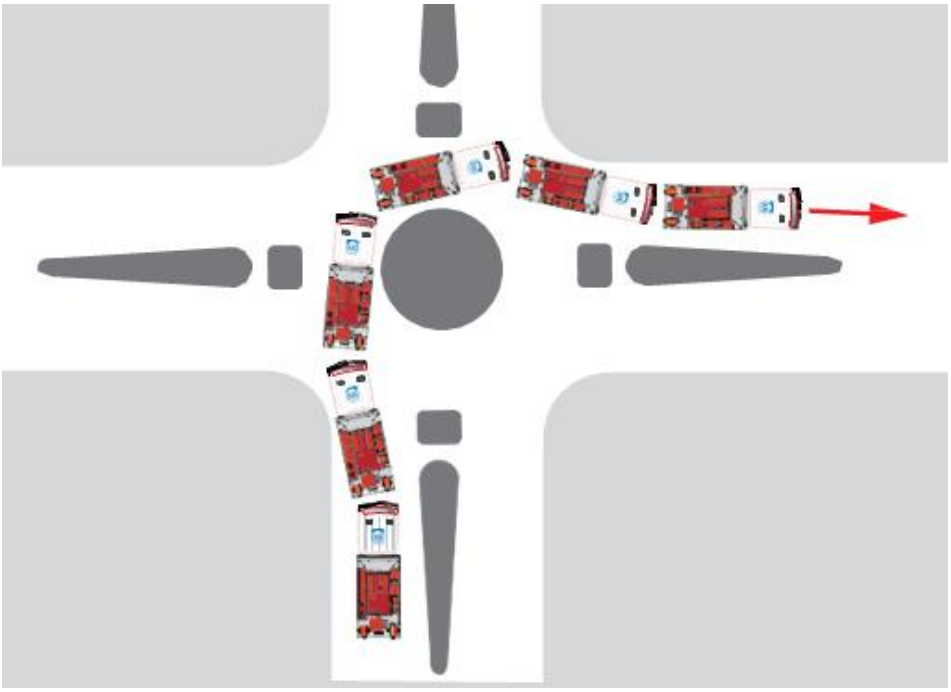
The radius dimensions given are for wall to wall clearance where body overhangs travel a wider arc than the wheel tracks (vehicle swept path). The swept path shall include an additional 500mm clearance either side of the vehicle.



Roundabout swept path.

Example of a swept path as applied to a roundabout.

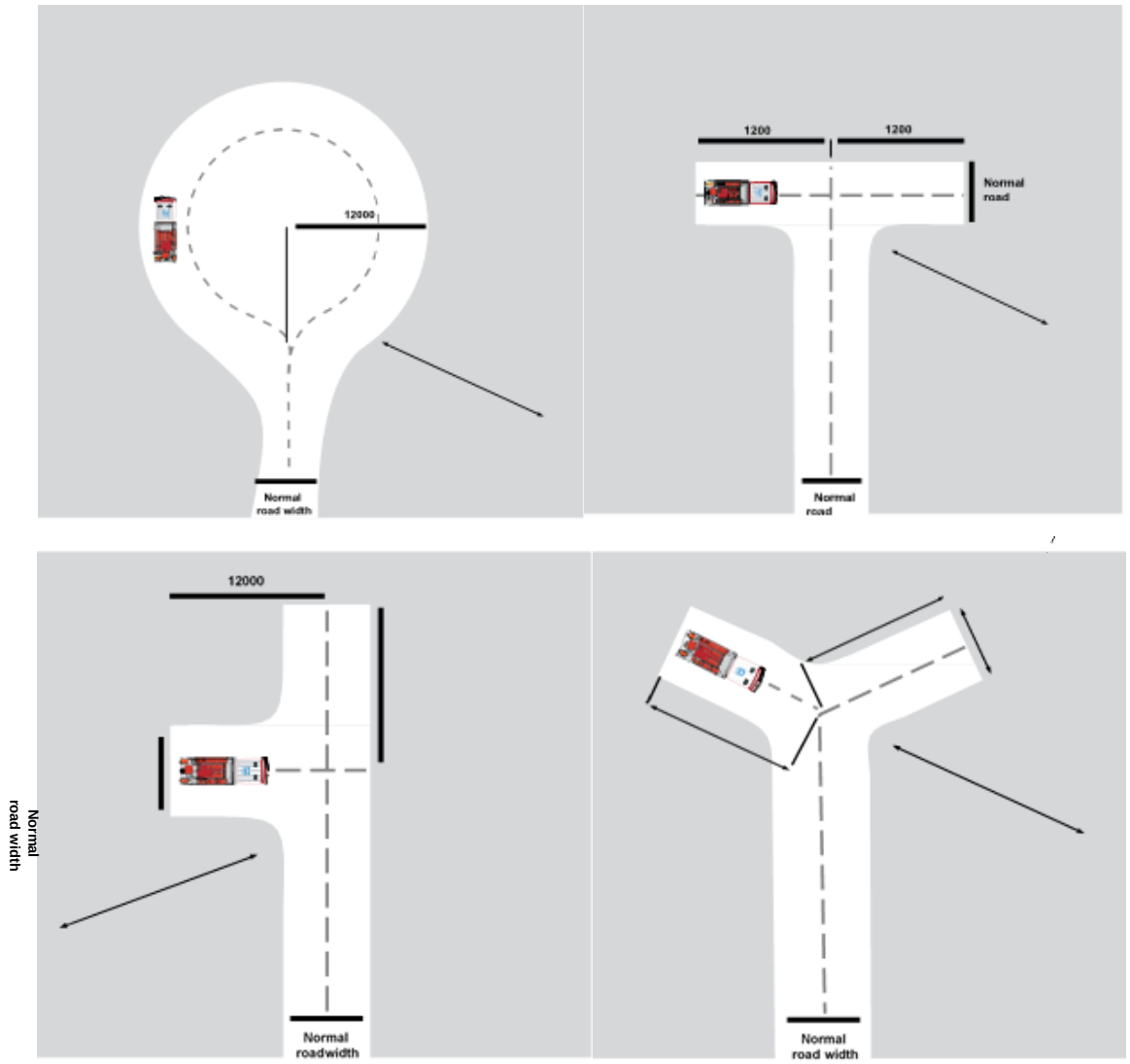
The distance between inner and outer turning arcs allows for expected vehicle body swing of front and rear overhanging sections.



Vehicle turning head requirements

Dead ends that are longer then 200m must be provided with a turning head area that avoids multipoint turns. “No parking” signs are to be erected within the turning head.

The minimum turning radius shall be in accordance with Table A3.2 of Planning for Bushfire Protection 2019. Where multipoint turning is proposed the NSW RFS will consider the following options:



Services

Hydrant services should be located outside the carriageway and parking bays to permit traffic flow and access. Setup of standpipes within the carriageway may stop traffic flow. Hydrant services shall be located on the side of the road away from the bushfire threat where possible.

Passing bays

The construction of passing bays, where required, shall be 20m in length and provide a minimum trafficable width at the passing point of 6m.

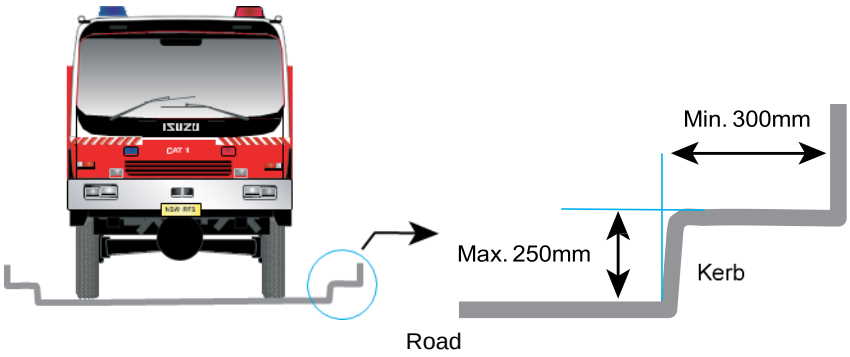
Passing bays can provide advantages when designed correctly. Poor design can and does severely impede access.

Parking

Parking can create a pinch point in required access. The location of parking should be carefully considered to ensure fire appliance access is unimpeded. Hydrants shall be located outside of access ways and any parking areas to ensure that access is available at all times.

Kerb dimensions

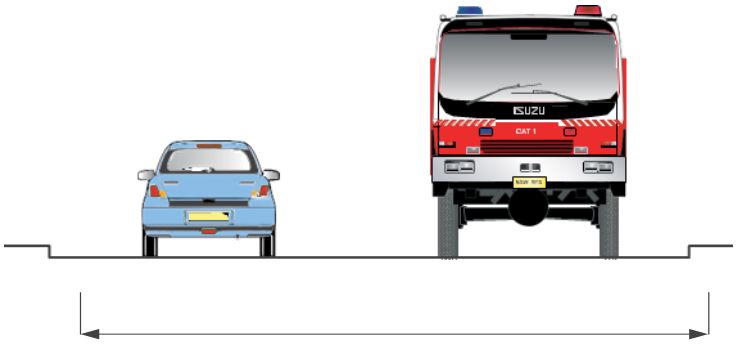
All kerbs constructed around access roads should be no higher than 250mm and free of vertical obstructions at least 300mm back from the kerb face to allow clearance for front and rear body overhang.



ROAD TYPES

Perimeter Roads

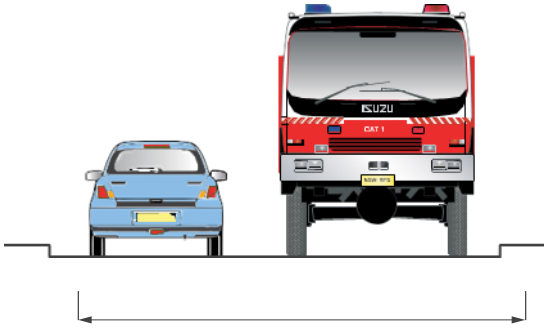
Perimeter roads are to be provided with a minimum clear width of 8m. Parking and hydrants are to be provided outside of carriageways. Hydrants are to be located outside of carriageways and parking areas.



Perimeter roads = 8m to kerb

Non-perimeter Roads

Non-perimeter roads shall be provided with a minimum clear width of 5.5m. Parking is to be provided outside of the carriageway and hydrants are not to be located in carriageways or parking areas.



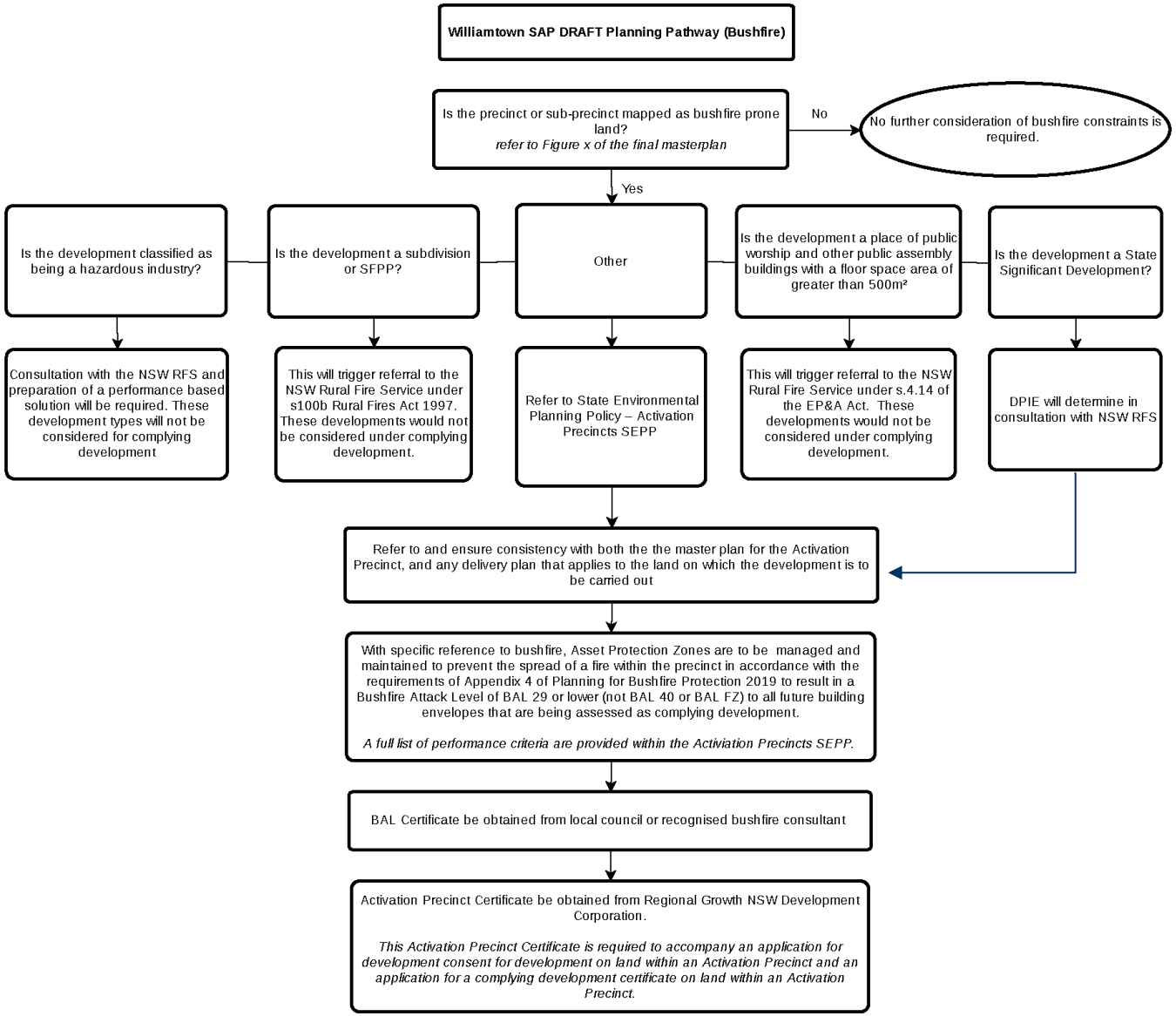
Non-perimeter roads = 5.5m to kerb

Property access

Property access roads are to be a minimum of 4m wide.

Property access road
4m wide carriage way

APPENDIX D WILLIAMTOWN SAP DRAFT PLANNING PATHWAY (BUSHFIRE)


Williamtown SAP DRAFT Planning Pathway (Bushfire)
Is the precinct or sub-precinct mapped as bushfire prone land?
refer to Figure x of the final masterplan
No
No further consideration of bushfire constraints is required.
Yes
Is the development classified as being a hazardous industry?
Is the development a subdivision or SFPP?
Other
Is the development a place of public worship and other public assembly buildings with a floor space area of greater than 500m²
Is the development a State Significant Development?
Consultation with the NSW RFS and preparation of a performance based solution will be required. These development types will not be considered for complying development
This will trigger referral to the NSW Rural Fire Service under s100b Rural Fires Act 1997. These developments would not be considered under complying development.
Refer to State Environmental Planning Policy – Activation Precincts SEPP
This will trigger referral to the NSW Rural Fire Service under s.4.14 of the EP&A Act. These developments would not be considered under complying development.
DPIE will determine in consultation with NSW RFS
Refer to and ensure consistency with both the the master plan for the Activation Precinct, and any delivery plan that applies to the land on which the development is to be carried out
With specific reference to bushfire, Asset Protection Zones are to be managed and maintained to prevent the spread of a fire within the precinct in accordance with the requirements of Appendix 4 of Planning for Bushfire Protection 2019 to result in a Bushfire Attack Level of BAL 29 or lower (not BAL 40 or BAL FZ) to all future building envelopes that are being assessed as complying development.
A full list of performance criteria are provided within the Activiation Precincts SEPP.
BAL Certificate be obtained from local council or recognised bushfire consultant
Activation Precinct Certificate be obtained from Regional Growth NSW Development Corporation.
This Activation Precinct Certificate is required to accompany an application for development consent for development on land within an Activation Precinct and an application for a complying development certificate on land within an Activation Precinct.

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