

Illawarra Bush Fire Management Committee

Bush Fire Risk Management Plan



2015 to 2020

**Prepared by the Illawarra District Bush Fire
Management Committee
Pursuant to section 52 of the *Rural Fires Act 1997***

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Glossary

Assets: anything valued by the community which includes houses, crops, heritage buildings and places, infrastructure, the environment, businesses, and forests, that may be at risk from bush fire.

Bush Fire: a general term used to describe fire in vegetation, includes grass fire.

Bush Fire Hazard: the potential severity of a bush fire, which is determined by fuel load, fuel arrangement and topography under a given climatic condition.

Bush Fire Risk: the chance of a bush fire igniting, spreading and causing damage to the community or the assets they value.

Bush Fire Risk Management: a systematic process that provides a range of treatments which contribute to the well being of communities and the environment, which suffer the adverse effects of wildfire/bush fire.

Bush Fire Threat: potential bush fire exposure of an asset due to the proximity and type of a hazard and the slope on which the hazard is situated.

Consequence: outcome or impact of a bush fire event.

Fire Fighting Authorities: the NSW Rural Fire Service, Fire & Rescue NSW, the National Parks and Wildlife Service and Forests NSW.

Likelihood: the chance of a bush fire igniting and spreading.

Major Bush Fire: A bush fire which requires the attendance of multiple brigades, or causes damage to property or injury to one or more persons.

Display area: geographic area determined by the Bush Fire Management Committee which is used to provide a suitable area and scale for community participation and mapping display purposes.

Recovery costs: the capacity of an asset to recover from the impacts of a bush fire.

Risk Acceptance: an informed decision to accept the consequences and the likelihood of a particular risk.

Risk Analysis: a systematic process to understand the nature of and to deduce the level of risk.

Risk Assessment: the overall process of risk identification, risk analysis and risk evaluation.

Risk Identification: the process of determining what, where, when, why, and how something could happen.

Risk Treatment: the process of selection and implementation of measures to modify risk.

Vulnerability: the susceptibility of an asset to the impacts of bush fire.

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Authorisation

In accordance with Part 3 Division 4 of the Rural Fires Act 1997, this Plan has been prepared by the Illawarra Bush Fire Management Committee and has been endorsed by the BFMC via email on Friday 8 January 2016 for submission to the Bush Fire Coordinating Committee.

Recommended



Clr Chris Connor
Chairperson
Illawarra Bush Fire Management Committee

Approved



On behalf of the
NSW Bush Fire Coordinating Committee

Amendment List

Amendment		Entered	
Number	Date	Signature	Date

Chapter 1. Introduction

1.1 Background

Under the *Rural Fires Act 1997* the Bush Fire Coordinating Committee (BFCC) must constitute a Bush Fire Management Committee (BFMC) for each area in the State, which is subject to the risk of bush fires. Each BFMC is required to prepare and submit to the BFCC a draft Bush Fire Risk Management Plan (BFRMP).

A BFRMP is a strategic document that identifies community assets at risk and sets out a five-year program of coordinated multi-agency treatments to reduce the risk of bush fire to the assets. Treatments may include such things as hazard reduction burning, grazing, community education, fire trail maintenance and establishing community fireguard groups.

Annual programs to implement the treatments identified in this plan will be undertaken by the relevant land managers and fire fighting authorities.

In exercising its functions under the *Rural Fires Act 1997*, including the preparation of a draft bush fire risk management plan, the Illawarra BFMC is required to have regard to the principles of ecologically sustainable development (ESD).

This document and the accompanying maps together form the BFRMP for the Illawarra BFMC area.

This BFRMP has been prepared by the Illawarra BFMC and covers both public and private lands. This BFRMP must be reviewed and updated within each successive five-year period from the constitution of the BFMC.

The BFCC recognises that climate change has the potential to increase bush fire risk. The risk assessment process applied in this BFRMP is based on current climatic conditions. The BFCC will monitor information on climate change and will modify the process when necessary.

1.2 Aim and Objectives

The **aim** of this BFRMP is to minimise the risk of adverse impact of bush fires on life, property and the environment.

The **objectives** of this BFRMP are to:

- reduce the number of human-induced bush fire ignitions that cause damage to life, property and the environment;
- manage fuel to reduce the rate of spread and intensity of bush fires, while minimising environmental/ecological impacts;
- reduce the community's vulnerability to bush fires by improving its preparedness; and
- effectively contain fires with a potential to cause damage to life, property and the environment.

1.3 Description of the Illawarra BFMC Area

1.3.1 Location and land tenure

The Illawarra BFMC area is located south of Sydney, New South Wales and includes the Local Government Areas of Wollongong, Shellharbour and Kiama.

The area covered by the Illawarra BFMC is 112,930 hectares and includes the land tenures outlined in Table 1.1.

Land Manager	% of BFMC area
National Parks & Wildlife Service	12.48
Department of Lands	2.75
Local Government	5.37
Private	51.5
All other	27.90

Table 1.1 Land Tenure

1.3.2 Climate and bush fire season

The typical/average climate in the Illawarra BFMC area is humid temperate, with a rainfall average of 1329 mm annually. The start of normal fire seasons coincides with fresh to strong south west to north west winds which prevail during August and September. The majority of bush fires can occur from this period until the onset of summer rains or coastal showers. Longer fire seasons are experienced when rainfall is lower than average extending the bush fire season through summer to early autumn. Extreme fire danger days are usually experienced due to strong west to north westerly winds, particularly where the drought indices are low.

Hazard reduction burning is usually conducted during the cooler months, between March-October, but may be extended beyond this period if desirable conditions exist. Desirable weather conditions for prescribed burning include high humidity and low temperatures which are common to this period in the year.

Smoke attributed to bush fire can have a major impact on various infrastructures, facilities and the environment. These include major transportation routes for road and rail, ventilation shafts for mines, tourism operations, urban interface areas and the hospitals, in particular the Garrawarra Centre. Wind direction, fuel moisture contents and lighting techniques are considered and managed to reduce the likelihood of smoke issues. The Illawarra area is also subject to 'No Burn Days' administered by the Environment Protection Authority.

1.3.3 Population and demographic information

The population of the Illawarra BFMC area is approximately 296,870 people. The major population centres are Wollongong, Shellharbour and Kiama.

The following issues have been identified within the Illawarra area as potentially impacting on the ability of certain sections of the community to prepare for bush fire:

- Seasonal population changes; with almost 1 million visitors to or passing through the Illawarra per year.

1.3.4 History of bush fire frequency and ignition cause

The Illawarra BFMC area has on average 760 bush fires per year, of which 4-5 on average can be considered to be major fires.

The Illawarra area has experienced bush fires on a variety of occasions which have been documented since 1939. Major fire activity occurred in September 1939, December 1952, October 1968 and 1974, November 1980 and 1983, January 1994, December 1997 and 2001, January 2002 and October 2002, August 2012 and September 2012, October 2013. These wildfires burnt areas along the escarpment and plateau mainly in the west and north-west areas and also burnt extensive areas below the escarpment.

Fires generally travel in an easterly direction under the influence of westerly winds. Southerly and/or easterly winds also have the potential to intensify wildfire burning on or along the escarpment.

The main sources of ignition in the Illawarra BFMC area are:

- Arson and incendiarism- common mainly in high visitation areas and during school holidays, and is on the increase in the Illawarra area. During summer months the population increases due to tourism and this, combined with significant urban growth, is a possible contributing factor.
- Car dumping- dumping of cars and setting them alight is one of the major ignition sources in the Illawarra particularly in urban interface and bushland areas.
- Lightning (predominantly on the top of the escarpment) - lightning activity in the district is mainly on the top of the escarpment and plateau area, which is normally (but not always) accompanied by rainfall. Thunderstorm activity generally occurs in late spring and summer.
- Electrical power lines- arcing of high voltage electrical power lines in high winds, particularly those on top and west of the escarpment, can result in the ignition of fire.
- Escapes from legal burning- mainly in rural areas of the Illawarra, occurring in similar areas to illegal burning activity. This activity is also largely in mid to late spring.
- Illegal burning activities- mainly concentrated, but not limited to, rural areas and occur generally from mid to late spring.

Chapter 2. Identifying and Assessing the Bush Fire Risk

2.1 Process

The Australia/New Zealand Standard *AS/NZS 4360: 2004 Risk Management* was used as the basis for the risk assessment process. See Figure 2.1 for the steps involved. For a detailed description of the process undertaken see the Bush Fire Risk Management Planning Guidelines for Bush Fire Management Committees on the RFS website: www.rfs.nsw.gov.au.

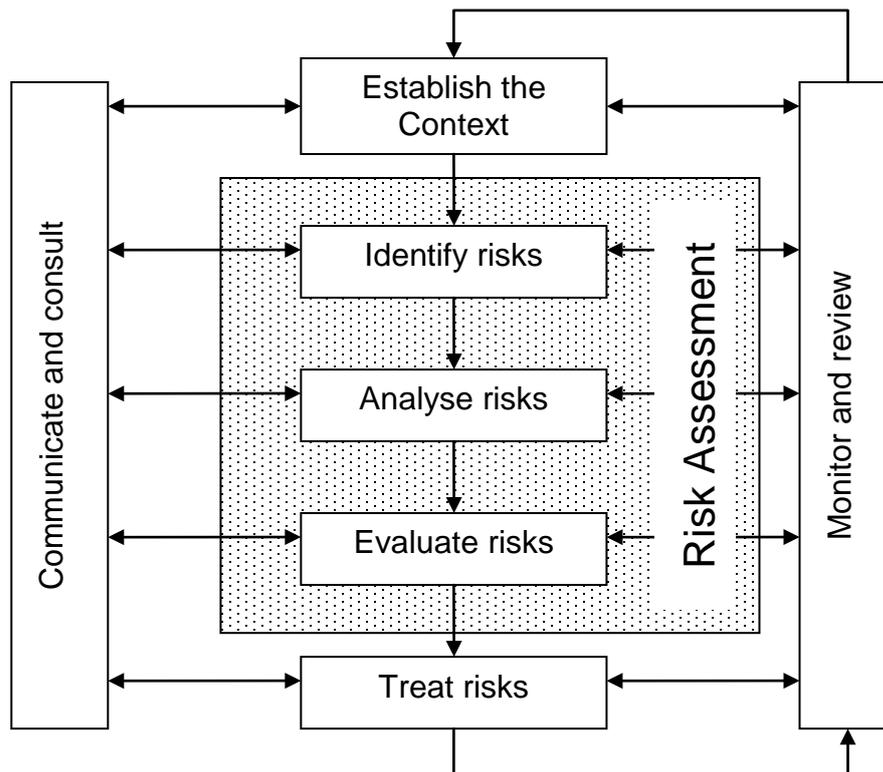


Figure 2.1 Overview of the risk assessment process

2.2 Communication and Consultation

Community participation is an integral part of risk management. The Community Participation Strategy involved developing and implementing a process to address the needs, issues and concerns of stakeholders within the BFMC area in regards to the BFRMP. See Appendix 1 for the Community Participation Strategy used by the Illawarra BFMC in preparing this BFRMP.

2.3 Identifying the Bush Fire Risk

Identifying the level of bush fire risk firstly involved identifying important community assets considered to be at risk from bush fire in the Illawarra BFMC area, and then assessing the likelihood and consequence ratings.

2.3.1 Assets

BFMC members and the community, including RFS volunteers, identified assets within the Illawarra BFMC that they believed were at risk of bush fire.

The assets were divided into four asset types:

Human settlement

- Residential areas including urban bushland interface areas and rural properties;
- Special Fire Protection areas including schools, hospitals, nursing homes, and tourist facilities; and
- Other human settlement areas including commercial and industrial areas where distinct from major towns.
- Neighbourhood Safer Place (NSP) is defined by the *Rural Fires Act 1997* as *land or a building designated as a neighbourhood safer place under section 62C*. NSPs provide a place of last resort for people during a bush fire. All designated NSP locations for NSW are available at www.rfs.nsw.gov.au.

Economic

- Agricultural; e.g. major silos, regional saleyards, cropping/grazing land;
- Commercial/industrial e.g. major industries, waste treatment plants, sawmills;
- Infrastructure e.g. large power lines, gas and oil pipelines, railway lines, electricity substations, communication facilities;
- Tourist and recreational e.g. tourist sites and facilities, resorts, retreats;
- Mines;
- Commercial forests e.g. pine plantations, eucalypt plantations and commercial native forests; and
- Drinking water catchments.

Environmental

- Threatened species, populations and ecological communities and Ramsar wetlands;
- Locally important species and ecological communities, such as species and ecological communities especially sensitive to fire.

Cultural

- Aboriginal significance – Aboriginal places and items of significance;
- Non-indigenous heritage – places and items arising from the early occupation of NSW by European or other non-indigenous settlers; and
- Other cultural assets – community halls, clubs and recreational facilities.

See Appendix 2 for the full list of assets identified in the Illawarra BFMC area. See maps Appendix 4 for the location of assets to be treated under this BFRMP.

2.3.2 Assessing the Bush Fire Risk - Consequence

Once the assets were identified, the consequence of a bush fire impacting on these assets was assessed.

See Appendix 2 for the consequence ratings assigned to each asset identified in the Illawarra BFMC area.

The different asset types had different assessment processes used to determine the consequence. These processes are identified below.

Human settlement

A potential fire behaviour model using vegetation type, slope and separation distance was used to produce a threat rating for human settlement assets. The vulnerability of the asset to a bush fire was also assessed and a rating assigned. These ratings were then used to assess the consequence of a bush fire impacting upon a human settlement asset.

Special Fire Protection (SFP) assets were considered inherently more vulnerable to bush fire due to mobility capacity, knowledge or other issues relating to their inhabitants, (e.g. the elderly, infirm, children or tourists) and therefore stricter requirements for vulnerability assessment and rating were applied. Due to circumstances surrounding NSPs and their use during a bush fire, stricter requirements for vulnerability assessment and rating will also apply to these assets.

Economic

The level of economic impact e.g. local, regional or state, as well as the economic recovery costs (how long and complicated a financial recovery will be) of the asset were identified. These ratings were used to assess the consequence of a bush fire impacting upon an economic asset.

Environmental

The vulnerability of an environmental asset was determined by its conservation status and its geographic extent (distribution across the landscape). Vulnerability and potential impact of bush fire were used to assess the consequence of a bush fire impacting upon an environmental asset.

Cultural

For non-indigenous historical, Aboriginal and other cultural assets a potential fire behaviour model using fuel load, slope and proximity was used to produce a threat rating. The physical vulnerability of the asset to a bush fire was also assessed. These ratings were then used to assess the consequence of a bush fire impacting upon a cultural asset.

2.3.3 Assessing the Bush Fire Risk - Likelihood

For all asset types the likelihood of a bush fire occurring was assessed. This involves considering fire history, including ignition cause and patterns, known fire paths, access, containment potential and potential fire run (size of the vegetated area). See Appendix 2 for the likelihood ratings assigned to each asset identified in the Illawarra BFMC area.

2.3.4 Identifying the level of risk

The consequence and likelihood ratings were then used to identify the level of risk. See Appendix 2 for the risk ratings assigned to each asset identified in the Illawarra BFMC area.

2.3.5 Evaluating the Bush Fire Risk

Once the risk ratings for each asset were identified, they were evaluated to:

- a) confirm that risk levels identified in the risk analysis process are appropriate and reflect the relative seriousness of the bush fire risk;
- b) identify which assets require treatments; and
- c) identify treatment priorities.

2.3.6 Prioritising Treatments

No organisation has limitless resources to deal with adverse risk. It is therefore necessary to define priorities. The bush fire risk ratings determined were used to prioritise the risk treatments, i.e. areas of extreme risk were considered first for treatment, then very high, then high then medium then low.

Within the matrix, the risk levels are identified numerically from 1-5 with priorities from highest risk to lowest risk (e.g. 1 represents an extreme risk which has the highest priority). Where there is a need to prioritise within the risk levels a letter will indicate the priority level (e.g. A, B, C, or D). For example 3A reflects the higher priority given to a particular asset within the high risk level and 3D reflects the lower priority given to a particular asset within the same high risk level.

Consequence Likelihood	Minor	Moderate	Major	Catastrophic
Almost certain	3D	2C	1C	1A
Likely	4	3A	2A	1B
Possible	5	4	3B	2B
Unlikely	5	5	4	3C

2.3.7 Risk Acceptability

Risks below a certain level were assessed as not requiring treatment within the life of this plan. Within the Illawarra BFMC area the level of acceptability is high. Areas of medium or low risk are likely to be managed by routine procedures and so do not require a specific application of resources.

All NSPs for a BFMC area will require ongoing treatment by the applicable land owner to ensure that the asset remains viable as a place of last resort for people during a bush fire. Therefore, all NSP assets are allocated specific treatments in this Plan, regardless of the level of bush fire risk identified and the risk acceptability nominated by the Illawarra BFMC.

Chapter 3. Treating the Risk

3.1 Bush Fire Management Zones

Bush Fire Management Zones were identified within the Illawarra BFMC area and mapped (see maps Appendix 4). These zones identify the fire management intent for a specific area. See Table 3.1 for descriptions of the zones and their purposes. The four categories of Bush Fire Management Zones are:

- Asset Protection Zone (APZ);
- Strategic Fire Advantage Zone (SFAZ);
- Land Management Zone (LMZ); and
- Fire Exclusion Zone (FEZ).

Some of these zones (usually Land Management Zones) may be further classified within this category by the land manager, e.g. LMZ -Heritage Management Zone (NPWS).

Zone	Purpose	Suppression Objective(s)	Zone characteristics
Asset Protection Zone	To protect human life, property and highly valued public assets and values.	To enable the safe use of Direct Attack suppression strategies within the zone. To minimise bush fire impacts on undefended assets.	As per RFS document <i>Standards for Asset Protection Zones</i> .
Strategic Fire Advantage Zone	To provide strategic areas of fire protection advantage which will reduce the speed and intensity of bush fires, and reduce the potential for spot fire development; To aid containment of wildfires to existing management boundaries.	To improve the likelihood and safe use of: Parallel Attack suppression strategies within the zone. and/or Indirect Attack (back burning) in high to very high fire weather conditions within the zone. To reduce the likelihood of: Crown fire development within the zone. and/or Spot fire ignition potential from the zone	Zone width related to suppression objectives and dependent upon: <ul style="list-style-type: none"> • Topography • Aspect • Spotting propensity • Location of adjacent firebreaks • Mosaic pattern of treatment Assess Overall Fuel Hazard (OFH) once vegetation communities reach minimum fire thresholds within this plan. Management practices should aim to achieve mosaic fuel reduction patterns so that the majority of the SFAZ has an OFH of less than high.
Land Management Zone	To meet relevant land management objectives in areas where APZs or SFAZs are not appropriate.	As per the land management and fire protection objectives of the responsible land management agency. To reduce the likelihood of spread of fires. To undertake mosaic burning	As appropriate to achieve land management e.g. heritage and/or fire protection e.g. broad scale mosaic burning objectives.
Fire Exclusion Zone	To exclude bush fires.	N/A	Variable dependant on size of fire sensitive area requiring protection.

Table 3.1 Bush Fire Management Zones: Purpose, objectives and characteristics

NB: OFH refers to the Overall Fuel Hazard Guide as described in the document published by (Dept. of Sustainability and Environment 3rd ed. 1999 & NPWS version); State-wide procedures for assessment of fuel hazard will be developed in conjunction with the BFCC.

Note: All areas that are not mapped or described as APZs or SFAZs are considered as LMZs.

3.2 BFMC Wide Treatments

BFMC wide treatments are activities which reduce the overall bush fire risk within the BFMC area and are undertaken on an ongoing basis as part of normal business. These treatments are not linked to specific assets in the BFRMP, rather they are applied across all or part of the BFMC area as designated by legislation or agency policy. BFMC wide treatments include the following:

- **Reviewing the bush fire prone land map**

These maps identify bush fire prone land and are used to trigger whether a development application is assessed using *Planning for Bush Fire Protection*¹.

- **Ensuring developments in bush fire prone land comply with *Planning for Bush Fire Protection***

This assessment process requires new applications for development to include bush fire protection measures.

- **Using the Local Environment Plan/s (LEPs) to control developments in areas with a bush fire risk**

LEPs can be used to exclude development in extreme bush fire risk areas or where bush fire protection measures cannot be incorporated.

- **Varying the standard bush fire danger period as required**

In years where the weather is particularly adverse the bush fire danger period may be brought in early or extended. This is assessed every year by the BFMC.

- **Requiring permits during the bush fire danger period**

In the bush fire danger period a fire safety permit is required to light a fire in the open. Permits specify conditions such as fire fighting equipment that must be on site, or restrict burns based on weather conditions.

- **Prosecution of arsonists/offenders**

Under the *Rural Fires Act 1997* persons may be prosecuted for breaching the conditions on a fire permit, lighting a fire during a Total Fire Ban, allowing fire to escape their property, or other breaches of the Act.

- **Investigation of bush fire cause**

All bush fires which do not have a known cause are investigated to identify how they started.

¹ NSW Rural Fire Service 2006 *Planning for Bush Fire Protection: A guide for councils, planners, fire authorities and developers*.

- **Normal fire suppression activities**

Responding to bush fire is a normal business activity for the fire fighting authorities.

- **Assessing and managing compliance with strategic fire fighting resource allocation provisions**

Strategic fire fighting resource allocation provisions is the process used to identify the number of stations, brigades and appliances required in an area, and consider members, training, assets and hazards.

- **Preparation of a S52 Operations Coordination Plan**

The Operations Coordination Plan is prepared biannually and sets out how coordinated fire fighting will occur. It includes specific operational restrictions on fire fighting techniques in certain areas, where fires will be managed from, and how agencies involved can communicate during operations.

- **Fire Management Plans or Plans of Management**

Some land management agencies have developed fire management plans or plans of management with specific fire or fuel management strategies, for example a Forests NSW Regional Fuel Management Risk Plan, a NPWS Fire Management Strategy. These publicly exhibited plans form the basis for operational fire planning on public parks, reserves and forests.

- **Bush Fire Hazard Complaints**

If someone is concerned about possible bush fire hazards on a neighbouring property or any other land, then this can be reported to the RFS Commissioner or their local RFS Fire Control Centre. The complaint will be investigated and may result in a notice being issued to the landowner or manager to reduce the hazard.

3.3 Asset Specific Treatments

There are four broad strategy groups available to treat the bush fire risk to assets identified in the BFRMP.

The types of asset specific treatments in each strategy group used in the Illawarra BFMC area are listed below. A full list of the treatment strategies in the Illawarra BFMC area are in Appendix 3.

Strategy	Targeted treatments used in the Illawarra BFMC area
Ignition Management	<ul style="list-style-type: none"> • <i>Restrict access to area.</i>
Hazard Reduction	<ul style="list-style-type: none"> • <i>Implement SFAZ mosaic burn program.</i> • <i>Vegetation maintenance around structures.</i>
Community Education	<ul style="list-style-type: none"> • <i>Conduct community engagement activities e.g. targeted street meetings, schools, etc.</i>
Preparedness	<ul style="list-style-type: none"> • <i>Maintain fire trails.</i> • <i>Maintain adequate access for firefighting resources.</i>

Table 3.2 Asset specific treatments used in the Illawarra BFMC area

3.4 Fire Thresholds

The vegetation in the Illawarra BFMC area was classified into fire threshold categories (Table 3.3).

Vegetation formation	Minimum SFAZ Threshold	Minimum LMZ Threshold	Maximum Threshold	Notes
Rainforest	NA	NA	NA	Fire should be avoided.
Alpine complex	NA	NA	NA	Fire should be avoided.
Wet Sclerophyll forest (shrubby subformation)	25	30	60	Crown fires should be avoided in the lower end of the interval range.
Wet Sclerophyll forest (grassy subformation)	10	15	50	Crown fires should be avoided in the lower end of the interval range.
Grassy woodland	5	8	40	Minimum interval of 10 years should apply in the southern Tablelands area. Occasional intervals greater than 15 years may be desirable.
Grassland	2	3	10	Occasional intervals greater than 7 years should be included in coastal areas. There was insufficient data to give a maximum interval; available evidence indicates maximum intervals should be approximately 10 years.
Dry sclerophyll forest (shrub/grass subformation)	5	8	50	Occasional intervals greater than 25 years may be desirable.
Dry sclerophyll forest (shrub subformation)	7	10	30	Occasional intervals greater than 25 years may be desirable.
Heathlands	7	10	30	Occasional intervals greater than 20 years may be desirable.
Freshwater wetlands	6	10	35	Occasional intervals greater than 30 years may be desirable.
Forested wetlands	7	10	35	Some intervals greater than 20 years may be desirable.
Saline wetlands	NA	NA	NA	Fire should be avoided.
Semi-arid woodlands (grassy subformation)	6	9	No max	Not enough data for a maximum fire interval.
Semi-arid woodlands (shrubby subformation)	10	15	No Max	Not enough data for a maximum fire interval.
Arid shrublands (chenopod subformation)	NA	NA	NA	Fire should be avoided.
Arid shrublands (acacia subformation)	10	15	No Max	Not enough data for a maximum fire interval.

Table 3.3 Fire Thresholds for Vegetation Categories

3.5 Annual Works Programs

The land management agencies and fire fighting authorities responsible for implementing the treatments identified in this plan will include those treatments in their annual works programs detailing how, when, and where the required activities will be undertaken.

3.6 Implementation

When the treatments identified in this BFRMP are implemented there are a number of issues that need to be considered by the responsible agency including environmental assessments and approvals, smoke management and prescribed burn plans.

Chapter 4. Performance Monitoring and Reviewing

4.1 Review

This BFRMP must be reviewed and updated within each successive five-year period from the constitution of the BFMC. The Illawarra BFMC will also review this plan as necessary to account for any changes in context or risk. This may be triggered by a range of circumstances, including but not limited to:

- changes to the BFMC area, organisational responsibilities or legislation;
- changes to the bush fire risk in the area; or
- following a major fire event.

4.2 Monitoring

The BFMC is required to monitor progress towards the completion of treatment works listed in the BFRMP, and the timeliness of the works.

4.3 Reporting

The BFMC is required to report annually to the BFCC on its progress in implementing the bush fire risk management activities identified in this plan.

4.4 Performance Measurements

State wide performance measurements which are linked to the BFRMP have been identified by the BFCC. All BFMCs must use these to monitor and report on their success in reducing the bush fire risk in their BFMC area.

Appendices

Appendix 1 Community Participation Strategy

Date	Target Audience	Method of communication	Method of notification	Key messages/ purpose	Resources required	Responsibility
15/09/15	General public Display areas: - North Wollongong - South Wollongong	Community kiosks	Articles in local newspapers, Council website and social media	<ul style="list-style-type: none"> • introduce BFRMPs • community issues • identify assets • asset assessment • discuss treatment options • community responsibilities 	<ul style="list-style-type: none"> • media article • venue • Facilitator/s • maps 	Michael Gray RFS Linda Rowan RFS Alycia Clifford Council Damien Dubrowin NPWS Adrian Johnstone NPWS Jamie Erskine NPWS Jeremy Hood FRNSW
	RFS Brigade Captains	Pre-planned meeting; Presentation at Captains meeting	RFS correspondence, phone calls	<ul style="list-style-type: none"> • identify the assets • identify major areas of risk • discuss likelihood/ consequence • discuss treatment options 	<ul style="list-style-type: none"> • presenter • maps 	Michael Gray RFS
19/09/15	General public Display areas: -- Kiama South -- Kiama North	Pre-planned meeting	Articles in local newspapers, Council website and social media	<ul style="list-style-type: none"> • introduce BFRMPs • community issues • identify assets • asset assessment • discuss treatment options • community responsibilities 	<ul style="list-style-type: none"> • media article • venue • Facilitator/s • maps 	Michael Gray RFS Peter Gill Council Damien Dubrowin NPWS
30/09/15	General Public Display areas: - Shellharbour - South Wollongong	Community kiosk	Articles in local newspapers, Council website and social media	<ul style="list-style-type: none"> • introduce BFRMPs • community issues • identify assets • asset assessment • discuss treatment options • community responsibilities 	<ul style="list-style-type: none"> • media article • venue • Facilitator/s • maps 	Michael Gray RFS Linda Rowan RFS Damien Dubrowin NPWS Andrew Lee Council
7/10/15	General Public Display areas: - Helensburgh	Community kiosk	Articles in local newspapers, Council website and social media	<ul style="list-style-type: none"> • introduce BFRMPs • community issues • identify assets • asset assessment • discuss treatment options • community responsibilities 	<ul style="list-style-type: none"> • media article • venue • Facilitator/s • maps 	Michael Gray RFS Linda Rowan RFS Damien Dubrowin NPWS Tony Kondek WaterNSW Alycia Clifford Council Cassie Martiansen Council Rowena Morris NPWS
Ongoing	General public Local libraries	Contact number/ information line	Number advertised on notice boards, and in local news papers	<ul style="list-style-type: none"> • maintain community participation • record and consider issues and comments • provide feedback 	<ul style="list-style-type: none"> • BFMC representative • landline number 	Michael Gray RFS Council

Precinct 1 - HELENSBURGH

Appendix 2 Asset Register

PRECINCT	ASSET DISPLAY NUMBER	ASSET TYPE	ASSET NAME	ADDRESS	LGA	LIKELIHOOD	CONSEQUENCE	RISK	PRIORITY	TREATMENT NUMBER
Helensburgh	15	Human Settlement	Stanwell Tops	Stanwell Tops	Wollongong	Likely	Catastrophic	Extreme	1B	10;30;14;48;31;52
Helensburgh	14	Human Settlement	Otford	Otford	Wollongong	Likely	Catastrophic	Extreme	1B	48;36;37;38;39;40;25;51
Helensburgh	16	Human Settlement	Darkes Forest	Darkes Forest	Wollongong	Likely	Catastrophic	Extreme	1B	32;33;34;35;55;56;57
Helensburgh	125	Human Settlement	Coalcliff	Coalcliff	Wollongong	Possible	Major	High	3B	189;194;214
Helensburgh	17	Human Settlement	Helensburgh	Helensburgh	Wollongong	Likely	Catastrophic	Extreme	1B	17;23;24;25;26;27;28;29;13;51
Helensburgh	114	Human Settlement	Stanwell Park	Stanwell Park	Wollongong	Possible	Major	High	3B	167;173;174;178;179;137
Helensburgh	64	Human Settlement	Lilyvale	Lilyvale	Wollongong	Likely	Major	Very High	2A	128;95;96
Helensburgh	13	Human Settlement	Garrawarra	Garrawarra	Wollongong	Likely	Catastrophic	Extreme	1B	41;42;43;44;45;50;51
Helensburgh	140	Human Settlement	Neighbourhood Safer Place (Helensburgh)	Charles Harper Park	Wollongong	Possible	Moderate	Medium	4	223
Helensburgh	2	Human Settlement	Stanwell Tops Conference Centre	Stanwell Tops	Wollongong	Likely	Catastrophic	Extreme	1B	12;18
Helensburgh	30	Human Settlement	Helensburgh Public School	Helensburgh	Wollongong	Almost certain	Major	Extreme	1C	67
Helensburgh	18	Human Settlement	Otford Public School	Otford	Wollongong	Likely	Catastrophic	Extreme	1B	53
Helensburgh	81	Human Settlement	Cabin Communities	Little Garie, South Era, Burning Palms & Bulgo	Wollongong	Possible	Catastrophic	Very High	2B	136
Helensburgh	3	Human Settlement	Garrawarra Hospital	Garawarra	Wollongong	Likely	Catastrophic	Extreme	1B	7;19

Precinct 1 - HELENSBURGH

PRECINCT	ASSET DISPLAY NUMBER	ASSET TYPE	ASSET NAME	ADDRESS	LGA	LIKELIHOOD	CONSEQUENCE	RISK	PRIORITY	TREATMENT NUMBER
Helensburgh	59	Human Settlement	Darkes Forest Private School	Darkes Forest	Wollongong	Likely	Major	Very High	2A	94
Helensburgh	138	Economic	Glenbernie Orchard	Darkes Forest	Wollongong	Almost certain	Minor	High	3D	221
Helensburgh	90	Economic	TL11 TransGrid Transmission Line Assets	TL11 Spans 1 - 115	Wollongong	Almost certain	Moderate	Very High	2C	146
Helensburgh	33	Economic	Darkes Forest Zone Substation	Darkes Forest	Wollongong	Likely	Major	Very High	2A	72
Helensburgh	45	Economic	33kV Integral Energy Line	Helensburgh-Kiama	Wollongong	Likely	Major	Very High	2A	74;99
Helensburgh	120	Economic	11kV Integral Energy Lines	Helensburgh-Kiama	Wollongong	Possible	Major	High	3B	169;186
Helensburgh	31	Economic	Thirroul - Waterfall Railway Corridor	Wollongong Nth Suburbs	Wollongong	Likely	Major	Very High	2A	70;71;97
Helensburgh	108	Economic	Otford Rural Fire Station	Otford	Wollongong	Likely	Moderate	High	3A	161
Helensburgh	109	Economic	Darkes Forest Rural Fire Station/Community Hall	Darkes Forest	Wollongong	Likely	Moderate	High	3A	162
Helensburgh	86	Economic	Stanwell Park Rural Fire Station	Cnr Lawrence Hargrave Dr & Murrawal Rd	Wollongong	Almost certain	Moderate	Very High	2C	137
Helensburgh	5	Economic	132kV Endeavour Energy Line	Helensburgh-Berry	Wollongong	Likely	Catastrophic	Extreme	1B	5;21
Helensburgh	87	Economic	TransGrid Communications Asset - Maddens Plains	600m East of Princes Highway - 1.3km North of Wombarra	Wollongong	Almost certain	Moderate	Very High	2C	148
Helensburgh	32	Economic	Level 2 Zone Substation	Helensburgh	Wollongong	Likely	Major	Very High	2A	75

Precinct 1 - HELENSBURGH

PRECINCT	ASSET DISPLAY NUMBER	ASSET TYPE	ASSET NAME	ADDRESS	LGA	LIKELIHOOD	CONSEQUENCE	RISK	PRIORITY	TREATMENT NUMBER
Helensburgh	35	Economic	Coalcliff Colliery and Coke Works Line	Coalcliff	Wollongong	Likely	Major	Very High	2A	73;100
Helensburgh	37	Economic	Garrawarra Hospital Line	Garrawarra	Wollongong	Likely	Major	Very High	2A	77;102
Helensburgh	38	Economic	Metropolitan Colliery and Sewer Pump Line	Parkes St Helensburgh	Wollongong	Likely	Major	Very High	2A	78;103
Helensburgh	36	Economic	Helensburgh Colliery Ventilation Shaft Line	Helensburgh	Wollongong	Likely	Major	Very High	2A	76;101
Helensburgh	134	Economic	Symbio Wildlife Pk	Helensburgh	Wollongong	Possible	Major	High	3B	216
Helensburgh	52	Economic	Metropolitan Colliery	Parkes St, Helensburgh	Wollongong	Likely	Major	Very High	2A	93;116;117
Helensburgh	51	Economic	Metropolitan Air Shaft	Old Princes Highway, Helensburgh	Wollongong	Likely	Major	Very High	2A	92;115
Helensburgh	61	Economic	Woronora Drinking Water Catchment	Woronora	Wollongong	Likely	Major	Very High	2A	126;127
Helensburgh	26	Environment	Flora	Darkes Forest	Wollongong	Almost certain	Major	Extreme	1C	66
Helensburgh	113	Environment	Flora	Northwest of Garrawarra	Wollongong	Likely	Moderate	High	3A	
Helensburgh	0	Environment	Flora	West of Helensburgh	Wollongong	Likely	Moderate	High	3A	
Helensburgh	93	Environment	Fauna amphib	Wollongong LGA	Wollongong	Almost certain	Moderate	Very High	2C	152
Helensburgh	69	Cultural	Aboriginal Sites Dharawal SCA	Dharawal SCA	Wollongong	Likely	Major	Very High	2A	49
Helensburgh	28	Cultural	Aboriginal Sites Garrawarra SCA	Garrawarra SCA	Wollongong	Almost certain	Major	Extreme	1C	49
Helensburgh	27	Cultural	Aboriginal Sites Royal NP	Royal NP	Wollongong	Almost certain	Major	Extreme	1C	49
Helensburgh	0	Cultural	Aboriginal Site	Royal National Park	Wollongong	Likely	Catastrophic	Extreme	1B	49

Precinct 1 - HELENSBURGH

PRECINCT	ASSET DISPLAY NUMBER	ASSET TYPE	ASSET NAME	ADDRESS	LGA	LIKELIHOOD	CONSEQUENCE	RISK	PRIORITY	TREATMENT NUMBER
Helensburgh	68	Cultural	Aboriginal Sites Woronora Dam	Woronora Catchment	Wollongong	Likely	Major	Very High	2A	49
Helensburgh	67	Cultural	Aboriginal Site Heathcote NP	Heathcote NP	Wollongong	Likely	Major	Very High	2A	49
Helensburgh	0	Cultural	Aboriginal Site	Royal National Park	Wollongong	Likely	Catastrophic	Extreme	1B	49
Helensburgh	0	Cultural	Aboriginal Site	Royal National Park	Wollongong	Likely	Catastrophic	Extreme	1B	49
Helensburgh	0	Cultural	Aboriginal Site	Royal National Park	Wollongong	Likely	Catastrophic	Extreme	1B	49
Helensburgh	0	Cultural	Aboriginal Site	Royal National park	Wollongong	Likely	Catastrophic	Extreme	1B	49
Helensburgh	0	Cultural	Aboriginal Site	Helensburgh	Wollongong	Likely	Catastrophic	Extreme	1B	49
Helensburgh	0	Cultural	Aboriginal Site	Royal National Park	Wollongong	Likely	Catastrophic	Extreme	1B	49
Helensburgh	80	Cultural	Lawrence Hargrave Memorial Park	Lawrence Hargrave Dr Stanwell Tops	Wollongong	Possible	Catastrophic	Very High	2B	137
Helensburgh	29	Cultural	Waterfall General (Garrawarra) Cemetery	Garrawarra	Wollongong	Almost certain	Major	Extreme	1C	68

Precinct 2 – WOLLONGONG NORTH

PRECINCT	ASSET DISPLAY NUMBER	ASSET TYPE	ASSET NAME	ADDRESS	LGA	LIKELIHOOD	CONSEQUENCE	RISK	PRIORITY	TREATMENT NUMBER
Wollongong North	167	Human Settlement	Mt Keira/Keiraville	Mt Keira/Keiraville	Wollongong	Possible	Moderate	Medium	4	
Wollongong North	166	Human Settlement	Balgownie/Mt Pleasant	Balgownie/Mt Pleasant	Wollongong	Possible	Moderate	Medium	4	
Wollongong North	165	Human Settlement	Woonona	Woonona	Wollongong	Possible	Moderate	Medium	4	
Wollongong North	163	Human Settlement	Corrimal	Corrimal	Wollongong	Possible	Moderate	Medium	4	
Wollongong North	126	Human Settlement	Wombarra (West)	Wombarra	Wollongong	Possible	Major	High	3B	198;190;177
Wollongong North	189	Human Settlement	Wombarra (East)	Wombarra	Wollongong	Possible	Moderate	Medium	4	143
Wollongong North	164	Human Settlement	Bulli	Bulli	Wollongong	Possible	Moderate	Medium	4	
Wollongong North	200	Human Settlement	Thirroul	Thirroul	Wollongong	Possible	Minor	Low	NA	
Wollongong North	66	Human Settlement	Middle Heights Estate	Coledale	Wollongong	Likely	Major	Very High	2A	129;130;133
Wollongong North	213	Human Settlement	University of Wollongong	Northfields Ave Gwynneville	Wollongong	Unlikely	Minor	Low	NA	
Wollongong North	190	Human Settlement	Clifton (East)	Clifton	Wollongong	Possible	Moderate	Medium	4	143
Wollongong North	84	Human Settlement	Scarborough (West)	Scarborough	Wollongong	Possible	Catastrophic	Very High	2B	141
Wollongong North	210	Human Settlement	Coledale (East)	Coledale	Wollongong	Unlikely	Moderate	Low	NA	
Wollongong North	128	Human Settlement	Austinmer (West)	Austinmer	Wollongong	Possible	Major	High	3B	192;190;191;193;217
Wollongong North	130	Human Settlement	Clifton (West)	Clifton	Wollongong	Possible	Major	High	3B	197;190
Wollongong North	172	Human Settlement	Scarborough (East)	Scarborough	Wollongong	Possible	Moderate	Medium	4	
Wollongong North	209	Human Settlement	Austinmer (East)	Austinmer	Wollongong	Unlikely	Moderate	Low	NA	

Precinct 2 – WOLLONGONG NORTH

PRECINCT	ASSET DISPLAY NUMBER	ASSET TYPE	ASSET NAME	ADDRESS	LGA	LIKELIHOOD	CONSEQUENCE	RISK	PRIORITY	TREATMENT NUMBER
Wollongong North	129	Human Settlement	Coledale (West)	Coledale	Wollongong	Possible	Major	High	3B	195;196
Wollongong North	193	Human Settlement	Neighbourhood Safer Place (Austinmer)	Pinecourt Park	Wollongong	Possible	Moderate	Medium	4	223
Wollongong North	21	Human Settlement	Bulli Tops & Lookout	Bulli Tops	Wollongong	Likely	Catastrophic	Extreme	1B	58
Wollongong North	19	Human Settlement	Mt Keira Public School	Mt Keira	Wollongong	Likely	Catastrophic	Extreme	1B	54
Wollongong North	6	Human Settlement	Mt Keira Girl Guides Camp	Mt Keira Road	Wollongong	Likely	Catastrophic	Extreme	1B	9
Wollongong North	7	Human Settlement	Mt Keira Scout Camp	Mt Keira Road	Wollongong	Likely	Catastrophic	Extreme	1B	8
Wollongong North	78	Human Settlement	Mt Kembla Public School	Mt Kembla	Wollongong	Likely	Major	Very High	2A	132
Wollongong North	12	Human Settlement	Mt Keira Summit Park	Queen Elizabeth Drive, Mt Keira	Wollongong	Likely	Catastrophic	Extreme	1B	46;48
Wollongong North	135	Human Settlement	Coledale Hospital	Lawrence Hargrave Drive, Coledale	Wollongong	Unlikely	Catastrophic	High	3C	218
Wollongong North	20	Human Settlement	Sublime Point Lookout	Sublime Point, Bulli	Wollongong	Likely	Catastrophic	Extreme	1B	58;59
Wollongong North	103	Economic	Panorama House	Bulli Tops	Wollongong	Likely	Moderate	High	3A	156;159
Wollongong North	123	Economic	Austinmer Rural Fire Service	Buttenshaw Drive Austinmer	Wollongong	Possible	Major	High	3B	208
Wollongong North	104	Economic	NPWS Illawarra Workshop	Byarong Park, Mt Keira	Wollongong	Likely	Moderate	High	3A	155
Wollongong North	4	Economic	Bellambi Transmission Substation	Bellambi Creek	Wollongong	Likely	Catastrophic	Extreme	1B	4;20
Wollongong North	162	Economic	Mt Keira Rural Fire Station	Mt Keira	Wollongong	Possible	Moderate	Medium	4	
Wollongong North	107	Economic	Loddin River Pumping Station	Appin Road	Wollongong	Likely	Moderate	High	3A	161

Precinct 2 – WOLLONGONG NORTH

PRECINCT	ASSET DISPLAY NUMBER	ASSET TYPE	ASSET NAME	ADDRESS	LGA	LIKELIHOOD	CONSEQUENCE	RISK	PRIORITY	TREATMENT NUMBER
Wollongong North	63	Economic	Level 2 Zone Substation	Wombarra	Wollongong	Likely	Major	Very High	2A	121
Wollongong North	185	Economic	Level 2 Zone Substation	Mount Ousley	Wollongong	Unlikely	Major	Medium	4	229
Wollongong North	184	Economic	Level 2 Zone Substation	West Wollongong	Wollongong	Unlikely	Major	Medium	4	228
Wollongong North	62	Economic	Level 2 Zone Substation	Bulli	Wollongong	Likely	Major	Very High	2A	120
Wollongong North	42	Economic	Water Pump- Mt Pleasant	New Mount Pleasant Road	Wollongong	Likely	Major	Very High	2A	82;107
Wollongong North	44	Economic	South Bulli Zone Substation	South Bulli Pit	Wollongong	Likely	Major	Very High	2A	85;108
Wollongong North	41	Economic	Brokers Nose Communication Site	Brokers Nose	Wollongong	Likely	Major	Very High	2A	81;106
Wollongong North	96	Economic	M1 Princes Motorway	Wollongong	Wollongong	Almost certain	Moderate	Very High	2C	153
Wollongong North	97	Economic	M1 Princes Motorway	Wollongong	Wollongong	Almost certain	Moderate	Very High	2C	153
Wollongong North	98	Economic	Appin Road	Wollongong	Wollongong	Almost certain	Moderate	Very High	2C	153
Wollongong North	99	Economic	Picton Road	Wollongong	Wollongong	Almost certain	Moderate	Very High	2C	153
Wollongong North	24	Economic	Mt Keira Communications Facility	Mt Keira	Wollongong	Almost certain	Major	Extreme	1C	65;69
Wollongong North	139	Economic	Letterbox Tower	Cataract	Wollongong	Almost certain	Minor	High	3D	222
Wollongong North	39	Economic	Maddens Plains Communications Site	Maddens Plains	Wollongong	Likely	Major	Very High	2A	79;104
Wollongong North	40	Economic	Loddon River Supply Line	Bulli Tops	Wollongong	Likely	Major	Very High	2A	80;105
Wollongong North	47	Economic	NRE No.4 Shaft	Picton Road	Wollongong	Likely	Major	Very High	2A	87;111

Precinct 2 – WOLLONGONG NORTH

PRECINCT	ASSET DISPLAY NUMBER	ASSET TYPE	ASSET NAME	ADDRESS	LGA	LIKELIHOOD	CONSEQUENCE	RISK	PRIORITY	TREATMENT NUMBER
Wollongong North	46	Economic	Cordeaux Mine	Picton Road	Wollongong	Likely	Major	Very High	2A	88;110
Wollongong North	121	Economic	South Bulli Colliery	Bellambi Lane, Russell Vale	Wollongong	Possible	Major	High	3B	172;187
Wollongong North	53	Economic	South Bulli Colliery Air Shaft	Fire Road 7B	Wollongong	Likely	Major	Very High	2A	86;109
Wollongong North	101	Economic	Cataract Drinking Water Catchment	Cataract	Wollongong	Almost certain	Moderate	Very High	2C	126;127
Wollongong North	102	Economic	Cordeaux Drinking Water Catchments	Cordeaux	Wollongong	Almost certain	Moderate	Very High	2C	126;127
Wollongong North	95	Environment	Bellambi Dunes	Bellambi Dunes	Wollongong	Almost certain	Moderate	Very High	2C	154
Wollongong North	186	Environment	Puckeys Estate	Puckeys Estate, Fairy Meadow	Wollongong	Likely	Minor	Medium	4	230
Wollongong North	23	Environment	Fauna amphib	Wollongong LGA	Wollongong	Almost certain	Major	Extreme	1C	63
Wollongong North	137	Environment	Fauna	Wollongong LGA	Wollongong	Almost certain	Minor	High	3D	220
Wollongong North	156	Environment	Fauna amphib	Wollongong LGA	Wollongong	Unlikely	Major	Medium	4	
Wollongong North	0	Environment	Flora	Wollongong	Wollongong	Likely	Moderate	High	3A	
Wollongong North	0	Environment	Flora Vine Interface	Wollongong LGA	Wollongong	Unlikely	Major	Medium	4	
Wollongong North	111	Environment	Fauna Ground Bird	Wollongong LGA	Wollongong	Likely	Moderate	High	3A	
Wollongong North	112	Environment	Flora	Wollongong North	Wollongong	Likely	Moderate	High	3A	
Wollongong North	56	Environment	Flora Rainforest	Wollongong LGA	Wollongong	Likely	Major	Very High	2A	125
Wollongong North	0	Environment	Fauna Ground bird	Wollongong LGA	Wollongong	Almost certain	Major	Extreme	1C	61
Wollongong North	122	Environment	Flora Rainforest	Wollongong LGA	Wollongong	Possible	Major	High	3B	205

Precinct 2 – WOLLONGONG NORTH

PRECINCT	ASSET DISPLAY NUMBER	ASSET TYPE	ASSET NAME	ADDRESS	LGA	LIKELIHOOD	CONSEQUENCE	RISK	PRIORITY	TREATMENT NUMBER
Wollongong North	1	Environment	Flora Shrub	Wollongong LGA	Wollongong	Almost certain	Catastrophic	Extreme	1A	3;2
Wollongong North	55	Environment	Flora	Wollongong LGA	Wollongong	Likely	Major	Very High	2A	118
Wollongong North	92	Environment	Fauna amphib	Wollongong LGA	Wollongong	Almost certain	Moderate	Very High	2C	151
Wollongong North	105	Environment	Fauna amphib	Wollongong LGA	Wollongong	Likely	Moderate	High	3A	160
Wollongong North	0	Environment	Fauna Amphibian	Illawarra	Wollongong	Likely	Moderate	High	3A	
Wollongong North	157	Environment	Fauna amphib	Wollongong LGA	Wollongong	Unlikely	Major	Medium	4	
Wollongong North	70	Cultural	Aboriginal Sites Cataract Catchment Area	Cataract Catchment	Wollongong	Likely	Major	Very High	2A	49
Wollongong North	76	Cultural	Aboriginal Sites Illawarra Escarpment SCA	Illawarra Escarpment	Wollongong	Likely	Major	Very High	2A	49

Precinct 3 – WOLLONGONG SOUTH

PRECINCT	ASSET DISPLAY NUMBER	ASSET TYPE	ASSET NAME	ADDRESS	LGA	LIKELIHOOD	CONSEQUENCE	RISK	PRIORITY	TREATMENT NUMBER
Wollongong South	169	Human Settlement	Cordeaux Heights/Unanderra	Cordeaux Heights/Unanderra	Wollongong	Possible	Moderate	Medium	4	
Wollongong South	168	Human Settlement	Figtree/Nareena Hills	Figtree/Nareena Hills	Wollongong	Possible	Moderate	Medium	4	
Wollongong South	170	Human Settlement	Farmborough Heights	Farmborough Heights	Wollongong	Possible	Moderate	Medium	4	
Wollongong South	9	Human Settlement	Coal Geology Residences	Farmborough Road, Farmborough Heights	Wollongong	Likely	Catastrophic	Extreme	1B	11;16
Wollongong South	85	Human Settlement	Kembla Heights	Kembla Heights	Wollongong	Possible	Catastrophic	Very High	2B	142;143;16;144
Wollongong South	183	Human Settlement	Huntley/Avondale	Huntley/Avondale	Wollongong	Possible	Moderate	Medium	4	
Wollongong South	206	Human Settlement	Wongawilli/Horsley	Wongawilli/Horsley	Wollongong	Possible	Minor	Low	NA	
Wollongong South	171	Human Settlement	Dombarton	Dombarton	Wollongong	Possible	Moderate	Medium	4	
Wollongong South	127	Human Settlement	Mt Kembla	Mt Kembla/Kembla Heights	Wollongong	Possible	Major	High	3B	201;202;203;190
Wollongong South	145	Human Settlement	TAFE Yallah Campus	Yallah	Wollongong	Possible	Moderate	Medium	4	
Wollongong South	88	Economic	Avon Switching Station-TransGrid Substation Asset	Avon Switching Station No 15 Fire Road	Wollongong	Almost certain	Moderate	Very High	2C	145
Wollongong South	94	Economic	TransGrid - Avon Sub/Switch	TL10/16 Span 160	Wollongong	Almost certain	Moderate	Very High	2C	149
Wollongong South	148	Economic	Substation-Kembla	Mt Kembla	Wollongong	Possible	Moderate	Medium	4	231
Wollongong South	132	Economic	Moss Vale Railway Corridor	Farmborough Heights	Wollongong	Possible	Major	High	3B	170;184
Wollongong South	65	Economic	Nebo No.4 Shaft	Upper Cordeaux, Mt Kembla	Wollongong	Likely	Major	Very High	2A	90;113
Wollongong South	153	Economic	TL17 TransGrid Transmission Line Assets	TL17 Landing to 36	Wollongong	Possible	Moderate	Medium	4	224

Precinct 3 – WOLLONGONG SOUTH

PRECINCT	ASSET DISPLAY NUMBER	ASSET TYPE	ASSET NAME	ADDRESS	LGA	LIKELIHOOD	CONSEQUENCE	RISK	PRIORITY	TREATMENT NUMBER
Wollongong South	181	Economic	Farmborough Heights Rural Fire Station	Farmborough Heights	Shellharbour	Possible	Moderate	Medium	4	
Wollongong South	34	Economic	Substation Cordeaux No.1	Cordeaux Dam	Wollongong	Likely	Major	Very High	2A	84;98
Wollongong South	182	Economic	Dapto Rural Fire Station	Wongawilli	Wollongong	Possible	Moderate	Medium	4	
Wollongong South	60	Economic	Avon raw water off-take	Avon	Wollongong	Likely	Major	Very High	2A	119
Wollongong South	146	Economic	Mt Kembla Rural Fire Station	Cordeaux Road, Mount Kembla	Wollongong	Possible	Moderate	Medium	4	
Wollongong South	43	Economic	Water Pump- Mt Kembla	Mt Kembla	Wollongong	Likely	Major	Very High	2A	83
Wollongong South	150	Economic	TL8 TransGrid Transmission Line Assets	TL8 Span 144 to 175	Wollongong	Possible	Moderate	Medium	4	225
Wollongong South	151	Economic	TL18 TransGrid Transmission Line Assets	TL18 Spans 1 to 30	Wollongong	Possible	Moderate	Medium	4	226
Wollongong South	89	Economic	TL 10 TransGrid Transmission Line Assets	TL10 Spans 1 to 28	Wollongong	Almost certain	Moderate	Very High	2C	147
Wollongong South	149	Economic	Dapto Substation	Yallah Road, Yallah	Wollongong	Possible	Moderate	Medium	4	
Wollongong South	152	Economic	TL16 TransGrid Transmission Line Assets	TL16 Spans 133 to 159	Wollongong	Possible	Moderate	Medium	4	227
Wollongong South	141	Economic	Tallawarra Power Station	Tallawarra Lands	Wollongong	Possible	Moderate	Medium	4	
Wollongong South	48	Economic	Dendrobium Mine	Adj 6C Fire Trail	Wollongong	Likely	Major	Very High	2A	88;110
Wollongong South	49	Economic	Elouera Colliery	Wongawilli Road, Wongawilli	Wollongong	Likely	Major	Very High	2A	89;112

Precinct 3 – WOLLONGONG SOUTH

PRECINCT	ASSET DISPLAY NUMBER	ASSET TYPE	ASSET NAME	ADDRESS	LGA	LIKELIHOOD	CONSEQUENCE	RISK	PRIORITY	TREATMENT NUMBER
Wollongong South	50	Economic	Wongawilli Air Shaft	Adj to Western End of Avon Tunnel	Wollongong	Likely	Major	Very High	2A	91;114
Wollongong South	77	Economic	Avon Drinking Water Catchments	Avon	Kiama	Likely	Major	Very High	2A	131
Wollongong South	155	Environment	Fauna	Wollongong LGA	Wollongong	Likely	Minor	Medium	4	
Wollongong South	58	Environment	Flora-yellow	Wollongong LGA	Wollongong	Likely	Major	Very High	2A	123
Wollongong South	22	Environment	Fauna amphib	Wollongong LGA	Wollongong	Almost certain	Major	Extreme	1C	62
Wollongong South	57	Environment	Flora-yellow	Wollongong LGA	Wollongong	Likely	Major	Very High	2A	122
Wollongong South	159	Environment	Flora-herb	Wollongong LGA	Wollongong	Unlikely	Major	Medium	4	
Wollongong South	54	Environment	Flora Ground	Wollongong LGA	Wollongong	Likely	Major	Very High	2A	124
Wollongong South	91	Environment	Fauna amphib	Wollongong LGA	Wollongong	Almost certain	Moderate	Very High	2C	150
Wollongong South	11	Environment	Flora-sub shrub	West Dapto	Wollongong	Likely	Catastrophic	Extreme	1B	47
Wollongong South	72	Cultural	Aboriginal Sites Avon Catchment Area	Avon Catchment	Wollongong	Likely	Major	Very High	2A	49
Wollongong South	71	Cultural	Aboriginal Sites Cordeaux Catchment Area	Cordeaux Catchment	Wollongong	Likely	Major	Very High	2A	49
Wollongong South	73	Cultural	Aboriginal Sites Upper Nepean SCA	Upper Nepean	Wollongong	Likely	Major	Very High	2A	49
Wollongong South	0	Cultural	Aboriginal Site	Horsley	Wollongong	Likely	Major	Very High	2A	49
Wollongong South	0	Cultural	Aboriginal Site	Port Kembla	Wollongong	Possible	Major	High	3B	
Wollongong South	0	Cultural	Aboriginal Site	Yallah	Wollongong	Likely	Major	Very High	2A	49

Precinct 3 – WOLLONGONG SOUTH

PRECINCT	ASSET DISPLAY NUMBER	ASSET TYPE	ASSET NAME	ADDRESS	LGA	LIKELIHOOD	CONSEQUENCE	RISK	PRIORITY	TREATMENT NUMBER
Wollongong South	0	Cultural	Aboriginal Site	Windang	Wollongong	Likely	Catastrophic	Extreme	1B	49
Wollongong South	0	Cultural	Aboriginal Site	Figtree	Wollongong	Unlikely	Moderate	Low	NA	
Wollongong South	0	Cultural	Aboriginal Site	Yallah	Wollongong	Likely	Major	Very High	2A	49
Wollongong South	83	Cultural	Walkers Property	Upper Cordeaux	Wollongong	Possible	Catastrophic	Very High	2B	139
Wollongong South	82	Cultural	PK2 Pit Pony Stable	Farmborough Road, Farmborough Heights	Wollongong	Possible	Catastrophic	Very High	2B	135;140
Wollongong South	147	Cultural	Former Marshall Mount Public School and Master's Residence	LOT 100 DP 712786 MARSHALL MOUNT ROAD, DAPTO	Wollongong	Possible	Moderate	Medium	4	
Wollongong South	119	Cultural	Mt Brown Reserve	Koonawarra/Dapto	Wollongong	Possible	Major	High	3B	176;188;209
Wollongong South	8	Cultural	Mt Kembla Pit Pony Stable	Harry Graham Drive, Mt Kembla	Wollongong	Likely	Catastrophic	Extreme	1B	6
Wollongong South	10	Cultural	Cordeaux Manner	Cordeaux Manner	Wollongong	Likely	Catastrophic	Extreme	1B	15;22

Precinct 4 – SHELLHARBOUR

PRECINCT	ASSET DISPLAY NUMBER	ASSET TYPE	ASSET NAME	ADDRESS	LGA	LIKELIHOOD	CONSEQUENCE	RISK	PRIORITY	TREATMENT NUMBER
Shellharbour	187	Human Settlement	Albion Park Rail	Shellharbour	Shellharbour	Possible	Moderate	Medium	4	
Shellharbour	208	Human Settlement	Croom	Shellharbour	Shellharbour	Possible	Minor	Low	NA	
Shellharbour	202	Human Settlement	Tullimbar Estate	Tullimbar	Shellharbour	Possible	Minor	Low	NA	
Shellharbour	118	Human Settlement	Blackbutt	Blackbutt	Shellharbour	Possible	Major	High	3B	175;182;204;213
Shellharbour	203	Human Settlement	Shellcove	Shellcove	Shellharbour	Unlikely	Minor	Low	NA	
Shellharbour	177	Human Settlement	Albion Park	Albion Park	Shellharbour	Possible	Moderate	Medium	4	
Shellharbour	116	Human Settlement	Mount Warrigal retirement home	Mount Warrigal	Shellharbour	Possible	Major	High	3B	165;183
Shellharbour	175	Economic	Calderwood Rural Fire Station	Calderwood	Shellharbour	Possible	Moderate	Medium	4	
Shellharbour	142	Economic	Nurrewin	Macquarie Pass NP	Shellharbour	Unlikely	Major	Medium	4	
Shellharbour	143	Economic	Mount Warrigal Comms Facilities	Mount Warrigal	Shellharbour	Possible	Moderate	Medium	4	
Shellharbour	207	Economic	Unanderra - Gerringong Railway Corridor	Shellharbour/Kiama	Shellharbour	Unlikely	Minor	Low	NA	
Shellharbour	100	Economic	Illawarra Highway	Shellharbour	Shellharbour	Almost certain	Moderate	Very High	2C	153
Shellharbour	194	Economic	Bass Point Reserve	Bass Point	Kiama	Unlikely	Major	Medium	4	
Shellharbour	133	Economic	Killalea State Park	Shellharbour	Shellharbour	Possible	Major	High	3B	210;212
Shellharbour	199	Economic	Bass Point Quarry	Bass Point	Shellharbour	Unlikely	Moderate	Low	NA	
Shellharbour	198	Economic	Basalt Quarries	Croom/ Dunmore	Shellharbour	Unlikely	Moderate	Low	NA	
Shellharbour	161	Environment	Flora-yellow	Shellharbour LGA	Shellharbour	Unlikely	Major	Medium	4	
Shellharbour	0	Environment	Flora	Shellharbour LGA	Shellharbour	Likely	Moderate	High	3A	
Shellharbour	0	Environment	Flora	Shellharbour	Shellharbour	Likely	Moderate	High	3A	

Precinct 4 – SHELLHARBOUR

PRECINCT	ASSET DISPLAY NUMBER	ASSET TYPE	ASSET NAME	ADDRESS	LGA	LIKELIHOOD	CONSEQUENCE	RISK	PRIORITY	TREATMENT NUMBER
Shellharbour	160	Environment	Flora-herb	Shellharbour LGA	Shellharbour	Unlikely	Major	Medium	4	
Shellharbour	154	Environment	Fauna amphib	Shellharbour LGA	Shellharbour	Unlikely	Major	Medium	4	
Shellharbour	0	Environment	Flora Vine urban	Shellharbour	Shellharbour	Unlikely	Major	Medium	4	
Shellharbour	25	Environment	Flora Ground	Shellharbour LGA	Shellharbour	Almost certain	Major	Extreme	1C	64
Shellharbour	0	Environment	Flora	Shellharbour	Shellharbour	Almost certain	Moderate	Very High	2C	49
Shellharbour	0	Cultural	Aboriginal Site	Dunmore	Shellharbour	Unlikely	Major	Medium	4	

Precinct 5 – KIAMA NORTH

PRECINCT	ASSET DISPLAY NUMBER	ASSET TYPE	ASSET NAME	ADDRESS	LGA	LIKELIHOOD	CONSEQUENCE	RISK	PRIORITY	TREATMENT NUMBER
Kiama North	124	Human Settlement	Jamberoo Rural	Jamberoo	Kiama	Possible	Major	High	3B	206;164;180;181;163
Kiama North	131	Human Settlement	Carrington Falls	Carrington Falls	Kiama	Possible	Major	High	3B	207;199;200;211;215
Kiama North	205	Human Settlement	Kiama Downs	Kiama Downs	Kiama	Unlikely	Minor	Low	NA	
Kiama North	204	Human Settlement	Minnamurra	Minnamurra	Kiama	Unlikely	Minor	Low	NA	
Kiama North	201	Human Settlement	Kiama	Kiama	Kiama	Possible	Minor	Low	NA	
Kiama North	192	Human Settlement	Jamberoo Residential	Jamberoo	Kiama	Possible	Moderate	Medium	4	
Kiama North	178	Human Settlement	Jamberoo Lodge	Jamberoo	Kiama	Possible	Moderate	Medium	4	
Kiama North	179	Human Settlement	Triple Care Farm	Carrington	Kiama	Unlikely	Major	Medium	4	
Kiama North	144	Economic	Minnamurra Waste Disposal Depot	Minnamurra	Kiama	Possible	Moderate	Medium	4	
Kiama North	176	Economic	Carrington Falls Rural Fire Station	Carrington Falls	Kiama	Possible	Moderate	Medium	4	
Kiama North	115	Economic	K Hill Comms & Repeater Towers	Knights Hill	Kiama	Possible	Major	High	3B	166
Kiama North	117	Economic	Saddleback Mtn Comms Facility	Saddleback Mtn	Kiama	Possible	Major	High	3B	171;168;185
Kiama North	180	Economic	Illawarra Fly Tree Top Walk	Knights Hill	Kiama	Possible	Moderate	Medium	4	
Kiama North	212	Economic	Jamberoo Recreational Park	Jamberoo	Kiama	Unlikely	Moderate	Low	NA	
Kiama North	191	Economic	Minnamurra Rainforest Centre	Minnamurra Rainforest	Kiama	Unlikely	Major	Medium	4	

Precinct 5 – KIAMA NORTH

PRECINCT	ASSET DISPLAY NUMBER	ASSET TYPE	ASSET NAME	ADDRESS	LGA	LIKELIHOOD	CONSEQUENCE	RISK	PRIORITY	TREATMENT NUMBER
Kiama North	110	Environment	Fauna Ground Bird	Kiama LGA	Kiama	Likely	Moderate	High	3A	
Kiama North	158	Environment	Flora-herb	Kiama LGA	Kiama	Unlikely	Major	Medium	4	
Kiama North	0	Environment	Fauna Minnamurra River	Minnamurra	Kiama	Unlikely	Major	Medium	4	
Kiama North	0	Environment	Fauna Ground Bird	Kiama LGA	Kiama	Almost certain	Major	Extreme	1C	60
Kiama North	0	Environment	Flora vine interface	Kiama	Kiama	Unlikely	Major	Medium	4	
Kiama North	0	Environment	Fauna amphib	Kiama LGA	Kiama	Likely	Moderate	High	3A	157
Kiama North	0	Environment	Flora rainforest	Southern Illawarra	Kiama	Unlikely	Major	Medium	4	
Kiama North	106	Environment	Flora shrub	Kiama LGA	Kiama	Likely	Moderate	High	3A	158
Kiama North	136	Environment	Fauna	Kiama LGA	Kiama	Almost certain	Minor	High	3D	219
Kiama North	74	Cultural	Aboriginal Sites Barren Grounds Nature Reserve	Kiama LGA	Kiama	Likely	Major	Very High	2A	49
Kiama North	75	Cultural	Aboriginal Sites Budderoo NP	Kiama LGA	Kiama	Likely	Major	Very High	2A	49
Kiama North	0	Cultural	Aboriginal Site	Jerrara	Kiama	Unlikely	Moderate	Low	NA	

Precinct 5 – KIAMA SOUTH

PRECINCT	ASSET DISPLAY NUMBER	ASSET TYPE	ASSET NAME	ADDRESS	LGA	LIKELIHOOD	CONSEQUENCE	RISK	PRIORITY	TREATMENT NUMBER
Kiama South	173	Human Settlement	Gerroa	Gerroa	Kiama	Possible	Moderate	Medium	4	232
Kiama South	188	Human Settlement	Gerringong/Werri Beach	Gerringong/Werri Beach	Kiama	Possible	Moderate	Medium	4	
Kiama South	197	Human Settlement	Neighbourhood Safer Place (Foxground)	205 Foxground Rd Foxground	Kiama	Unlikely	Moderate	Low	NA	235
Kiama South	196	Human Settlement	Neighbourhood Safer Place (Gerroa)	Gerroa Fishermans Club Car Park	Kiama	Unlikely	Moderate	Low	NA	234
Kiama South	79	Human Settlement	Seven Mile Beach Holiday Park	Gerroa	Kiama	Possible	Catastrophic	Very High	2B	134;138
Kiama South	174	Economic	Foxground Rural Fire Station	Foxground	Kiama	Possible	Moderate	Medium	4	
Kiama South	211	Economic	Gerroa Sewage Treatment Plant	Gerroa	Kiama	Unlikely	Moderate	Low	NA	236
Kiama South	0	Cultural	Aboriginal Site	Toolijooa	Kiama	Unlikely	Moderate	Low	NA	

Appendix 3 Treatment Register

CA	WaterNSW
FRNSW	Fire & Rescue NSW
LGA	Local Government Agency
OEH	National Park & Wildlife Service
RFS	Rural Fire Service
RMS	Roads & Maritime Services
TI CL	Department of Primary Industries - Lands

Treatment Register

TREATMENT NUMBER	STRATEGY	PRIORITY	ACTION DESCRIPTION	RESPONSIBLE AGENCY	SCHEDULE DATE	SUPPORT AGENCY
1	Hazard Reduction		Vegetation maintenance around structure	CA	1516;1617;1718;1819;1920	
2	Ignition Management	1A	Restrict access to area	LGA	1516;1617;1718;1819;1920	
3	Preparedness	1A	Maintain fire trails	OEH;Private	1516;1617;1718;1819;1920	
4	Hazard Reduction	1B	Vegetation maintenance around substation	Other	1516;1617;1718;1819;1920	RFS
5	Hazard Reduction	1B	Inspect and perform hazard reduction activities	Other	1516;1617;1718;1819;1920	RFS
6	Hazard Reduction	1B	APZ maintenance	OEH	1516;1617;1718;1819;1920	
7	Hazard Reduction	1B	APZ maintenance	Other	1516;1617;1718;1819;1920	RFS
8	Hazard Reduction	1B	APZ maintenance	OEH	1516;1617;1718;1819;1920	
9	Hazard Reduction	1B	APZ maintenance	OEH	1516;1617;1718;1819;1920	
10	Community Education	1B	Conduct Community Engagement Activities	LGA;OEH;RFS	1516;1617;1718;1819;1920	
11	Hazard Reduction	1B	APZ maintenance	OEH	1516;1617;1718;1819;1920	
12	Hazard Reduction	1B	APZ maintenance	Other	1516;1617;1718;1819;1920	RFS
13	Hazard Reduction	1B	APZ maintenance	Other	1516;1617;1718;1819;1920	
14	Hazard Reduction	1B	Vegetation maintenance around infrastructures	Private	1516;1617;1718;1819;1920	
15	Hazard Reduction	1B	Vegetation maintenance around structure	CA	1516;1617;1718;1819;1920	
16	Preparedness	1B	Maintain fire trails	OEH	1516;1617;1718;1819;1920	
17	Preparedness	1B	Maintain fire trails	RailCorp	1516;1617;1718;1819;1920	
18	Preparedness	1B	Maintain fire trails	Other	1516;1617;1718;1819;1920	RFS
19	Preparedness	1B	Maintain fire trails	CA;Other	1516;1617;1718;1819;1920	RFS
20	Preparedness	1B	Maintain fire trails	Private;Other	1516;1617;1718;1819;1920	
21	Preparedness	1B	Maintain fire trails	CA;LGA;Private;Other	1516;1617;1718;1819;1920	
22	Preparedness	1B	Maintain fire trails	CA;LGA	1516;1617;1718;1819;1920	
23	Community Education	1B	Conduct Community Engagement Activities	LGA;OEH;RFS	1516;1617;1718;1819;1920	
24	Preparedness	1B	Maintain fire trails	LGA;OEH;Private	1516;1617;1718;1819;1920	
25	Hazard Reduction	1B	APZ maintenance	TI CL	1516;1617;1718;1819;1920	
26	Community Education	1B	Conduct letter box drop or media release	OEH	1516;1617;1718;1819;1920	
27	Hazard Reduction	1B	APZ maintenance	Private	1516;1617;1718;1819;1920	
28	Community Education	1B	Conduct Community Engagement Activities	FRNSW	1516;1617;1718;1819;1920	
29	Hazard Reduction	1B	APZ maintenance	LGA	1516;1617;1718;1819;1920	
30	Community Education	1B	Conduct Community Engagement Activities	FRNSW	1516;1617;1718;1819;1920	
31	Preparedness	1B	Maintain fire trails	Private	1516;1617;1718;1819;1920	

TREATMENT NUMBER	STRATEGY	PRIORITY	ACTION DESCRIPTION	RESPONSIBLE AGENCY	SCHEDULE DATE	SUPPORT AGENCY
32	Community Education	1B	Conduct Community Engagement Activities	CA;OEH;RFS	1516;1617;1718;1819;1920	
33	Preparedness	1B	Maintain fire trails	CA;OEH	1516;1617;1718;1819;1920	
34	Hazard Reduction	1B	APZ maintenance	Private	1516;1617;1718;1819;1920	
35	Hazard Reduction	1B	APZ maintenance	CA	1516;1617;1718;1819;1920	
36	Hazard Reduction	1B	APZ maintenance	Private	1516;1617;1718;1819;1920	
37	Community Education	1B	Conduct media release or letter box drop	OEH	1516;1617;1718;1819;1920	
38	Hazard Reduction	1B	Implement SFAZ mosaic burn program	Private	1819	RFS
39	Community Education	1B	Conduct Community Engagement Activities	RFS	1516;1617;1718;1819;1920	
40	Preparedness	1B	Maintain fire trails	LGA	1516;1617;1718;1819;1920	
41	Hazard Reduction	1B	Implement SFAZ mosaic burn program	CA;Other	1718;1920	RFS
42	Hazard Reduction	1B	APZ maintenance	Other	1516;1617;1718;1819;1920	
43	Hazard Reduction	1B	Vegetation maintenance around structures	Other	1516;1617;1718;1819;1920	
44	Community Education	1B	Conduct Community Engagement Activities	Other	1516;1617;1718;1819;1920	RFS
45	Preparedness	1B	Maintain fire trails	CA;Other	1516;1617;1718;1819;1920	
46	Hazard Reduction	1B	APZ maintenance	Private	1516;1617;1718;1819;1920	
47	Preparedness	1B	Maintain adequate access for firefighting resources	Private	1516;1617;1718;1819;1920	
48	Hazard Reduction	1B	Vegetation maintenance around structures	LGA	1516;1617;1718;1819;1920	
49	Preparedness	1B	Maintain adequate access for firefighting resource	OEH	1516;1617;1718;1819;1920	
50	Preparedness	1B	Implement and maintain Community Protection Plan	RFS	1516;1617;1718;1819;1920	
51	Hazard Reduction	1B	Implement SFAZ mosaic burn program	TI CL;LGA;OEH;Private;RFS	1516;1718;1920	
52	Hazard Reduction	1B	Implement SFAZ mosaic burn program	LGA;OEH;RFS	1718;1920	
53	Hazard Reduction	1B	Vegetation maintenance around School	Other	1516;1617;1718;1819;1920	
54	Hazard Reduction	1B	Vegetation maintenance around School	Other	1516;1617;1718;1819;1920	
55	Hazard Reduction	1B	Implement SFAZ mosaic burn program	OEH	1617;1819	
56	Hazard Reduction	1B	Implement SFAZ mosaic burn program	CA	1718;1920	
57	Preparedness	1B	Maintain fire trails	Private	1516;1617;1718;1819;1920	LGA;RFS
58	Hazard Reduction	1B	Vegetation maintenance around structures	LGA	1516;1617;1718;1819;1920	
59	Preparedness	1B	Maintain fire trails	LGA	1516;1617;1718;1819;1920	
60	Preparedness	1C	Maintain fire trails	OEH	1516;1617;1718;1819;1920	
61	Preparedness	1C	Maintain fire trails	CA	1516;1617;1718;1819;1920	
62	Preparedness	1C	Maintain adequate access for firefighting resources	Private	1516;1617;1718;1819;1920	
63	Preparedness	1C	Maintain adequate access for firefighting resources	Private	1516;1617;1718;1819;1920	
64	Preparedness	1C	Maintain adequate access for firefighting resources	Private	1516;1617;1718;1819;1920	

TREATMENT NUMBER	STRATEGY	PRIORITY	ACTION DESCRIPTION	RESPONSIBLE AGENCY	SCHEDULE DATE	SUPPORT AGENCY
65	Preparedness	1C	Maintain access	LGA	1516;1617;1718;1819;1920	
66	Preparedness	1C	Maintain fire trails	OEH	1516;1617;1718;1819;1920	
67	Hazard Reduction	1C	Vegetation maintenance around School	Other	1516;1617;1718;1819;1920	
68	Hazard Reduction	1C	Vegetation Maintenance around Cemetery	LGA	1516;1617;1718;1819;1920	
69	Hazard Reduction	1C	APZ maintenance	LGA	1617;1718;1819;1920	
70	Hazard Reduction	2A	Vegetation maintenance along rail corridors	RailCorp	1516;1617;1718;1819;1920	
71	Preparedness	2A	Inspect and maintain raliway corridor	RailCorp	1516;1617;1718;1819;1920	
72	Hazard Reduction	2A	Vegetation maintenance around substation	Other	1516;1617;1718;1819;1920	RFS
73	Hazard Reduction	2A	Inspect and perform hazard reduction activities	Other	1516;1617;1718;1819;1920	RFS
74	Hazard Reduction	2A	Inspect and perform hazard reduction activities	Other	1516;1617;1718;1819;1920	RFS
75	Hazard Reduction	2A	Vegetation maintenance around substation	Other	1516;1617;1718;1819;1920	
76	Hazard Reduction	2A	Inspect and perform hazard reduction activities	Other	1516;1617;1718;1819;1920	RFS
77	Hazard Reduction	2A	Inspect and perform hazard reduction activities	Other	1516;1617;1718;1819;1920	RFS
78	Hazard Reduction	2A	Inspect and perform hazard reduction activities	Other	1516;1617;1718;1819;1920	RFS
79	Hazard Reduction	2A	Inspect and perform hazard reduction activities	Other	1516;1617;1718;1819;1920	RFS
80	Hazard Reduction	2A	Inspect and perform hazard reduction activities	Other	1516;1617;1718;1819;1920	RFS
81	Hazard Reduction	2A	Inspect and perform hazard reduction activities	Other	1516;1617;1718;1819;1920	RFS
82	Hazard Reduction	2A	Inspect and perform hazard reduction activities	Other	1516;1617;1718;1819;1920	RFS
83	Hazard Reduction	2A	Inspect and perform hazard reduction activities	Other	1516;1617;1718;1819;1920	RFS
84	Hazard Reduction	2A	Vegetation maintenance around substation	Other	1516;1617;1718;1819;1920	
85	Hazard Reduction	2A	Vegetation maintenance around substation	Other	1516;1617;1718;1819;1920	
86	Hazard Reduction	2A	APZ maintenance	Other	1516;1617;1718;1819;1920	
87	Hazard Reduction	2A	APZ maintenance	Other	1516;1617;1718;1819;1920	
88	Hazard Reduction	2A	APZ maintenance	Other	1516;1617;1718;1819;1920	
89	Hazard Reduction	2A	APZ maintenance	Other	1516;1617;1718;1819;1920	
90	Hazard Reduction	2A	APZ maintenance	Other	1516;1617;1718;1819;1920	
91	Hazard Reduction	2A	APZ maintenance	Other	1516;1617;1718;1819;1920	
92	Hazard Reduction	2A	APZ maintenance	Other	1516;1617;1718;1819;1920	
93	Hazard Reduction	2A	APZ maintenance	Other	1516;1617;1718;1819;1920	
94	Hazard Reduction	2A	Vegetation maintenance around infrastructure	Private	1516;1617;1718;1819;1920	
95	Hazard Reduction	2A	Vegetation maintenance around infrastructures	OEH	1516;1617;1718;1819;1920	
96	Preparedness	2A	Maintain fire trails	Private	1516;1617;1718;1819;1920	
97	Preparedness	2A	Maintain access	RailCorp	1516;1617;1718;1819;1920	
98	Preparedness	2A	Maintain fire trails	CA;Other	1516;1617;1718;1819;1920	
99	Preparedness	2A	Maintain fire trails	CA;Private;Other	1516;1617;1718;1819;1920	
100	Preparedness	2A	Maintain fire trails	Private;Other	1516;1617;1718;1819;1920	

TREATMENT NUMBER	STRATEGY	PRIORITY	ACTION DESCRIPTION	RESPONSIBLE AGENCY	SCHEDULE DATE	SUPPORT AGENCY
101	Preparedness	2A	Maintain fire trails	CA;Private;Other	1516;1617;1718;1819;1920	
102	Preparedness	2A	Maintain fire trails	Private;Other	1516;1617;1718;1819;1920	
103	Preparedness	2A	Maintain fire trails	Private;Other	1516;1617;1718;1819;1920	
104	Preparedness	2A	Maintain fire trails	Private;Other	1516;1617;1718;1819;1920	
105	Preparedness	2A	Maintain fire trails	CA;LGA;Other	1516;1617;1718;1819;1920	
106	Preparedness	2A	Maintain fire trails	LGA;Private;Other	1516;1617;1718;1819;1920	
107	Preparedness	2A	Maintain fire trails	Private;Other	1516;1617;1718;1819;1920	
108	Preparedness	2A	Maintain fire trails	Other	1516;1617;1718;1819;1920	
109	Preparedness	2A	Maintain fire trails	CA;Other	1516;1617;1718;1819;1920	
110	Preparedness	2A	Maintain fire trails	CA	1516;1617;1718;1819;1920	
111	Preparedness	2A	Maintain fire trails	CA;Other	1516;1617;1718;1819;1920	
112	Preparedness	2A	Maintain fire trails	Other	1516;1617;1718;1819;1920	
113	Preparedness	2A	Maintain fire trails	CA;Other	1516;1617;1718;1819;1920	
114	Preparedness	2A	Maintain fire trails	CA;Other	1516;1617;1718;1819;1920	
115	Preparedness	2A	Maintain fire trails	CA;Private	1516;1617;1718;1819;1920	
116	Preparedness	2A	Maintain fire trails	Other	1516;1617;1718;1819;1920	
117	Preparedness	2A	Maintain access	RailCorp	1516;1617;1718;1819;1920	
118	Preparedness	2A	Maintain fire trails	OEH	1516;1617;1718;1819;1920	
119	Hazard Reduction	2A	APZ maintenance	CA	1516;1617;1718;1819;1920	
120	Hazard Reduction	2A	Vegetation maintenance around substation	Other	1516;1617;1718;1819;1920	
121	Hazard Reduction	2A	Vegetation maintenance around substation	Other	1516;1617;1718;1819;1920	
122	Preparedness	2A	Maintain adequate access for firefighting resources	Private	1516;1617;1718;1819;1920	
123	Preparedness	2A	Maintain adequate access for firefighting resources	Private	1516;1617;1718;1819;1920	
124	Preparedness	2A	Maintain adequate access for firefighting resources	Private	1516;1617;1718;1819;1920	
125	Preparedness	2A	Maintain adequate access for firefighting resources	Private	1516;1617;1718;1819;1920	
126	Preparedness	2A	Maintain fire trails	CA	1516;1617;1718;1819;1920	
127	Hazard Reduction	2A	Implement SFAZ mosaic burn program	CA	1617;1819	TI CL;OEH
128	Community Education	2A	Conduct Community Engagement Activities	OEH	1516;1617;1718;1819;1920	
129	Community Education	2A	Conduct Community Engagement Activities	FRNSW	1516;1617;1718;1819;1920	RFS
130	Preparedness	2A	Maintain access	Private	1516;1617;1718;1819;1920	
131	Hazard Reduction	2A	Implement SFAZ mosaic burn program	CA	1617;1819	
132	Hazard Reduction	2A	Vegetation maintenance around School	Other	1516;1617;1718;1819;1920	
133	Hazard Reduction	2A	Implement SFAZ mosaic burn program	LGA;FRNSW	1819	RFS
134	Hazard Reduction	2B	Vegetation maintenance around infrastructures	LGA	1516;1617;1718;1819;1920	
135	Hazard Reduction	2B	APZ maintenance	OEH	1516;1617;1718;1819;1920	

TREATMENT NUMBER	STRATEGY	PRIORITY	ACTION DESCRIPTION	RESPONSIBLE AGENCY	SCHEDULE DATE	SUPPORT AGENCY
136	Community Education	2B	Conduct annual letter box drop or media release	OEH	1516;1617;1718;1819;1920	
137	Hazard Reduction	2B	Vegetation maintenance around infrastructure	LGA	1516;1617;1718;1819;1920	
138	Community Education	2B	Conduct Community Engagement Activities	LGA;RFS	1516;1617;1718;1819;1920	
139	Hazard Reduction	2B	APZ maintenance	CA	1516;1617;1718;1819;1920	
140	Preparedness	2B	Maintain fire trails	OEH	1516;1617;1718;1819;1920	
141	Community Education	2B	Conduct Community Engagement Activities	FRNSW	1516;1617;1718;1819;1920	
142	Community Education	2B	Conduct Community Engagement Activities	FRNSW	1516;1617;1718;1819;1920	RFS
143	Preparedness	2B	Maintain access	LGA	1516;1617;1718;1819;1920	
144	Hazard Reduction	2B	APZ maintenance	OEH	1516;1617;1718;1819;1920	
145	Hazard Reduction	2C	Inspect easements and structures annually	Private	1516;1617;1718;1819;1920	
146	Hazard Reduction	2C	Inspect easements and structures annually	Other	1516;1617;1718;1819;1920	
147	Hazard Reduction	2C	Inspect easements and structures annually	Other	1516;1617;1718;1819;1920	
148	Hazard Reduction	2C	Inspect easements and structures annually	Other	1516;1617;1718;1819;1920	
149	Hazard Reduction	2C	Inspect easements and structures annually	Other	1516;1617;1718;1819;1920	
150	Preparedness	2C	Maintain adequate access for firefighting resources	CA	1516;1617;1718;1819;1920	
151	Preparedness	2C	Maintain adequate access for firefighting resources	CA	1516;1617;1718;1819;1920	
152	Preparedness	2C	Maintain adequate access for firefighting resources	CA	1516;1617;1718;1819;1920	
153	Preparedness	2C	Maintain road corridor	LGA;RMS	1516;1617;1718;1819;1920	
154	Ignition Management	2C	Restrict access to area	LGA	1516;1617;1718;1819;1920	
155	Hazard Reduction	3A	APZ maintenance	OEH	1516;1617;1718;1819;1920	
156	Hazard Reduction	3A	APZ maintenance	Private	1516;1617;1718;1819;1920	
157	Preparedness	3A	Maintain fire trails	OEH	1516;1617;1718;1819;1920	
158	Preparedness	3A	Maintain fire trails	OEH	1516;1617;1718;1819;1920	
159	Preparedness	3A	Maintain fire trails	LGA	1516;1617;1718;1819;1920	
160	Preparedness	3A	Maintain adequate access for firefighting resources	CA	1516;1617;1718;1819;1920	
161	Hazard Reduction	3A	Vegetation maintenance around infrastructures	LGA	1516;1617;1718;1819;1920	
162	Hazard Reduction	3A	Vegetation maintenance around structures	LGA	1516;1617;1718;1819;1920	
163	Community Education	3B	Conduct Community Engagement Activities	OEH;RFS	1516;1617;1718;1819;1920	
164	Hazard Reduction	3B	APZ maintenance	OEH	1516;1617;1718;1819;1920	
165	Hazard Reduction	3B	Maintain APZ	LGA	1516;1617;1718;1819;1920	
166	Hazard Reduction	3B	Vegetation maintenance around infrastructure	Private	1516;1617;1718;1819;1920	
167	Community Education	3B	Conduct Community Engagement Activities	LGA;RFS	1516;1617;1718;1819;1920	

TREATMENT NUMBER	STRATEGY	PRIORITY	ACTION DESCRIPTION	RESPONSIBLE AGENCY	SCHEDULE DATE	SUPPORT AGENCY
168	Hazard Reduction	3B	Inspect and perform hazard reduction activities	Other	1516;1617;1718;1819;1920	RFS
169	Hazard Reduction	3B	Inspect and perform hazard reduction activities	Other	1516;1617;1718;1819;1920	RFS
170	Hazard Reduction	3B	Vegetation maintenance around rail corridors	RailCorp	1516;1617;1718;1819;1920	
171	Hazard Reduction	3B	Vegetation maintenance around infrastructure	LGA	1516;1617;1718;1819;1920	
172	Hazard Reduction	3B	APZ maintenance	Other	1516;1617;1718;1819;1920	
173	Hazard Reduction	3B	APZ maintenance	Private	1516;1617;1718;1819;1920	RFS
174	Community Education	3B	Conduct Community Engagement Activities	FRNSW	1516;1617;1718;1819;1920	
175	Hazard Reduction	3B	APZ maintenance	LGA	1516;1617;1718;1819;1920	
176	Hazard Reduction	3B	APZ Maintenance	LGA	1516;1617;1718;1819;1920	
177	Hazard Reduction	3B	Vegetation maintenance around infrastructure	Private	1516;1617;1718;1819;1920	
178	Preparedness	3B	Maintain fire trails	RailCorp	1516;1617;1718;1819;1920	
179	Preparedness	3B	Maintain fire trails	Private	1516;1617;1718;1819;1920	
180	Preparedness	3B	Maintain tracks	OEH	1516;1617;1718;1819;1920	
181	Preparedness	3B	Maintain fire trails	OEH	1516;1617;1718;1819;1920	
182	Preparedness	3B	Maintain fire trails	LGA	1516;1617;1718;1819;1920	
183	Preparedness	3B	Maintain fire trails	LGA	1516;1617;1718;1819;1920	
184	Preparedness	3B	Maintain fire trails	CA;Other	1516;1617;1718;1819;1920	
185	Preparedness	3B	Maintain fire trails	TI CL;LGA	1516;1617;1718;1819;1920	
186	Preparedness	3B	Maintain fire trails	CA;LGA;Private;Other	1516;1617;1718;1819;1920	
187	Preparedness	3B	Maintain fire trails	LGA;Private;Other	1516;1617;1718;1819;1920	
188	Preparedness	3B	Maintain fire trails	LGA	1516;1617;1718;1819;1920	
189	Community Education	3B	Conduct Community Engagement Activities	LGA;FRNSW	1516;1617;1718;1819;1920	RFS
190	Hazard Reduction	3B	APZ maintenance	LGA	1516;1617;1718;1819;1920	
191	Hazard Reduction	3B	APZ maintenance	Private	1516;1617;1718;1819;1920	
192	Community Education	3B	Conduct Community Engagement Activities	LGA;OEH;RFS	1516;1617;1718;1819;1920	
193	Community Education	3B	Conduct Community Engagement Activities	FRNSW	1516;1617;1718;1819;1920	
194	Community Education	3B	Conduct Community Engagement Activities	FRNSW	1516;1617;1718;1819;1920	
195	Hazard Reduction	3B	APZ maintenance	Private	1516;1617;1718;1819;1920	
196	Community Education	3B	Conduct Community Engagement Activities	LGA;OEH;FRNSW;RFS	1516;1617;1718;1819;1920	
197	Community Education	3B	Conduct Community Engagement Activities	LGA;FRNSW	1516;1617;1718;1819;1920	
198	Community Education	3B	Conduct Community Engagement Activities	LGA;FRNSW	1516;1617;1718;1819;1920	RFS

TREATMENT NUMBER	STRATEGY	PRIORITY	ACTION DESCRIPTION	RESPONSIBLE AGENCY	SCHEDULE DATE	SUPPORT AGENCY
199	Hazard Reduction	3B	Vegetation maintenance on slash breaks	OEH	1516;1617;1718;1819;1920	
200	Preparedness	3B	Maintain fire trails	OEH	1516;1617;1718;1819;1920	
201	Preparedness	3B	Maintain fire trails	LGA;Private	1516;1617;1718;1819;1920	
202	Hazard Reduction	3B	APZ maintenance	Private	1516;1617;1718;1819;1920	
203	Community Education	3B	Conduct Community Engagement Activities	LGA;OEH;RFS	1516;1617;1718;1819;1920	
204	Community Education	3B	Conduct Community Engagement Activities	LGA;RFS	1516;1617;1718;1819;1920	
205	Preparedness	3B	Maintain adequate access for firefighting resources	Private	1516;1617;1718;1819;1920	
206	Hazard Reduction	3B	Vegetation maintenance around structures	Private	1516;1617;1718;1819;1920	
207	Hazard Reduction	3B	Vegetation maintenance around infrastructures	Private	1516;1617;1718;1819;1920	
208	Hazard Reduction	3B	Vegetation maintenance around infrastructure	LGA	1516;1617;1718;1819;1920	
209	Ignition Management	3B	Restrict access to area	LGA	1516;1617;1718;1819;1920	
210	Hazard Reduction	3B	Vegetation maintenance as per Killalea State BFMP	Other	1516;1617;1718;1819;1920	RFS
211	Community Education	3B	Conduct Community Engagement Activities	OEH;RFS	1516;1617;1718;1819;1920	
212	Hazard Reduction	3B	Implement SFAZ mosaic burning program	Other	1718;1920	RFS
213	Hazard Reduction	3B	Implement SFAZ mosaic burn program	LGA	1718;1920	RFS
214	Hazard Reduction	3B	APZ maintenance	LGA	1516;1617;1718;1819;1920	
215	Hazard Reduction	3B	Implement SFAZ mosaic burn program	RFS	1617;1819	OEH
216	Preparedness	3B	Implement and maintain Bush Fire Management Plan	Private		
217	Preparedness	3B	Maintain fire trails	LGA	1516;1617;1718;1819;1920	RFS
218	Hazard Reduction	3C	Maintain vegetation around Hospital	Private	1516;1617;1718;1819;1920	RFS
219	Preparedness	3D	Maintain tracks	OEH	1516;1617;1718;1819;1920	
220	Preparedness	3D	Maintain adequate access for firefighting resources	CA	1516;1617;1718;1819;1920	
221	Hazard Reduction	3D	APZ maintenance	Private	1516;1617;1718;1819;1920	
222	Hazard Reduction	3D	APZ maintenance	CA	1516;1617;1718;1819;1920	
223	Hazard Reduction	4	Maintain fuels in accordance with Guidelines	LGA	1516;1617;1718;1819;1920	
224	Hazard Reduction	4	Inspect easements and structures annually	Other	1516;1617;1718;1819;1920	
225	Hazard Reduction	4	Inspect easements and structures annually	Other	1516;1617;1718;1819;1920	
226	Hazard Reduction	4	Inspect easements and structures annually	Other	1516;1617;1718;1819;1920	
227	Hazard Reduction	4	Inspect easements and structures annually	Other	1516;1617;1718;1819;1920	
228	Hazard Reduction	4	Vegetation maintenance around substation	Other	1516;1617;1718;1819;1920	
229	Hazard Reduction	4	Vegetation maintenance around substation	Other	1516;1617;1718;1819;1920	
230	Preparedness	4	Maintain fire trails	LGA	1516;1617;1718;1819;1920	
231	Hazard Reduction	4	APZ maintenance	Other	1516;1617;1718;1819;1920	

TREATMENT NUMBER	STRATEGY	PRIORITY	ACTION DESCRIPTION	RESPONSIBLE AGENCY	SCHEDULE DATE	SUPPORT AGENCY
232	Hazard Reduction	4	Implement SFAZ mosaic burn program	LGA	1920	RFS
233	Hazard Reduction	4	Implement SFAZ mosaic burn program	LGA	1920	RFS
234	Hazard Reduction	NA	Maintain fuels in accordance with Guidelines	Private	1516;1617;1718;1819;1920	
235	Hazard Reduction	NA	Maintain fuels in accordance with Guidelines	LGA	1516;1617;1718;1819;1920	
236	Hazard Reduction	NA	APZ maintenance	Other	1516;1617;1718;1819;1920	

Appendix 4 Maps

Map 1 – Helensburgh Precinct

Map 2 – Wollongong North Precinct

Map 3 – Wollongong South Precinct

Map 4 – Shellharbour Precinct

Map 5 – Kiama North Precinct

Map 6 – Kiama South Precinct

Map 7 - Vegetation Categories

Map 8 – Time Since Fire

Map 9 – Fire Frequency

Map 10 – Fire Threshold

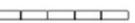
Assets

		Human - Residential			Commercial Forests
		Human - Other			Drinking Water Catchments
		Special Fire Protection			Environmental - Locally Important
		Economic - Agricultural			Environmental - Vulnerable (Species)
		Economic - Commercial			Environmental - Endangered (Species)
		Economic - Infrastructure			Cultural - Aboriginal Heritage
		Economic - Tourism and Recreational			Cultural - Other
		Economic - Mines			Cultural - Non Indigenous

Bush Fire Management Zones

	Fire Exclusion Zone (FEZ)		Land Management Zone (LMZ)
	Asset Protection Zone (APZ)		Strategic Fire Advantage Zone (SFAZ)

Base Data Layers

	Major Roads Sealed		Drainage Perennial
	Major Roads Unsealed		Drainage Non Perennial
	Secondary Road Sealed		Hydro-Line Perennial
	Secondary Road Unsealed		Hydro-Line Non Perennial
	Local Road Sealed		Contour (100m)
	Local Road Unsealed		Contour (10m)
	Local Road Unspecified		Map Display Area
	4WD Track Unspecified		Local Government Area
	Path		Crown Land
	Heavy Rail		State Forests
	Light Rail		National Park
	Heavy Rail Siding		

*Note – Some base data layers may not be displayed on map

Illawarra BFMC Bush Fire Risk Management Plan 2017

Wollongong South - Map Display Area

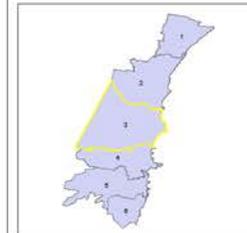
Map 3 of 6

This Bush Fire Risk Management Plan (BFRMP) has been prepared by the Illawarra Bush Fire Management Committee (BFMC) pursuant to section 62 of the Rural Fires Act 1987.

The aim of this BFRMP is to reduce the adverse impact of bush fires on life, property and the environment.

- The objectives of this BFRMP are to:
- reduce the number of human-induced bush fire ignitions that cause damage to life, property or the environment;
 - manage fuel to reduce the spread and intensity of bush fires while minimising environmental/ecological impacts;
 - reduce the community's vulnerability to bush fires by improving its preparedness; and
 - effectively contain bush fires with a potential to cause damage to life, property and the environment.

This map forms part of the BFRMP for the Illawarra BFMC, covering the local government area(s) of Sutherland Shire and Wollongong. It should be viewed in conjunction with the accompanying BFRMP document which provides further detail on the BFMC area, the assets assessed and the risk assessment process used.



Review
Under the Rural Fires Act 1987 this plan must be reviewed and updated within each successive five year period following the consultation of the BFMC. The Illawarra BFMC will also review this plan as necessary. This may be triggered by a range of circumstances, including but not limited to:

- changes to the BFMC area, organisational responsibilities or legislation;
- changes to the bush fire risk in the area; or
- following a major bush fire event.

Assets
This BFRMP identifies the assets that are considered by the Illawarra BFMC and are considered to be at risk from bush fire, assessed by the local fire and emergency services agencies. Assets in the BFMC area identified as requiring treatment are listed in the assets table. Other assets within the BFMC area that were assessed as not requiring treatment within the life of this plan are listed in the appendix to the BFRMP document. The Map Ref number 'NA' denotes non-rated assets.

Treatments
Specific treatments assigned to assets in the Illawarra area are listed in the treatments table and linked to the assets which they are designed to protect. Standard BFMC wide treatments (i.e. not limited to a specific asset) which occur on an ongoing basis within the BFMC area are:

- ensuring the bush fire zone land complies with Planning for Bush Fire Protection;
- using the Local Environment Plans (LEPs) to control development in areas with a bush fire risk;
- spraying the standard bush fire danger period as required;
- repairing ponds during bush fire danger periods;
- provision of arboricultural services;
- investigation of bush fire events;
- normal fire suppression activities;
- attending and managing compliance with strategic fire-fighting resource allocation management systems;
- operation of a SES Operations Coordination Plan.

Note on LMC: All areas not specifically mapped as an APZ, SPZ or FEZ are considered as LMC for fire risk management plan. Fire areas identified by an LMC prior to the map, please refer to the BFRMP document for the specific land management objectives.

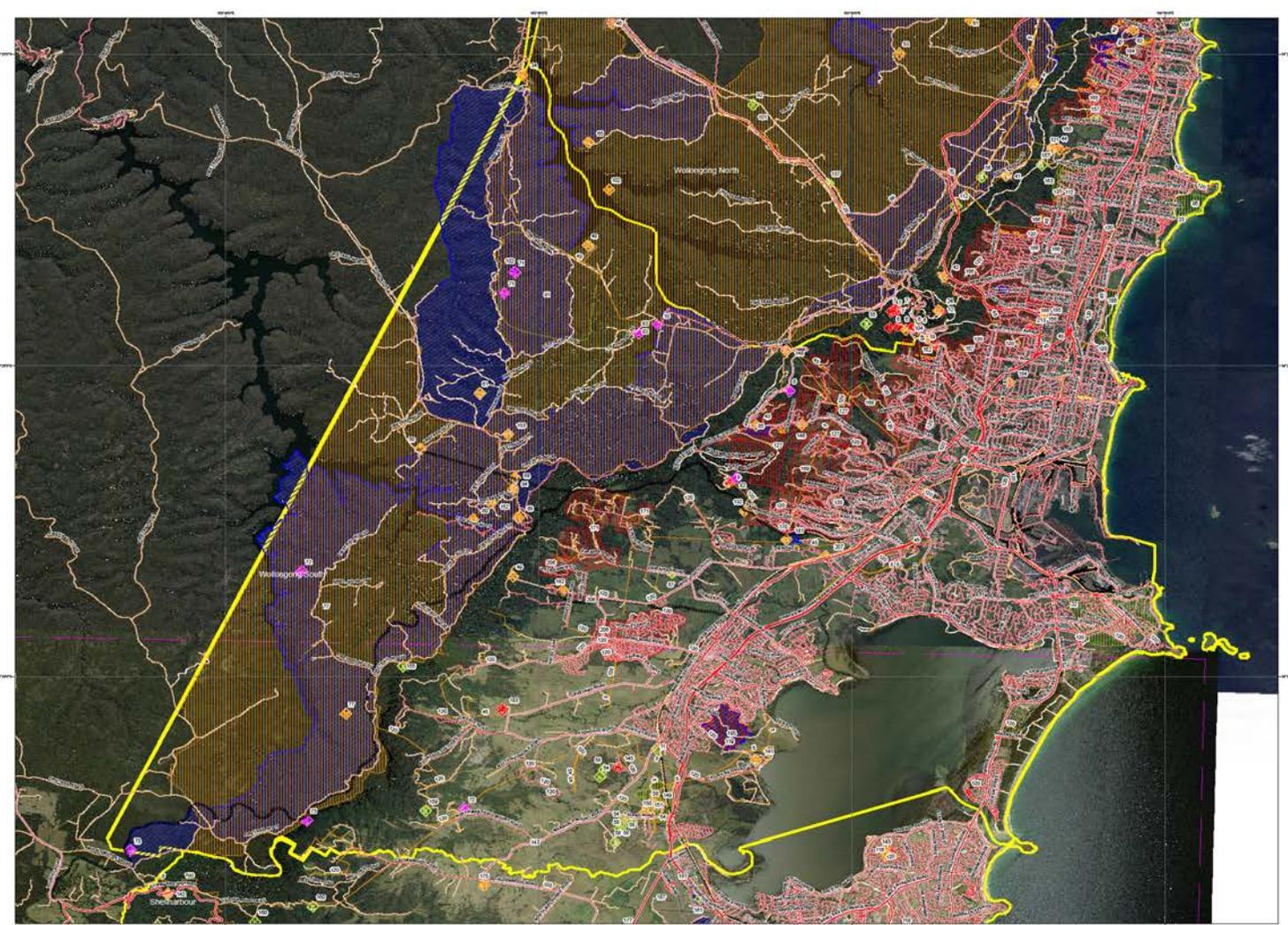
Asset	Purpose	Suppression	Zone
Asset Protection Zone	To protect human life, property and highly valued public assets and values.	use of Direct Attack suppression strategies within the zone	As per RFS document Standards for Asset Protection Zones
Strategic Fire Advantage Zone	To provide strategic areas of fire protection advantage which will reduce the spread and intensity of bush fires, and reduce the potential for fuel for the bush fire.	To improve the effectiveness and dependability of: <ul style="list-style-type: none"> - Parallel Attack suppression strategies; - Topography and building proximity adjacent fire breaks; - Manual patterns of attack in high to very high weather risk areas within the zone. 	Zone width related to suppression strategies and dependent upon: <ul style="list-style-type: none"> - Topography - Building proximity - Manual patterns of attack in high to very high weather risk areas within the zone.
Land Management Zone	To meet relevant land management objectives in areas where APZs or SPZs are not appropriate.	To reduce the likelihood of Crown fire development within the zone, and/or Spot fire ignition potential from the zone.	As per the land management and the responsibilities of the responsible land management agency or agencies. To undertake habitat burning.
Fire Exclusion Zone	To exclude bush fires.	N/A	Variance dependent on size of the exclusion area requiring protection.

Disclaimer
The Illawarra BFMC makes every effort to ensure the quality of the information contained on this map. Users of this map, users should verify the accuracy of the information and should obtain any appropriate professional advice relevant to their particular circumstances.

The Illawarra BFMC does not guarantee and assumes no liability or responsibility for the accuracy, currency or completeness of the information. Copyright Illawarra BFMC 2017.

Authorized by Date issued: Thursday, 16 March 2017 of Illawarra BFMC.

BFRMP version 2.1.26.6

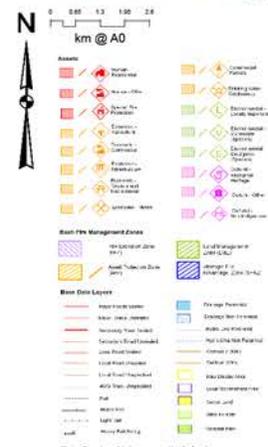


Map Ref	Asset name	Asset type	Subtype	Risk level	Priority	Treatment
NA	Aboriginal Site	Cultural	Aboriginal	Extreme	1B	T90
9	Mt Kiamla Fire Pump Station	Cultural	Non	Extreme	1B	T9
9	Coal Storage Reservoirs	Human	Residential	Extreme	1B	T11-19
10	Cordeaux Mariner	Cultural	Other	Extreme	1B	T18,22
11	Flora-sub shrub	Environment	Endangered	Extreme	1B	T47
22	Fauna amphib	Environment	Endangered	Extreme	1C	T82
NA	Aboriginal Site	Cultural	Aboriginal	Very High	2A	T90
6th	Aboriginal Site	Cultural	Aboriginal	Very High	2A	T90
6A	Aboriginal Site	Cultural	Aboriginal	Very High	2A	T90
24	Substation Cordeaux No.1	Economics	Infrastructure	Very High	2A	T94,95
43	Water Pump Mt Kiamla	Economics	Infrastructure	Very High	2A	T93
48	Dandabrum Mine	Economics	Mines	Very High	2A	T98,110
49	Bluesue Gallery	Economics	Mines	Very High	2A	T98,110
50	Woolpack for Shell	Economics	Mines	Very High	2A	T91,114
54	Flora Shrub	Environment	Endangered	Very High	2A	T124
57	Flora-yellow	Environment	Endangered	Very High	2A	T122
60	Flora-yellow	Environment	Endangered	Very High	2A	T123
65	Asian water off-take	Economics	Infrastructure	Very High	2A	T116
85	Nahin No.4 Shell	Economics	Infrastructure	Very High	2A	T90,113
71	Aboriginal Sites Cordeaux Catchment	Cultural	Aboriginal	Very High	2A	T90
72	Aboriginal Sites Acon Catchment Area	Cultural	Aboriginal	Very High	2A	T90
73	Aboriginal Sites Upper Heapan SCA	Cultural	Aboriginal	Very High	2A	T90
77	Asian Drinking Water Catchments	Economics	Drinking	Very High	2A	T131
82	PK2 Fire Pump Station	Cultural	Non	Very High	2B	T135,140
83	Walkers Property	Cultural	Non	Very High	2B	T139
85	Kiamla Hegarty	Human	Residential	Very High	2B	T13
86	Asian Drinking Station TransGrid	Economics	Infrastructure	Very High	2C	T145
88	TL 10 TransGrid Transmission Line	Economics	Infrastructure	Very High	2C	T143
91	Fauna amphib	Environment	Endangered	Very High	2C	T150
94	TransGrid - Acon SubStation	Economics	Infrastructure	Very High	2C	T148
119	Mt Brown Reserve	Cultural	Non	High	3B	O1
127	Mt Kiamla	Human	Residential	High	3B	O1
132	Mass Vale Railway Corridor	Economics	Infrastructure	High	3B	T170,184
148	Substation Kiamla	Economics	Infrastructure	Medium	4	T291
150	TL8 TransGrid Transmission Line Assets	Economics	Infrastructure	Medium	4	T225
181	TL18 TransGrid Transmission Line	Economics	Infrastructure	Medium	4	T228
182	TL 19 TransGrid Transmission Line	Economics	Infrastructure	Medium	4	T227
183	TL 17 TransGrid Transmission Line	Economics	Infrastructure	Medium	4	T224

(1)T142;143;16;144

(2)T116;18;206

(3)T20;202;209;180



ID	Treatment strategy	Action	Agencies (Support)
78	Hazard Reduction	APZ maintenance	DEH
711	Hazard Reduction	APZ maintenance	DEH
713	Hazard Reduction	Vegetation maintenance around structures	CA
745	Preparedness	Maintain fire trails	CA, LGA
722	Preparedness	Maintain fire trails	CA, LGA
747	Preparedness	Maintain adequate access for firefighting	Private
748	Preparedness	Maintain adequate access for firefighting	DEH
762	Preparedness	Maintain adequate access for firefighting	Private
783	Hazard Reduction	Inspect and perform hazard reduction activities	Endeavour Energy (RFS)
784	Hazard Reduction	Vegetation maintenance around substation	Endeavour Energy
788	Hazard Reduction	APZ maintenance	BHP Billiton Suezara Coal
788	Hazard Reduction	APZ maintenance	NRE Dupart
788	Hazard Reduction	APZ maintenance	NRE Dupart
791	Hazard Reduction	APZ maintenance	NRE Dupart
798	Preparedness	Maintain fire trails	CA, Endeavour Energy
7110	Preparedness	Maintain fire trails	CA
7112	Preparedness	Maintain fire trails	NRE Dupart
7113	Preparedness	Maintain fire trails	CA, NRE Dupart
7114	Preparedness	Maintain fire trails	CA, NRE Dupart
7119	Hazard Reduction	APZ maintenance	CA
7122	Preparedness	Maintain adequate access for firefighting	Private
7123	Preparedness	Maintain adequate access for firefighting	Private
7124	Preparedness	Maintain adequate access for firefighting	Private
7131	Hazard Reduction	Implement SPZ residual burn program	CA
7135	Hazard Reduction	APZ maintenance	DEH
7136	Hazard Reduction	APZ maintenance	CA

ID	Treatment strategy	Action	Agencies (Support)
7142	Preparedness	Maintain fire trails	DEH
7143	Community Education	Conduct Community Engagement Activities	RFS/DF (RFS)
7143	Preparedness	Maintain assets	LGA
7144	Hazard Reduction	APZ maintenance	DEH
7145	Hazard Reduction	Inspect assessments and structures annually	Private
7147	Hazard Reduction	Inspect assessments and structures annually	TransGrid
7149	Hazard Reduction	Inspect assessments and structures annually	TransGrid
7150	Preparedness	Maintain adequate access for firefighting	CA
7170	Hazard Reduction	Vegetation maintenance around rail corridors	RatCorp
7178	Hazard Reduction	APZ Maintenance	LGA
7184	Preparedness	Maintain fire trails	CA, Endeavour Energy
7188	Preparedness	Maintain fire trails	LGA
7190	Hazard Reduction	APZ maintenance	LGA, Private
7201	Preparedness	Maintain fire trails	LGA, Private
7202	Hazard Reduction	APZ maintenance	Private
7203	Community Education	Conduct Community Engagement Activities	LGA, DEH, RFS
7206	Signage Management	Install signs to area	LGA
7204	Hazard Reduction	Inspect assessments and structures annually	TransGrid
7225	Hazard Reduction	Inspect assessments and structures annually	TransGrid
7228	Hazard Reduction	Inspect assessments and structures annually	TransGrid
7227	Hazard Reduction	Inspect assessments and structures annually	TransGrid
7231	Hazard Reduction	APZ maintenance	Endeavour Energy

*Note - Some base data layers may not be displayed on map



Map Ref	Asset name	Asset type	Subtype	Risk level	Priority	Treatment
79	Seven Mile Beach Holiday Park	Human	Residential	Very High	2B	T134, T136
173	Gerona	Human	Residential	Medium	4	T232
186	Neighbourhood Sales Place (Gerona)	Human	Residential	Low	NA	T234
187	Neighbourhood Sales Place (Fogbound)	Human	Residential	Low	NA	T235
211	Gerona Sewage Treatment Plant	Economic	Infrastructure	Low	NA	T235

Illawarra BFMC Bush Fire Risk Management Plan 2017

Kiama South - Map Display Area Map 6 of 6

This Bush Fire Risk Management Plan (BFRMP) has been prepared by the Illawarra Bush Fire Management Committee (BFMC) pursuant to section 52 of the Rural Fires Act 1997.

- The aim of this BFRMP is to reduce the adverse impact of bush fires on life, property and the environment.
- The objectives of this BFRMP are to:
- reduce the number of human-included bush fire incidents that cause damage to life, property or the environment;
 - reduce the risk to life, property and the environment of bush fires, while minimising environmental/ecological impacts;
 - reduce the community's vulnerability to bush fires by improving the preparedness; and
 - effectively contain fires with a potential to cause damage to life, property and the environment.

This map forms part of the BFRMP for the Illawarra BFMC, covering the local Government area of Kiama, Shellharbour and Wollongong. It should be viewed in conjunction with the accompanying BFRMP document which provides further details on the BFMC area, the assets assessed and the risk assessment process used.



- Review
- Under the Rural Fires Act 1997 this plan must be reviewed and updated within each calendar year after approval. The objectives of the BFRMP, the Illawarra BFMC will also review this plan as necessary. This may be triggered by a range of circumstances, including but not limited to:
- changes to the BFMC area, organisational responsibilities or legislation;
 - changes to the Bush Fire Risk in the area; or
 - following a major fire event.

Assets

This BFRMP identifies the assets that are considered by the Illawarra BFMC and community to be at risk from bush fires, assesses the bush fire risk to each asset and assigns treatments designed to mitigate the risk. Assets in the BFMC area identified as requiring treatment are listed in the assets table. Other assets within the BFMC area that were assessed as not requiring treatment within the life of this plan are listed in the appendix to the BFRMP document. The Map Ref number 'NA' denotes non-spatial assets.

- Treatments
- Specific treatments assigned to assets in the Illawarra area are listed in the treatments table and linked to the assets which they are designed to protect. Standard BFMC wide treatments (i.e. not listed in a specific asset) which exist on an ongoing basis within the BFMC area are:
- revising the bush fire prone land map;
 - ensuring developments in the bush fire prone land comply with Planning for Bush Fire Protection;
 - using the Local Environment Plans (LEPs) to control development in areas with a bush fire risk;
 - varying the standard bush fire danger period as required;
 - requiring central ducting from the danger periods;
 - provision of strategic firebreaks;
 - mitigation of bush fire cause;
 - control the suppression capability;
 - assessing and managing compliance with strategic fire-fighting resource allocation management systems;
 - preparation of a SO2 Operations Coordination Plan.

Note on LMC: All areas not specifically mapped as an APZ, SPAC or FEZ are considered as LMC for this risk management plan. For areas identified by an LMC polygon on the map, please refer to the BFRMP document for the specific land management objectives.

Asset	Purpose	Suppression	Zone
Asset Protection Zone	To protect human life, property and high valued public assets and values.	To minimise bush fire impacts on undervalued assets.	As per RFS Asset Protection Zones
Strategic Fire Advantage Zone	To provide strategic areas of fire protection advantage which will reduce the speed and intensity of bush fires, and to provide the potential for fire to be contained or extinguished by strategic management.	To improve the bushfire and safe use of fire-fighting suppression resources within the zone.	Zone width related to objectives and objectives are: <ul style="list-style-type: none"> Topography Vegetation Soil (soil properties) Location of assets Asset pattern of bush burning in high risk areas Asset pattern of bush burning in high risk areas
Land Management Zone	To meet relevant land management and the protection objectives where APZs or SPACs are not appropriate.	To reduce the bushfire of spread of fire.	As per the land management and the protection objectives of the responsible land management agency.
Fire Exclusion Zone	To exclude bush fires.	To undertake mosaic burning.	Variable dependent on size of the bushfire area requiring protection.

Assets

- Asset Protection Zone
- Strategic Fire Advantage Zone
- Land Management Zone
- Fire Exclusion Zone

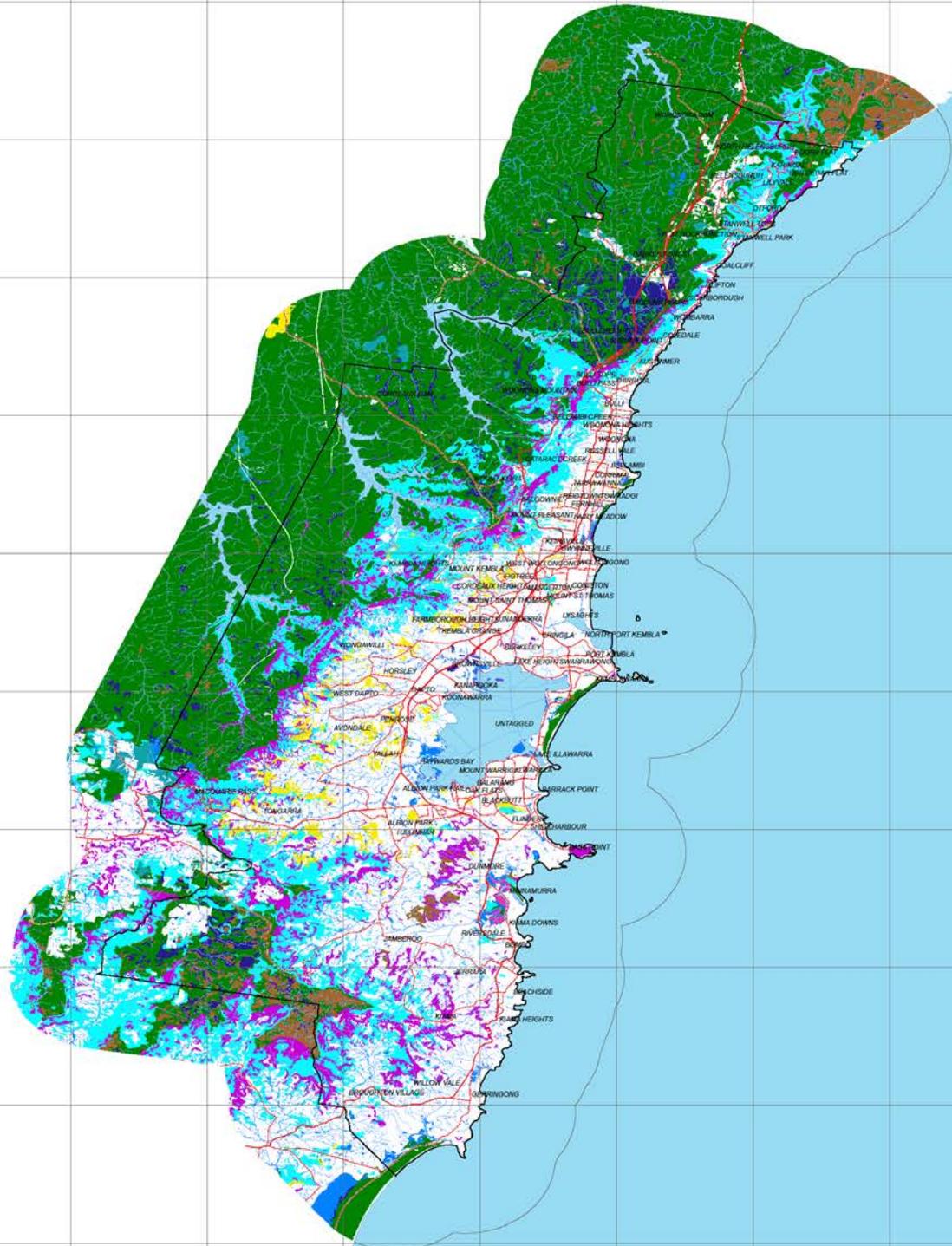
Base Data Layers

- Asset Protection Zone
- Strategic Fire Advantage Zone
- Land Management Zone
- Fire Exclusion Zone

ID	Treatment strategy	Action	Agency (Support)
T134	Hazard Reduction	Negotiate maintenance around infrastructure	LOA
T136	Community Education	Conduct Community Engagement Activities	LOA, RFS
T232	Hazard Reduction	Implement SPAC mosaic burn program	LOA, RFS
T234	Hazard Reduction	Maintain kerbs in accordance with Guidelines	Private
T235	Hazard Reduction	Maintain kerbs in accordance with Guidelines	LOA
T236	Hazard Reduction	APF maintenance	Sydney Water

Illawarra BFMC

Vegetation Categories (version 3.02)*



Legend

Keith Category

- Alpine complex
- Arid shrublands (Acacia subformation)
- Arid shrublands (Chenopod subformation)
- Cleared
- Dry sclerophyll forests (Shrub/grass subformation)
- Dry sclerophyll forests (Shrubby subformation)
- Forested wetlands
- Freshwater wetlands
- Grasslands
- Grassy woodlands
- Heathlands
- Rainforests
- Saline wetlands
- Semi-arid woodlands (Grassy subformation)
- Semi-arid woodlands (Shrubby subformation)
- Wet sclerophyll forests (Grassy subformation)
- Wet sclerophyll forests (Shrubby subformation)

Jurisdiction

- Jurisdiction
- BFMC 5km Buffer
- Other States
- NSW

Major Roads

- Major Road Sealed
- Major Road Unsealed
- Other States
- Secondary Road Sealed
- Secondary Road Unsealed

Hydrology

- Hydro-Line Perennial
- Hydro-Line Non Perennial
- Drainage Perennial
- Drainage Non Perennial

*Keith, D. 2004. Ocean Shores to Desert Dunes: The Native Vegetation of New South Wales and the ACT. NSW Department of Conservation

Data Dictionary:

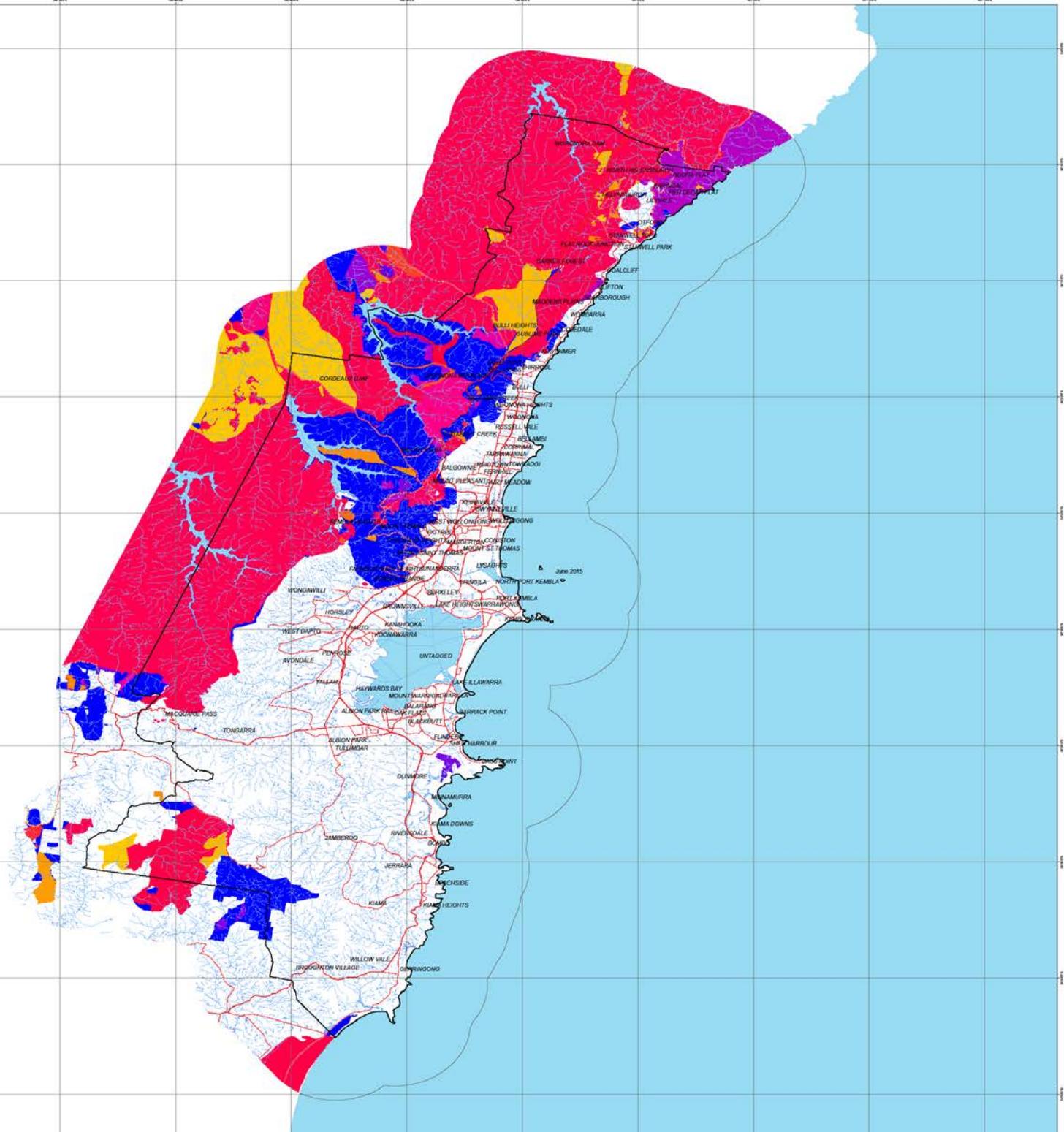
Data Type	Source	Date
GISM Boundaries (and 5km Buffer)	NSW DPS	June 2015
Towns or Locations	NSW LPI	June 2015
Road Network	NSW LPI	June 2015
Drainage	NSW LPI	June 2015
Vegetation (version 3.02)	NPWS / Geosul / RPS	September 2010
State Backdrop	NSW LPI	June 2015

Disclaimer:
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 2015 NSW Rural Fire Service

Illawarra BFMC

Time Since Fire

Number of years since last burnt (June 2015 Data)



Legend

Time Since Fire (June 2015)

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18
- 19
- 20
- 21
- 22
- 23
- 24
- 25 +

Major Roads

- Major Road Sealed
- Major Road Unsealed
- Secondary Road Sealed
- Secondary Road Unsealed

Hydrology

- Hydro-Line Perennial
- Hydro-Line Non Perennial
- Drainage Perennial
- Drainage Non Perennial

Jurisdiction

- Jurisdiction
- BFMC 5km Buffer
- Other States
- NSW

Data Dictionary:

Data Type	Source	Date
BFMC Boundaries (incl 5km Buffer)	NSW RFS	June 2015
Towns or Locations	NSW LPI	June 2015
Road Network	NSW LPI	June 2015
Drainage	NSW LPI	June 2015
Fire History	NSW RFS	June 2015
State Workings	NSW LPI	June 2015

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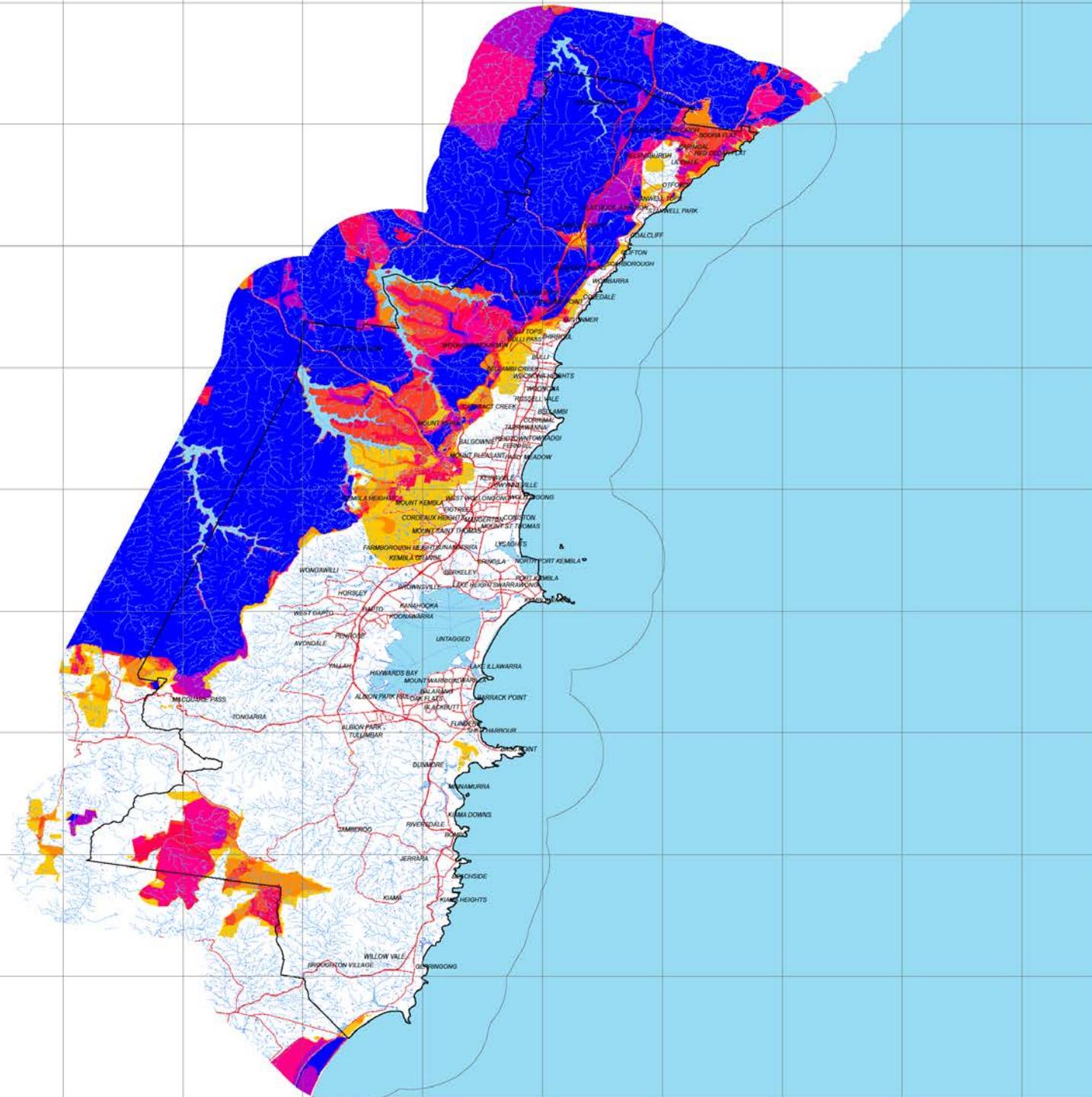
Page 56

0 2 4 8 km

Illawarra BFMC

Bush Fire Frequency

Number of Wildfires Recorded (June 2015 Data)



Legend

Fire Frequency (June 2015)

- 1
- 2
- 3
- 4
- 5
- 6
- 7 +

Major Roads

- Major Road Sealed
- Major Road Unsealed
- Secondary Road Sealed
- Secondary Road Unsealed

Hydrology

- Hydro-Line Perennial
- Hydro-Line Non Perennial
- Drainage Perennial
- Drainage Non Perennial

Jurisdiction

- Jurisdiction
- BFMC 5km Buffer
- Other States
- NSW

Data Dictionary:

Data Type	Source	Date
BFMC Boundaries (and 5km Buffer)	NSW RFS	June 2015
Towns or Locations	NSW LPI	June 2015
Road Network	NSW LPI	June 2015
Drainage	NSW LPI	June 2015
Fire History	NSW RFS	June 2015
State Boundaries	NSW LPI	June 2015

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Illawarra BFMC

Fire Threshold (June 2015)*

*Calculated using Vegetation Formations of NSW (version 3.02)

Vegetation categories (Keith, D. 2004) and Time Slice Fire datasets have been combined to produce this Fire Threshold map. Table 1 (interpretation of Kerry et al. 2004, NSW RFS 2006) lists the Fire Threshold values used for each vegetation community to calculate the Fire Threshold categories.

Each vegetation community has a minimum and maximum fire regime threshold (Kerry et al. 2004). A fire interval between these thresholds (within threshold) is the time between fire events that a specific plant or vegetation community needs, to avoid being at risk from a decline in biodiversity. A decline in biodiversity usually occurs as a result of either too infrequent (above maximum threshold) or too frequent burning (below minimum threshold). Some vegetation formations are classified as fire resistant and therefore do not have a fire threshold.

Fire frequency, fire intensity, season, extent (patchiness) and type of fire also influence whether or not a specific fire event has caused or is likely to cause a decline in biodiversity.

The map will be used to assist the BFMC in developing appropriate fire management strategies to reduce the risk of assets being affected by wildfire, and where possible, not impacting negatively on local biodiversity.

Additional information about the fire threshold map may be found in the document 'Bush Fire Risk Management Planning Guidelines for BFMCs'.

References:
 - Keith, D. (2004). Ocean Shores to Desert Dunes: The Native Vegetation of NSW and the ACT. Department of Environment and Conservation
 - Kerry, B., Sutherland, E., Tasker, E. and Bradstock, B. (2004). Guidelines for Ecologically Sustainable Fire Management. NSW Biodiversity Strategy. NSW National Parks and Wildlife Service.
 - NSW Rural Fire Service. (2006). Bush Fire Environmental Assessment Code

Table 1: Fire Threshold Values

Vegetation Formation	Min. Threshold (MM)	Max. Threshold
Barrenland	NA	NA
Saline Complex	NA	NA
Wet Sclerophyll Forest (Shrubly)	30	60
Wet Sclerophyll Forest (Grassy)	15	60
Grassy Woodland	8	40
Grassland	3	10
Dry Sclerophyll Forest (Shrubly / Grassy)	8	50
Dry Sclerophyll Forest (Shrubly)	10	30
Heathlands	10	30
Fringing Wetlands	10	30
Forested Wetlands	10	30
Saline Wetlands	NA	NA
Semi and Woodlands (Grassy)	9	No Max
Semi and Woodlands (Shrubly)	15	No Max
Acid Shrublands (Chenopod)	NA	NA
Acid Shrublands (Acaacia)	15	No Max

Legend

Major Roads

- Major Road Sealed
- Major Road Unsealed
- Secondary Road Sealed
- Secondary Road Unsealed

Threshold

- Above
- Within
- Below
- Intolerant

Hydrology

- Hydro-Line Perennial
- Hydro-Line Non Perennial
- Drainage Perennial
- Drainage Non Perennial

Jurisdiction

- Jurisdiction
- BFMC 5km Buffer
- Other States
- NSW

Data Dictionary:

Data Type	Source	Date
BFMC Boundaries (incl 5km Buffer)	NSW RFS	June 2015
Towns or Locations	NSW LPI	June 2015
Road Network	NSW LPI	June 2015
Drainage	NSW LPI	June 2015
Fire Threshold	NSW RFS	June 2015
State Boundary	NSW LPI	June 2015

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