Shoalhaven Bush Fire Management Committee

Bush Fire Risk Management Plan

Prepared by the Shoalhaven Bush Fire Management Committee; pursuant to section 52 of the Rural Fires Act, 1997.

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Authorisation

In accordance with Part 3 Division 4 of the Rural Fires Act 1997, this Draft Plan has been prepared by the Shoalhaven Bush Fire Management Committee and has been endorsed at the BFMC meeting on 20 May 2010 for submission to the Bush Fire Coordinating Committee.

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Shoalhaven Bush Fire Management Committee

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On behalf of the

NSW Bush Fire Co-ordinating Committee

Amendment List

Amen	dment	Entered				
Number	Date	Signature	Date			

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.

Department of Lands (DL): Land and Property Management Authority (LPMA)

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.

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

Fire Thresholds: Minimum threshold intervals between fire events are generally established by determining the minimum time-frames required for key plant species within an ecological community to reach reproductive maturity, whilst avoiding deleterious impacts to species diversity and habitat structures in the broader ecological community

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.

National Parks and Wildlife Services: Department of Environment, Climate Change and Water NSW (DECCW)

Overall Fuel Hazard: refers to the Overall Fuel Hazard Guide as described in the document published by Dept. of Sustainability and Environment 3rd edition.

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.

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 Shoalhaven 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 Shoalhaven BFMC area.

This BFRMP has been prepared by the Shoalhaven 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, cultural heritage 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, cultural heritage 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, cultural heritage and the environment.

1.3 Description of the Shoalhaven BFMC area

1.3.1 Location and land tenure

The Shoalhaven BFMC area is located on the New South Wales South Coast and includes the Local Government Area of Shoalhaven.

The area covered by the Shoalhaven BFMC is 4660 km², spanning 160 kilometres of coast between from Berry to Durras Lake and includes the land tenures outlined in Table 1.1.

Land Manager	% of BFMC area
DECCW	49
Land & Property Management Authority NSW	11.4
Department of Lands	6.4
Local Government	1
Defence	0.09
Private	27
Commonwealth	0.19
All other	4.92

Table 1.1 Land tenure

1.3.2 Climate and bush fire season

The typical / average climate in the Shoalhaven BFMC area is generally mild with average temperatures ranging from 15.5°C in June to 26.5°C in January. Rainfall is more pronounced in Summer/Autumn with average annual rainfalls of 1110mm in Nowra and 1270mm in Milton. The bush fire season generally runs between September and March each year.

Prevailing weather conditions associated with the bush fire season in the Shoalhaven BFMC area are North-westerly winds accompanied by high daytime temperatures and low relative humidity. There are also frequently dry lightning storms occurring during the bush fire season.

1.3.3 Population and demographic information

The population of the Shoalhaven BFMC area is approximately 97,000. The major population centres are Nowra/Bomaderry, Jervis Bay/St Georges Basin and Ulladulla. The following issues have been identified within the Shoalhaven BFMC area as potentially impacting on the ability of certain sections of the community to prepare themselves for bush fire:

• High levels of tourism during the warmer months of the year can see the population increase to 320,000.

1.3.4 History of bush fire frequency and ignition cause

The Shoalhaven BFMC area has on average 600 bush fires per year, of which an average of twenty fires can be considered to be major fires requiring response by two or more fire authorities. The Shoalhaven can experience significant fire activity at any time of the year and fires in isolated parts of the LGA may burn for several days.

The main sources of ignition in the Shoalhaven BFMC area include:

- Arson
- Accidental ignitions
- Lightning

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.

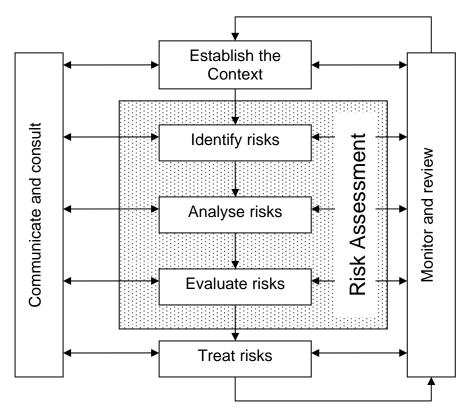


Figure 2.1 Overview of the risk assessment process

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 Shoalhaven 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 Shoalhaven 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 Shoalhaven 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.

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 significant wetlands (including Ramsar);
- 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 Shoalhaven BFMC area. See maps 1-6 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 Shoalhaven 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.

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

Environmental assets with known minimum fire threshold were assessed to determine if they were at risk of a bush fire within the 5 year life of the BFRMP using fire history data. Those environmental assets which were within or above the fire threshold were not assessed in the BFRMP, as the negative impact of a fire within the 5 year period was determined as being low and may even be of benefit to the asset and surrounding habitat. Minimum threshold intervals between fire events are generally established by determining the minimum time-frames required for key plant species within an ecological community to reach reproductive maturity, whilst avoiding deleterious impacts to species diversity and habitat structures in the broader ecological community.

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 Shoalhaven 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 Shoalhaven 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.

2.3.7 Risk acceptability

Risks below a certain level were assessed as not requiring treatment within the life of this plan. This is due to a combination of risk priority and capacity to undertake the works. Within the Shoalhaven BFMC area the level of acceptability is "high". Areas of medium or low risk and cultural and environmental assets are likely to be managed by routine procedures and so do not require a specific application of resources. However, where possible and practicable the Shoalhaven BFMC will treat medium and low risks.

Chapter 3. Treating the risk

3.1 Bush Fire Management Zones

Bush Fire Management Zones were identified within the Shoalhaven BFMC area and mapped (see maps 1-6). 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).

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 Standards for 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 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 dependant upon: 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 manager.	As appropriate to achieve land management e.g. heritage and/or fire protection e.g. broad scale mosaic burning objectives.

Fire	To exclude bush	N/A	Variable dependant on
Exclusion	fires.		size of fire sensitive area
Zone			requiring protection.

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

NB: OFH refers 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.

For the purpose of the Bush Fire Environmental Assessment Code:

- 1. Plantations that are approved under the *Plantations & Reafforestation Act 1999* after closure of the public exhibition period for this BFRMP are considered to be identified in this BFRMP; and
- Retained vegetation within the aforementioned plantations is considered to be a Strategic Fire Advantage Zone identified in the text of this BFRMP as long as it meets the suppression objectives for SFAZs included in the BFRMP, and is not mapped or otherwise described as a Fire Exclusion Zone in the BFRMP.

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.

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

• 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 offenders in relation to deliberate ignitions

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.

The member agencies of the BFMC will co-operate with the NSW Police in relation to the prosecution of arsonists under the Crimes Act 1900.

Investigation of bush fire cause

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

Normal fire suppression activities

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

Community Education

Providing communities and individuals with information on preparing for and dealing with bush fires.

Surveillance

Carrying out surveillance on days of very high or above fire danger.

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 considers 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 five 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 Shoalhaven BFMC area are listed below. A full list of the treatment strategies in the Shoalhaven BFMC area are in Appendix 3.

Strategy	Targeted treatments used in theShoalhaven BFMC area					
Ignition Management	Manage ignitions on days of very high to extreme to reduce the chance of fire escape.					
Hazard Reduction	Conduct prescribed burning and mechanical hazard reduction to reduce risk					
Community						
Education	Provide a variety of community education opportunities to					
	increase community resilience.					
Property						
Planning	Conduct property planning to provide further, asset specific treatments					
Preparedness						
	Ensure community preparedness for fire events					

Table 3.2 Asset specific treatments used in the Shoalhaven BFMC area

3.4 Fire thresholds

The vegetation in the Shoalhaven 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

Kenny et. Al. (2003) NSW Biodiversity Strategy, Guidelines for Ecologically Sustainable Fire Management

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.

Local permit issuing

In the Shoalhaven BFMC area the issuing of permits is required between September and March of each year.

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 Shoalhaven 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
27 Aug	Nowra	Meeting	Radio media Web site	Opportunity to comment on BFRMP	OHP, laptop, screen	RFS/Council
15 Aug	Tomerong	Kiosk	Web site	Opportunity to comment on BFRMP	Table, chair, maps	RFS/NPWS
22 Aug	Basin View	Meeting	Web site	Bush fire preparedness Opportunity to comment on BFRMP	OHP, laptop, screen	RFS/NPWS/Cou ncil
28 Aug	Ulladulla	Ulladulla	Website	Opportunity to comment on BFRMP	OHP, laptop, screen	RFS/Council
19 Aug	Volunteer Fire Fighters	Meeting	Internal	Seek opportunities for for input into the plan	Maps, draft plan	RFS
10 Oct	Volunteer Firefighters	Captains Meeting	Internal	Seek input, advise of exhibition	Draft Plan, Maps	RFS
24 Sept	Ulladaulla	Meetings x 2	Radio	Preparing for the season. BFRMP	Laptop, maps	RFS
17 Aug	Volunteer Fire Fighters	Meeting	Internal		Maps	RFS

Appendix 2 Asset Register

No	Asset type	Asset sub	Asset name	Asset Location	Display area	Likelihood	Consequence	Risk	Priority	Treatment
110	Human	typo	Accountante	Location	South	Almost	Concoquence	TRIOR	1 Honey	Troumon
188	Settlement	Residential	Pothole Road Cabins		Shoalhaven	certain	Catastrophic	Extreme	1A	1;3;7
61	Human Settlement	Residential	Benton Sands		Bay and Basin	Likely	Catastrophic	Extreme	1B	1;3;9
236	Human Settlement	Residential	Order of St Charbel		North Shoalhaven	Likely	Catastrophic	Extreme	1B	1;3;9
239	Human Settlement	Residential	Jebberra Estate		Bay and Basin	Likely	Catastrophic	Extreme	1B	1;3;16
237	Human Settlement	Special Fire Protection	Jervis Bay Christian Community School		Bay and Basin	Almost certain	Major	Extreme	1C	1;2;15
160	Human Settlement	Special Fire Protection	Environmental Education Centre		Ulladulla	Likely	Catastrophic	Extreme	1B	1;15
216	Environment	Endangered	Endangered Fauna		Bay and Basin	Almost certain	Major	Extreme	1C	
208	Environment	Endangered	Endangered Flora		Nowra	Almost certain	Major	Extreme	1C	
209	Environment	Endangered	Endangered Flora		Nowra	Almost certain	Major	Extreme	1C	
219	Cultural	Aboriginal Significance	Aboriginal Significance		Nowra	Likely	Catastrophic	Extreme	1B	
235	Cultural	Aboriginal Significance	Aboriginal Sites		Ulladulla	Likely	Catastrophic	Extreme	1B	

No	Asset type	Asset sub type	Asset name	Asset Location	Display area	Likelihood	Consequence	Risk	Priority	Treatment
157	Human Settlement	Residential	Tomerong Non-urban		Bay and Basin	Likely	Major	Very High	2A	1;2;17;12
158	Human Settlement	Residential	Falls Creek Rural Residential		Nowra	Likely	Major	Very High	2A	1;2;17;12
159	Human Settlement	Residential	Shoalhaven South Non Urban		South Shoalhaven	Likely	Major	Very High	2A	1;2;12
155	Human Settlement	Residential	Sussex Inlet Rural Residential	Sussex Inlet Road		Likely	Major	Very High	2A	1;2;17;12
232	Human Settlement	Residential	North Shoalhaven Rural		North Shoalhaven	Likely	Major	Very High	2A	1;2;17;12
43	Human Settlement	Residential	Myola		Bay and Basin	Likely	Major	Very High	2A	1;2;3;4;5
16	Human Settlement	Special Fire Protection	Glengarry	Jacks Corner Road, Kangaroo Valley	North Shoalhaven	Likely	Major	Very High	2A	1;15
108	Human Settlement	Special Fire Protection	Vincentia Primary School		Bay and Basin	Possible	Catastrophic	Very High	2B	1;15
222	Environment	Endangered	Endangered Fauna		South Shoalhaven	Likely	Major	Very High	2A	
215	Environment	Endangered	Endangered Flora		Nowra	Likely	Major	Very High	2A	
234	Environment	Endangered	Endangered Fauna		Bay and Basin	Likely	Major	Very High	2A	

No	Asset type	Asset sub type	Asset name	Asset Location	Display area	Likelihood	Consequence	Risk	Priority	Treatment
221	Environment	Endangered	Endangered Fauna		South Shoalhaven	Likely	Major	Very High	2A	
217	Environment	Endangered	Endangered Flora		South Shoalhaven	Likely	Major	Very High	2A	
210	Environment	Endangered	Endangered Flora		Nowra	Likely	Major	Very High	2A	
214	Environment	Endangered	Endangered Fauna		Nowra	Likely	Major	Very High	2A	
211	Environment	Endangered	Endangered Flora		North Shoalhaven	Likely	Major	Very High	2A	
212	Environment	Endangered	Endangered Flora		North Shoalhaven	Likely	Major	Very High	2A	
213	Environment	Endangered	Endangered Flora		North Shoalhaven	Likely	Major	Very High	2A	
218	Cultural	Aboriginal Significance	Aboriginal Significance		West Shoalhaven	Likely	Major	Very High	2A	
240	Cultural	Aboriginal Significance	Aboriginal Significance		Ulladulla	Likely	Major	Very High	2A	
12	Cultural	Non Indigenous	Pioneer Farm	2029 Moss Vale Road	North Shoalhaven	Likely	Major	Very High	2A	7;15
156	Human Settlement	Residential	Wandandian Non Urban	7 0.0 7 10 0	Bay and Basin	Likely	Moderate	High	3A	1;2;18;12
54	Human Settlement	Residential	Old Erowal Bay		Bay and Basin	Possible	Major	High	3B	1;2;13
45	Human Settlement	Residential	Huskisson		Bay and Basin	Possible	Major	High	3B	1;2;5;19;21

No	Asset type	Asset sub type	Asset name	Asset Location	Display area	Likelihood	Consequence	Risk	Priority	Treatment
113	Human Settlement	Residential	West Lake Conjola, Prior Street		Ulladulla	Unlikely	Catastrophic	High	3C	1;5;20
73	Human Settlement	Residential	Medlyn Avenue Sussex Inlet			Unlikely	Catastrophic	High	3C	1;20
72	Human Settlement	Residential	Sussex Inlet			Possible	Major	High	3B	1;2;5;20;21
70	Human Settlement	Residential	Badgee			Possible	Major	High	3B	1;2;20
62	Human Settlement	Residential	Bream Beach		Bay and Basin	Unlikely	Catastrophic	High	3C	1;20;22
60	Human Settlement	Residential	St Georges Basin West		Bay and Basin	Possible	Major	High	3B	1;20
58	Human Settlement	Residential	Basin View		Bay and Basin	Possible	Major	High	3B	1;19;14
48	Human Settlement	Residential	Vincentia East		Bay and Basin	Unlikely	Catastrophic	High	3C	1;12;14
31	Human Settlement	Residential	West Nowra Residential Area		Nowra	Possible	Major	High	3B	1;13;14
29	Human Settlement	Residential	Nowra Western Interface		Nowra	Possible	Major	High	3B	1;13;14
27	Human Settlement	Residential	Bomaderry West		North Shoalhaven	Possible	Major	High	3B	13;14
24	Human Settlement	Residential	North Nowra	North Nowra	North Shoalhaven	Possible	Major	High	3B	13;14
233	Human Settlement	Residential	Nowra Rural Residential		Nowra	Likely	Moderate	High	3A	1;2;12

No	Asset type	Asset sub type	Asset name	Asset Location	Display area	Likelihood	Consequence	Risk	Priority	Treatment
140	Human	туре	Asset Hame	Location	South	Likeiiiiood	Consequence	IXISK	1 Hority	Treatment
37	Settlement	Residential	Cudmirrah Berrarah		Shoalhaven	Possible	Major	High	3B	1;2;5;19;14
	Human				North		,			
33	Settlement	Residential	Bangalee/Tapitalee		Shoalhaven	Possible	Major	High	3B	1;2;13
107	Human Settlement	Special Fire Protection	Vincentia High School		Bay and Basin	Possible	Major	High	3B	1;15
111	Human Settlement	Special Fire Protection	Sussex Inlet Public School		Bay and Basin	Unlikely	Catastrophic	High	3C	1;15
			Ulladulla Industrial			Almost				
154	Economic	Commercial	Area		Ulladulla	certain	Minor	High	3D	1
150	Economic	Commercial	St Georges Basin Sewage Treatment Plant	The Wool Road	Bay and Basin	Almost certain	Minor	High	3D	1
151	Economic	Commercial	Manyana STP & Landfill		Ulladulla	Almost certain	Minor	High	3D	1
149	Economic	Commercial	Sussex Inlet Industrial Precinct	Sussex Inlet Road ETC	Bay and Basin	Almost certain	Minor	High	3D	1
148	Economic	Commercial	Huskisson Industrial Area	Huskisson	Nowra	Almost certain	Minor	High	3D	1
142	Economic	Commercial	Sawmill BTU Road		Nowra	Almost certain	Minor	High	3D	1
141	Economic	Commercial	South Nowra Industrial/Commercial		Nowra	Almost certain	Minor	High	3D	1
140	Economic	Commercial	Bamarang Water Treatment Plant	Bamarang	Nowra	Possible	Major	High	3B	1

No	Asset type	Asset sub type	Asset name	Asset Location	Display area	Likelihood	Consequence	Risk	Priority	Treatment
138	Economic	Commercial	West Nowra Commercial/Industrial Area		Nowra	Almost certain	Minor	High	3D	1
228	Economic	Infrastructure	Fishermans Paradise Communications Tower		Ulladulla	Likely	Moderate	High	ЗА	1
227	Economic	Infrastructure	Boyne		South Shoalhaven	Likely	Moderate	High	3A	1
226	Economic	Infrastructure	Red Rocks Communications Tower		North Shoalhaven	Likely	Moderate	High	3A	1
167	Economic	Tourist and Recreational	The Pines Motel & Tourist Park		South Shoalhaven	Almost certain	Minor	High	3D	1;5;7;15
166	Economic	Tourist and Recreational	The Bush Camp Caravan Park		South Shoalhaven	Almost certain	Minor	High	3D	1;5;7;15
58	Human Settlement	Residential	Basin View South		Bay and Basin	Unlikely	Major	Medium	4	
98	Human Settlement	Residential	Lake Tabourie		South Shoalhaven	Unlikely	Major	Medium	4	
97	Human Settlement	Residential	Burrill Lake North		Ulladulla	Unlikely	Major	Medium	4	
78	Human Settlement	Residential	Manyana West		Ulladulla	Unlikely	Major	Medium	4	
96	Human Settlement	Residential	Dolphin Point		Ulladulla	Unlikely	Major	Medium	4	

No	Accet type	Asset sub	Asset name	Asset Location	Display	Likelihood	Consequence	Risk	Priority	Treatment
NO	Asset type	type	Asset name	Location	area	Likeiiiiood	Consequence	KISK	Priority	Heatiment
95	Human Settlement	Residential	Burrill Lake West		Ulladulla	Unlikely	Major	Medium	4	
44	Human Settlement	Residential	Woollamia		Bay and Basin	Unlikely	Major	Medium	4	
100	Human Settlement	Residential	Kioloa		South Shoalhaven	Unlikely	Major	Medium	4	
51	Human Settlement	Residential	Erowal Bay		Bay and Basin	Unlikely	Major	Medium	4	
49	Human Settlement	Residential	Hyams Beach-Illoura		Bay and Basin	Unlikely	Major	Medium	4	
47	Human Settlement	Residential	Vincentia		Bay and Basin	Unlikely	Major	Medium	4	
46	Human Settlement	Residential	Vincentia North		Bay and Basin	Unlikely	Major	Medium	4	
77	Human Settlement	Residential	Cunjurrong Point		Ulladulla	Unlikely	Major	Medium	4	
76	Human Settlement	Residential	Bendalong		Ulladulla	Unlikely	Major	Medium	4	
75	Human Settlement	Residential	Bendalong North		Ulladulla	Unlikely	Major	Medium	4	
129	Human Settlement	Residential	Callala	Callala Bay/Callala Beach	Nowra	Unlikely	Major	Medium	4	1
74	Human Settlement	Residential	Swan Haven			Unlikely	Major	Medium	4	
99	Human Settlement	Residential	Bawley Point West		South Shoalhaven	Unlikely	Major	Medium	4	
66	Human Settlement	Residential	Sanctuary Point		Bay and Basin	Possible	Moderate	Medium	4	1

No	Asset type	Asset sub type	Asset name	Asset Location	Display area	Likelihood	Consequence	Risk	Priority	Treatment
	Human			Location	Bay and					Trodinone
64	Settlement	Residential	Tomerong West		Basin	Unlikely	Major	Medium	4	
63	Human Settlement	Residential	Wrights Beach		Bay and Basin	Unlikely	Major	Medium	4	
59	Human Settlement	Residential	Basin View East		Bay and Basin	Unlikely	Major	Medium	4	
102	Human Settlement	Residential	North Durras		South Shoalhaven	Unlikely	Major	Medium	4	
101	Human Settlement	Residential	Depot Beach		South Shoalhaven	Unlikely	Major	Medium	4	
50	Human Settlement	Residential	Hyams Beach		Bay and Basin	Unlikely	Major	Medium	4	
30	Human Settlement	Residential	Nowra Urban Area		Nowra	Possible	Moderate	Medium	4	
18	Human Settlement	Residential	Kangaroo Valley, Jenanter Drive	Jenanter Drive	North Shoalhaven	Unlikely	Major	Medium	4	
86	Human Settlement	Residential	Lake Conjola		Ulladulla	Unlikely	Major	Medium	4	
85	Human Settlement	Residential	Conjola Park East		Ulladulla	Unlikely	Major	Medium	4	
243	Human Settlement	Residential	Culburra/Orient Point		Nowra	Possible	Moderate	Medium	4	
195	Human Settlement	Residential	Ulladulla		Ulladulla	Unlikely	Major	Medium	4	
36	Human Settlement	Residential	Currarong		Nowra	Possible	Moderate	Medium	4	
197	Human Settlement	Residential	Bawley Point		South Shoalhaven	Unlikely	Major	Medium	4	

No	Asset type	Asset sub type	Asset name	Asset Location	Display area	Likelihood	Consequence	Risk	Priority	Treatment
79	Human Settlement	Residential	Manyana		Ulladulla	Unlikely	Major	Medium	4	
89	Human Settlement	Residential	Narrawallee West		Ulladulla	Unlikely	Major	Medium	4	
83	Human Settlement	Residential	Conjola Park Lakeside Drive		Ulladulla	Unlikely	Major	Medium	4	
241	Human Settlement	Residential	Shoalhaven Heads		North Shoalhaven	Unlikely	Major	Medium	4	
223	Human Settlement	Special Fire Protection	Falls Creek Public School		Nowra	Unlikely	Major	Medium	4	
106	Human Settlement	Special Fire Protection	University of Wollongong, Shoalhaven Campus		Nowra	Possible	Moderate	Medium	4	
204	Human Settlement	Special Fire Protection	Anglicare Chesalon	Old Southern Road	Nowra	Unlikely	Major	Medium	4	
55	Human Settlement	Special Fire Protection	Coastal Waters Retirement Village	Old Erowal Bay	Bay and Basin	Unlikely	Major	Medium	4	
104	Human Settlement	Special Fire Protection	Illaroo Farm		North Shoalhaven	Unlikely	Major	Medium	4	
203	Human Settlement	Special Fire Protection	Nowra Christian Community School	Old Southern Road	Nowra	Unlikely	Major	Medium	4	
134	Economic	Agricultural	Bay & Basin Agriculture		Bay and Basin	Likely	Minor	Medium	4	
152	Economic	Commercial	Lake Conjola STP		Ulladulla	Likely	Minor	Medium	4	

		Asset sub		Asset	Display					
No	Asset type	type	Asset name	Location	area	Likelihood	Consequence	Risk	Priority	Treatment
143	Economic	Commercial	HMAS Albatross		Nowra	Unlikely	Major	Medium	4	
145	Economic	Commercial	Power Station		North Shoalhaven	Unlikely	Major	Medium	4	
245	Economic	Infrastructure	Communications Tower	Sasafrass	West Shoalhaven	Likely	Minor	Medium	4	
244	Economic	Infrastructure	Communications Tower		Bay and Basin	Likely	Minor	Medium	4	
229	Economic	Infrastructure	Communications/Water Facility		Bay and Basin	Possible	Moderate	Medium	4	
207	Economic	Infrastructure	Mt Cambewarra Communications Facility		North Shoalhaven	Unlikely	Major	Medium	4	
171	Economic	Tourist and Recreational	Lake Tabourie Tourist Park	Lake Tabourie	South Shoalhaven	Likely	Minor	Medium	4	
180	Economic	Tourist and Recreational	Snappy Gums Caravan Park		Bay and Basin	Likely	Minor	Medium	4	
187	Economic	Tourist and Recreational	Alamein Caravan Park		Bay and Basin	Likely	Minor	Medium	4	
199	Economic	Tourist and Recreational	Coastal Patrol		South Shoalhaven	Likely	Minor	Medium	4	
196	Economic	Tourist and Recreational	Rifle Range		Nowra	Likely	Minor	Medium	4	
194	Economic	Tourist and Recreational	Ulladulla Pistol Club		Ulladulla	Likely	Minor	Medium	4	
168	Economic	Tourist and Recreational	The Cabins		Bay and Basin	Likely	Minor	Medium	4	
164	Economic	Tourist and Recreational	Burrill Lake Caravan Park		Ulladulla	Likely	Minor	Medium	4	

Na	A	Asset sub	A 4	Asset	Display	l ilalika a d		Diale	Duianitus	Tuestuesut
No	Asset type	type	Asset name	Location	area	Likelihood	Consequence	Risk	Priority	Treatment
186	Economic	Tourist and Recreational	Sussex Inlet Surf Life Saving Club		Bay and Basin	Likely	Minor	Medium	4	
163	Economic	Tourist and Recreational	Rustic Caravan Park		Ulladulla	Likely	Minor	Medium	4	
162	Economic	Tourist and Recreational	Coolendel		Nowra	Likely	Minor	Medium	4	
184	Economic	Tourist and Recreational	Myola Tourist Park		Nowra	Likely	Minor	Medium	4	
165	Economic	Tourist and Recreational	Ulladulla Caravan Parks		Ulladulla	Likely	Minor	Medium	4	
172	Economic	Tourist and Recreational	Racecourse Beach Tourist Park		South Shoalhaven	Likely	Minor	Medium	4	
174	Economic	Tourist and Recreational	Merry Beach Tourist Park		South Shoalhaven	Likely	Minor	Medium	4	
175	Economic	Tourist and Recreational	Pretty Beach Camp Ground		South Shoalhaven	Likely	Minor	Medium	4	
177	Economic	Tourist and Recreational	Depot Beach Camp Ground		South Shoalhaven	Likely	Minor	Medium	4	
169	Economic	Tourist and Recreational	Lake Conjola Entrance Caravan Park	Lake Conjola	Ulladulla	Likely	Minor	Medium	4	
178	Economic	Tourist and Recreational	North Durras Caravan Parks		South Shoalhaven	Likely	Minor	Medium	4	
170	Economic	Tourist and Recreational	Wairo Beach Tourist Park		South Shoalhaven	Likely	Minor	Medium	4	
176	Economic	Tourist and Recreational	Pebbly Beach Camp Ground		South Shoalhaven	Likely	Minor	Medium	4	

No	Asset type	Asset sub	Asset name	Asset Location	Display area	Likelihood	Consequence	Risk	Priority	Treatment
110	Asset type	type	Addet name	Location	urcu	Likelillood	Consequence	IXION	THOTHY	Treatment
400	5	Commercial	Bay & Basin		Bay and	I Shada	Minor	Ma di um	4	
192	Economic	Forest	Commercial Forests		Basin	Likely	Minor	Medium	4	
191	Economic	Commercial Forest	Nowra Commercial Forests		Nowra	Likely	Minor	Medium	4	
		Commercial	Ulladulla Commercial							
193	Economic	Forest	Forests		Ulladulla	Likely	Minor	Medium	4	
146	Economic	Drinking Water Catchment	Tallowa Dam	Tallowa Dam Road	North Shoalhaven	Unlikely	Major	Medium	4	
147	Economic	Drinking Water Catchment	Bamarang Water Pump Station	Bamarang	Nowra	Possible	Moderate	Medium	4	
144	Economic	Drinking Water Catchment	Bendeela Pondage and associated infrastructure	Kangaroo Valley	North Shoalhaven	Unlikely	Major	Medium	4	
161	Environment	Endangered	Endangered Fauna	,	North Shoalhaven	Unlikely	Major	Medium	4	
15	Cultural	Non Indigenous	Greenfields Beach Site	Jervis Bay National Park	Bay and Basin	Unlikely	Major	Medium	4	
56	Human Settlement	Residential	Vincentia			Unlikely	Moderate	Low	NA	
94	Human Settlement	Residential	Burrill Lake		Ulladulla	Unlikely	Minor	Low	NA	

		Asset sub		Asset	Display					
No	Asset type	type	Asset name	Location	area	Likelihood	Consequence	Risk	Priority	Treatment
92	Human Settlement	Residential	Mollymook		Ulladulla	Unlikely	Moderate	Low	NA	
65	Human Settlement	Residential	Tomerong East		Bay and Basin	Unlikely	Minor	Low	NA	
68	Human Settlement	Residential	Wandandian		Bay and Basin	Unlikely	Minor	Low	NA	
130	Human Settlement	Residential	Sussex Inlet North	Sussex Inlet	Bay and Basin	Unlikely	Moderate	Low	NA	
67	Human Settlement	Residential	Bewong		Bay and Basin	Unlikely	Minor	Low	NA	
28	Human Settlement	Residential	Bomaderry	Bomaderry	North Shoalhaven	Possible	Minor	Low	NA	
26	Human Settlement	Residential	Bomaderry Rural Residential		North Shoalhaven	Unlikely	Moderate	Low	NA	
90	Human Settlement	Residential	Narrawalle		Ulladulla	Unlikely	Moderate	Low	NA	
32	Human Settlement	Residential	Worrigee		Nowra	Possible	Minor	Low	NA	
19	Human Settlement	Residential	Kangaroo Valley Village	Kangaroo Valley	North Shoalhaven	Unlikely	Moderate	Low	NA	
88	Human Settlement	Residential	Narrawallee		Ulladulla	Unlikely	Moderate	Low	NA	
87	Human Settlement	Residential	Milton		Ulladulla	Unlikely	Minor	Low	NA	
84	Human Settlement	Residential	Conjola Park West		Ulladulla	Unlikely	Moderate	Low	NA	
34	Human Settlement	Residential	Greenwell Point		Nowra	Unlikely	Minor	Low	NA	

		Asset sub		Asset	Display					
No	Asset type	type	Asset name	Location	area	Likelihood	Consequence	Risk	Priority	Treatment
80	Human Settlement	Residential	Berringer Lake		Ulladulla	Unlikely	Moderate	Low	NA	
	Human	rtoolaoritiar	Dominger Lance		North	- Crimitory	moderate	2011	1.0.1	
201	Settlement	Residential	Berry		Shoalhaven	Unlikely	Moderate	Low	NA	
	Human		West Cambewarra	West Cambewarra	North					
23	Settlement	Residential	Road Residential Area	Road	Shoalhaven	Possible	Minor	Low	NA	
81	Human Settlement	Residential	Fisherman's Paradise		Ulladulla	Unlikely	Minor	Low	NA	
202	Human Settlement	Residential	Berry Rural		North Shoalhaven	Unlikely	Moderate	Low	NA	
91	Human Settlement	Residential	Mollymook Beach		Ulladulla	Unlikely	Minor	Low	NA	
200	Human Settlement	Residential	Cambewarra		North Shoalhaven	Unlikely	Moderate	Low	NA	
198	Human Settlement	Special Fire Protection	Australian National University		South Shoalhaven	Unlikely	Moderate	Low	NA	
103	Human Settlement	Special Fire Protection	Watersleigh		North Shoalhaven	Unlikely	Moderate	Low	NA	
206	Human Settlement	Special Fire Protection	Shoalhaven High School		Nowra	Unlikely	Moderate	Low	NA	
205	Human Settlement	Special Fire Protection	St Johns Highschool		Nowra	Unlikely	Moderate	Low	NA	
20	Human Settlement	Special Fire Protection	David Berry Hospital	85 Tannery Road	North Shoalhaven	Unlikely	Moderate	Low	NA	

No	Asset type	Asset sub type	Asset name	Asset Location	Display area	Likelihood	Consequence	Risk	Priority	Treatment
135	Economic	Agricultural	Ulladulla Agriculture		Ulladulla	Unlikely	Minor	Low	NA	
132	Economic	Agricultural	North Shoalhaven Agriculture		North Shoalhaven	Unlikely	Minor	Low	NA	
137	Economic	Agricultural	West Shoalhaven Agriculture		West Shoalhaven	Unlikely	Minor	Low	NA	
136	Economic	Agricultural	South Shoalhaven		South Shoalhaven	Unlikely	Minor	Low	NA	
133	Economic	Agricultural	Nowra Agriculture		Nowra	Unlikely	Minor	Low	NA	
238	Economic	Commercial	Albatross Aviation Technology Park		Nowra	Possible	Minor	Low	NA	
189	Economic	Commercial	Shoalhaven Heads STP		North Shoalhaven	Unlikely	Moderate	Low	NA	
153	Economic	Commercial	Ulladulla STP	Kings Point Road	Ulladulla	Possible	Minor	Low	NA	
139	Economic	Commercial	West Nowra Water Treatment Facilities		Nowra	Possible	Minor	Low	NA	
224	Economic	Infrastructure	Railway Line		North Shoalhaven	Unlikely	Moderate	Low	NA	
242	Economic	Infrastructure	Communications Tower		North Shoalhaven	Unlikely	Minor	Low	NA	

	A 4 4	Asset sub	A 4	Asset	Display	121-1211	0	D:-1	Dui a vita	T
No	Asset type	type	Asset name	Location	area	Likelihood	Consequence	Risk	Priority	Treatment
246	Economic	Infrastructure	Communications Tower	Kingaman	Ulladulla	Unlikely	Moderate	Low	NA	
183	Economic	Tourist and Recreational	Kangaroo Valley Tourist Park		North Shoalhaven	Unlikely	Minor	Low	NA	
231	Economic	Tourist and Recreational	Bay & Basin Leisure Centre		Bay and Basin	Possible	Minor	Low	NA	
190	Economic	Tourist and Recreational	Motor Cycle Club		Nowra	Possible	Minor	Low	NA	
185	Economic	Tourist and Recreational	Cudmirrah Berrara Caravan Parks		Bay and Basin	Unlikely	Minor	Low	NA	
182	Economic	Tourist and Recreational	Kangaroo Valley Country Club		North Shoalhaven	Unlikely	Minor	Low	NA	
173	Economic	Tourist and Recreational	Kioloa Beach Tourist Park		South Shoalhaven	Unlikely	Minor	Low	NA	
179	Economic	Tourist and Recreational	Holiday Haven Tourist Park		North Shoalhaven	Possible	Minor	Low	NA	
181	Economic	Tourist and Recreational	Conjola Lakeside Van Park		Ulladulla	Unlikely	Minor	Low	NA	
14	Cultural	Non Indigenous	Riversdale	Illaroo	North Shoalhaven	Unlikely	Moderate	Low	NA	
13	Cultural	Non Indigenous	Bundanon	Illaroo	North Shoalhaven	Unlikely	Moderate	Low	NA	

Chapter 5. Appendix 3 Treatment Register

No	Strategy	Priority	Action	Comment	Responsible Agency	Support Agency	Scheduled Action Date	Asset
1	Hazard Reduction	1A	Inspect APZ & maintain if required	Myola, Callala, Sanctuary Point, West Lake Conjola	DL; LGA; DECC; Private; DPI; Defence	RFS	0910;1011; 1112;1213; 1314	157; 93; 156; 158; 159; 54; 188; 45; 155; 113; 129; 73; 72; 70; 66; 62; 61; 60; 58; 48; 232; 31; 29; 236; 233; 43; 37; 33; 107; 16; 111; 237; 108; 160; 154; 150; 151; 149; 148; 142; 141; 140; 138; 228; 227; 226; 167; 166; 239
2	Hazard Reduction	1C	Monitor SFAZ and maintain if required	Myola, Sussex Inlet	DL; LGA; DECC; Private; DPI	NSWFB;RFS	0910;1011; 1112;1213; 1314	157; 156; 158; 159 ;54; 45; 155; 72; 70; 232;233; 43; 37; 33; 237

No	Strategy	Priority	Action	Comment	Responsible Agency	Support Agency	Scheduled Action Date	Asset
3	Community Education	1A	Conduct Community Firewise Workshop	Myola, Potholes Road Cabins, Benton Sands, Jerberra Estate	RFS		910	188; 61; 236; 43; 239
4	Property Planning	2A	Prepare Village Protection Plan	Myola	DL; LGA; DECC; NSWFB; RFS		1011	43
5	Community Education	2A	Conduct Tourist Park Education Program	Myola, Cudmirrah Berrara, Huskisson, Sussex Inlet	RFS		1213	45; 113; 72; 43; 37; 167; 166
6	Preparedness		Restrict Access on days of Extreme Fire Danger	Potholes Road	DECC	RFS; Police	0910;1011; 1112;1213; 1314	
7	Ignition Management	1A	Implement solid fuel fire ban if required	Potholes Road	DL; LGA; DECC; Private; DPI	NSWFB;RFS	0910;1011; 1112;1213; 1314	188; 167; 166; 12

No	Strategy	Priority	Action	Comment	Responsible Agency	Support Agency	Scheduled Action Date	Asset
9	Property Planning	1B	Develop Community Fire Safety Action Plan	Benton Sands	Private	RFS	1011	61; 236
12	Preparedness	2A	Implement SWS program	Southern Shoalhaven Non-urban, Falls Creek Rural Residential, Tomerong Non-urban, Sussex Inlet Rural, North Shoalhaven Rural, Wandandian Non-urban	RFS		1112;1213; 1314	157; 156; 158; 159; 155; 48; 232; 233
13	Community Education	3B	Conduct community firewise Workshop	North Nowra, Bomaderry West, Nowra Western Interface, West Nowra Residential Area,	NSWFB; RFS	RFS	1314	54; 31; 29; 27; 24; 33

No	Strategy	Priority	Action	Comment	Responsible Agency	Support Agency	Scheduled Action Date	Asset
14	Community Education	3B	Conduct Kids Firewise Program	North Nowra	NSWFB; RFS		1011	58; 48; 31; 29; 27; 24; 37
15	Property Planning	1B	Develop Facility Fire Action Plan		Private; Other	RFS	1011	107;16; 111; 237; 108; 160; 167; 166; 12
16	Property Planning	1B	Develop Community Fire Action Plan	Jerberra Estate	LGA;DECC;RFS;Other		1011	239
17	Property Planning	2A	Implement Farm Firewise Program		RFS		1011	157; 158; 155; 232
18	Property Planning	3A	Implement Farm Firewise		RFS		1112	156

No	Strategy	Priority	Action	Comment	Responsible Agency	Support Agency	Scheduled Action Date	Asset
19	Community Education	3B	Conduct Community Firewise Workshop		RFS		1011	45; 58; 37
20	Community Education	3B	Conduct Community Firewise Workshop	St Georges Basin West, Badgee, Sussex Inlet, Bream Beach, Medlyn Avenue Sussex Inlet, Kings Point, West Lake Conjola Prior Street.	RFS		1112	93; 113; 73; 72; 70; 62; 60
21	Community Education	3B	Conduct Tourist Park Education Program	Huskisson	RFS		1112	45;72
22	Community Education	3C	Conduct Tourist Park Education Program	Myola, Cudmirrah Berrara, Huskisson, Sussex Inlet	RFS		1112	62

Appendix 4 Maps

Map 1 of 6 North Shoalhaven

Map 2 of 6 Nowra

Map 3 of 6 Bay and Basin

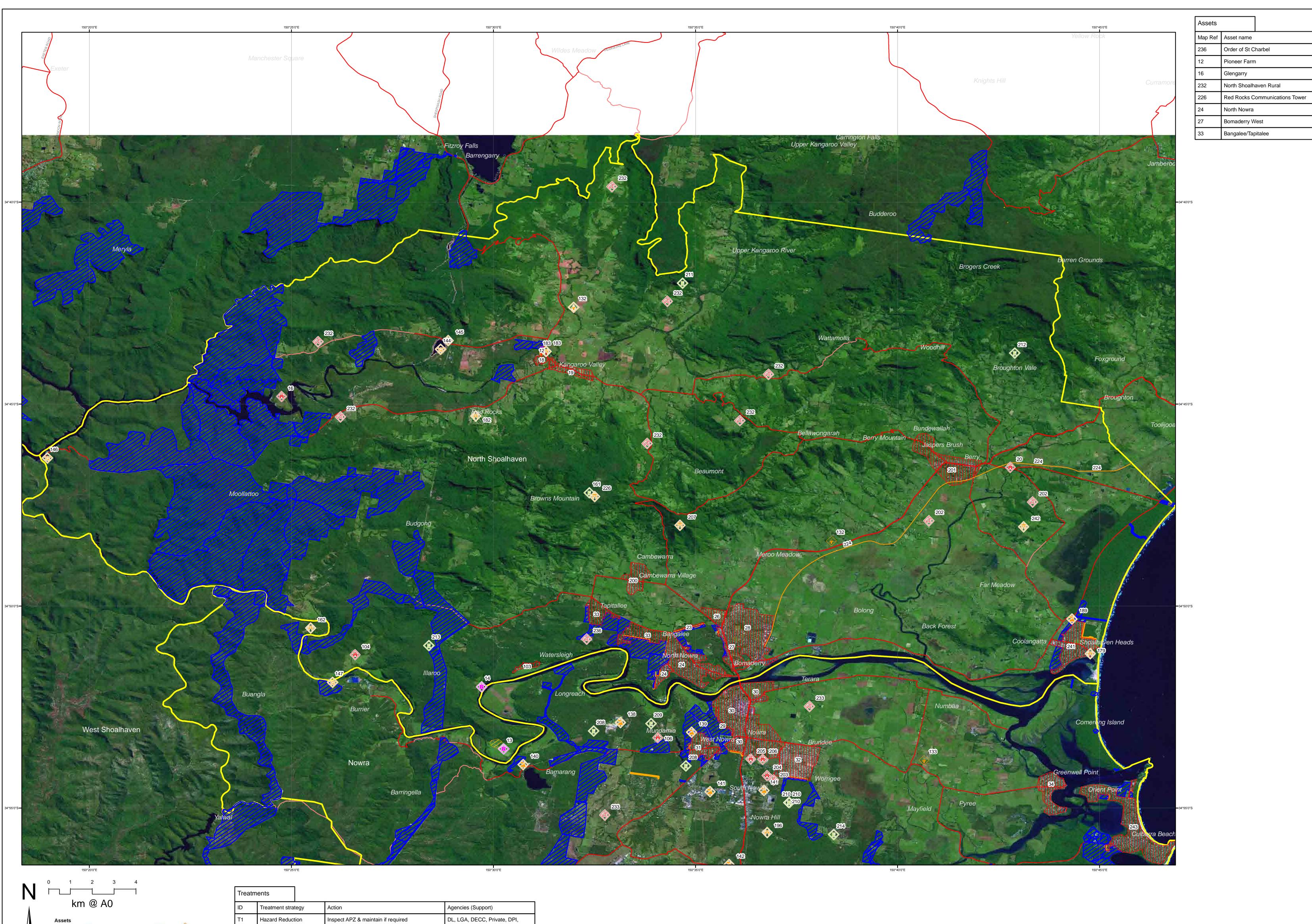
Map 4 of 6 Ulladulla

Map 5 of 6 South Shoalhaven

Map 6 of 6 West Shoalhaven

Map 7 Shoalhaven Fire Frequency

Map 8 Shoalhaven Time Since Fire



North Shoalhaven - Map Display Area

Map 1 of 6

This Bush Fire Risk Management Plan (BFRMP) has been prepared by the Shoalhaven 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-induced bush fire ignitions that cause damage to life,

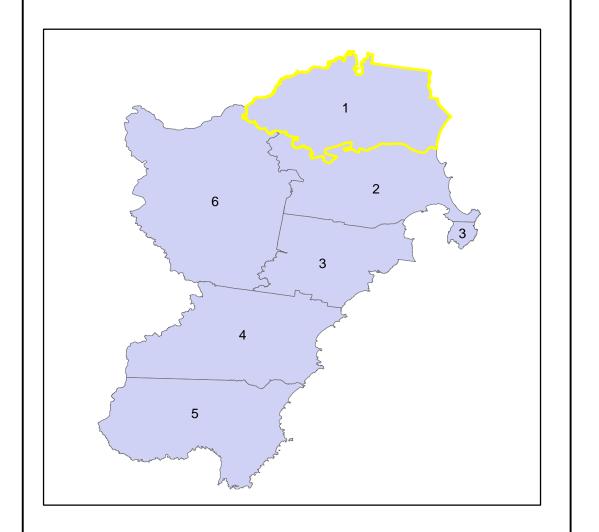
Residential

Special Fire Very High 2A

nfrastructure High

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 fires with a potential to cause damage to life, property and the

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- varying the standard bush fire danger period as required; - requiring permits during bush fire danger periods - prosecution of arsonists/offenders

- investigation of bush fire cause; - normal fire suppression activities;

- assessing and managing compliance with strategic fire-fighting resource allocation management systems; - preparation of a S52 Operations Coordination Plan;

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Zone	Purpose	Suppression	Zone
Asset Protection Cone	To protect human life, property and highly valued public assets and values.	To enable the safe use of Direct Attack supression strategies within the zone. To minimise bush fire impacts on undefended assets.	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 speed and intensity of bush fires, and reduce the potential for spot fire development. To aid containment of wildfires to existing management boudnaries.	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 dependant upon: - Topography - Aspect - Spotting propensity - Location of adjacent fire breaks - 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
.and //anagement //one	To meet relevant land management objectives in area 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 Cone	To exclude bush fires.	N/A	Variable dependant on size of fire sensitive area requiring protection.

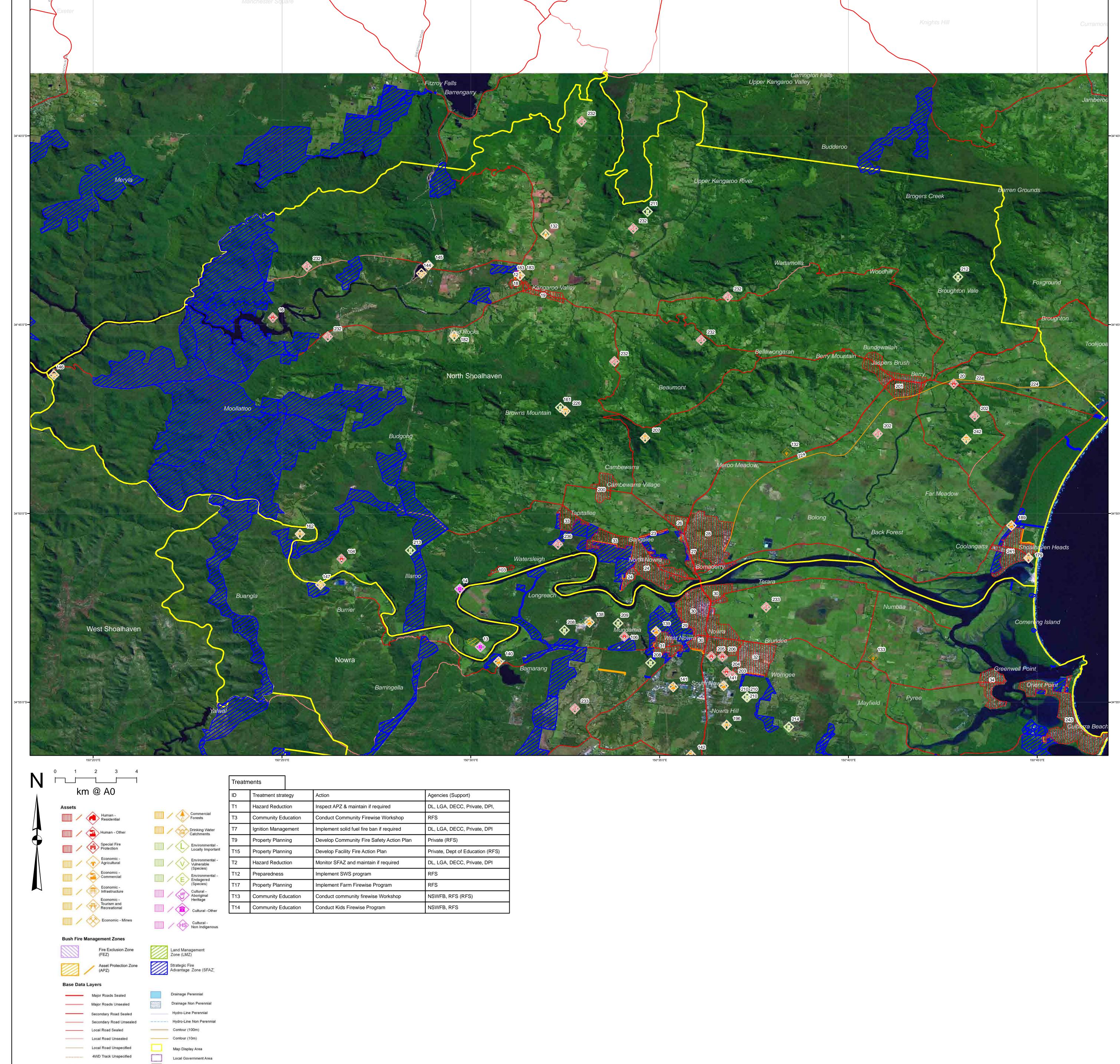
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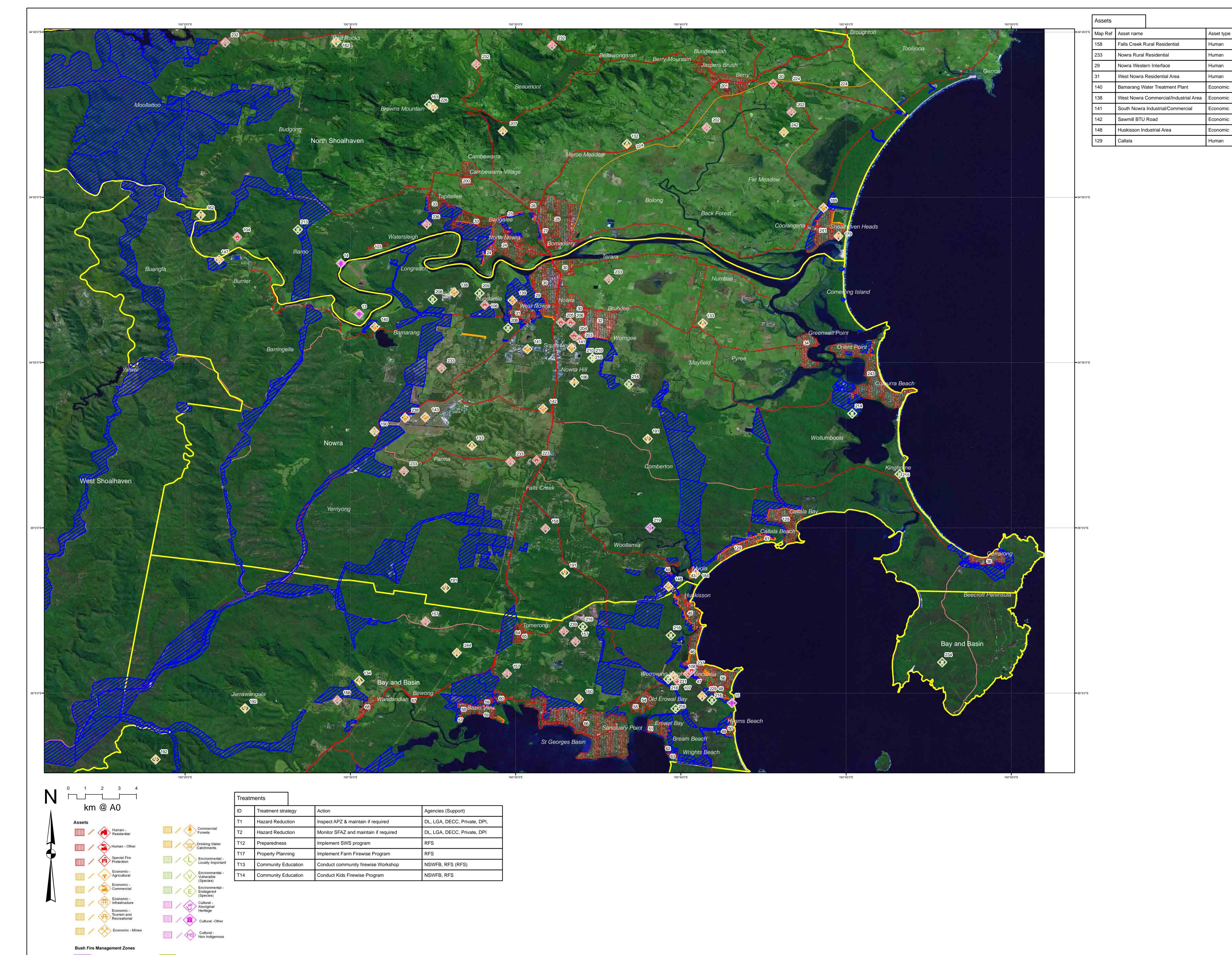
Crown Land

Heavy Rail

Light Rail

Heavy Rail Siding

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



Base Data Layers

Major Roads Sealed Major Roads Unsealed

Local Road Sealed

Local Road Unsealed

Local Road Unspecified

4WD Track Unspecified

Heavy Rail

Light Rail

Heavy Rail Siding

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

Secondary Road Unsealed

Drainage Perennial

Map Display Area

Crown Land

Local Government Area

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

Contour (100m)

Contour (10m)

Shoalhaven BFMC **Bush Fire Risk** Management Plan 2010

Nowra - Map Display Area

Map 2 of 6

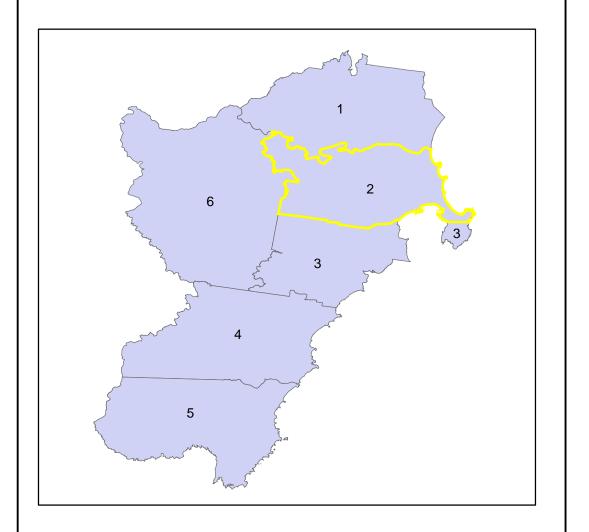
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The **objectives** of this BFRMP are to:
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varying the standard bush fire danger period as required;
requiring permits during bush fire danger periods - prosecution of arsonists/offenders

- investigation of bush fire cause; - normal fire suppression activities;

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Zone	Purpose	Suppression	Zone
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Land Management Zone	To meet relevant land management objectives in area 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.
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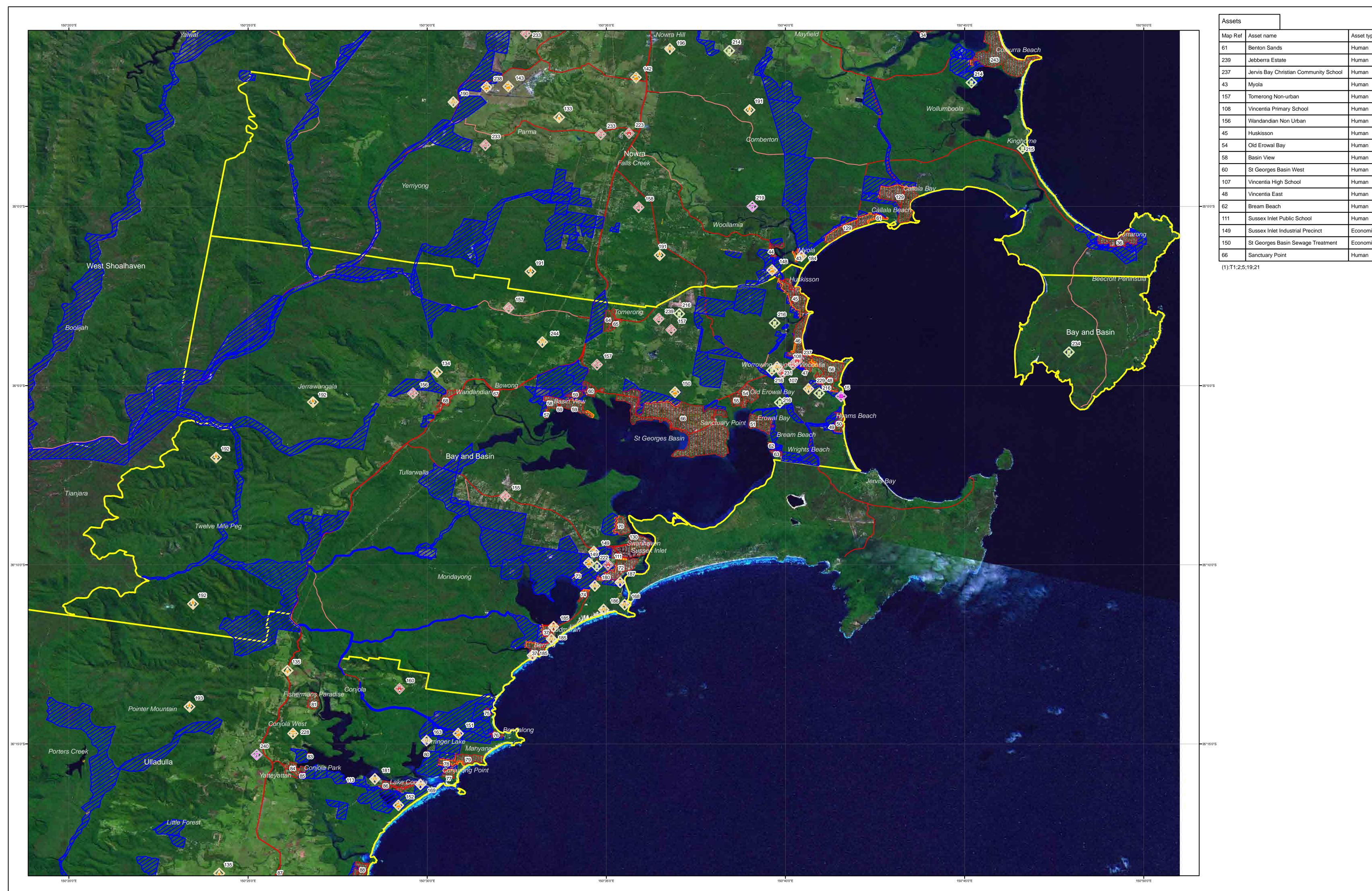
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IN				Treatn	nents			
1	km	@ A0		ID	Treatment stra	tegy	Action	Agencies (Support)
A	Assets		Massacritic NA	T1	Hazard Reduc	ion	Inspect APZ & maintain if required	DL, LGA, DECC, Private, DPI,
	<u> </u>	Human - Residential	Commercial Forests	Т3	Community Ed	ucation	Conduct Community Firewise Workshop	RFS
		Human - Other	Drinking Water	Т9	Property Plann	ing	Develop Community Fire Safety Action Plan	Private (RFS)
		Special Fire	Catchments	T15	Property Plann	ing	Develop Facility Fire Action Plan	Private, Dept of Education (RFS)
Ĭ		Protection	Environmental - Locally Important	T16	Property Plann	ing	Develop Community Fire Action Plan	LGA, DECC, RFS, Planning NSW
Λ		Economic - Agricultural	Environmental - Vulnerable	T2	Hazard Reduc	ion	Monitor SFAZ and maintain if required	DL, LGA, DECC, Private, DPI
		Economic - Commercial	(Species) Environmental -	T4	Property Plann	ing	Prepare Village Protection Plan	DL, LGA, DECC, NSWFB, RFS
	шш	Economic -	E Endagered (Species)	T5	Community Ed	ucation	Conduct Tourist Park Education Program	RFS
,		Infrastructure Economic -	Cultural - Aboriginal Heritage	T12	Preparedness		Implement SWS program	RFS
		Tourism and Recreational	Cultural -Other	T17	Property Plann	ing	Implement Farm Firewise Program	RFS
		Economic - Mines	Cultural -	T18	Property Plann	ing	Implement Farm Firewise	RFS
		~	Non Indigenous	T13	Community Ed	ucation	Conduct community firewise Workshop	NSWFB, RFS (RFS)
	Bush Fire Ma	Bush Fire Management Zones		T14	Community Ed	ucation	Conduct Kids Firewise Program	NSWFB, RFS
		Fire Exclusion Zone (FEZ)	Land Management Zone (LMZ)	T19	Community Ed	ucation	Conduct Community Firewise Workshop	RFS
		Asset Protection Zone	Strategic Fire	T20	Community Ed	ucation	Conduct Community Firewise Workshop	RFS
		(APZ)	Advantage Zone (SFAZ)	T21	Community Ed	ucation	Conduct Tourist Park Education Program	RFS
	Base Data L	Layers		T22	Community Ed	ucation	Conduct Tourist Park Education Program	RFS
	-	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) Contour (10m)					
		Local Road Unsealed Local Road Unspecified	Massing (NAM Sales)					
		4WD Track Unspecified	Map Display Area					
	55555555	Path	Local Government Area					
		Heavy Rail	Crown Land					
		Light Rail	State Forests					
		Heavy Rail Siding	National Park					

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Shoalhaven BFMC Bush Fire Risk Management Plan 2010

Bay and Basin - Map Display Area

Map 3 of 6

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Special Fire Extreme 1C T1;2;15

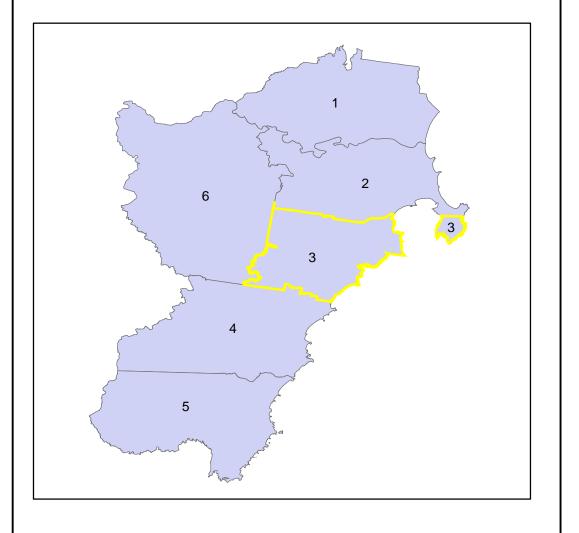
Special Fire Very High 2B

Special Fire High

Special Fire High

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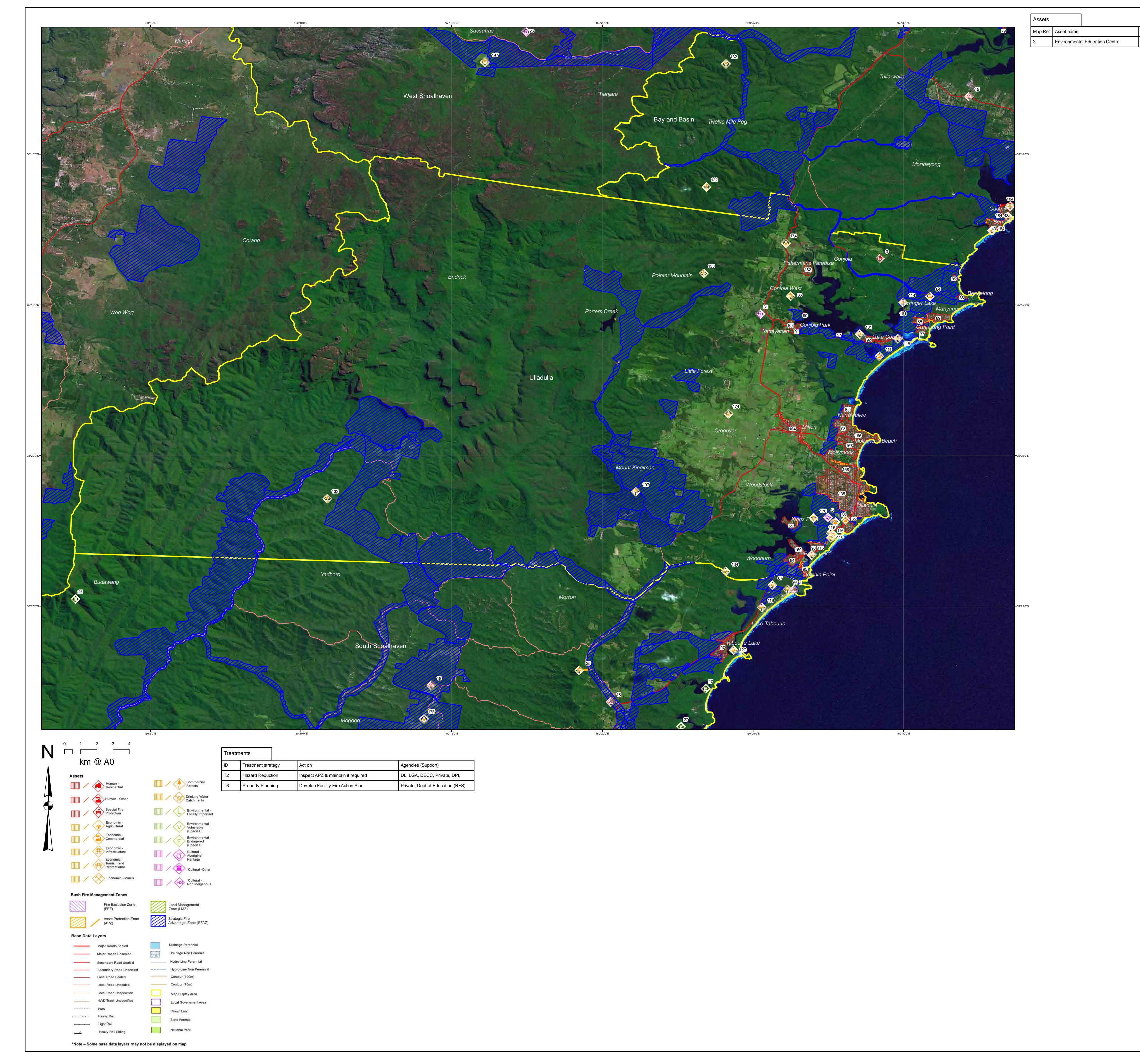
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Ulladulla - Map Display Area

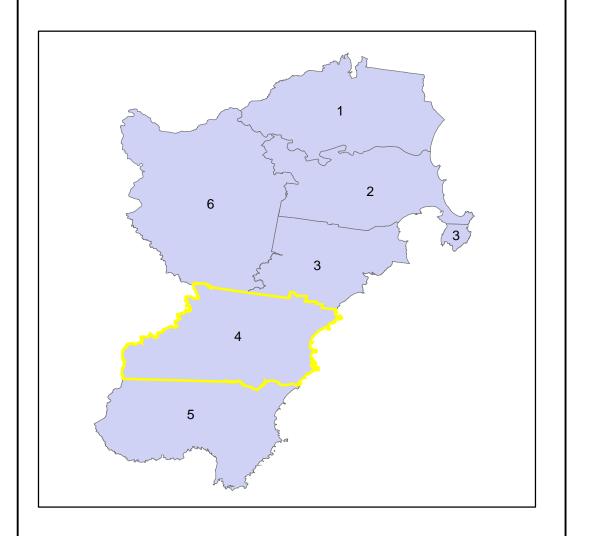
Map 4 of 6

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- investigation of bush fire cause; - normal fire suppression activities;

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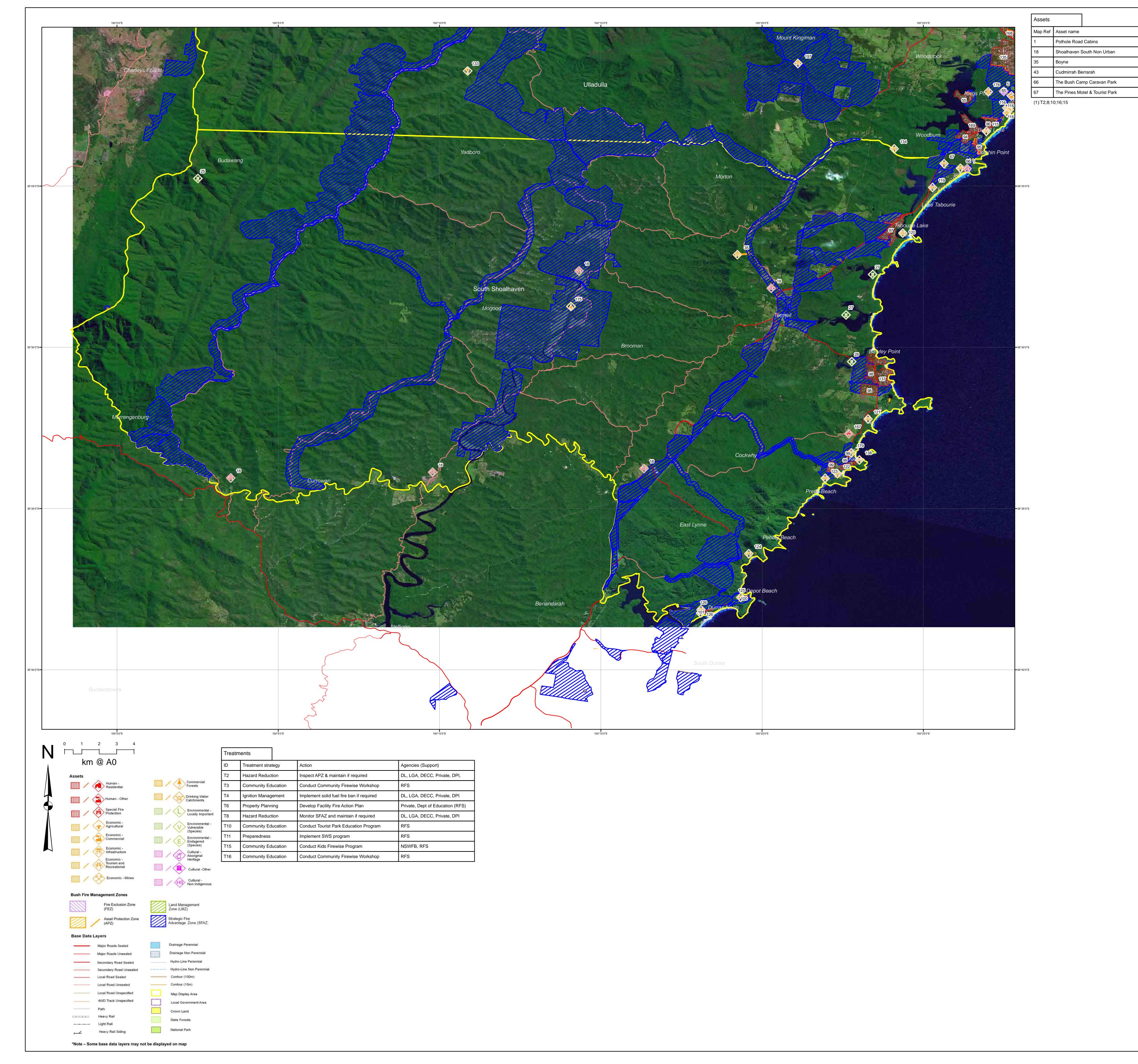
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South Shoalhaven - Map Display Area

Map 5 of 6

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Residential

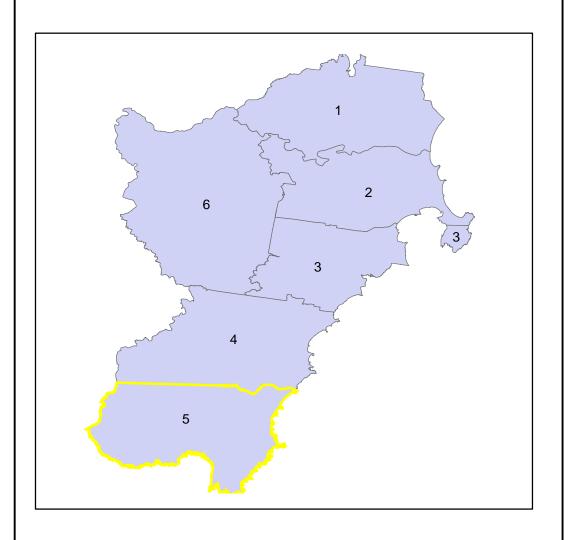
nfrastructure High

Tourist and High

Tourist and High

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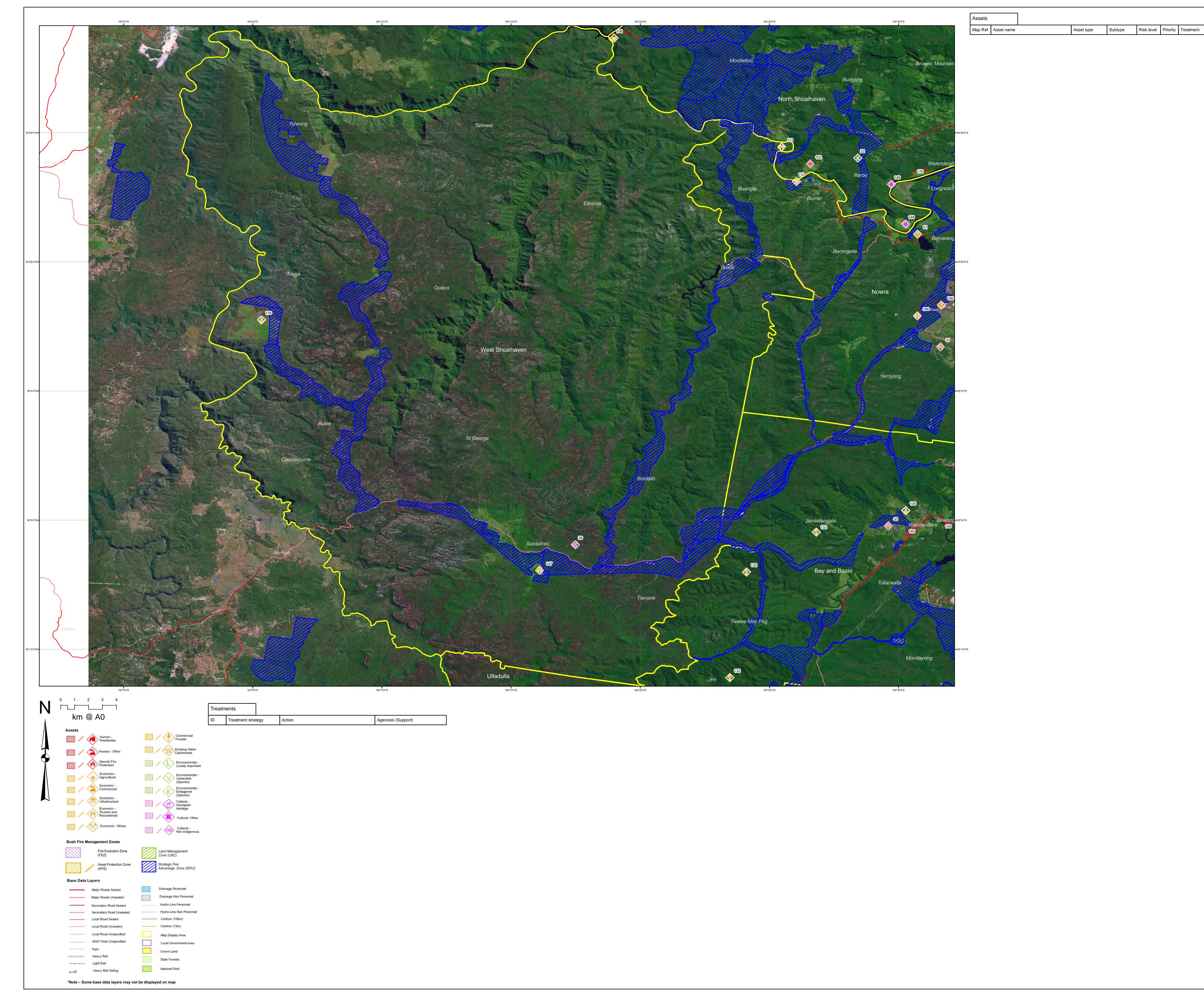
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West Shoalhaven - Map Display Area

Map 6 of 6

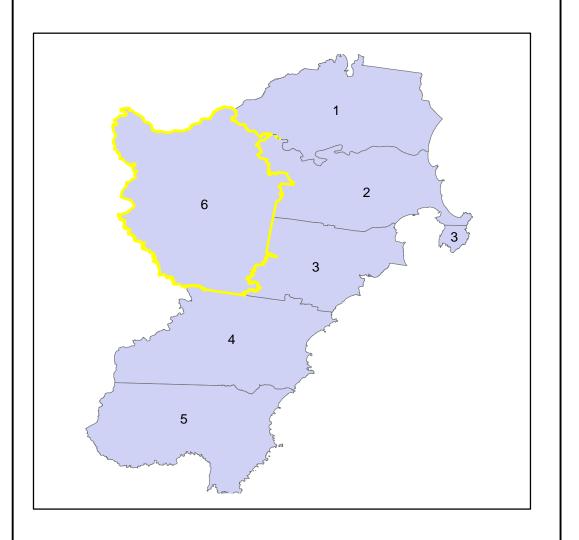
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- reduce the number of human-induced bush fire ignitions that cause damage to life,

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 fires with a potential to cause damage to life, property and the environment.

This map forms part of the BFRMP for the Shoalhaven BFMC, covering the local government area(s) of Shoalhaven. 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.



Under the Rural Fires Act 1997 this plan must be reviewed and updated within each successive five year period following the constitution of the BFMC. The Shoalhaven 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 reponsibilities 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 Shoalhaven 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 treatments are listed in the assets table. Other assets within the BFMC area that were assessed as not requiring treatments within the life of this plan are listed in the appendix to the BFRMP document. The Map Ref number "NA" denotes non-spatial

Specific treatments assigned to assets in the Shoalhaven 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 linked to a specific asset) which occur on an ongoing basis within the BFMC area are: - reviewing the bush fire prone land map;

- ensuring developments in the bush fire prone land comply with Planning for Bush - using the Local Environment Plan/s (LEPs) to control development in areas with a bush fire risk;

varying the standard bush fire danger period as required;
requiring permits during bush fire danger periods
prosecution of arsonists/offenders

- investigation of bush fire cause;

- normal fire suppression activities;

- assessing and managing compliance with strategic fire-fighting resource allocation management systems;
- preparation of a S52 Operations Coordination Plan;

Note on LMZ: All areas not specifically mapped as an APZ, SFAZ or FEZ are considered as LMZ for this risk management plan. For areas identified by an LMZ

Zone	Purpose	Suppression	Zone
Asset Protection Zone	To protect human life, property and highly valued public assets and values.	To enable the safe use of Direct Attack supression strategies within the zone. To minimise bush fire impacts on undefended assets.	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 speed and intensity of bush fires, and reduce the potential for spot fire development. To aid containment of wildfires to existing management boudnaries.	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 dependant upon: - Topography - Aspect - Spotting propensity - Location of adjacent fire breaks - 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 area 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.

available on this map. Before relying on the information on this map, users should carefully evaluate its accuracy, completeness and relevance for their purposes, and should obtain any appropriate professional advice relevant to their particular

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