



Shire of Chittering

Bushfire Risk Management Plan

2016 – 2021

Office of Bushfire Risk Management (OBRM) Bushfire Risk Management (BRM) Plan reviewed
18 April 2017

Local Government Council BRM Plan endorsement 17 May 2017

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Document Endorsements

Shire of Chittering (SoC) Council endorses that the Bushfire Risk Management Plan (BRM Plan) has been reviewed and assessed by the Office of Bushfire Risk Management as compliant with the standard for bushfire risk management planning in Western Australia, the *Guidelines for Preparing a Bushfire Risk Management Plan*. SoC is the owner of this document and has responsibility, as far as is reasonable, to manage the implementation of the BRM Plan and facilitate the implementation of bushfire risk management treatments by risk owners. The endorsement of the BRM Plan by SoC Council satisfies their endorsement obligations under section 2.3.1 of the *State Hazard Plan for Fire (Westplan Fire)*.

Local Government	Representative	Signature	Date
Shire of Chittering	Mr. Alan Sheridan, CEO		6/6/17

Amendment List

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2.0			

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1. Introduction

1.1 Background

Under the *State Hazard Plan for Fire (Westplan Fire)* an integrated Bushfire Risk Management Plan (BRM Plan) is to be developed for local government areas with significant bushfire risk. This BRM Plan has been prepared for the Shire of Chittering in accordance with the requirements of *Westplan Fire* and the *Guidelines for Preparing a Bushfire Risk Management Plan* (Guidelines). The risk management processes used to develop this BRM Plan are aligned to the key principles of *AS/NZS ISO 31000:2009 Risk management – Principles and guidelines*, as described in the Second Edition of the *National Emergency Risk Assessment Guidelines* (NERAG 2015). This approach is consistent with the policies of the State Emergency Management Committee, specifically the *State Emergency Management Policy 3.2 – Emergency Risk Management Planning*.

This BRM Plan is a strategic document that identifies assets at risk from bushfire and their priority for treatment. The Treatment Schedule sets out a broad program of coordinated multi-agency treatments to address risks identified in the BRM Plan. Government agencies and other land managers responsible for implementing treatments participate in developing the BRM Plan to ensure treatment strategies are collaborative and efficient, regardless of land tenure.

1.2 Aim and Objectives

The aim of the BRM Plan is to document a coordinated and efficient approach toward the identification, assessment and treatment of assets exposed to bushfire risk within the SoC.

The objective of the BRM Plan is to effectively manage bushfire risk within the SoC in order to protect people, assets and other things of local value. Specifically, the objectives of this BRM Plan are to:

- Guide and coordinate a tenure blind, multi-agency bushfire risk management program over a five year period;
- Document the process used to identify, analyse and evaluate risk, determine priorities and develop a plan to systematically treat risk;
- Facilitate the effective use of the financial and physical resources available for bushfire risk management activities;
- Integrate bushfire risk management into the business processes of local government, land owners and other agencies;
- Ensure there is integration between land owners and bushfire risk management programs and activities;
- Monitor and review the implementation of treatments to ensure treatment plans are adaptable and risk is managed at an acceptable level.

1.3 Legislation, Policy and Standards

The following legislation, policy and standards were considered to be applicable in the development and implementation of the BRM Plan.

1.3.1 Legislation

- *Bush Fires Act 1954*
- *Emergency Management Act 2005*
- *Fire Brigades Act 1942*
- *Fire and Emergency Service Act 1998*
- *Conservation and Land Management Act 1984*
- *Environmental Protection Act 1986*
- *Environmental Protection and Biodiversity Conservation Act 1999*
- *Wildlife Conservation Act 1950*
- *Aboriginal Heritage Act 1972*
- *Metropolitan Water Supply, Sewerage and Drainage Act 1909*
- *Country Areas Water Supply Act 1947*
- *Building Act 2011*
- *Bush Fires Regulations 1954*
- *Emergency Management Regulations 2006*
- *Planning and Development (Local Planning Scheme) Regulations 2015*

1.3.2 Policies, Guidelines and Standards

- National Emergency Risk Assessment Guidelines (NERAG) (Second Edition 2015)
- State Emergency Management Policy 2.5 - Emergency Management in Local Government Districts
- State Emergency Management Policy 3.2. – Emergency Risk Management Planning
- State Emergency Management Prevention Procedure 1 – Emergency Risk Management Planning
- State Hazard Plan for Fire (Westplan Fire)
- State Planning Policy 3.7: Planning in Bushfire Prone Areas
- State Planning Policy 3.4: Natural Hazards and Disasters
- Guidelines for Planning in Bushfire Prone Areas (2015)
- Western Australian Emergency Risk Management Guidelines (Emergency Management WA 2005)
- A Guide to the Use of Pesticides in Western Australia (Dept. of Health 2010)
- Guidelines for Plantation Fire Protection (DFES 2011)
- Firebreak Location, Construction and Maintenance Guidelines (DFES)
- Bushfire Risk Management Planning – Guidelines for preparing a Bushfire Risk Management Plan (2015)
- AS/NZS ISO 31000:2009 - Risk management – Principles and guidelines
- AS 3959-2009 Construction of buildings in bushfire-prone areas
- Building Protection Zone Standards (DFES)
- SoC Firebreak Notice

1.3.3 Other Related Documents

- National Strategy for Disaster Resilience
- National Statement of Capability for Fire and Emergency Services (AFAC 2015)
- Public Service Circular No. 88 Use of Herbicides in Water Catchment Areas (Dept. of Health 2007)
- Code of Practice for Timber Plantations in Western Australia (Forest Products Commission 2006)
- Bushfire Risk Management Planning Handbook
- Bushfire Risk Management System (BRMS) User Guide
- SoC Strategic Community Plan 2012 – 2022
- SoC Corporate Business Plan
- SoC Local Planning Strategy
- SoC Local Biodiversity Strategy
- SoC Local Emergency Management Arrangements 2013
- SoC Fire Break Notice (Annual Notice)
- SoC Bush Reserve Risk Assessment
- SoC Risk Management Policy
- SoC Community Engagement Plan 2012
- SoC Community Engagement Policy

2. The Risk Management Process

The risk management processes used to identify and address risk in this BRM Plan are aligned with the international standard for risk management, AS/NZS ISO 31000:2009, as described in NERAG (2015). This process is outlined in Figure 1 below.

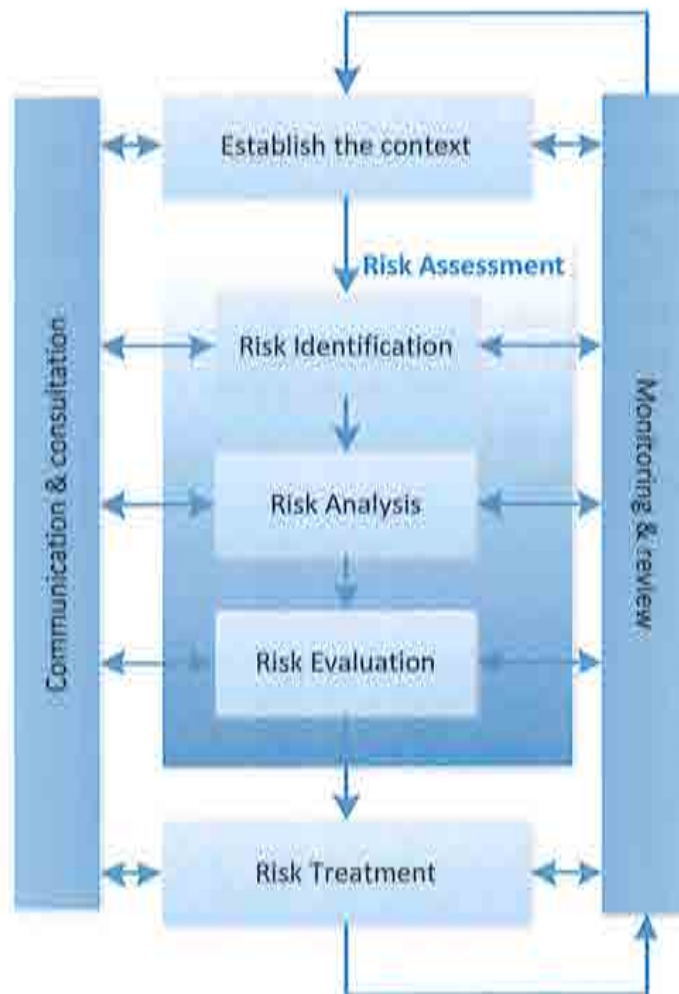


Figure 1 - An overview of the risk management process¹

¹ AS/NZS ISO 31000:2009, Figure 3, reproduced under SAI Global copyright Licence 1411-c083.

2.1 Roles and Responsibilities

Table 1 – Roles and Responsibilities

Stakeholder Name*	Roles and Responsibilities
Shire of Chittering	<ul style="list-style-type: none"> ▪ As custodian of the BRM Plan, coordination of the development and ongoing review of the Integrated BRM Plan. ▪ Negotiation of commitment from land owners to treat risks identified in the BRM Plan. ▪ As treatment manager, implementation of treatment strategies. ▪ As part of the approval process, submission of the draft BRM Plan to the Office of Bushfire Risk Management (OBRM) to review it for consistency with the Guidelines. ▪ As part of the approval process, submission of the final BRM Plan to council for their endorsement and adoption.
Department of Fire and Emergency Services (DFES)	<ul style="list-style-type: none"> ▪ Participation in and contribution to the development and implementation of BRM Plans, as per their agency responsibilities as the Westplan Fire Hazard Management Agency. ▪ Support to local government through expert knowledge and advice in relation to the identification, prevention and treatment of bushfire risk. ▪ Facilitation of local government engagement with state and federal government agencies in the local planning process. ▪ Undertake treatment strategies, including prescribed burning on behalf of Department of Lands for Unmanaged Reserves and Unallocated Crown Land within gazetted town site boundaries. ▪ In accordance with Memorandums of Understanding and other agreements, implementation of treatment strategies for other landholders.
Office of Bushfire Risk Management (OBRM)	<ul style="list-style-type: none"> ▪ Under the OBRM Charter, to ensure bushfire risk is managed in accordance with AS/NZS ISO 31000 and reporting on the state of bushfire risk across Western Australia. ▪ Review BRM Plans for consistency with the Guidelines prior to final endorsement by council.
Department of Parks and Wildlife (P&W)	<ul style="list-style-type: none"> ▪ Participation in and contribution to the development and implementation of BRM Plans. ▪ Providing advice for the identification of environmental assets that are vulnerable to fire and planning appropriate treatment strategies for their protection. ▪ As treatment manager, implementation of treatment strategies on department managed land and for Unmanaged Reserves and Unallocated Crown Land outside gazetted town site boundaries. ▪ In accordance with Memorandums of Understanding and other agreements, implementation of treatment strategies for other landholders.

Stakeholder Name*	Roles and Responsibilities
Other State and Federal Government Agencies	<ul style="list-style-type: none"> ▪ Assist the local government by providing information about their assets and current risk treatment programs. ▪ Participation in and contribution to the development and implementation of BRM Plans. ▪ As treatment manager, implementation of treatment strategies.
Public Utilities	<ul style="list-style-type: none"> ▪ Assist the local government by providing information about their assets and current risk treatment programs. ▪ Participation in and contribution to the development and implementation of BRM Plans. ▪ As treatment manager, implementation of treatment strategies.
Corporations and Private Land Owners	<ul style="list-style-type: none"> ▪ As treatment manager, implementation of treatment strategies.

2.2 Communication and Consultation

As indicated in Figure 1 (page 7), communication and consultation throughout the risk management process is fundamental to the preparation of an effective BRM Plan. To ensure appropriate and effective communication occurred with relevant stakeholders in the development of the BRM Plan, a *Communication Strategy* was prepared. The strategy is provided at **Appendix A**.

3. Establishing the Context

3.1 Description of the Local Government and Community Context

3.1.1 Strategic and Corporate Framework

The Bushfire Risk Management Plan has been established to develop strategies to effectively plan for and mitigate the potential adverse effects of bushfire within the Shire. Responsibility for the BRMP process sits with the Shire of Chittering Chief Executive Officer (CEO), however; the management and implementation of the plan is the responsibility of the Executive Manager of Development Services. The effective implementation of this plan depends upon the engagement and involvement of multiple stakeholders, the Shire of Chittering's responsibility is to facilitate the management of bushfire risk to the community as supported by the provision of this plan.

The BRM Plan will play an integral part of the Shires Strategic Community Plan which was adopted in 2012 and represents the Shire's approach to planning, and sets out the vision and aspirations for the community for the next 10 years, by working to strengthening the Shires capacity to achieve its overall vision "*A Sustainable Future*" through 2 of its key priorities:

- Improving services to the community, through the enhancement of emergency services and the education of fire protection, and
- Promoting and supporting sustainable lifestyle choices, through the encouragement of better fire protection.

The outcomes identified within the BRM Plan, along with the objectives outlined within the Shire's Strategic Community Plan, Corporate Plan, Local Planning Strategy, and the Local Biodiversity Strategy, will help guide future planning within the Shire and prioritise mitigation works to ensure a safer community.

3.1.2 Location, Boundaries and Tenure

The SoC is a land locked shire situated on the Darling Scarp encompassing an area of 1,220 square kilometres, with the Shire centre of Bindoon being 80 kilometres from Perth; it is bounded on the west by the Shire of Gingin, on the north by the Shire of Victoria Plains, on the east by the Shire of Toodyay and on the south by the Shire of Swan. A small south westerly section of the Shire abuts the City of Wanneroo.

The Shire comprises of the areas of Bindoon, Lower Chittering, Mooliabeenee, Muchea, Upper Chittering, and Wannamal.

Figure 2 – Location of the Shire of Chittering²



² Google Maps

Table 2 – Overview of Land Tenure and Management within the BRM Plan Area

Land Manager/Agency ^a	% of Plan Area
Shire of Chittering	3.45
Private Property	95.0465
Department of Parks and Wildlife	1.37
Australian Defence Force	0.13
Main Roads Western Australia	0.0025
Brookfield Rail	0.001
Total	100%

Source: Local Government Records

3.1.3 Population and Demographics

The Shire has approximately 4,996 people residing in the area³. The majority of people live in Lower Chittering (1,558 people), followed by Bindoon (1,063) and then Muchea (680 people).

The Shire continues to experience high growth rates mainly centred on the semi-rural areas of Lower Chittering, Muchea and Bindoon, with population growth of 56.8% (or 1,890 people) since 2004⁴. The highest population projections by WA Tomorrow would see an average annual growth of 4.5% between 2011 and 2026, and result in 7,570 people living in the Shire of Chittering by 2026. Given the Shire's current population, this would see an increase of 2,269 people in the next ten years, or approximately 227 people per year, at the highest projections.

The Shire has the second largest youth population in the Wheatbelt⁵, with a comparatively large number of children aged 0-14 living in the Shire (978 or 22.1% of population) but this figure drops significantly for the 15-29 age bracket (representing 615 or 14% of the population)⁶.

The northeast metropolitan area will continue to grow, in line with the Western Australian Planning Commission "Direction 2031 and Beyond Strategic Plan" and with this growth comes the requirement for improved services. Over recent years residents purchasing property in Chittering are seeking a semi-rural lifestyle whilst still maintaining an expectation to have access to services and facilities equivalent to the metropolitan area. An ever-increasing number of people are commuting to Perth for work and there is a high level of absent landowners who perhaps are in a transition, gradually relocating from metro to country or establishing a retirement hideaway.

³ Australian Bureau of Statistics

⁴ Australian Bureau of Statistics

⁵ Wheatbelt Youth Strategy 2012-2017 Regional Development Australia Wheatbelt WA

⁶ Australian Bureau of Statistics

Living and working in a rural environment most long term residents of the Shire of Chittering are acutely aware of the threat from bushfire to their area with most having experienced and possibly fought a bushfire directly or at least been deeply concerned as a bushfire passed close by. The on-going community and historical association with bushfire and the availability of information through modern communication sources means residents are connected and increasingly more bushfire informed than ever before.

Most rural properties are self-sufficient, to some extent, being equipped with their own firefighting equipment and appliances (often as a requirement of the Bush Fires Act 1954) and as with most rural communities an atmosphere of neighbour helping neighbour exists with extensive phone trees and social media being used to keep each other informed of potential risk, direct threat and actions being carried out or required.

Preparedness is obvious on most rural properties with low fuel protection zones and firefighting measures in place surrounding assets and dwellings for immediate use when required. The Shire of Chittering and its local Bush Fire Brigades are an information source for all residents and property owners. There are two Bushfire Ready facilitators working within the Shire to promote and expand the DFES Bushfire Ready program.

High population growth rates in Lower Chittering and Bindoon and new people moving to the Shire, less aware of bushfire risk, presents the challenge of having to constantly address community education needs as to all bushfire related matters. Many property owners in these areas have not experienced a bushfire and their level of knowledge, experience, preparedness, ability and resilience is less known but community education measures are being taken to address this.

The Shire of Chittering has been engaged in identifying established sub division developments affected by previous planning decisions which are no longer in line with modern bush fire risk management principles. The Subdivision Critical Links Project sets out to ensure all established and planned residential sub divisions are provided with 2 way access. The Firebreak Notice is reviewed yearly to ensure it is kept up to date with contemporary bush fire management practices including measures provided by the Western Australian Planning Commission's Guidelines for Planning in Bushfire Prone Areas and Appendices and AS3959-2009 Construction of buildings in bushfire prone areas.

Implementation of State Planning Policy 3.7, Planning in Bushfire Prone Areas, through information provided within the Guidelines and Appendices will help to ensure:

- decision makers determine appropriate land use planning in relation to bushfire prone areas
- specification of requirements to be met at each stage of the planning process; and
- necessary bushfire protection measures are incorporated into development.

Although the threat of bushfire remains a constant risk during the summer months and a frightening experience for the community when one occurs, these measures in conjunction with local government Firebreak Notice compliance and enforcement, public education and engagement and bushfire risk management planning and treatment process's will provide the foundation for enhanced bushfire reduction and protection for current and future human settlement developments and other assets within the Shire of Chittering.

3.1.4 Economic Activities and Industry

The Shire's economy is based on broad-acre farming, orchards, and small rural holdings and has many semi-rural lifestyle residential properties. There is limited industry, being extractive industry operations (gravel, clay and sand), Muchea Livestock Sale Yards, mineral sands refinery, monastery, plant nurseries, viticulture, wineries, tourism, and other small businesses. There are economic distinctions between each of the townships/districts.

Similarly to section 3.1.3 Population and Demographics a large proportion of agricultural businesses and residential assets are combined on the same land tenure and are faced with the same bushfire risks presented by the combination of summer maturing grassland style crops and native bushland. The entire Shire of Chittering has been assessed as Bushfire Prone.

When summer fires have occurred and not been brought under control quickly they have developed into large bush and crop fires fanned by strong winds which have burnt through and destroyed thousands of hectares until successfully brought under control. These fires can have a significant impact on individual and collective agri business turnover, affecting employment and the local economy to some extent as normal seasonal agricultural and flow on activities are interrupted. Crops may be destroyed by direct flame contact, radiant heat or contaminated by smoke contact in the case of viticulture. Livestock, kilometres of fencing and equipment may also be destroyed and main roads supply and access routes may be out of action for weeks, impacting residents and communities further up the line.

Wannamal is situated approximately 32kms north of Bindoon and is an agricultural area producing grain crops, hay, sheep and cattle.

Lower Chittering is characterised by agricultural activities, wineries and life style properties.

Muchea has approximately one third of residents working for a local mineral sands refinery, one third working south of Muchea in the wider Perth area, and the remaining third either as self-employed local contractors or retired.

Bindoon has approximately 500 residents working in agriculture, horticulture, township CBD businesses, Local Government, schools, commuting to work in other areas, or retired.

Table 3 – Overview of Economic Activities and Industry in the Shire of Chittering

Industry Type and Number ⁷	
Agriculture, Forestry and fishing	166
Mining	3
Manufacturing	22
Electricity, gas, water, and waste services	3
Construction	117
Wholesale trade	12
Retail trade	21
Accommodation and food services	8
Transport, postal and warehousing	39
Financial and insurance services	18
Rental, hiring and real estate services	24
Professional scientific and technical services	46
Administrative and support services	12
Education and training	4
Health care and social assistance	--
Arts and recreations services	6
Other services	27
Not classified	12
Total	540

3.2 Description of the Environment and Bushfire Context

3.2.1 Topography and Landscape Features

The Ridge Hill Shelf laterite foothills of the Darling Scarp consist of gravelly and sandy soil which grade into the mostly level Pinjarra Coastal Plain. Rising up and away to the east of the coastal plain is the steeply sloping Darling Escarpment which presents a horizontal line of hills with small depressions where the valleys have formed⁸.

Lower Chittering is historically renowned for its scenic beauty having steep slopes dropping to scenic meandering rivers. The Bindoon countryside is also undulating with rolling hills and a patch work of agricultural and native bush land areas.

The Shire of Chittering has diverse geographic areas including the Swan Coastal Plain, the Darling Scarp and undulating hills areas. These can be subdivided into four identified local geographical units.

⁷ Australian Bureau of Statistics, 2012 Census

⁸ Parks & Wildlife Precinct 12 Middle Swan - Ellen Brook to Bells Rapids

The Dandaragan Plateau landform is fragmented by rural living precincts and major highways. The arable land is generally of poor quality and mainly used for grazing and isolated pockets of horticulture. There are extensive areas of remnant native vegetation.

The Northern Broad Agricultural Area, covering the area of the Shire north from Mooliabeenee and Bindoon Dewars Pool Roads is mainly used for horticulture as productive soils and moderate water supply are available in the area. Crops are harvested later in the year and as they mature into summer present a significant bushfire risk. The undulating landscape, large crop sizes and open country side allow for fast moving wind driven grass fires to escalate quickly⁹.

The Bindoon town site was historically positioned adjacent to the Lake Needoonga water source which is also a part of the Perth water catchment system. The bushland surrounding Lake Needoonga vegetation may, under the right conditions, present a significant bushfire risk to the Bindoon town site. Recently measures have been identified and agreed upon by State agencies to reduce the bushfire risk from Lake Needoonga to the Bindoon town site.

The Chittering Valley landform follows the Brockman River from Bindoon to the southern boundary of the shire and includes areas of steep gradients covered by remnant native vegetation with interspersed grazing and horticulture activities. The diverse terrain can have a dramatic effect on fire behaviour. The gullies and valleys can alter wind flow, establishing localised wind directions and conditions making fire behaviour and direction difficult to predict and respond to. This area is predominantly private property and the steep terrain can present access issues when fires occur. Were possible the majority of private property owners, in complying with the Shire Firebreak Notice and providing adequate firebreaks to their property, have alleviated access issues to some degree.

The Ellen Brook Pallus Plain is an environmentally sensitive area located west of the Gingin Fault. The Muchea town site is located in the south-west corner of the area and is susceptible to the passage of bushfires emanating from neighbouring Banksia Woodlands driven by afternoon southerly through to westerly prevailing winds. Topography in this area has little effect on bushfire behaviour and the Woodland is under a management plan which includes an extensive firebreak network and mosaic prescribed burning plan.

⁹ Parks & Wildlife Northern forest Region Management Plan 1997

3.2.2 Climate and Bushfire Season

The Shire of Chittering experiences a Mediterranean climate with cool wet winters and warm dry summers. Rainfall largely occurs from late autumn through to spring with an average annual rainfall of 632.5mm¹⁰. This rainfall supports substantial vegetation growth during the winter and spring months which dries during spring and into summer. The combination of prevailing winds during the warmer months, (predominantly morning easterly followed by afternoon west/south westerly winds) and desiccated vegetation increases bushfire risk. The bushfire season is generally considered to be from October through to April. The Shire of Chittering Restricted and Prohibited Burning Times are:

- **Restricted Burning Times**
October 1st until November 30th
April 1st until May 31st
- **Prohibited Burning Times**
December 1st until March 31st

These dates are subject to seasonal climatic variables and weather conditions including periods where lack of winter rainfall may constitute drought conditions. Irregular summer storms emanating mostly from tropical cyclones in the north of the State may produce lightning and high winds in the outer metropolitan area, increasing the potential risk of wildfires and erratic fire behaviour in the area.

Table 5 – Average Summer Climate Data (Gingin Aero Club)¹¹

Month	Mean Maximum Temperature	Decile 9 Maximum Temperature	Maximum Temperature	Mean 3pm Relative Humidity	Mean Monthly Rainfall (mm)	Mean 3pm Wind Speed
December	30.6°C	37.7°C	37.7°C	35 %	9.7	25.9 km/h
January	33.2°C	39.9°C	39.9°C	33 %	14.3	25.5 km/h
February	33.3°C	39°C	39°C	33 %	9.9	24.3 km/h
March	30.7°C	36.9°C	36.9°C	35 %	15.9	22.4 km/h

¹⁰ Bureau of Meteorology (Gingin Aero Weather Station) average rainfall 1996-2017

¹¹ Bureau of Meteorology (Gingin Aero Weather Station)

Figure 3 – Mean Maximum Temperatures¹²

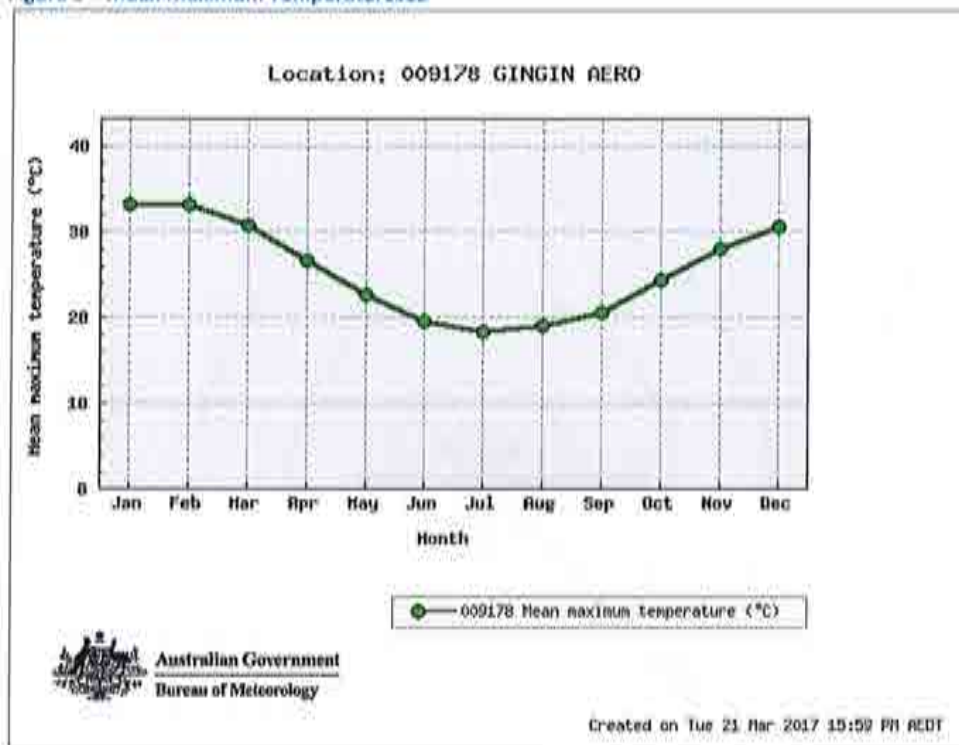


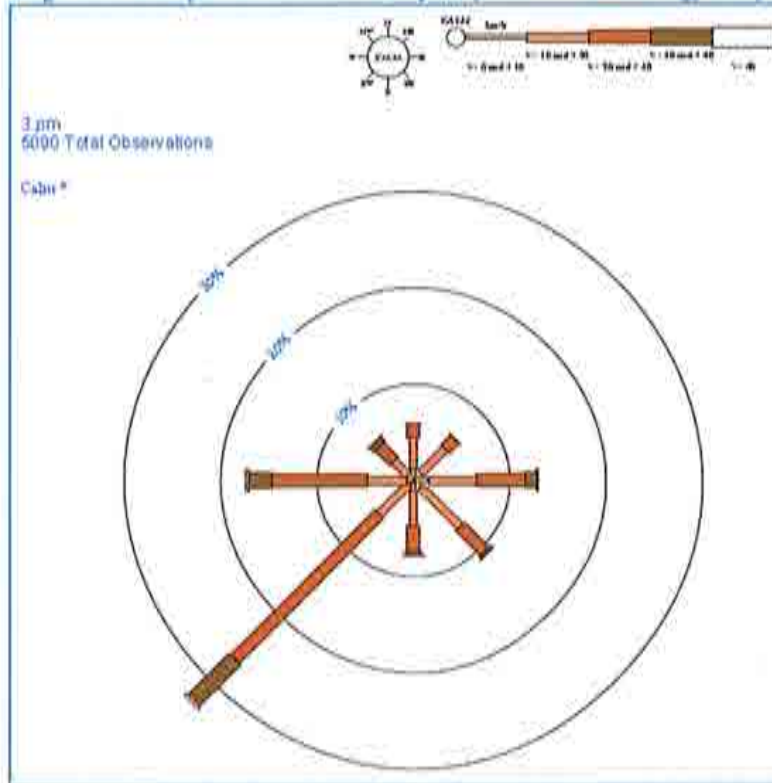
Figure 4 - Gingin Aero Club Mean Rainfall Data (Bureau of Meteorology 2015)¹³



¹² Bureau of Meteorology (Gingin Aero Weather Station)

¹³ Bureau of Meteorology (Gingin Aero Weather Station)

Figure 5 – Gingin Aero Club 3pm wind direction and speed (Bureau of Meteorology 2015)¹⁴



3.2.3 Vegetation

The vegetation occurring on the steep slopes of the Darling Escarpment ranges from low open woodland to lichens according to the depth of the soil. Woodland constituents are predominantly Wandoo (*Eucalyptus wandoo*), Darling Range Ghost Gum (*Eucalyptus laevis*) and Marri (*Eucalyptus calophylla*). Woodland and forest fuel loads are often in the range of 25 to 35 tonnes per hectare presenting a significant bushfire risk if left unmitigated. Ideally fuel loads should be maintained below 8 tonnes per hectare. Other plant species found at these sites are Rock Sheoak (*Allocasuarina huegeliana*), Pincushion (*Borya nitida*), Marble Hakea (*Hakea incrassata*), Narrow Fruit Hakea (*Hakea stenocarpa*), Fuchsia Grevillea (*Grevillea bipinnatifida*), Goodenia (*Goodenia fasciculata*) and Spindly Grevillea (*Grevillea endlicheriana*)¹⁵.

The Murray and Bindoon Complex are represented at the Upper Swan valley floors. The vegetation type ranges from open forest Jarrah (*Eucalyptus marginata*), and Marri (*Eucalyptus calophylla*) with some Swan River Blackbutt (*Eucalyptus patens*) to low open forest of flooded gum (*Eucalyptus rudis*) to swamp Paperbark (*Melaleuca raphilophylla*) on the valley floors. Other plants include hairy gland flower (*Adenanthos barbigerus*), Honey Bush (*Hakea lissocarpa*), Sword Sedge (*Lepidospermum angustatum*) and Common Pin Head (*Styphelia tenuiflora*)¹⁶.

¹⁴ Bureau of Meteorology (Gingin Aero Weather Station)

¹⁵ Precinct 12 Middle Swan - Ellen Brook to Bells Rapids

¹⁶ Precinct 12 Middle Swan - Ellen Brook to Bells Rapids

Broad acre cropping across northern areas of the Shire presents as Grassland and when matured, during the summer months, presents a 4.5 tonne per hectare fuel load which remains a high fire threat until reduced upon harvest; however the remaining stubble will still carry a fire between crops, bushland and assets.

3.2.4 Bushfire Frequency and Causes of Ignition

Reports from the Department of Fire and Emergency Services identified an average of 27 fires occurred within the Shire of Chittering each year between June 2010 and July 2016¹⁷. Fire Brigades responded to a total of 191¹⁸ fires during this period on an average of a fire every 11 days, this was heightened during the Shires Restricted and Prohibited Burning times with a reported fire on average every 9 days.

Analysis revealed 40% of fire ignition sources had been undetermined or unreported; the most common source of ignitions that were able to be determined were; Burn off fires (14%), Weather (10%), Vehicle / Farming Equipment (7%), Suspicious/Deliberate (7%), Re-ignition of previous fire (5%), Power lines (5%).

Table 6 – Bushfire causes by ignition types (Department of Fire and Emergency Services)

	2010/ 2011	2011/ 2012	2012/ 2013	2013/ 2014	2014/ 2015	2015/ 2016	Total
Burn off fires	1	1	7	5	10	3	27
Campfires/bonfires/outdoor cooking	-	-	1	-	-	-	1
Children misadventure	-	-	-	1	1	-	2
Cigarette	2	1	-	1	1	-	5
Hot works (grinding, cutting, drilling etc..)	1	-	-	-	-	-	1
Improper Fuelling /Storage/Use of material ignited	-	1	2	-	-	-	3
Other open flames or fire	1	1	-	-	2	-	4
Power lines	2	1	-	3	3	1	10
Re-ignition of previous fire	-	3	1	1	2	3	10
Sleeping/Alcohol/Drugs/Physical-Mental impairment	-	1	3	-	-	1	5
Suspicious/Deliberate	-	-	-	2	9	2	13
Undetermined	5	4	3	3		1	16
Unreported	12	10	4	3	17	16	62
Vehicles (incl. Farming Equipment / Activities)	2	2	1	1	5	2	13
Weather Conditions - Lightning	6	2	5	3	2	1	19
Total	32	27	27	23	52	30	191

¹⁷ Landscape Fires with Ignition Report – Department of Fire and Emergency Services.

¹⁸ Landscape Fires with Ignition Report – Department of Fire and Emergency Services.

4. Asset Identification and Risk Assessment

4.1 Planning Areas

The Shire of Chittering has been divided into 4 planning areas, Bindoon, Chittering, Muchea and Wannamal. Attached at Appendix B is a map showing the boundaries of the planning areas identified within the Shire of Chittering

4.1.1 Priorities for Asset Identification and Assessment

Assets were identified and assessed across the local government, based on the following order of priority.

Table 7 – Priorities for Asset Identification and Assessment

Priority	Asset Category	Asset Subcategory	Planning Area
First Priority	Human Settlement	Special Risk and Critical Facilities	All
Second Priority	Human Settlement	All other subcategories	All
Third Priority	Economic	Critical Infrastructure	All
Fourth Priority	Economic	All other subcategories	All
Fifth Priority	Environmental	All subcategories	All
Sixth Priority	Cultural	All subcategories	All

4.2 Asset Identification

Asset identification and risk assessment has been conducted at the local level using the methodology described in the Guidelines. Identified assets have been mapped, recorded and assessed in the Bushfire Risk Management System (BRMS). Identified assets are categorised into the following subcategories:

Table 8 – Asset Categories and Subcategories

Asset Category	Asset Subcategories
Human Settlement	<ul style="list-style-type: none">• Residential areas Rural urban interface areas and rural properties.• Places of temporary occupation Commercial, mining and industrial areas located away from towns and population centres (that is, not adjoining residential areas).• Special risk and critical facilities Hospitals, nursing homes, schools and childcare facilities, tourist accommodation and facilities, prison and detention centres, government administration centres and depots, incident control centres, designated evacuation centres, police, fire and emergency services.
Economic	<ul style="list-style-type: none">• Agricultural Pasture, grazing, livestock, crops, viticulture, horticulture and other farming infrastructure.

Asset Category	Asset Subcategories
	<ul style="list-style-type: none"> • Commercial and industrial Major industry, waste treatment plants, mines, mills and processing and manufacturing facilities and cottage industry. • Critical infrastructure Power lines and substations, water and gas pipelines, telecommunications infrastructure, railways, bridges, port facilities and waste water treatments plants. • Tourist and recreational Tourist attractions and recreational sites that generate significant tourism and/or employment within the local area. • Commercial forests and plantations • Drinking water catchments
Environmental	<ul style="list-style-type: none"> • Protected Rare and threatened flora and fauna, ecological communities and wetlands. • Priority Fire sensitive species and ecological communities. • Locally important Nature conservation and research sites, habitats, species and communities, areas of visual amenity.
Cultural	<ul style="list-style-type: none"> • Aboriginal heritage Places of indigenous significance. • Recognised heritage Assets afforded legislative protection through identification by the National Trust, State Heritage List or Local Planning Scheme Heritage List. • Local heritage Assets identified in a Municipal Heritage Inventory or by the community. • Other Other assets of cultural value, for example community centres and recreation facilities.

4.3 Assessment of Bushfire Risk

Risk assessments have been undertaken for each asset or group of assets identified using the methodology described in the Guidelines.

The number of assets within the local government in each asset category at the time of BRM Plan endorsement is shown in the following table.

Table 9 – Asset Category Proportions

Asset category	Proportion of identified assets
Human Settlement	378
Economic	115
Environmental	30
Cultural	4

4.3.1 Likelihood Assessment

Likelihood is described as the chance of a bushfire igniting, spreading and reaching an asset. The approach used to determine the likelihood rating is the same for each asset category: Human Settlement, Economic, Environmental and Cultural.

There are four possible likelihood ratings: almost certain, likely, possible, and unlikely.

Table 10 – Likelihood Ratings

Likelihood Rating	Description
Almost Certain (Sure to Happen)	<ul style="list-style-type: none">• Is expected to occur in most circumstances;• High level of recorded incidents and/or strong anecdotal evidence; and/or• Strong likelihood the event will recur; and/or• Great opportunity, reason or means to occur;• May occur more than once in 5 years.
Likely (Probable)	<ul style="list-style-type: none">• Regular recorded incidents and strong anecdotal evidence; and/or• Considerable opportunity, reason or means to occur;• May occur at least once in 5 years.
Possible (feasible but < probable)	<ul style="list-style-type: none">• Should occur at some stage; and/or• Few, infrequent, random recorded incidents or little anecdotal evidence; and/or• Some opportunity, reason or means to occur.
Unlikely (Improbable, not likely)	<ul style="list-style-type: none">• Would only occur under exceptional circumstances.

4.3.2 Consequence Assessment

Consequence is described as the outcome or impact of a bushfire event. The approach used to determine the consequence rating is **different for each asset category**: Human Settlement, Economic, Environmental and Cultural.

There are four possible consequence ratings: minor, moderate, major and catastrophic.

Table 11 – Consequence Ratings

Consequence Rating	Descriptions
Minor	<ul style="list-style-type: none">• No fatalities.• Near misses or minor injuries with first aid treatment possibly required.• No persons are displaced.• Little or no personal support (physical, mental, emotional) required.• Inconsequential or no damage to an asset, with little or no specific recovery efforts required beyond the immediate clean-up.• Inconsequential or no disruption to community.• Inconsequential short-term failure of infrastructure or service delivery. (Repairs occur within 1 week, service outages last less than 24 hours.)• Inconsequential or no financial loss. Government sector losses managed within standard financial provisions. Inconsequential business disruptions.
Moderate	<ul style="list-style-type: none">• Isolated cases of serious injuries, but no fatalities. Some hospitalisation required, managed within normal operating capacity of health services.• Isolated cases of displaced persons who return within 24 hours.• Personal support satisfied through local arrangements.• Localised damage to assets that is rectified by routine arrangements.• Community functioning as normal with some inconvenience.• Isolated cases of short to mid-term failure of infrastructure and disruption to service delivery. (Repairs occur within 1 week to 2 months, service outages last less than 1 week.)• Local economy impacted with additional financial support required to recover. Government sector losses require activation of reserves to cover loss. Disruptions to businesses lead to isolated cases of loss of employment or business failure.• Isolated cases of damage to environmental or cultural assets, one-off recovery efforts required, but with no long term effects to asset.

Consequence Rating	Descriptions
Major	<ul style="list-style-type: none"> • Isolated cases of fatalities. • Multiple cases of serious injuries. Significant hospitalisation required, leading to health services being overstretched. • Large number of persons displaced (more than 24 hours duration). • Significant resources required for personal support. • Significant damage to assets, with ongoing recovery efforts and external resources required. • Community only partially functioning. Widespread inconvenience, with some services unavailable. • Mid to long-term failure of significant infrastructure and service delivery affecting large parts of the community. Initial external support required. (Repairs occur within 2 to 6 months, service outages last less than a month.) • Local or regional economy impacted for a significant period of time with significant financial assistance required. Significant disruptions across industry sectors leading to multiple business failures or loss of employment. • Significant damage to environmental or cultural assets that require major rehabilitation or recovery efforts. • Localised extinction of native species. This may range from loss of a single population to loss of all of the species within the BRM Plan area (for a species which occupies a greater range than just the BRM Plan area).
Catastrophic	<ul style="list-style-type: none"> • Multiple cases of fatalities. • Extensive number of severe injuries. • Extended and large number requiring hospitalisation, leading to health services being unable to cope. • Extensive displacement of persons for extended duration. • Extensive resources required for personal support. • Extensive damage to assets that will require significant ongoing recovery efforts and extensive external resources. • Community unable to function without significant support. • Long-term failure of significant infrastructure and service delivery affecting all parts of the community. Ongoing external support required. (Repairs will take longer than 6 months, service outages last more than 1 month.) • Regional or State economy impacted for an extended period of time with significant financial assistance required. Significant disruptions across industry sectors leading to widespread business failures or loss of employment. • Permanent damage to environmental or cultural assets. • Extinction of a native species in nature. This category is most

Consequence Rating	Descriptions
	relevant to species that are restricted to the BRM Plan area, or also occur in adjoining areas and are likely to be impacted upon by the same fire event. 'In nature' means wild specimens and does not include flora or fauna bred or kept in captivity.

The methodology used to determine the consequence rating for each asset category is based on the following:

- Consequence Rating - Human Settlement Assets**
 The outcome or impact of a bushfire event on the asset, or a group of assets, measured by the threat posed by the hazard vegetation and the vulnerability of the asset.
- Consequence Rating - Economic Assets**
 The outcome or impact of a bushfire event on the asset, or a group of assets, measured by the level of economic impact and the recovery costs.
- Consequence Rating - Environmental Assets**
 The outcome or impact of a bushfire event on the asset, or a group of assets, measured by the vulnerability of the asset and the potential impact of a bushfire or fire regime.
- Consequence Rating - Cultural Assets**
 The outcome or impact of a bushfire event on the asset, or a group of assets, measured by the threat posed by the hazard vegetation and the vulnerability of the asset.

4.3.3 *Assessment of Environmental Assets*

Using available biological information and fire history data, environmental assets with a known minimum fire threshold were assessed to determine if they were at risk from bushfire, within the five year life of the BRM Plan. Environmental assets that would not be adversely impacted by bushfire within the five year period have not been included and assessed in the BRM Plan. The negative impact of a fire on these assets (within the period of this BRM Plan) was determined to be minimal, and may even be of benefit to the asset and surrounding habitat.

4.3.4 Local Government Asset Risk Summary

A risk profile for the local government is provided in the summary table below. This table shows the proportion of assets at risk from bushfire in each risk category at the time the BRM Plan was endorsed.

Table 12 – Local Government Asset Risk Summary

Risk Rating Asset Category	Low	Medium	High	Very High	Extreme
Human Settlement	0%	2%	13%	28%	57%
Economic	2%	3%	13%	4%	8%
Environmental	0%	1%	4%	1%	0%
Cultural	0%	0%	0%	1%	0%

5. Risk Evaluation

5.1 Evaluating Bushfire risk

The risk rating for each asset has been assessed against the likelihood and consequence descriptions to ensure:

- The rating for each asset reflects the relative seriousness of the bushfire risk to the asset;
- Likelihood and consequence ratings assigned to each asset are appropriate; and
- Local issues have been considered.

5.2 Treatment Priorities

The treatment priority for each asset has been automatically assigned by BRMS, based on the asset's risk rating. Table 10 shows how likelihood and consequence combine to give the risk rating and subsequent treatment priority for an asset.

Table 13 – Treatment Priorities

Consequence Likelihood	Minor	Moderate	Major	Catastrophic
Almost certain	3D (High)	2C (Very High)	1D (Extreme)	1A (Extreme)
Likely	1C (Medium)	3A (High)	2A (Very High)	1B (Extreme)
Possible	1A (Low)	1A (Medium)	3B (High)	2B (Very High)
Unlikely	1C (Low)	1B (Low)	1B (Medium)	3C (High)

5.3 Risk Acceptability

Risks below a certain level were not considered to require specific treatment during the life of this BRM Plan. They will be managed by routine local government wide controls and monitored for any significant change in risk.

In most circumstances risk acceptability and treatment will be determined by the land owner, in collaboration with local government and fire agencies. However, as a general rule, the following courses of action have been adopted for each risk rating.

Table 14 – Criteria for Acceptance of Risk and Course of Action

Risk Rating	Criteria for Acceptance of Risk	Course of Action
Extreme (Priorities 1A, 2B, 3C)	Only acceptable with excellent controls. Urgent treatment action is required.	Routine controls are not enough to adequately manage the risk. Immediate attention required as a priority. Specific action is required in first year of BRM Plan.
Very High (Priorities 2A, 2B, 2C)	Only acceptable with excellent controls. Treatment action is required.	Routine controls are not enough to adequately manage the risk. Specific action will be required during the period covered by the BRM Plan.
High (Priorities 3A, 3B, 3C, 3D)	Only acceptable with adequate controls. Treatment action may be required.	Specific action may be required. Risk may be managed with routine controls and monitored annually.
Medium (Priorities 4A, 4B, 4C)	Acceptable with adequate controls. Treatment action is not required but risk must be monitored regularly.	Specific action may not be required. Risk may be managed with routine controls and monitored periodically throughout the life of the BRM Plan.
Low (Priorities 5A, 5B, 5C)	Acceptable with adequate controls. Treatment action is not required but risk must be monitored.	Need for specific action is unlikely. Risk will be managed with routine controls and monitored as required.

6. Risk Treatment

The purpose of risk treatment is to reduce the likelihood of a bushfire occurring and/or the potential impact of a bushfire on the community, economy and environment. This is achieved by implementing treatments that modify the characteristics of the hazard, the community or the environment.

There are many strategies available to treat bushfire risk. The treatment strategy (or combination of treatment strategies) selected will depend on the level of risk and the type of asset being treated. Not all treatment strategies will be suitable in every circumstance.

6.1 Local Government-Wide Controls

Local government-wide controls are activities that reduce the overall bushfire risk within the Shire of Chittering. These types of treatments are not linked to specific assets, and are applied across all or part of the local government as part of normal business or due to legislative requirements. The following controls are currently in place across the Shire of Chittering:

- *Bush Fires Act 1954* Section 33 notices, including applicable fuel management requirements, firebreak standards and annual enforcement programs;
- Declaration and management of Prohibited Burn Times, Restricted Burn Times and Total Fire Bans for the local government;
- Public education campaigns and the use of P&W and DFES state-wide programs, tailored to suit local needs;
- State-wide arson prevention programs developed in conjunction with WA Police and DFES;
- State planning framework and local planning schemes, implementation of appropriate land subdivision and building standards in line with DFES, Department of Planning and Building Commission policies and standards; and
- Monitoring performance against the BRM Plan and reporting annually to the local government council and OBRM.
- Fuel load management through burning and other means;
- Identify, construct and maintain firebreaks and access routes necessary for fire management purposes.

A multi-agency work plan has been developed and is attached at **Appendix C**. The plan details work to be undertaken as a part of normal business, to improve current controls or to implement new controls to better manage bushfire risk across the local government.

6.2 Asset-Specific Treatment Strategies

Asset-specific treatments are implemented to protect an individual asset or group of assets, identified and assessed in the BRM Plan as being at risk from bushfire. There are six asset specific treatment strategies:

- **Fuel management** - Treatment reduces or modifies the bushfire fuel through manual, chemical and prescribed burning methods;
- **Ignition management** - Treatment aims to reduce potential human and infrastructure sources of ignition in the landscape;
- **Preparedness** - Treatments aim to improve access and water supply arrangements to assist firefighting operations;
- **Planning** - Treatments focus on developing plans to improve the ability of firefighters and the community to respond to bushfire; and
- **Community Engagement** - Treatments seek to build relationships, raise awareness and change the behaviour of people exposed to bushfire risk.
- **Other** - Local government-wide controls, such as community education campaigns and planning policies, will be used to manage the risk. Asset-specific treatment is not required or not possible in these circumstances.

6.3 Determining the Treatment Schedule

Efforts will be made to finalise the Treatment Schedule within six months of this BRM Plan being endorsed by council. The Treatment Schedule will be developed in broad consultation with land owners and other stakeholders.

Land owners are ultimately responsible for treatments implemented on their own land. This includes any costs associated with the treatment and obtaining the relevant approvals, permits or licences to undertake an activity. Where agreed, another agency may manage a treatment on behalf of a land owner. However, the onus is still on the land owner to ensure treatments detailed in this BRM Plan are completed.

7. Monitoring and Review

Monitoring and review processes are in place to ensure that the BRM Plan remains current and valid. These processes are detailed below to ensure outcomes are achieved in accordance with the *Communication Strategy and Treatment Schedule*.

7.1 Review

A comprehensive review of this BRM Plan will be undertaken at least once every five years, from the date of council endorsement. Significant circumstances that may warrant an earlier review of the BRM Plan include:

- Changes to the BRM Plan area, organisational responsibilities or legislation;
- Changes to the bushfire risk profile of the area; or
- Following a major fire event.

7.2 Monitoring

BRMS will be used to monitor the risk ratings for each asset identified in the BRM Plan and record the treatments implemented. Risk ratings are reviewed on a regular basis. New assets will be added to the *Asset Risk Register* when they are identified.

7.3 Reporting

The SoC will submit an annual report to OBRM each year summarising progress made towards implementation of the BRM Plan.

An annual pre fire season report will be submitted to Council each year summarising treatment strategies.

8. Glossary

Asset	A term used to describe anything of value that may be adversely impacted by bushfire. This may include residential houses, infrastructure, commercial, agriculture, industry, environmental, cultural and heritage sites.
Asset Category	There are four categories that classify the type of asset – Human Settlement, Economic, Environmental and Cultural.
Asset Owner	The owner, occupier or custodian of the asset itself. Note: this may differ from the owner of the land the asset is located on, for example a communication tower located on leased land or private property.
Asset Register	A component within the Bushfire Risk Management System used to record the details of assets identified in the Bushfire Risk Management Plan.
Asset Risk Register	A report produced within the Bushfire Risk Management System that details the consequence, likelihood, risk rating and treatment priority for each asset identified in the Bushfire Risk Management Plan.
Bushfire	Unplanned vegetation fire. A generic term which includes grass fires, forest fires and scrub fires both with and without a suppression objective. ¹⁹
Bushfire Management Plan	A document that sets out short, medium and long term bushfire risk management strategies for the life of a development. ²⁰
Bushfire risk management	A systematic process to coordinate, direct and control activities relating to bushfire risk with the aim of limiting the adverse effects of bushfire on the community.
Bushfire Threat	The threat posed by the hazard vegetation, based on the vegetation category, slope and separation distance.
Consequence	The outcome or impact of a bushfire event.
Draft Bushfire Risk Management Plan	The finalised draft Bushfire Risk Management Plan (BRM Plan) is submitted to the OBRM for review. Once the OBRM review is complete, the BRM Plan is called the 'Final BRM Plan' and can be progressed to local government council for endorsement.

¹⁹ Australasian Fire and Emergency Service Authorities Council 2012, *AFAC Bushfire Glossary*, AFAC Limited, East Melbourne.

²⁰ Western Australian Planning Commission 2015, *State Planning Policy 3.7: Planning in Bushfire Prone Areas*, WAPC, Perth.

Emergency Risk Management Plan	A document (<i>developed under State Emergency Management Policy 3.2.</i>) that describes how an organisation(s) intends to undertake the activities of emergency risk management based on minimising risk. These plans help inform the ongoing development of Local Emergency Management Arrangements (LEMA) and Westplans.
Geographic Information System (GIS)	A data base technology, linking any aspect of land-related information to its precise geographic location. ²¹
Geographic Information System (GIS) Map	The mapping component of the Bushfire Risk Management System. Assets, treatments and other associated information is spatially identified, displayed and recorded within the GIS Map.
Land Owner	The owner of the land, as listed on the Certificate of Title; or leaser under a registered lease agreement; or other entity that has a vested responsibility to manage the land.
Likelihood	The chance of something occurring. In this instance, the chance of a bushfire igniting, spreading and reaching the asset.
Locality	The officially recognised boundaries of suburbs (in cities and larger towns) and localities (outside cities and larger towns).
Planning Area	A geographic area determine by the local government which is used to provide a suitable scale for risk assessment and stakeholder engagement.
Priority	See Treatment Priority.
Recovery Cost	The capacity of an asset to recover from the impacts of a bushfire.
Responsible Person	The person responsible for planning, coordinating, implementing, evaluating and reporting on a risk treatment.
Risk acceptance	The informed decision to accept a risk, based on the knowledge gained during the risk assessment process.
Risk analysis	The application of consequence and likelihood to an event in order to determine the level of risk.
Risk assessment	The systematic process of identifying, analysing and evaluating risk.

²¹ Landgate 2015, *Glossary of terms*, Landgate, Perth

Risk evaluation	The process of comparing the outcomes of risk analysis to the risk criteria in order to determine whether a risk is acceptable or tolerable.
Risk identification	The process of recognising, identifying and describing risks.
Risk Manager	The organisation or individual responsible for managing a risk identified in the Bushfire Risk Management Plan; including review, monitoring and reporting.
Risk Register	A component within the Bushfire Risk Management System used to record, review and monitor risk assessments and treatments associated with assets recorded in the Bushfire Risk Management Plan.
Risk treatment	A process to select and implement appropriate measures undertaken to modify risk.
Rural	Any area where in residences and other developments are scattered and intermingled with forest, range, or farm land and native vegetation or cultivated crops. ²²
Rural Urban Interface (RUI)	The line or area where structures and other human development adjoin or overlap with undeveloped bushland. ²³
Slope	The angle of the ground's surface measured from the horizontal.
Tenure Blind	An approach where multiple land parcels are consider as a whole, regardless of individual ownership or management arrangements.
Treatment	An activity undertaken to modify risk, for example a prescribed burn.
Treatment Objective	The specific aim to be achieved or action to be undertaken, in order to complete the treatment. Treatment objectives should be specific and measurable.
Treatment Manager	The organisation, or individual, responsible for all aspects of a treatment listed in the Treatment Schedule of the Bushfire Risk Management Plan, including coordinating or undertaking work, monitoring, reviewing and reporting.

²² Australasian Fire and Emergency Service Authorities Council 2012, *AFAC Bushfire Glossary*, AFAC Limited, East Melbourne

²³ Australasian Fire and Emergency Service Authorities Council 2012, *AFAC Bushfire Glossary*, AFAC Limited, East Melbourne

Treatment Priority	The order, importance or urgency for allocation of funding, resources and opportunity to treatments associated with a particular asset. The treatment priority is based on an asset's risk rating.
Treatment Schedule	A report produced within the Bushfire Risk Management System that details the treatment priority of each asset identified in the Bushfire Risk Management Plan and the treatments scheduled.
Treatment Strategy	The broad approach that will be used to modify risk, for example fuel management.
Treatment Type	The specific treatment activity that will be implemented to modify risk, for example a prescribed burn.
Vulnerability	The susceptibility of an asset to the impacts of bushfire.

9. Common Abbreviations

APZ	Asset Protection Zone
BRM	Bushfire Risk Management
BRMP	Bushfire Risk Management Planning
BRMS	Bushfire Risk Management System
CALD	Culturally and Linguistically Diverse
DEMC	District Emergency Management Committee
DFES	Department of Fire and Emergency Services
ERMP	Emergency Risk Management Plan
FFDI	Forest Fire Danger Index
FMP	Fire Management Plan
GFDI	Grassland Fire Danger Index
GIS	Geographic Information System
HSZ	Hazard Separation Zone
JAFFA	Juvenile and Family Fire Awareness
LEMA	Local Emergency Management Arrangements
LEMC	Local Emergency Management Committee
LG	Local Government
LMZ	Land Management Zone
OBRM	Office of Bushfire Risk Management
P&W	Parks and Wildlife (Department of)
SEMC	State Emergency Management Committee
SLIP	Shared Land Information Platform
SoC	Shire of Chittering
WAPC	Western Australian Planning Commission

10. Appendices

A. Communication Strategy



Shire of Chittering

Bushfire Risk Management Planning Communication Strategy

Document Control

Document Name	Bushfire Risk Management Planning – Communication Strategy	Current Version	2.0
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Related Documents

Title	Version	Date
Shire of Chittering Bushfire Risk Management Plan	1.0	

Amendment List

1	26/05/2016	D Carroll	BRMO
2	22/11/2016	S Ormsby	BRPC

1. Introduction

A Bushfire Risk Management Plan (BRM Plan) is a strategic document that outlines the approach to the identification, assessment and treatment of assets exposed to bushfire risk within the Shire of Chittering. This Communication Strategy accompanies the BRM Plan for the Shire of Chittering. It documents the communication objectives for the BRM Plan, roles and responsibilities for communication, key stakeholders, target audiences and key messages at each project stage, communication risks and strategies for their management, and communication monitoring and evaluation procedures.

2. Communication Overview

2.1 Communication Objectives

The communication objectives for the development, implementation and review of the BRM Plan for the Shire of Chittering are as follows:

1. Key stakeholders understand the purpose of the BRM Plan and their role in the bushfire risk management planning process.
2. Stakeholders who are essential to the bushfire risk management planning process, or can supply required information, are identified and engaged in a timely and effective manner.
3. Relevant stakeholders are involved in decisions regarding risk acceptability and treatment.
4. Key stakeholders engage in the review of the BRM Plan as per the schedule in place for the local government area.
5. The community and other stakeholders engage with the bushfire risk management planning process and as a result are better informed about bushfire risk and understand their responsibilities to address bushfire risk on their own land.

2.2 Communication Roles and Responsibilities

Shire of Chittering is responsible for the development, implementation and review of the Communication Strategy. Key stakeholders support local government by participating in the development and implementation of the Communications Strategy as appropriate. An overview of communication roles and responsibilities follows:

- CEO, Shire of Chittering, responsible for endorsement of the BRM Plan Communications Strategy.
- Executive Manager Development Services, Shire of Chittering, responsible for monitoring and reporting on the BRM Plan and Communication strategy.
- Economic Development and Communications Officer, Shire of Chittering, responsible for external communications with local government area.

- Bushfire Risk Management Planning Coordinator, Shire of Chittering, responsible for operational-level communication between the Shire and the Department of Fire and Emergency Services.
- Bushfire Risk Management Officer, Department of Fire and Emergency Services responsible for operational-level communication between Shire, Department of Fire and Emergency Services and the Office of Bushfire Risk Management.

2.3 Key Stakeholders for Communication

The following table identifies key stakeholders in bushfire risk management planning. These are stakeholders that are identified as having a significant role or interest in the planning process or are likely to be significantly impacted by the outcomes.

Stakeholder	Role or interest	Level of impact of outcomes	Level of engagement
Local Government	Facilitation of BRM Plan, Land Managers	High	Consult, Involve and Inform
Dept. of Fire and Emergency Services	Assist LG with development of BRM Plan, Technical advice and expertise	High	Consult, Collaborate, Involve and Inform
Parks and Wildlife	Asset identification, Land Managers	High	Consult, Involve and Inform
Service Providers	Asset identification, Land Managers	Medium	Consult and Inform
Land Managers	Asset / Land Manager	Medium	Consult, Inform and Empower
Asset Owners	Land Managers / Impact of bushfire on business	Low	Consult, Inform and Empower
Interest Groups	Awareness of BRM Plan, Consultation and expert advice Asset Identification	Low	Consult, Inform and Empower

Communications Plan

Timing of Communication	Stakeholder (s)	Communication Objective(s)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring and Evaluation Method
<i>Development of the BRM Plan</i>								
Life of Plan	Shire of Chittering Councilors and Executive Team	All (1-5)	Emails Meetings	Informed, consulted, accountable or responsible. Review and input into Plan.	BRPC or Executive Manager Development Services	Time constraints Unclear message	Planning and time management	Feedback, questions and level of support received
Life of plan	Dept. of Fire and Emergency Services	All (1-5)	Email, Phone Call, Face to face Meetings (Quarterly) Face to Face meetings	Informed, consulted, accountable or responsible. Review and input into Plan.	BRPC/BRMO	Time constraints Unclear message	Planning and time management	Feedback, questions and level of support received
Life of plan	Parks and Wildlife	All (1-5)	Email, Phone Call, Face to face Meetings (Quarterly) Face to Face meetings	Informed, consulted, accountable or responsible. Review and input into Plan.	BRPC/BRMO	Time constraints Unclear message	Planning and time management	Feedback, questions and level of support received

Timing of Communication	Stakeholder (s)	Communication Objective(s)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring and Evaluation Method
Life of plan	Bushfire Advisory Committee (BFAC) / LEMC	All (1-5)	Meetings (Quarterly) Face to Face meetings	Engaged in process of BRMP Treatment Schedule and Risk Analysis	BRPC/CESM	Time constraints Unclear message	Prepare presentation for each BPAC Provide updates as required	Feedback, treatments negotiated and supported by committee.
Life of Plan	Land Managers	1 and 2	Social Media Shire Website Face to face meetings Community workshops and forums	Inform of the BRMP process Identify valued assets Identify existing controls	BRPC/BMRO	Limit Resources Stakeholder not identified Limit engagement from Stakeholder	Time management Widespread consultation	Engaged throughout process Feedback received Success of outcomes
01/4/2016-31/03/2017	Asset Owners	1 and 2	Shire Website Face to face meetings Community workshops and forums	Inform of the BRMP process Identify valued assets Identify existing controls	BRPC/BMRO	Media not reaching majority Workshops and forums could get abstracted by other agendas	Newspaper and website details Chair meetings with strict agenda and purpose	Engaged throughout process Feedback received Success of outcomes

Timing of Communication	Stakeholder (s)	Communication Objective(s)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring and Evaluation Method
01/04/2016-31/03/2017	Service Providers	1 and 2	Email, Phone Call, Face to face meetings	Inform of the BRMP process Identify valued assets Identify existing controls	BRPC/BRMO	Limit Resources Stakeholder not identified Limited engagement from stakeholder	Time management Widespread consultation	level of support received Feedback received Success of outcomes
<i>Implementation of the BRM Plan</i>								
Life of Plan	Shire of Chittering Councilors and Executive Team	3, 4 and 5	Face to face meetings Email Reports	Risk Analysis and Prioritised strategic treatments	BRPC/BRMO	Incorrect information Lack of understanding	Clear communication and regular updates	Feedback, questions and level of support received
Life of plan	Dept. of Fire and Emergency Services	3, 4 and 5	Email, Phone Call, Face to face Meetings (Quarterly) Face to Face meetings	Risk Analysis and Prioritised strategic treatments	BRPC/BRMO	Incorrect information Lack of understanding	Clear purpose Clear communication and regular updates Clear purpose	Feedback, questions and level of support received

Timing of Communication	Stakeholder (s)	Communication Objective(s)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring and Evaluation Method
Life of plan	Parks and Wildlife	3, 4 and 5	Email, Phone Call, Face to face Meetings (Quarterly) Face to Face meetings	Risk Analysis and Prioritised strategic treatments	BRPC/BRMO	Incorrect information Lack of understanding	Clear communication and regular updates Clear purpose	Feedback, questions and level of support received
Life of plan	Bushfire Advisory Committee (BFAC) / LEMC	3, 4 and 5	Face to face meetings Report	Risk Analysis and Prioritised strategic treatments	BRPC/BRMO	Incorrect information	Clear communication and regular updates	Good feedback received on works
Life of Plan	Land Managers	3, 4 and 5	Social Media Shire Website Face to face meetings Community workshops and forums	Treatment Schedule and Risk Analysis Negotiation of treatments	BRPC/BRMO	Incorrect information Lack of understanding Limited engagement from stakeholder Limit resources	Clear purpose Well planned and executed sharing of information Negotiations conducted	Feedback and commitment received to implement agreed controls Highly engaged

Timing of Communication	Stakeholder (s)	Communication Objective(s)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring and Evaluation Method
Life of Plan	Asset Owners	3, 4 and 5	Face to face meetings	Empowerment through Provision of risk analysis information	BRPC/BRMO	Incorrect information Lack of understanding Limited engagement from stakeholder Limit resources	Well planned and executed sharing of information Negotiations conducted	Feedback and commitment received to implement agreed controls Highly engaged
Life of Plan	Service Providers	3, 4 and 5	Social Media Shire Website Face to face meetings Community workshops and forums	Provision of Risk Analysis and Prioritised strategic treatments.	BRPC/BRMO	Incorrect information Limited engagement from stakeholder Limit resources	Well planned and executed sharing of information Negotiations conducted	Feedback and commitment received to implement agreed controls

Timing of Communication	Stakeholder (s)	Communication Objective(s)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring and Evaluation Method
<i>Review of the BRM Plan</i>								
Annually	OBRM/BRMB	All (1-5)	Report Email Meeting	Review, Monitor and Reporting Endorse plan Compliance to plan and acceptance of risk	BRPC/BRMO	Poor reporting and recording of information Review not completed by BRMB and OBRM	BRPC & BRMO to record data and information appropriately Approved by BRMB and OBRM for LG	Feedback from Council received Work completed as a result of plan Good reporting
6 Monthly	Shire of Chittering Councilors and Executive Team	3 and 4	Report Meeting	Report on actions and key performance indicators for BRMP process	BRPC	Objectives not clearly set out Key actions not identified	Discuss with councilors and Executive team Clear objectives set	Good reporting and feedback from CEO and Director on work completed
5 Yearly	Shire of Chittering Councilors and Executive Team	3 and 4	Report Email Meeting	Full review of BRM Plan	BRPC/BRMO	Review not completed Limited resources to complete review	Approved by BRMB and OBRM for LG	Feedback from Council received Work completed as a result of plan Good reporting

B. Planning Area Map



C. LG Wide Controls

Multi-Agency Work Plan – Local Government Wide Controls

Control	ID	Action/Activity Description	Lead Agency	Partners	Application Targeted	Period	Status	Implementation Notes
Risk Analysis		BRM Plan extreme risks priority for treatment	DFES	LG, DPaw, DFES Service Providers	Y	1	Complete	Treatments planned for all extreme risks and including in BRMP Treatment Schedule.
		Maintain and refine BRM Plan	DFES	LG	Y	All	Ongoing	As per Westplan Fire a collaborative approach between LG, P&W & DFES
		SoC Bush Reserves Risk Assessment	LG	Private Contractor	Y	Ongoing	Annual	Mitigation Contractor, prescribed burning, firebreaks install and upgrade
		Annual Firebreak Notice published	LG	-	N	All	Ongoing	Published annually.
Bush Fire Act 1954 S.33		Review of annual firebreak notice	LG	-	N	1	Completed	Review to improve adequacy of control. Due 2016.
		Annual firebreak notice inspections	LG	-	Y	2	Annual	Level of non-compliance to inform BRM Plan context and vulnerability assessments (human settlement assets).
		Review and update times as required for Prohibited Burn and Restricted Burn Times.	LG	-	N	Ongoing	Ongoing	Local Government may alter prohibited and restricted burning times, based on seasonal conditions.
		Planning in bushfire prone areas	WAPC	LG, Land Owners	N	Ongoing	Ongoing	Foundation for the implementation of effective, risk-based land use planning and development.
Planning		E.g. State Planning Policy 3.7			N			The Shire aligns its planning policies and standards to SPP 3.7
		Bushfire Management Plans	LG	Land Owners	-	Ongoing	Ongoing	Implementation of effective, risk-based land use planning and development.

Control	ID	Action/Activity Description	Lead Agency	Partners	Application Targeted	Period	Status	Implementation Notes
Community Engagement		DFES Community Engagement Initiatives/programs, DFES Monthly themes	DFES	LG	N	Ongoing	Ongoing	Monthly themes promoted over social media
		Community Bushfire Ready groups (preparedness, education and information)	LG	DFES	N	Ongoing	Ongoing	2 Bushfire Ready Facilitators are in the shire working together with LG and DFES Community Engagement, to educate the community on bushfire events
Reduction of Ignition Sources		Western Power Bushfire Management Plan	Western Power	-	Y	Ongoing	Ongoing	Annual vegetation management, asset inspections and maintenance are completed to ensure risk is managed
Fuel Management		Fuel reduction of UCL/UMR	DFES	LG	Y	Ongoing	Ongoing	Engage Bush Fire Brigades and contractors for fuel reduction
		Mitigation of rail corridors	Brookfield	N/A	Y	Ongoing	Ongoing	3 year programme to reduce fuel loads within Muchea town site
		Mitigation of Main Roads verges & lands	Main Roads	-	Y	Ongoing	Ongoing	MRWA work includes, slashing, spraying, mulching, pruning and other mechanical treatments
		Mitigation of ADF bushland	ADF	-	Y	Ongoing	Ongoing	To be advised
		Shire of Chittering annual works program	LG	-	N	Ongoing	Ongoing	Work includes, slashing, spraying, mulching, pruning and other mechanical treatments
		Shire of Chittering LG Reserves Plan, including Prescribed Burning	LG	-	Y	3	Ongoing	Contractors working through sites as budget permits
		Bushfire Brigade Prescribed Burning	LG	-	Y	Ongoing	Annual	Engaged to reduce fuels on private property as required
		Fuel Reduction, asset protection zones, hazard separation zone.	Private Land Owner	-	N	2	Ongoing	Fuel reduction undertaken by private land owner to comply with Firebreaks Notice

