Shire of Brookton
Bushfire Risk Management Plan

2021-2026

Office of Bushfire Risk Management (OBRM) Bushfire Risk Management (BRM) Plan reviewed 14 July 2021

Local Government Council BRM Plan endorsement

Document Control

Document Name	Bushfire Risk Management Plan	Current Version	*1.1*
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Document Endorsements

The *Shire of Brookton* 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*. The *Shire of Brookton* 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 *Shire of Brookton* Council satisfies their endorsement obligations under *State Hazard Plan Fire*.

Local Government	Representative	Signature	Date
Shire of Brookton			

Local Government Disclaimer

In approving this BRM Plan, the Shire of Brookton is acknowledging the assets that have been identified and the risk ratings and treatment priorities assigned. Endorsement of the plan is a commitment by the Shire to work with landowners and managers to address unacceptable risk within the community. Endorsement of this plan is not committing the Shire to a program of treatment works to be implemented by others, or an acceptance of responsibility for risk occurring on land that is not owned or managed by the Shire. [1]

Amendment List

Version	Date	Author	Section
4	29/06/2021	Shire of Brookton	
			Add as required.

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[1] *Guidelines for Preparing a Bushfire Risk Management Plan, November 2015, Page 79*

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Contents

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 (BRMS) used to record the details of assets identified in the Bushfire Risk Management Plan (BRM Plan).
Asset Risk Register	A report produced within the BRMS that details the consequence, likelihood, risk rating and treatment priority for each asset identified in the BRM Plan.
Bushfire	Unplanned vegetation fire. A generic term which includes grass fires, forest fires and scrub fires both with and without a suppression objective.
Bushfire Hazard	The hazard posed by the classified vegetation, based on the vegetation category, slope and separation distance.
Bushfire Management Plan	A document that sets out short, medium- and long-term bushfire risk management strategies for the life of a development.
Bushfire Risk	The chance of a bushfire igniting, spreading and causing damage to the community or the assets they value.
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 Risk	The chance of a bushfire igniting, spreading and causing damage to the community or the assets they value.
Consequence	The outcome or impact of a bushfire event.
Draft Bushfire Risk Management Plan	The finalised draft BRM Plan is submitted to the Office of Bushfire Risk Management (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.
Emergency Risk Management Plan	A document developed under *State Emergency Management Policy 2.9* 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 and State Hazard Plans.
Geographic Information System (GIS)	A data base technology, linking any aspect of land-related information to its precise geographic location.
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, it is the potential of a bushfire igniting, spreading and impacting on an asset.
Locality	The officially recognised boundaries of suburbs (in cities and larger towns) and localities (outside cities and larger towns).
Map	The mapping component of the BRMS. Assets, treatments and other associated information is spatially identified, displayed and recorded within the Map.
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.
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 BRM Plan; including review, monitoring and reporting.
Risk Register	A component within the BRMS used to record, review and monitor risk assessments and treatments associated with assets recorded in the BRM 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.
Rural Urban Interface	The line or area where structures and other human development adjoin or overlap with undeveloped bushland.
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 planned 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 BRM Plan, including coordinating or undertaking work, monitoring, reviewing and reporting.
Treatment Planning Stage	The status or stage of a treatment as it progresses from proposal to implementation.
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 BRMS that details the treatment priority of each asset identified in the BRM 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 planned burn.
Vulnerability	The susceptibility of an asset to the impacts of bushfire.

Common Acronyms

AFAC	Australasian Fire and Emergency Services Authorities Council
BFAC	Bush Fire Advisory Committee
BRM	Bushfire Risk Management
BRM Branch	Bushfire Risk Management Branch (DFES)
BRM Plan	Bushfire Risk Management Plan
BRMS	Bushfire Risk Management System
DBCA	Department of Biodiversity, Conservation and Attractions
DFES	Department of Fire and Emergency Services
DPLH	Department of Planning, Lands and Heritage
EPBC Act	Environmental Protection and Biodiversity Conservation Act
PWS	Parks and Wildlife Service (DBCA)
FPC	Forest Products Commission
GIS	Geographical Information System
LEMC	Local Emergency Management Committee
OBRM	Office of Bushfire Risk Management (DFES)
PEC	Priority Ecological Community
RFD	Rural Fire Division (DFES)
SEMC	State Emergency Management Committee
TEC	Threatened Ecological Community
UCL	Unallocated Crown Land
UMR	Unmanaged Reserve
WA	Western Australia
WAPC	Western Australian Planning Commission

1. Introduction

1.1 Background

Under the *State Hazard Plan 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 Brookton* in accordance with the requirements of the *Guidelines for Preparing a Bushfire Risk Management Plan* (the Guidelines) from the Office of Bushfire Risk Management (OBRM) within the Department of Fire and Emergency Services (DFES). The risk management processes used to develop this BRM Plan are aligned to the key principles of *AS/NZ ISO 31000:2009 Risk management –Principles and Guidelines* and those described in the *National Emergency Risk Assessment Guidelines*. This approach is consistent with *State Emergency Management (SEM)* and *SEM Prevention and Mitigation Procedure.*

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 are to participate in developing the BRM Plan to ensure treatment strategies are collaborative and efficient, regardless of land tenure. Each entity shall be responsible for implementation of respective mitigation measures on their own land.

1.2 Aim and Objectives

The aim of a BRM Plan is to effectively manage bushfire risk in order to protect people, assets and other things of local value in *Shire of Brookton*. The objectives of this BRM Plan are to:

- guide and coordinate a tenure blind, multi-agency BRM 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 BRM activities;
- integrate BRM into the business processes of local government, land owners and other agencies;
- ensure there is integration between land owners, BRM programs and activities where possible; and
- document processes used to monitor and review the implementation of treatment plans to ensure they are adaptable, and that risk is managed at an acceptable level by responsible landowners where practical.

1.3 Legislation, Policy and Standards

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

1.3.1 Legislation

Legislation	Document
Acts	• Aboriginal Heritage Act 1972 • Building Act 2011 • Bush Fires Act 1954 • Conservation and Land Management Act 1984 • Country Areas Water Supply Act 1947 • Emergency Management Act 2005 • Environmental Protection Act 1986 • Environmental Protection and Biodiversity Conservation Act 1999 (cth) • Fire and Emergency Service Act 1998 • Fire Brigades Act 1942 • Heritage of Western Australia Act 1990 • Local Government Act 1995 • Metropolitan Water Supply, Sewerage and Drainage Act 1909 • National Trust of Australia (WA) Act 1964 • Planning and Development Act 2005 • Biodiversity Conservation Act 2016
Regulations	• Bush Fires Regulations 1954 • Emergency Management Regulations 2006 • Planning and Development (Local Planning Scheme) Regulations 2015 • Biodiversity Conservation Regulations 2018

1.3.2 Policies, Guidelines and Standards

Author	Document
Australian Institute for Disaster Resilience	• National Emergency Risk Assessment Guidelines (Second Edition 2015)

Government of Western Australia – Office of Emergency Management	• State Emergency Management Policy 2.5 – Local Arrangements
	• State Emergency Management Policy 3.2 – Emergency Risk Management Planning
	  • *State Emergency Management*
	  • *Prevention Procedure 1 – Emergency Risk Management Planning*
	  • *Preparedness Procedure 7 – Local Emergency Management Committee*
	  • *Preparedness Procedure 8 – Local Emergency Management Arrangements*
	• Western Australian Emergency Risk Management Guide 2015
	• State Hazard Plan – Fire

Western Australian Planning Commission	• State Planning Policy
	   • *No.3.4 – Natural Hazards and Disasters*
	   • *No 3.7 - Planning in Bushfire Prone Area Guidelines*
	   • *Guidelines for Planning in Bushfire Prone Area (2017)*
	• Visual Guide for Bushfire Risk Assessment in Western Australia (2016)

Department of Health	• A guide to the management of pesticides in local government pest control programs in Western Australia (2009) • Guidelines for the safe use of pesticides in non-agricultural workplaces (2007)
Department of Fire and Emergency Services	• Firebreak Locations, Construction and Maintenance Guideline • Guidelines for Plantation Fire Protection (2015) • Bushfire Risk Management Planning – Guidelines for Preparing a Bushfire Risk Management Plan (2015) • Building Protection Zone Standards
Department of Environment Regulation	• A guide to the exemptions and regulations for clearing native vegetation (April 2014) • A guide to the assessment of the application to clear native vegetation (December 2014) • A guide to burning under the native vegetation clearing provisions (August 2015)
Department of Biodiversity, Conservation and Attractions - Parks and Wildlife Service	• Fire Management Strategy (2019)
Dieback Working Group	• Managing Phytophthora Dieback
Australian Standards (AS)	• AS/NZS ISO 31000:2009 - Risk Management – Principles and Guidelines • AS 3959-2009 Construction of Buildings in Bushfire-Prone Areas
Shire of Brookton	• Disability Access and Inclusion Plan 2018-2023 • Strategic Community Plan 2027 • Heritage inventory 2014 • Local Emergency Management Plan 2012 • Local Recovery Plan 2012 • LMEC Emergency Evacuation Plan 2011

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/NZ ISO 31000:2009 Risk Management – Principles and Guidelines*. This process is outlined in Figure 1.
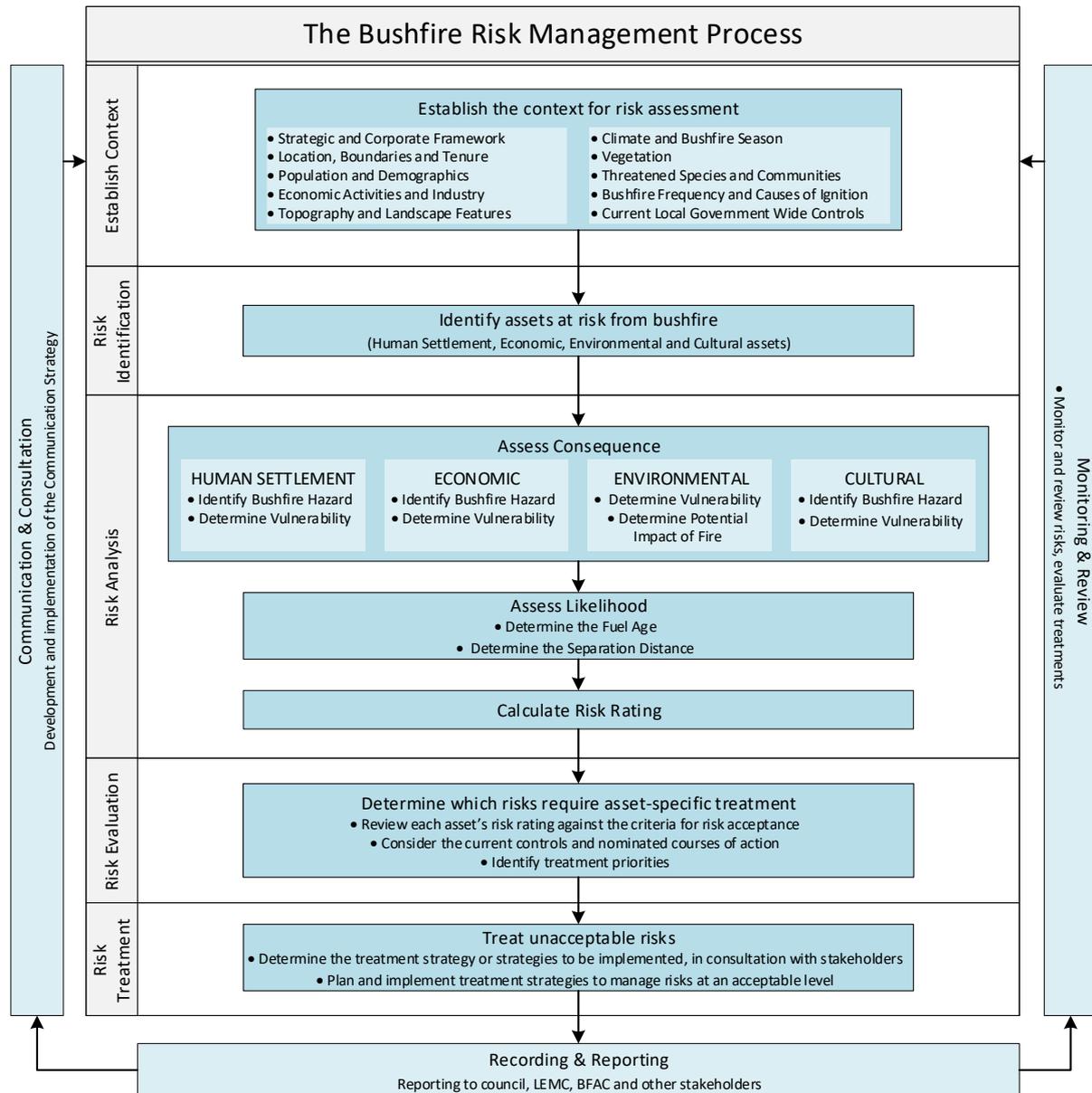
The Bushfire Risk Management Process

Establish Context

Establish the context for risk assessment

- Strategic and Corporate Framework
- Location, Boundaries and Tenure
- Population and Demographics
- Economic Activities and Industry
- Topography and Landscape Features
- Climate and Bushfire Season
- Vegetation
- Threatened Species and Communities
- Bushfire Frequency and Causes of Ignition
- Current Local Government Wide Controls

Risk Identification

Identify assets at risk from bushfire
(Human Settlement, Economic, Environmental and Cultural assets)

Risk Analysis

Assess Consequence

HUMAN SETTLEMENT	ECONOMIC	ENVIRONMENTAL	CULTURAL
• Identify Bushfire Hazard • Determine Vulnerability	• Identify Bushfire Hazard • Determine Vulnerability	• Determine Vulnerability • Determine Potential Impact of Fire	• Identify Bushfire Hazard • Determine Vulnerability

Assess Likelihood
- Determine the Fuel Age
- Determine the Separation Distance

Calculate Risk Rating

Risk Evaluation

Determine which risks require asset-specific treatment
- Review each asset's risk rating against the criteria for risk acceptance
- Consider the current controls and nominated courses of action
- Identify treatment priorities

Risk Treatment

Treat unacceptable risks
- Determine the treatment strategy or strategies to be implemented, in consultation with stakeholders
- Plan and implement treatment strategies to manage risks at an acceptable level

Communication & Consultation — Development and implementation of the Communication Strategy

Monitoring & Review — Monitor and review risks, evaluate treatments

Recording & Reporting
Reporting to council, LEMC, BFAC and other stakeholders

Figure 1 – An overview of the risk management process[2]

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[2] Adapted from: AS 3959:2009, with permission from SAI Global under licence number 1510-c081.

2.1   Roles and Responsibilities

The roles and responsibilities of the key stakeholders involved in the development of the BRM Plan is outlined in Table 1.

Table 1 – Roles and Responsibilities

Stakeholder Name	Roles and Responsibilities
Local Government	• The development and ongoing review of the integrated BRM Plan. • Negotiate commitment with landowners to treat risks identified in the BRM Plan. • Implement treatment strategies for community owned and managed assets under the control of the Local Government. • Submit the draft BRM Plan to the Office of Bushfire Risk Management (OBRM) for review of consistency with Guidelines. • Submit the final BRM Plan to Council for endorsement and adoption.
Department of Fire and Emergency Services	• Participate in and contribute to the development and implementation of BRM Plans, as per stated responsibilities as the Hazard Management Agency for bushfire. • Support to local government through expert knowledge and advice in relation to the identification, prevention and treatment of bushfire risk. • Facilitate local government engagement with state and federal government agencies in the local planning process. • Undertake treatment strategies, including planned burning on behalf of Department of Lands for Unmanaged Reserves and Unallocated Crown Land within gazetted town site boundaries. • Honour Memorandums of Understanding and other agreements in the implementation of treatment strategies for other landholders. • Provide supporting guidelines, templates and information management systems for the development and implementation of the BRM Plan. • Provide training and advice during the development of the BRM Plan. • Provide comments on draft plans and conducting quality assurance checks on the BRM Plan. • Review BRM Plans for consistency with the Guidelines prior to final endorsement by Council. • Provide funding through the Bushfire Mitigation Activity Fund to proactively treat extreme, very high and high bushfire risks.
Department of Biodiversity, Conservation and Attractions – Parks and Wildlife Service	• Participation in and contribution to the development and implementation of BRM Plans. • Provide advice for the identification of environmental assets that are vulnerable to fire and planning appropriate treatment strategies for their protection. • Implement treatment strategies on department managed land, and for Unmanaged Reserves and Unallocated Crown Land outside gazetted town site boundaries. • Honour Memorandums of Understanding and other agreements in the implementation of treatment strategies for other landholders.

Stakeholder Name	Roles and Responsibilities
Other State and Federal Government Agencies and Public Utilities	• Assist local government by providing information about assets and current risk treatment programs. • Participate in and contribute to the development and implementation of BRM Plans. • As treatment manager, implementation of treatment strategies.
Corporations and Private Land Owners	• Implement treatment strategies on privately owned or lease land.
Supplementary Stakeholders	• Participate in and contribute to the development and implementation of Bushfire Risk Management Plan and treatment schedules. • Provide advice for the identification of assets that are vulnerable to fire • Provide advice on appropriate treatment strategies for asset protection

2.2   Communication and Consultation

Good communication and consultation throughout the risk management process is fundamental to the effective development, implementation and review of the BRM Plan. To ensure appropriate and effective communication occurred with relevant stakeholders throughout this different stage of bushfire risk management, a *Communication Strategy* was prepared *Appendix 1*

3.   Establishing the Context.

3.1   Description of the Local Government and Community Context

3.1.1   Strategic and Corporate Framework

The *Strategic Community Plan 2018-2027* vision is for Brookton is to be a well-recognised business and agricultural hub, a flourishing stop-over destination and a celebrated place to live. This is a long-term planning document sets out Brookton's community vision and aspirations for the future. The Strategic Community Plan, Next Generation Brookton, is the parent document, which is used by community members, external members and the Shire of Brookton to enable all groups to collaborate, achieve, decide and fund future projects and service delivery initiatives. The BRM Plan integrates with Objective 9 of the Strategic *Community Plan 2018-2027 -Community Engagement which aims to ensure Brookton is an empowered and resilient community* [3]. This is achieved by improving the community's awareness of bushfire risk and aiming to improve bushfire preparedness to ensure community resilience. Further, Objective 4 of the *Strategic Community Plan 2018-2027* is to engage in new age volunteering models this is particularly important for the ongoing recruitment of volunteer fire fighters in the regional areas with small population numbers.

The Shire jointly employs Community Emergency Services Manager (CESM) to assist in activities related to building awareness and improving preparedness for bushfire events within the Shire, including the Shire's emergency response capability. The BRM Plan will assist by improving the community's awareness of bushfire risk and treatment activities planned in their area and the identification of treatment priorities for the Shire's forward planning and budgeting for treatment activities of Shire owned and controlled land within the BRM Plan area.

Tasks may be delegated to the Chief Bush Fire Control Officer (CBFCO), which is a volunteer position appointed by the Shire in accordance with the *Bush Fires Act, 1954*. The Shire's Local Emergency Management Committee (LEMC) and Bushfire Advisory Committee (BFAC) are identified as key stakeholders in the development, implementation, and review of the BRM Plan. The respective input and advice from each Committee is essential to the bushfire risk management process and will provide field and community experience.

The *Planning and Development (Local Planning Schemes) Amended Regulations 2015*, WA regulates land use and the erection of habitable buildings within a bushfire prone area, which is reinforced by the *State Planning Policy 3.7: Planning in Bushfire Prone Areas (SPP3.7)* and in conjunction with the Guidelines for Planning in Bushfire Prone Areas (Guidelines and Appendices). These documents in together aim to guide the implementation of effective risk-based land use planning and development to preserve life and reduce the impact of bushfire on property and infrastructure. [4] The bushfire prone planning allows future developments to be located and designed to avoid placing people and infrastructure in locations of high risk. The shire acknowledges that the Map of Bushfire Prone Areas is not designed to cover all known bushfire risks but as a trigger for planning and building activities. The Shire will continue to use this information when considering bushfire management and future developments.

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[3] https://www.brookton.wa.gov.au/documents/616/next-generation-brookton-strategic-community-plan-2018-2027
[4] https://www.dplh.wa.gov.au/information-and-services/state-planning/bushfire-planning/state-planning-policy-3-7-and-guidelines

3.1.2 Location, Boundaries and Tenure

The Shire of Brookton is in the Wheatbelt region and is approximately 140km southeast of Perth, covering an area of approximately 1626 square kilometres. The Shire of Brookton is bordering on Shire of Beverly, Quairading, Corrigin, Pingelly and Wandering.

As identified on *Table 2* most of the land is owned and operated by large private agricultural stakeholders. This can make bushfire mitigation works difficult as it will require stakeholder engagement by the Shire to ensure mitigation works are undertaken. The Shire currently sends out annual firebreak notices to ensure each landowner is undertaking mitigation works as required. The *Bush Fires Act, 1954* allows the Shire to undertake the bushfire mitigation works on private land and recoup cost associated with the works conducted. This legislation also allows for legal action, such as prosecution as a last resort option.

The approximately 6% of Crown land is dispersed within the Shire of Brookton, most of it covering pockets of woodland vegetation and as identified on *figure 13* threatened and priority flora and fauna.

Figure 2. Location Shire of Brookton (Bamford, 1995)

Table 2 – Overview of Land Tenure and Management within the Shire of Brookton

Land Manager/Agency	Percent of Local Government Area
Local Government	1.5%
Private	84.3%
Crown Land	6.1%
Other	8.1%
Total	**100%**

3.1.3 Population and Demographics

The shire is a mixed farming community, with an estimated population of around 964 persons. Over 95.5% of the population comes from English speaking background, therefore reducing communication barriers during community engagement and emergency response. Majority of the population lives either in the town centre or broad acre farming which should be considered during treatment programs.

As estimated by the Australian Bureau of Statistics 75% of shires population is in the 'vulnerable' age group, which includes children under the age of 14 and adults over the age of 65[5]. However, this does not include people with cognitive and physical impairments or people with existing heart and lung conditions. Shire of Brookton has a high percentage of elderly residents and therefore additional consideration for this group is essential to ensure that their health needs and mobility issues are considered during mitigation and emergency events. Engaging with community health care agencies and other community groups to ensure the vulnerable population is identified and catered for during emergency events, should form an important part of the community engagement activities.

The relatively low population and limitations of the population (including aging population) in Brookton reduces the number of firefighting volunteers available within the area. This creates challenges for the Shires in maintaining brigades and has the potential to increase the Shires risk during fire season as resources are limited.

The Shire has a highly represented indigenous community that signifies over 12% of the community's population. As indigenous people have a strong connection to the land, this is particularly important to note during mitigation works as it may impact cultural values and wellbeing. Some cultural ceremonies involve lighting of fires and therefore making communication and collaboration important to ensure that fires are lit in a manner that do not threaten life or property within the area[6].

3.1.4 Economic Activities and Industry

Brookton has a large mixed farming industry and agricultural production hub. This includes grain port terminals, railway lines for industrial transport, hay production, sheep and cattle farming. This is Brookston's key industry and a major contributor to the surrounding region.

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[5] https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/SSC50189.
[6] https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/SSC50189.

During the harvesting period additional workers get recruited from the neighbouring regions to assist with the seasonal harvest and production. This is major source of employment for the local community. Should a bushfire cause major infrastructure damage, such as road closures and crop losses over a large area, this can have significant economic loss. Depending on the fire location and damage caused remediation works, and loss of production can have years of economic impact [7].

One of the challenges in the agriculture production has changed and stubble is most commonly being retained all year around to reduce soil erosion. However, this leads to increased fuel loads and increased risk after harvest. Harvesting activities are also known to be an ignition source in the landscape and the shire uses firebreaks and harvest moving bans.

Brookton is considered a tourist stop conveniently located at the crossroads of four major roads (Brookton Highway, Brookton- Corrigin Road, Great Southern Highway and Williams St Great Southern Hwy). There is no data available as to how many tourists stop annually within the shire. However, these roads are significant for tourists travelling to regional towns nearby and the iconic tourist destination of *Wave Rock*. This road network also forms important transit routes for the regional farming industry.

Road closure or infrastructure damage to bridge crossings from a bushfire event can cause significant disruption to agricultural industries, tourists and residents commuting between townships. The Shires planning must incorporate a rapid response to any fire that may potentially impact the respective highways that serves these towns and communities. Early intervention and the combination of technology such as monitoring of satellite hot spots, fire predictions and local knowledge should be used in the decision making to determine the appropriate level of response.

Figure 3 Yeo Rd Bridge, Timber Frame, Shire of Brookton 2020

[7] https://www.brookton.wa.gov.au/documents/658/next-generation-brookton-corporate-business-plan-2021

3.2 Description of the Environment and Bushfire Context

3.2.1 Topography and Landscape Features

The Shire of Brookton is in the Avon River Catchment. The Avon River flows through the eastern parts of the Shire, the Avon south branch flows past the Brookton Town Site. Many of the tributaries of the Avon and most of the Dale River tributary begins in the Shire.

The topography around Brookton is relatively flat, with low cresting hills. To the eastern portion of the district sweeping views exist over the wide shallow channels with remnant vegetation evident inclusive of occasional strands of salmon gum on heavy soils and outcroppings of granite. The flat open country is dominated by agriculturally land and fires in this environment are predominantly grass fires driven by the wind. The shallow channel systems create disruptions in the landscape and present a barrier, with access often limited to crossover points. These barriers are a significant consideration and limitation when responding to fires, but also when planning bushfire mitigation activities.

In the west- eastern profile rejuvenated drainage subregion (steeper country, forested – greater contiguity of remnant vegetation, the forested areas have greater potential for higher fire intensities, access for fire suppression can be difficult.

In the low laying area of the north eastern corner of the Shire is 'Yenyenning Lake' which forms part of a long chain of natural saline lakes that empty into the Avon River during the heavy rainfall seasons and has important cultural significant to the local indigenous community[8]. Access in this area is relatively easier, fire intensities are relatively lower, however the rate of spread (ROS) can be greater due to vegetation classification. The salt lakes and fragmented areas of native vegetation have low fuel loads and create natural breaks in the landscape.
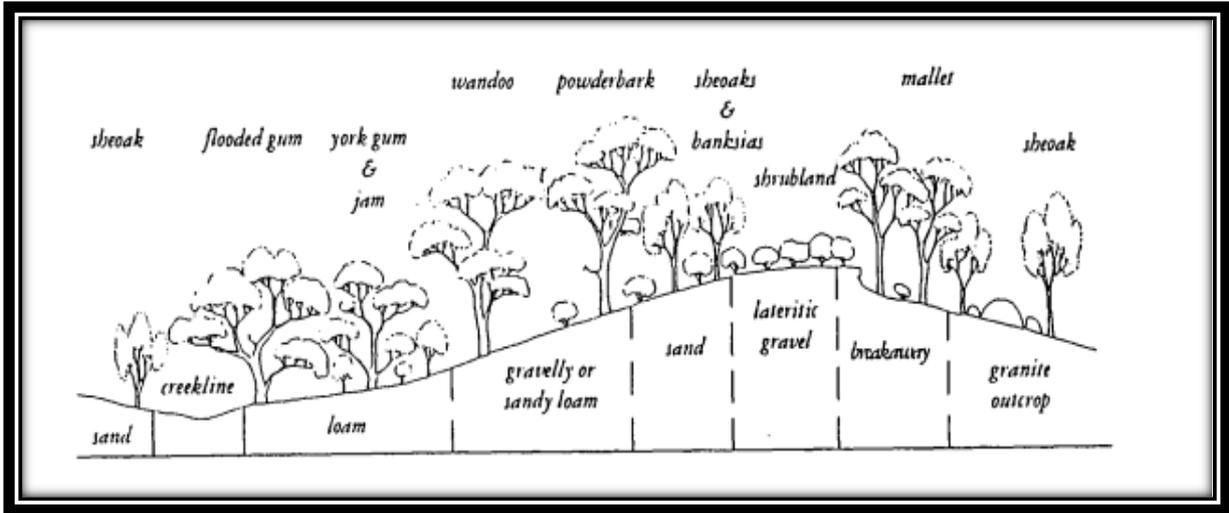

Figure 4 Typical Landscape in central parts of the Shire of Brookton (Bamford, 1995)

The landscape and development in the Brookton district are in the Rejuvenated Drainage Zone (RDZ), which has active river drainage systems that joins the Avon, Murray and Blackwood rivers. The landscape is more divided, often with variable soils formed from dissected laterites

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[8] Safstrom, R. (1997), Native Vegetation Handbook for the Shire of Brookton. Department of Agriculture and Food, Western Australia, Perth. Report.

and underlying igneous rock. In the south there are some broad saline valleys intruding from the poorly drained valleys, as shown on *figure 4*.

Figure 5 Overhead Image of 'Yenyenning Lake' system

3.2.2   Climate and Bushfire Season

The table below is a representation of average weather conditions for the Shire of Brookton, where the yellow highlighted columns show the months with high fire danger, being December to February each year.

Table 3- Average weather conditions for the Shire of Brookton[9]

	Jan	Feb	Mar	Apr	May	Jun	Jul	**Aug**	Sep	Oct	Nov	Dec	Ann
Mean Max (°C)	33	32.3	29.4	24.9	20.4	17.2	16.1	16.8	19.1	23.4	27.6	31	*24.3*
Mean Min (°C)	15.6	16.1	14.4	11.3	7.8	5.6	4.5	4.6	5.4	7.5	11	13.6	*9.8*
Mean Rain (mm)	12.2	15.2	18.2	25.2	55.5	82.5	83.3	60.8	38.2	24.1	14.3	10.2	*437*
Median Rain (mm)	2	3.8	8.5	22.6	50.9	81.8	74.6	55.8	35	20.4	10.4	3.7	*430*
Mean Rain Days	2.2	2.4	3.1	5.5	9.8	13.3	15	13.1	10	6.8	3.9	2.5	*86.2*

[9] Source: Bureau of Meteorology
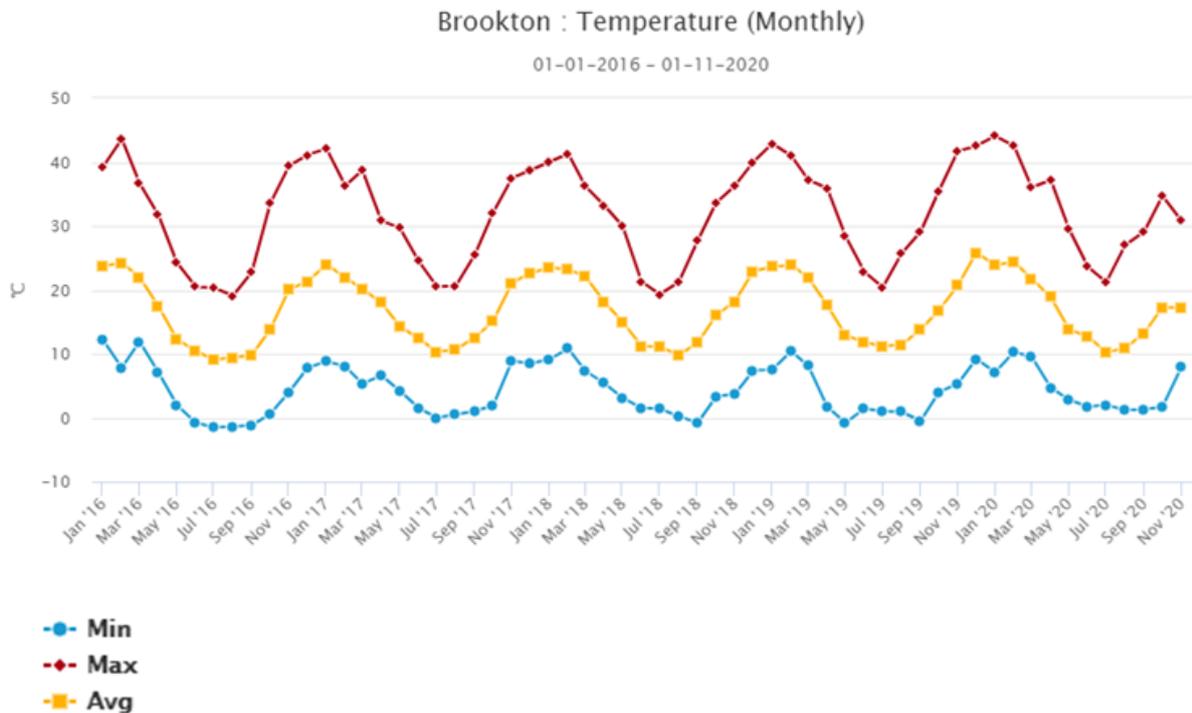
Figure 6: Brookton Monthly Temperature[10]

The Forest Fire Danger Index (FFDI) and Grass Fire Danger Index (GDFI) is an indicator of the potential fire behaviour expected on a day based on a combination of different weather conditions acknowledged to influence the risk of dangerous bushfire conditions in Australia, including temperature, rainfall, humidity and wind speed. In addition to the weather, bushfire events in Australia are also influenced by factors such as vegetation conditions, terrain and ignition sources.

The Forest Fire Danger Rating and Grass Fire Danger Rating should be considered as indicative numbers only. An observation based dataset examining broad-scale features in the fire weather conditions for regions throughout Australia, by the Bureau of Meteorology based on a 67-year time period has indicated the Shire of Brookton, has an average of 100 days per year, predominantly between the summer season, where the FFDI is 50 and above. As these conditions are considered sever and is at the same time as the harvest period extra caution needs to be taken, as ignition risk from harvesters makes the fire extremely difficult to supress and potentially having a fast moving fire moving across the landscape. During very high-risk days the shire issues vehicle movement bans across the shire to reduce the risk of an incident[11].

Many farming activities and grain harvesting operations create a significant risk of starting a fire. Harvester fires not only can cause significant damage to the machinery but also can cause significant loss of nearby crops and create a risk to local properties and endanger life. Fire

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agencies have recommended the suspension of grain harvesting when the local GFDI exceeds 35 as suppression can become difficult in these weather conditions[12]. Windspeed is the most dynamic variable factor influencing grassfire behaviour, which can fluctuate widely over short periods and varies with the height above ground and can cause erratic fire behaviour [13].

South easterly winds are common in spring and summer, from November through March, with occasional hot dry northerly winds generally coincide with grass curing and low soil moisture (see wind roses data from the past four years below). The lightest winds are typically April through June. Weather patterns typically move in from the west in summer featuring hot dry high-pressure systems. In winter, regular cold wet fronts move in from the south west. From October to December. One of the most significant weather features is the development and movement of a west-coast trough. Trough movements during Summer can bring hot, dry conditions via the North- Easterly winds on the eastern side of the trough, instability and increased potential for thunderstorms (lightning ignition). Further the winds behind the trough (west side) can move quickly to the SW presenting challenges to firefighters. *Table 4* shows that 20% fires caused by lightning, showing the significance of weather conditions and the summer storms.

[12] *https://www.rfs.nsw.gov.au/plan-and-prepare/farm-fire-safety/grain-harvesting-guide*
[13] *Phil Cheney & Andrew Sullivan , Grassfire Fuel, weather and fire behaviour, second edition, CSIRO 2008*
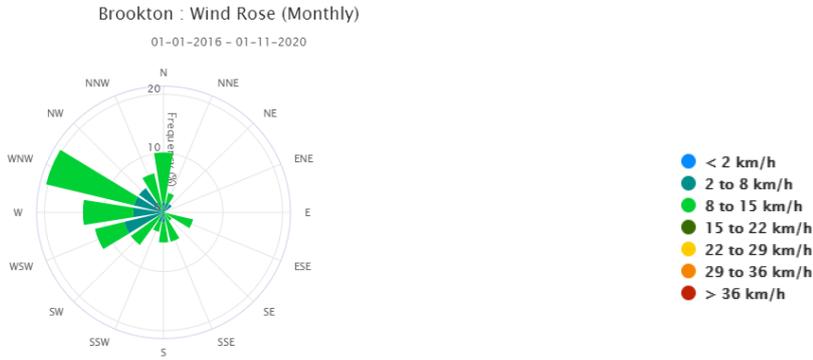
Figure 7: *Wind roses reflecting the annual predominant winds and wind speeds for the years 2016 to Nov 2020 taken from the Dept of Agriculture Weather Station BN001.* [14]
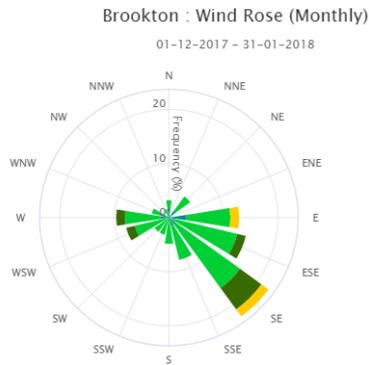
Figure 8 Wind Rose Fire Risk Months De 2017 to Feb 2018[15]
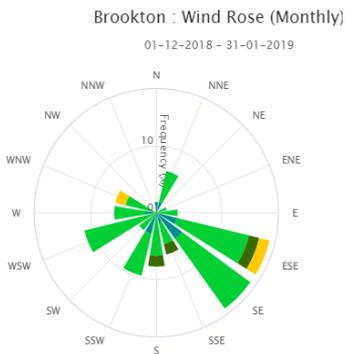
Figure 9 Wind Rose Fire Risk Months Dec 2018 to Feb 2019 [16]
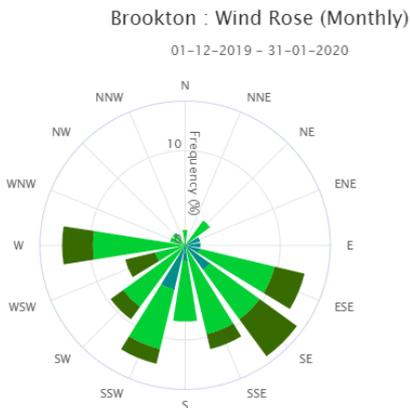
Figure 10 Wind Rose Fire Risk Months Dec 2019 to Feb 2020[17]

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[14] *Department of Agriculture and Food Weather Station Brookton (BN001)*

[15] *Department of Agriculture and Food Weather Station Brookton (BN001)*

[16] *Department of Agriculture and Food Weather Station Brookton (BN001)*

[17] *Department of Agriculture and Food Weather Station Brookton (BN001)*

3.2.3 Vegetation

Native vegetation in the Shire of Brookton has been significantly cleared for agricultural purposes, particularly in the 1950's. The 16.5% remaining areas of native vegetation[18] are mostly the areas unsuitable for agriculture: granite crops, breakaway country and saline areas. Woodland and sandplain country are very poorly presented in reserves and much of the woodlands that do remain are on private land have been degraded by grazing and weed invasion. *Figure 11* below shows the remaining remnant native vegetation within the Shire of Brookton and surrounds.

Figure 11 Native Vegetation in Brookton[19]

The landscape in the Shire of Brookton includes Jarrah forest on the western boundaries with a range of cleared farming land and a mixture of woodland/ forest vegetation, including Wandoo (*Eucalyptus wandoo*), Jarrah (*Eucalyptus marginata*) and Marri (*Corymbia calophylla*) towards the east of their range[20]. Towards the East the land has mostly been cleared for agricultural purposes and the landscape is broken by granite hills, scattered remnant vegetation mainly consisting of York Gum (*Eucaluptus loxophleba*) with fibrous bark and a mixture of low bush jam trees (*Acacia acuminata*) mainly around the drainage lines and roadsides. The eastern landscape also contains ancient drainage line and low cresting hills.

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[18] *Shepherd, D P, Beeston, G R, and Hopkins, A J. (2002), Native vegetation in Western Australia : extent, type and status. Department of Agriculture and Food, Western Australia, Perth. Report 249.*

[19] *Safstrom, R. (1997), Native Vegetation Handbook for the Shire of Brookton. Department of Agriculture and Food, Western Australia, Perth. Report.*

[20] *Safstrom, R. (1997), Native Vegetation Handbook for the Shire of Brookton. Department of Agriculture and Food, Western Australia, Perth. Report.*

In the Shire of Brookton larger reserves, a forest type vegetation that connects on to agricultural land. This is a challenge as fire can spread fast over the grasslands and build into high intensity fires in the forested areas.

The main fuel source for bushfires are the fine fuels consisting of fallen leaves, twigs and found on the forest grounds, with elevated fine fuels such as bark and dead vegetation connecting the fine fuels to the canopy. Fires of extreme intensity are crown fires, as the wind influence is greater in the canopy and therefore interconnected or continuous canopies can spready rapidly into large areas[21]. The fuel structure and the terrain slope also play an important role in the spread of fire, a study conducted by Linn, et al., 2010 found that the fuel bed characteristics which include the load, structure, moisture and heterogeneity effect the shape of the perimeter and the rate at which the fire spreads[22]. There is also a difference in the fire behavior on the location of fuel stratum, particularly that the canopy fires are strongly influenced by the topography slope and the rising plume indraft that originates from the lower level fuel layers in forested areas. In eucalypt plant species the phytolacca contains essential oils, even a 3% essential oil content, this can double the burning temperature of these specific species increasing the fire intensity in these areas. Because of this the hottest, fast moving fires are seen in the Jarrah forests in Brookton. The south west of the Shire has the highest fuel loads and undulating country which results in fires often rapidly develop into canopy fires in these areas. This reserve is managed by other state government agencies, which are responsible for fuel management in this area.

Whilst agricultural holdings (grassland) may appear to be a low bushfire risk, this vegetation presents a significant bushfire hazard, especially during harvest season. There is a community perception that the risk decreased after harvesting. However, studies presented at the International Fire Behaviour and Fuel conference, 2019 have revealed that the rate of spread in grass fires is not significantly influenced by the fuel height but rather fuel continuity. As shown in *figure 12* the flame height and intensity decrease but not the area of spread therefore still opposing a significant risk of large-scale fires occurring. Figure (a) shows before harvesting and figure (b) illustrates a harvested crop.

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[21] *Penman, T. D., & Towerton, A. L. (2008). Soil temperatures during autumn prescribed burning: implications for the germination of fire responsive species*

[22] *Safstrom, R. (1997), Native Vegetation Handbook for the Shire of Brookton. Department of Agriculture and Food, Western Australia, Perth. Report.*

Figure 12 Fire Behaviour Harvested & Unharvested Crop[23]

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[23] *International Fire Behavior & Fuel Conference, 2019 presentation by Rachel Bessell, Miguel Cruz, Richard Hurley, Andrew Sullivan*

3.2.4   Threatened Species and Communities

The fire regime is the pattern of fires that occur in the landscape including elements such as interval, frequency, size, intensity and season. Most native Australian species found in forests, woodlands and grasslands are adapted to a specific fire regime. For this reason fires (including planned burns) can benefit plants and animals species and improves biodiversity outcomes by reintroducing natural fires, helping to manage weeds or supporting other land management objectives.

Threatened Flora and Fauna are a key consideration for the Shire as they are not only recognised environmental assets but may impact the treatment options available to address risks in relation to other assets. For example, the breeding cycle of some threatened fauna, such as Numbats, may need to be a consideration when selecting the treatment. For example, the period in which prescribed burns can be undertaken needs to ensure nests are not disturbed during the breeding season. In areas identified as having vulnerable species, a thorough understanding of their fire requirements must be obtained prior to ensure the most appropriate treatment tool is used and that the best fire regime is being used. See **Appendix 4 – Declared Rare Flora and Fauna in the Shire of Brookton**

Response strategies should be environmentally sensitive within the constraints of the incident. The Shire will take every opportunity to remind landowners/managers of their obligation to obtain appropriate clearances and approvals prior to commencing vegetation-based treatments.
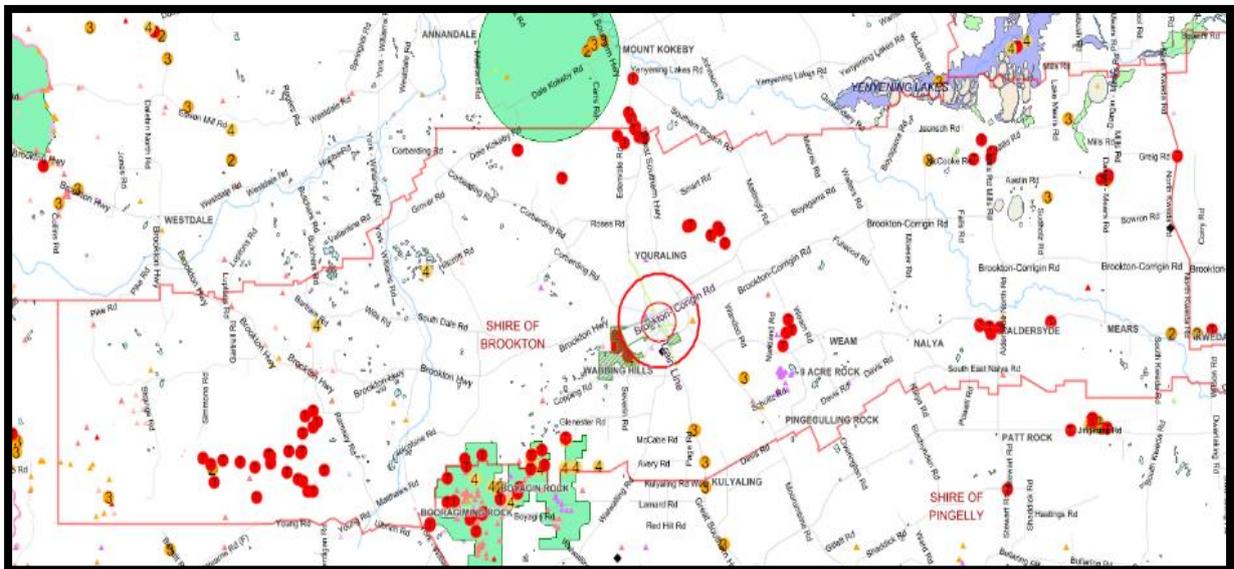

Figure 13 Threatened and Priority Flora Map[24].

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[24] *Gillian Stack, (2017), Threatened and Priority Flora Report Form - Field Manual Department of Environment and Conservation.*

3.2.5   Bushfire Frequency and Causes of Ignition

An ignition source can be from a natural source which are commonly lighting strikes in hot days or from human actions which can either be accidental or deliberate. The fire history for reported fires in the Shire between 20015/16 and 2019/20 indicates the majority number of fires are unreported ignition source and therefore leaving a large gap in understanding the cause of bushfires (*Table 4*). It is essential to work with fire managers and responding crews on the importance of providing ignition data. A high number of ignitions were caused due to lightning strikes and burn off fires.

As more than half the ignitions during the reporting period appear to be caused by human action. A targeted education program may be effective, to provide the community with better understanding of ignition risks, reporting requirements and fire behaviour, particularly for landowners conducting hazard reduction burns. As this may serve to influence better the decision-making of when and how burns should be conducted.

Table 4: Total Number of Bushfires (DFES, 2020)

Total for the Shire of Brookton	2015/ 2016	2016/ 2017	2017/ 2018	2018/ 2019	2019/ 2020	Total
Total Number of Bushfires:	13	11	5	7	7	43
Burn off fires	3	1	0	2	4	10
Campfires/bonfires/outdoor cooking	0	1	0	0	0	1
Cigarette	0	0	0	1	0	1
Equipment - Mechanical or electrical fault	0	1	0	0	0	1
Reignition of previous fire	2	0	0	0	0	2
Suspicious/Deliberate	0	0	2	1	0	3
Undetermined	0	0	0	0	1	1
Unreported	0	4	2	2	2	10
Vehicles (incl. Farming Equipment/Activities)	1	4	0	0	0	5
Weather Conditions - Lightning	7	0	1	1	0	9

Potential fire paths include the Avon River Valley which runs through Brookton townsite, and the forested area in the North and West of the Shire which has the potential to impact adjacent residential properties. North-west and south-east fire paths can have a severe impact in the town centre.

The Kalkarni Residential Age Care facility and local Brookton District High School is located on the North West side of the town, which can be severely impacted on through diminished air quality and potential amber attack on the vulnerable population of Brookton. The south- east side of the Brookton townsite encompasses the Co-operative Bulk Handling (CBH) open grain terminals, which have a very high ignition probability. Further, the remnant vegetation along

the Avon River presents as a 'wick' that connects to the town centre presenting considerable risk to the Brookton community. Developing a collective partnership and community collaboration cross tenure agreements and engagement will be a priority for the Shire to help address this risk.

3.2.6 Current Bushfire Risk Management Activities

The Shire circulates an annual Firebreak Notice under section 33 of the *Bush Fires Act, 1954* with all annual rates notices. The Fire Break Notice details the requirements for residents to maintain and construct fire breaks, asset protection zones and undertake other fire mitigation activities before the 1st of November each year. The adequate preparation of properties is vital for property owners and residents to ensure the fire risk is reduced and the allows safe access for firefighting appliances and asset protection.

Each year, the Shire undertakes some limited hazard reduction works program on land which it controls, which includes mechanical works, slashing and pruning. Priority is given to areas in populated town sites first as these areas address the most risks and ensure the works have the greatest impact.

3.2.7 Map of Bushfire Prone Areas

The intent of the WA Government's Bushfire Prone Planning Policy is to implement effective risk-based land use planning and development to preserve life and reduce the impact of bushfire on property and infrastructure. The *State Planning Policy 3.7 – Planning for Bushfire Prone Areas* ensures bushfire risk is given due consideration in all future planning and development decisions yet does not apply retrospectively. Importantly, the BRM Plan can help address the fire risk for existing development and establishing an effective treatment plan to manage the broader landscape and any unacceptable community risks.

Bushfire Prone Areas are subject to increased planning and construction requirements. These are addressed through the Shire of Brookton Local Planning Scheme No 4, including deemed provision for Local Planning Scheme amendments as provided for under the Planning and Development (Local Planning Scheme Amendment) Regulations 2015[25]. This document does not apply retrospectively, however the BRM Plan can help address this risk for existing development and establishing an effective treatment plan to manage the broader landscape and any unacceptable community risks.

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[25] *https://www.brookton.wa.gov.au/Profiles/brookton/Assets/ClientData/Document-Centre/Planning/Town_Planning_Scheme_No.4/Shire_of_Brookton_Local_Planning_Scheme_4_-_Advertised_Version_-_October_2017.pdf*
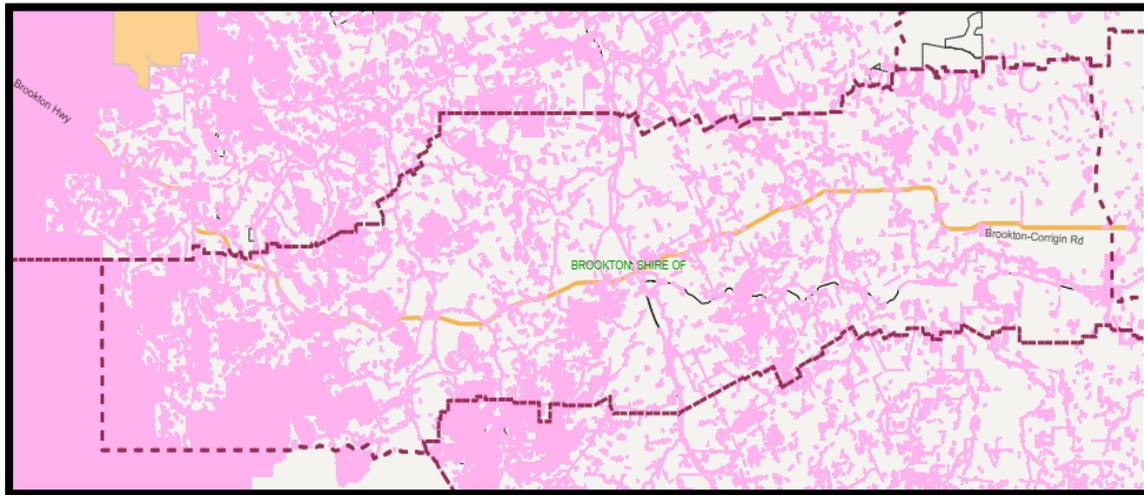
Figure 14: Bushfire Prone Area Shire of Brookton[26].

3.2.8 Volunteer Fire Brigades

There are currently four fire brigades operating within the Shire of Brookton. Two in Brookton West, one in Brookton East and one located central in the Brookton town site. Brookton has four fire appliances – all are four-wheel drive:

4.4B Brookton East (4,000 litres 4WD)
2.4B Brookton Central (2,000 litres 4WD)
2.4B Brookton West (2,000 litres 4WD)
2.4R Brookton West (2,000 litres 4WD)

The Shire has approximately 200 volunteers registered. This includes operation and non-operational roles. It is very common for initial fire response and suppression to be supported by local farmers with private appliances and vehicles with slip on firefighting units.

The bushfire management response skills and experience levels are high amongst the volunteers with many of the volunteers amassing considerable years of service. The local agricultural industry peaks in late October through to late December with the curing of crops and harvesting. Fire response is normally enhanced during harvest when most people are in the district and there are more firefighting units available. After harvest (post-Christmas) there is a decrease in the number of people/firefighters in the shire.

 The key times within the Shire of Brookton that may impact a bushfire response are:

- Preparation for Seeding: March - May
- Seeding: April – June
- Hay/Harvest: September – January

The Shire has an active Bushfire Advisory Committee (BFAC) which is chaired by the Shire President, with members including those in leadership positions from each of the Brigades. The BFAC members hold considerable bushfire firefighting skills and experience. This forum has been integral to the development of the BRM Plan with the BFAC membership continuing to be a key stakeholder in the implementation and review of this plan.

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[26] *https://www.dfes.wa.gov.au/bushfire/bushfireproneareas/*

4. Asset Identification and Risk Assessment

4.1 Planning Areas

The Shire of Brookton has only one planning area.

4.2 Priorities for Asset Identification and Assessment

Assets were identified and assessed systematically across the Shire of Brookton. Table 5 outlines the prioritisation process. *Table 5* defines the Asset Categories and Asset Subcategories.

Table 5- Priorities for Asset Identification within the Planning Area

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

Asset identification and risk assessment has been conducted at the local level using the methodology described in the Guidelines using the BRMS. Identified assets are categorised into the following categories and subcategories provided in *Table 6*.

Table 6– Asset Categories and Subcategories

| Asset Category	Asset Subcategories
Human Settlement	**Residential areas** Residential areas, including rural properties and rural urban interface areas. **Places of temporary occupation** Commercial districts and industrial areas, mining sites or camps and other locations where people may work or gather that are located away from towns and population centers. **Special risk and critical facilities** Locations and facilities where occupants may be more vulnerable to bushfire for one or more of the following reasons: • Occupants may have limited knowledge about the impact of bushfires; • Occupants may have a reduced capacity to evaluate risk and respond adequately to bushfire threat; • Occupants may be more vulnerable to stress and anxiety arising from bushfire threat or the effects of smoke; • There may be significant communication barriers; or • Relocation and/or management of occupants may present unique challenges or difficulties, such as transportation of occupants, or providing alternative accommodation, healthcare or food supplies.
Economic	**Agricultural** Areas under production, such as pasture, livestock, crops, viticulture, horticulture and other farming infrastructure. **Commercial and industrial** Major industry, waste treatment plants, mines (economic interest), mills and processing and manufacturing facilities and cottage industry. **Critical infrastructure** Power lines and substations, water and gas pipelines, telecommunications, railways, bridges, port facilities and wastewater treatments plants. **Tourist and recreational** Tourist attractions and recreational sites that generate significant tourism and/or employment within the local area. These assets are different to tourist accommodation described as a Human Settlement Asset (see above). **Commercial forests and plantations** Plantations and commercial native forests. **Drinking water catchments** Land and infrastructure associated with drinking water catchments.
Environmental	**Protected** Conservation listed threatened flora, fauna, ecological communities and wetlands. **Priority** Priority flora, fauna, ecological communities or wetlands. **Locally important** Species, populations, ecological communities, wetlands or habitats that the local community or independent scientific experts consider important.
Cultural	**Aboriginal heritage** Places of indigenous significance identified by the DPLH or the local community. **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 local 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. Most risk assessments on private property were undertaken via 'desktop' assessment However, assets with a preliminary rating of 'very high' and 'extreme' have been validated through field assessment.

At the time of completing this Bushfire Risk Management Plan, a total of **340** assets have undergone a bushfire risk assessment.

The percentage of assets within the local government in each asset category at the time of BRM Plan endorsement is shown in Table 7:

Table 7 – Asset Category Proportions
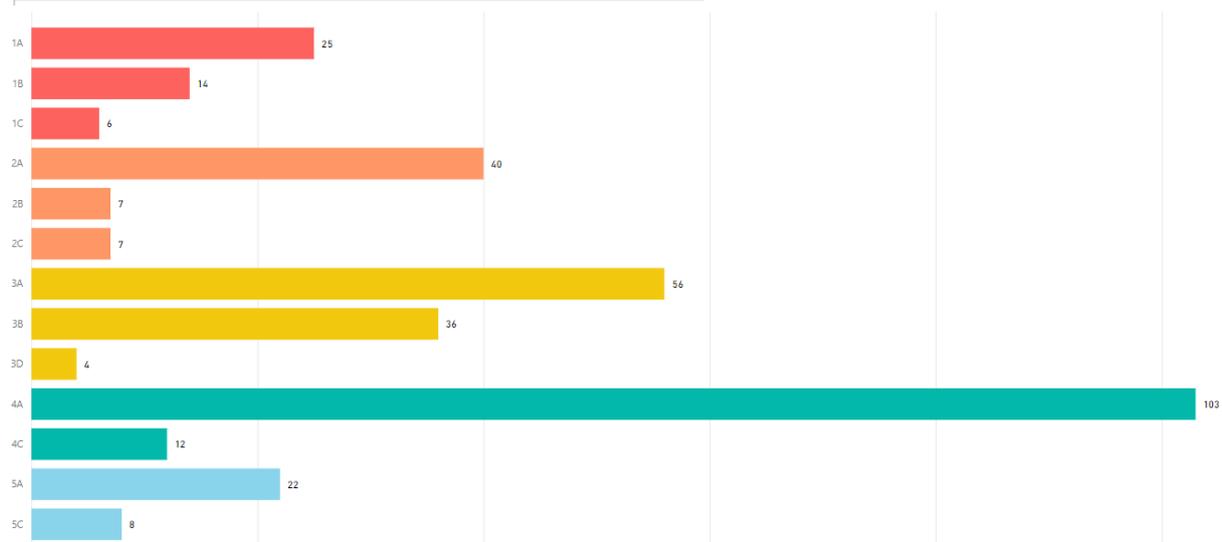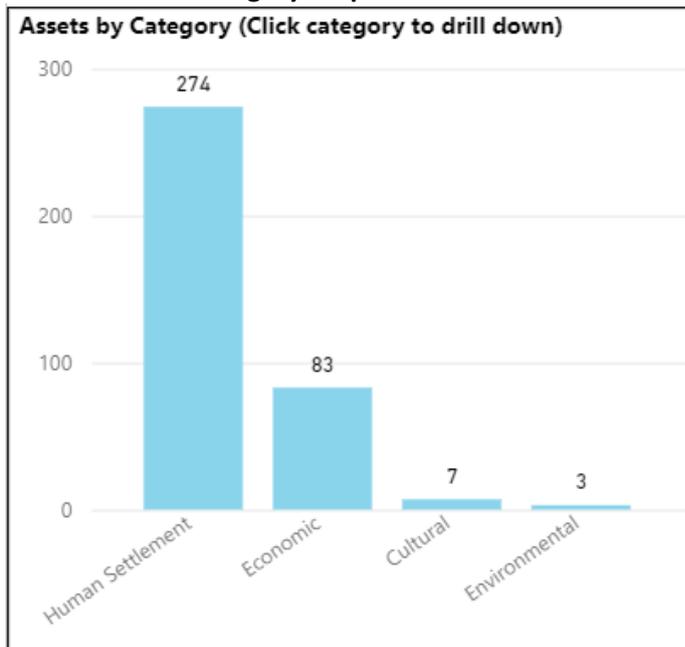
Figure 15 – Risk Profile Asset Category Proportions

4.3.1 Consequence Assessment

The consequence is described as the outcome or impact of a bushfire event. In determining the consequence assessment for human settlement, economic and cultural asset groups, the key factors that influence the rating are:

• Extent of the hazard presented by the surrounding vegetation; and

• Vulnerability of the asset.

In determining the consequence assessment for environmental asset groups, the key factors that influence the rating are:

• Potential impact of fire on the asset; and

• Vulnerability of the asset.

There are four possible consequence ratings; minor, moderate, major and catastrophic. These are outlined in Table 8

Table 8 – Consequence Ratings

Consequence Rating	Descriptions
Minor	No fatalities. Near misses or minor injuries with first aid treatment possibly required.
	No people 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	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.
Major	Isolated cases of fatalities.
	Multiple cases of serious injuries. Significant hospitalisation required, leading to health services being overstretched.

Consequence Rating	Descriptions
	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 Planning Area (for a species which occupies a greater range than just the BRM Planning Area).
Catastrophic	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 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 relevant to species that are restricted to the BRM Planning 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 hazard posed by the classified 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 hazard posed by the classified vegetation and the vulnerability of the asset.

- *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 hazard posed by the classified vegetation and the vulnerability of the asset.

4.3.2   Likelihood Assessment

Likelihood is described as the potential of a bushfire igniting, spreading and impacting 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 9 – Likelihood Ratings

Likelihood Rating	Description
Almost Certain (Sure, to happen)	• Is expected to occur in most circumstances; • High level of recorded incidents and/or strong anecdotal evidence; • Strong likelihood the event will recur; • Great opportunity, reason or means to occur; and/or • May occur more than once in 5 years.
Likely (Probable)	• Regular recorded incidents and strong anecdotal evidence; • Considerable opportunity, reason or means to occur; and/or • May occur at least once in 5 years.
Possible (feasible but < probable)	• Should occur at some stage; • Few, infrequent, random recorded incidents or little anecdotal evidence; and/or • Some opportunity, reason or means to occur.
Unlikely	• Would only occur under exceptional circumstances.

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 Table 10. This table shows the proportion of assets at risk from bushfire in each risk category at the time the BRM Plan was endorsed.

Table 10 – Local Government Asset Risk Summary

Risk Rating / Asset Category	Low	Medium	High	Very High	Extreme
Human Settlement	4.1%	29.7%	24.7%	13.8%	10.5%
Economic	2.3%	10%	5%	4.4%	2.6%
Environmental	0.5%	0.3%	0%	0%	0%
Cultural	0.3%	0%	0.8%	0.3%	0.6%

5. Risk Evaluation

5.1 Evaluating Bushfire Risk

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

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

5.2 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 landowner, in collaboration with Local Government and fire agencies. However, as a rule, the following courses of action have been adopted for each risk rating.

Table 11 – Criteria for Acceptance of Risk and Course of Action

Risk Rating	Criteria for Acceptance of Risk	Course of Action
Extreme **(Priorities 1A, 1B, 1C)**	Requires asset specific treatment strategies to be applied. Treatment action is required within 2 years of the plan being endorsed. It is unlikely that Local Government Wide Controls would be adequate to manage the risk. Identified risk in any event is the responsibility of the Treatment Manager.	Specific action(s) required in the first 2 years of the BRM Assets should be included on the Shires annual fire break inspection Treatments will be approached by: – Priority will be given to treatments that will have maximum benefit to multiple assets and critical infrastructure. – Treatments that benefit vulnerable communities will be given priority. – Identification of partnerships with other agencies for strategic mitigation. – Communication with asset owners will be as per the Communications Plan and focus on increasing understanding of the risk facing these assets.

Very High (Priorities 2A, 2B, 2C)	Requires asset specific treatment strategies to be applied. Treatment action is required with 2 years of the plan being endorsed. It is unlikely that Local Government Wide Controls would be adequate to manage the risk. Identified very risk in any event is the responsibility of the Treatment Manager.	Specific action(s) required in the first 2 years of the BRM Plan Assets may be included on the Shires annual fire break inspection Treatments will be approached by: – Priority will be given to treatments that will have maximum benefit to multiple assets and critical infrastructure. – Treatments that benefit vulnerable communities will be given priority. – Identification of partnerships with other agencies for strategic mitigation. – Communication with asset owners will be as per the Communications Plan and focus on increasing understanding of the risk facing these assets.
High	Asset specific treatment strategies will likely be required to adequately manage the risk. Identified risk in any event is the responsibility of the Treatment Manager.	Specific action(s) required in the first 3 years of the BRM Plan Treatments will be approached by: – Priority will be given to treatments that will have maximum benefit to multiple assets and critical infrastructure. – Treatments that benefit vulnerable communities will be given priority. – Identification of partnerships with other agencies for strategic mitigation. – Communication with asset owners will be as per the Communications Plan and focus on increasing understanding of the risk facing these assets.

Medium (Priorities 4A, 4B, 4C)	Asset specific treatments are not required, but risk should be monitored. If there is a change in the landscape / environment these assets may need to be reassessed more frequently. Identified risk in any event is the responsibility of the Treatment Manager.	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)	Asset specific treatments are not required, but risk should be monitored. Local government wide controls should be enough to manage the risk. If there is a change in the landscape / environment these assets may need to be reassessed more frequently. Identified risk in any event is the responsibility of the Treatment Manager.	The need for specific action is unlikely. Risk will be managed with routine controls and monitored as required.

5.3   Treatment Priorities

The treatment priority for each asset has been automatically assigned by BRMS and recorded in the *Treatment Schedule*, based on the asset's risk rating. Table 12 shows how consequence and likelihood combine to give the risk rating and subsequent treatment priority for an asset.

Table 12 – Treatment Priorities

Consequence / Likelihood	Minor	Moderate	Major	Catastrophic
Almost Certain	3D	2C	1C	1A

	(High)	(Very High)	(Extreme)	(Extreme)
Likely	4C (Medium)	3A (High)	2A (Very High)	1B (Extreme)
Possible	5A (Low)	4A (Medium)	3B (High)	2B (Very High)
Unlikely	5C (Low)	5B (Low)	4B (Medium)	3C (High)

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 are non-asset specific, rather they reduce the overall bushfire risk within the local government. 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 area.

- *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 DBCA 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.
- Shire of Brookton annual works program; and other practices and programs undertaken by local government or state agencies (**Multi-Agency Work Plans**) that contribute to bushfire risk management within the local government, including controls in place under state government policies, agreements or memorandums of understanding. These include:
  - Department of Fire and Emergency Services program of works on Unallocated Crown Land and Unmanaged Reserves;
  - Department of Biodiversity, Conservation and Attractions Master Burn Program;
  - Water Corporation Bushfire Risk Management Plan;
  - Western Power annual asset inspection and vegetation management program;
  - Department of Education Memorandum of Understanding;
  - Main Roads WA Bridge Assessment and Maintenance Works Plan;

A **Local Government-Wide Controls and Multi-Agency Work Plan** is attached at **Appendix** 3**.**

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 five asset specific treatment strategies:

- **Fuel management** – Treatment reduces or modifies the bushfire fuel through manual, chemical and planned 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.

6.3   Development of the Treatment Schedule

The use of planned burns as a mitigation measure is subject to a treatment from the relevant Agency.   DFES is responsible for undertaking treatment strategies, including prescribed burning on behalf of Department of Planning, Lands and Heritage for Unmanaged Reserves and Unallocated Crown Land within gazetted town site boundaries. DBCA Parks and Wildlife is responsible for undertaking treatment strategies, including prescribed burning on department managed land and for Unmanaged Reserves and Unallocated Crown Land outside gazetted town site boundaries. The Shire is responsible for managing shire reserves within the area boundaries.

Under the Environmental Protection and *Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) prescribed burning, under some circumstances, may be considered a controlled action and therefore approval must be sought for prescribed burns that may affect Threatened Ecological Communities, Priority Ecological Communities, Threatened Flora/Fauna, Critical Habitat or Migratory species. The EPBC Act is administered by the Department of the Environment. Information pertaining to individual sensitivities is gained by referral to: DFES Geographical Information System (GIS) servers with access to current Shared Land Information Platform (SLIP) data or the relevant agency.

Landowners 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 landowner. However, the onus is still on the landowner 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 Planning 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 Shire of Brookton will submit an annual report to OBRM each year summarising progress made towards implementation of the BRM Plan. As per Communications plan an annual report will also be supplied to Council with a major review being conducted every 5 years

The *Shire of Brookton* may be requested to contribute information relating to their bushfire risk treatment activities to the annual OBRM *Fuel Reduction Activity Report* upon request.

8.0 Appendices

Appendix 1   Communication Strategy
Appendix 2   Communication Plan
Appendix 3   Local Government-Wide Controls and Multi-Agency Work Plans
Appendix 4   Declared Flora and Fauna in Shire of Brookton
Appendix 5   Asset Register
Appendix 6   Treatment Schedule

Appendix 1 – Communications Strategy

Shire of Brookton

Bushfire Risk Management Planning

Communication Strategy

Document Control

Document Name	Communications Strategy	Current Version	1.1
Document Owner	Shire of Brookton CEO	Issue Date	May 2020
Document Location	Shire Office	Next Review Date	May 2025

Related Documents

Title	Version	Date
Shire of Brookton Bushfire Risk Management Plan	1.1	

Amendment List

Version
1.0

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 Brookton. This Communication Strategy accompanies the BRM Plan for the Shire of Brookton. 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 COMMUNICATIONS OVERVIEWS

Communication Objectives

The communication objectives for the development, implementation and review of the BRM Plan for the Shire of Brookton 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.

Communication Roles and Responsibilities

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

- Shire of Brookton CEO, or nominee, is responsible for:
    - endorsement of the BRM Plan Communications Strategy,
    - external communication with the local government area,
    - operational-level communication between the Shire and the Department of Fire and Emergency Services
    - approve the release of BRMS and BRM Plan data.
    - BRM Plan monitoring, review and reporting.

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 on outcomes	Level of engagement
Shire of Brookton	Significant role in plan and treatment development, implementation and review. Responsible for treatments as a landowner/manager.	High	Inform, consult, involve, collaborate and empower
Department of Fire and Emergency Services	Significant role in plan and treatment development, implementation and review. Support role in treatment Implementation.	High	Inform, consult, involve and collaborate
Department of Biodiversity, Conservation and Attractions	Significant role in plan and treatment development, implementation and review. Responsible for treatments as a landowner/manager.	High	Inform, consult, involve, collaborate and empower
Main Roads WA	Role in plan and treatment development, implementation and review. Responsible for treatments as a landowner/manager. Critical infrastructure interest.	Medium	Inform, consult, involve, collaborate
Telecommunication providers	Role in plan and treatment development, implementation and review. Responsible for treatments as a land owner/manager. Critical infrastructure interest.	Medium	Inform, consult, involve, collaborate
Department of Planning, Lands and Heritage, Land Corp & Landgate	Role in plan and treatment development, implementation and review	Medium	Inform, consult, involve, collaborate
Water Corporation & Department of Water	Role in plan and treatment development, implementation and review. Responsible for treatments as a land owner/manager. Critical infrastructure interest.	Medium	Inform, consult, involve, collaborate
Private Land Owners	Role in plan and treatment development, implementation and review. May have responsibilities for treatments as land owners/managers	High	Inform, consult, involve, collaborate and empower

Western Power	Role in plan and treatment development, implementation and review. Responsible for treatments as a land owner/manager. Critical infrastructure interest.	Medium	Inform, consult, involve, collaborate
Chief Bushfire Control Officer	Significant role in plan and treatment development, implementation and review. Actively assist in risk identification and treatment works. Empower to actively engage with community and identify/treat risks	High	Inform, consult, involve, collaborate and empower
Bushfire Brigades and other Emergency Services Volunteers	Significant role in plan and treatment development, implementation and review. Assist in risk identification and treatment works.	High	Inform, consult, involve, collaborate
Shire of Brookton Bushfire Advisory Committee	Role in plan development, implementation and review. Actively assist in risk identification and treatment works. Empower to actively engage with community and identify/treat risks	High	Inform, consult, involve, collaborate
Regional Operations Advisory Committee	Role in plan development, implementation and review	Medium	Inform, consult, involve, collaborate
Local Emergency Management Committee	Role in plan development, implementation and review	Medium	Inform, consult, involve
Traditional Owners, Regional Corporation, South West Aboriginal Land and Sea Council & Department of Aboriginal Affairs	Role in plan and treatment development, implementation and review. May have responsibilities for treatments as land owners/managers	Medium	Inform, consult and involve
Shire of Brookton Communities	Role in plan implementation and review	Medium	Inform, involve and consult

Appendix 2 - Communications Plan

Timing of Communication	Stakeholder (s)	Communication Objectives *(Refer to Page 46)*	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring & Evaluation Method
Development of the BRM Plan and Treatment Schedule								
Annually or as required	Shire of Brookton CEO, Senior Leadership Team and Council	1 – 3 & 5	• Email • Face to face meetings	• Inform and consult • Confirm accountability and responsibilities • Input into plan and treatments	BRMO, BRPC and CESM	• Resource constraints could limit their ability to participate	• Clarify misunderstandings and intentions of plan • Express value of meeting	• Stakeholder's willingness to participate • Feedback on the presentation
Annually or as required	Shire of Brookton Senior Leadership Team	1 – 3 & 5	• Email • Face to face meetings • Phone	• Input into plan and treatments	CEO, CESM or delegated person by CEO	• Limited time • Conflicting priorities	• Plan meetings	• Stakeholder's willingness to participate • Contributions to treatment plan
Bi-Annually	Bushfire Advisory Committee (BFAC) and Regional Operations Advisory Committee (ROAC)	1 – 3 & 5	• Email • Face to face meeting • Presentation	• Inform and consult • Confirm project objectives • Seek input into treatment plans • Project updates	BRMO, BRPC and CESM	• Stakeholder's willingness to participate • Availability of volunteers	• Preparation • Ensure current information on the BRM Plan Project is available	• Seek feedback on the presentation and (anecdotal) community feedback
Annually and as required	Local Emergency Management Committee (LEMC)	1 – 3 & 5	• Email • Face to face meetings	• Confirm project objectives • Seek input into treatment plans	BRMO,BRPC & CESM	• Stakeholder's willingness to participate	• Preparation • Ensure current information on the	• Feedback on the presentation

			• Presentation	• Project updates			BRM Plan Project is available	
Quarterly or as required	Chief Bushfire Control Officer (CBFCO), Bushfire Brigades, Brigade Captains	1 – 3 & 5	• Email • Face to face meetings	• Confirm project objectives • Seek input into treatment plans and providing project updates • Identify Risk and share information	BRMO, BRPC & CESM	• Time constraints • No plan, unorganised • Availability of volunteers	• Clarify misunderstandings and intentions of plan • Confirm benefits • Preparation • Ensure current information on the BRM Plan Project is available	• Feedback • Support for BRMP process • Level of engagement
Biannually	Dept of Biodiversity, Conservation and Attractions	1 – 3 & 5	• Face to face meetings • Email • Telephone	• Confirmation of environmental assets • Identification of DBCA burn plans • Confirming project objectives, seeking input into treatment plans and providing project updates • Development of treatment options	BRMO & BRPO	• Resource constraints could limit their ability to participate • Willingness to release 'confidential' data re environmental assets	• Clarify misunderstandings and intentions of plan • Provide undertakings re the release of confidential data • Restrict release of information and document in plan	• Level of engagement • Environmental assets in BRMS
Annually and as required	Stakeholders – Landowners / Land Managers	1 – 3 & 5	• Email • Face to face meeting • Telephone	• Asset identification/ confirmation • Outline BRMP process and objectives • Identify assets at risk	BRMO & BRPO	• Time constraints and travel • Level of interest and engagements in process	• Select appropriate channel of communication • Prepare materials and good planning	• Engagement and participation levels • Feedback

			• Presentations • Community Engagement activities	• Identify existing controls/programs • Development of treatment options		• Lack of resourcing	• Communicate funding opportunities when available	• Contributions to treatment strategies
Annually or as required	Stakeholders – Others	1 – 3 & 5	• Email • Face to face meeting • Telephone • Presentations • Community Engagement activities	• Asset identification/ confirmation • Inform of BRMP process • Identify assets at risk • Identify existing controls/programs • Development of treatment options	BRMO & BRPC	• Time constraints and travel • Level of interest and engagements in process	• Select appropriate channel of communication • Prepare materials • Plan communication	• Engagement and participation levels • Feedback
Annually and as required	Office of Bushfire Risk Management	1 & 2	• Email • Face to face meetings	• Compliance and governance • Plan endorsement	CEO or Delegate	• Government funding • Government priorities • Identified non compliances	• Stay up to date with process improvements	• Plan endorsed
Bi-annually and as required	Dept of Fire and Emergency Services (DFES) – District/Regional Office	1 – 3 & 5	• Email • Face to face meetings • Telephone	• UCL/UMR planned works • Identification of treatment strategies • Identification of other planned works	BRMO & BRPC	• Time constraints • Conflicting priorities • Response obligations	• Plan communications • Share information	• Other planned works identified • Funding opportunities identified • UCL/UMR treatments

| | | | | • Sharing information | | | | included on BRMS |
| | | | | • Identifying funding opportunities | | | | |

Implementation of the BRM Plan and Treatment Schedule

Timing of Communication	Stakeholder (s)	Communication Objectives *(Refer to Page 46)*	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring & Evaluation Method
Life of Plan	Shire of Brookton CEO, Senior Leadership Team and Council	All (1 – 5)	• Email • Face to face meetings	• Inform and consult • Confirm accountabilities and responsibilities. • Progress update • Issues identification and action planning	CEO or Delegate	• Time constraints • Availability • Lack of understanding • Budget (for LG mitigation)	• Planning and time management • Clear purpose • Targeted communication • Regular updates	• Feedback, • Questions raised • Level of support received
Life of Plan	Shire of Brookton Building and Works	1 -3 & 5	• Email • Face to face meetings	• Reduction of fuel loads on LG managed lands • Upgrades to strategic firebreaks	CEO or Delegate	• Poor organisation, • Limited time, • Not preparing • Poor communication from stakeholders and LG on completion of works	• Clarify misunderstandings and intentions of plan • Plan communications • Regular updates	• Treatments applied • Positive feedback received on treatment supplied • Risk ratings reduced

Biannually or as required	LEMC, BFAC, ROAC, CBFCO, CAPTS	All (1 – 5)	• Email • Face to face meetings	• Report on progress to plan • Report issues/constraints	CEO or Delegate	• Availability of volunteers • Time • 'Buy in' • Lack of understanding	• Collate data and report on success to plan • Compliance to plan • Keep informed	• Feedback received • Level of engagement • Issues identified and addressed
All (1 – 5)	Dept of Biodiversity, Conservation and Attractions	1 – 3 & 5	• Face to face meetings • Email • Telephone	• Confirmation of environmental assets • Development of treatment options	CEO or Delegate	• Resource constraints could limit their ability to participate • Willingness to release 'confidential' data re environmental assets	• Clarify misunderstandings and intentions of plan • Provide undertakings re the release of confidential data • Restrict release of information and document in plan	• Level of engagement • Environment-al assets in BRMS
As per Section 7.2 of this plan	Stakeholders – Landowners / Land Managers	1 – 3 & 5	• Email • Face to face meetings • Presentations • Community Engagement	• Inform and consult • Confirm accountability and responsibility • Status and progress of plan • Treatment status, gaps and issues to be addressed	CEO or Delegate	• Availability • Time • Loss of commitment • Access to treatment resources • Funding	• Planned sharing of information • Negotiations conducted • Communicate funding opportunities when available	• Feedback • Commitment to implement agreed controls • Highly engaged • Treatments being completed
As required	Stakeholders – Others	1 – 3 & 5	• Face to face	• Inform and consult	CEO or Delegate	• Availability	• Planned sharing of information	• Feedback

			• Presentations • Community Engagement • Telephone • Email	• Confirm accountability and responsibility • Status and progress of plan • Treatment status • Gaps and issues to be addressed		• Time • Loss of commitment	• Negotiations conducted • Communicate funding opportunities when available	• Commitment to implement agreed controls • Highly engaged • Treatments being completed
Annually or as required	OBRM, DFES District / Regional Office	1 – 3	• Face to face meetings • Email • Telephone	• UCL/UMR Management • Status and progress of plan • Treatment status, gaps and issues to be addressed • Continuous improvement • Information sharing • Identification of other planned works • Identification of funding opportunities	CEO or Delegate	• Time • Conflicting priorities	• Schedule communication opportunities	• Planned works identified • Improvements identified and implemented • Issues addressed
Annually	OBRM	1,22	• Written report	• Governance and compliance • Continuous improvement	CEO or Delegate	• Time • Conflicting priorities	• Plan communication	• Compliance requirements met

| Annually – ideally prior to fire season | Community | 5 | • Newsletter

• Website

• Facebook | • Continuous improvement | CEO or Delegate | • Time

• Conflicting priorities | • Plan communication | • Feedback received |

Review of the BRM Plan and Treatment Schedule

Timing of Communication	Stakeholder (s)	Communication Objectives *(Refer to Page 46)*	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring & Evaluation Method
Annually	Shire of Brookton CEO, Senior Leadership Team and Council	4, 5	• Email • Face to face meetings	• Governance and compliance • Review, monitoring and reporting to Council • Status update • Continuous improvement	CEO or Delegate	• Poor reporting and recording of information	• BRPC & BRMO to record data and information appropriately	• Feedback received • Planned works completed • Reporting & Statistics • Risk ratings reduced
5 Yearly (Shire, DFES and OBRM)	OBRM & LG Council	4, 5	• Email • Face to face meetings • Telephone • Written report	• Governance and compliance • Review, monitoring and reporting • Future planning	CEO or Delegate	• Poor reporting and recording of information • Review not completed by OBRM	• BRPC & BRMO to record data and information appropriately • Endorsed by OBRM	• Feedback received • Planned works completed • Reporting & Statistics • Risk ratings reduced
Quarterly or as required	Shire of Brookton – Building and Works	4, 5	• Face to face meetings	• Report on actions and status of BRM Plan	CEO or Delegate	• Time • LG capacity	• Plan Communication	• Feedback on work completed

				• Continuous improvement		• Conflicting priorities	• Discuss with Shire Leadership Team	• Risk ratings reduced • Improvements identified and implemented
Biannually or as required	DFES Regional / District Office	4, 5	• Face to face meetings • Email • Telephone	• Report on actions and status of BRMP • Continuous improvement • UCL/UMR funding	CEO or Delegate	• Time • LG capacity • Conflicting priorities	• Plan communications	• Feedback on work completed • Risk ratings reduced • Improvements identified and implemented
Annually	BFAC, ROAC, LEMC, CBFCO, Captains	4, 5	• Face to face meetings • Email • Telephone • Presentations	• Report on actions and status of BRMP • Continuous improvement	CEO or Delegate	• LG capacity • Time • Conflicting priorities • Buy in	• Keep informed • Share the wins	• Feedback on work completed • Risk ratings reduced • Improvements identified and implemented
Every 2 years or as required	Stakeholders – Land Owners / Land Managers	4, 5	• Face to face meetings • Telephone • Presentation • Community Engagement • Survey	• Status of treatments • Success of treatments • Continuous improvement	CEO or Delegate	• LG capacity • Time • Conflicting priorities • Buy in • Access to resources	• Plan communication • Target communication • Planned and prepared	• Feedback on work completed • Risk ratings reduced • Improvements identified and implemented

Every 2 years or as required	Stakeholders – Other	4, 5	• Face to face meetings • Telephone • Presentations • Community Engagement • Survey	• Status of treatments • Success of treatments • Continuous improvement	CEO or Delegate	• LG capacity • Time • Conflicting priorities • Buy in • Access to resources	• Plan communication • Target communication • Planned and prepared	• Feedback on work completed • Risk ratings reduced • Improvements identified and implemented

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Appendix 3 – Local Government-Wide Controls and Multi-Agency Work Plans

	Control	Action or Activity Description	Lead Agency	Other Stakeholder(s)	Notes and Comments
1.	BRMP Risk Analysis	Maintain and refine BRM Plan	Shire of Brookton	Landowners DFES Other agencies	Treatment identification and planning for all very high and extreme risk assets within the Shire.
2.	Shire of Brookton Bush Fire Notice (*Bush Fires Act 1954*)	Review annual notice Publish annual notice Inspections in accordance with annual notice	Shire of Brookton	CBFCO, FCO, Captains and the public	Published Annually. Inspect local properties regarding implementation of fire breaks. 'Fire Access Track' has the same meaning as 'Fire Break', in the *Bush Fires Act 1954.*
3.	Shire Prohibited and Restricted burn times and issuing of permits. (*Bush Fires Act 1954*)	Restricted and Prohibited Burn Times set the requirement that 'a permit to set fire to the bush' must be obtained.	Shire of Brookton	CBFCO, FCO's	Published Annually.
4.	Harvest and Vehicle Movement Bans	Bans imposed when the CBFCO and FCO's are of the opinion that the use of engines, vehicles, plant or machinery is likely to cause/contribute to the spread of a bushfire.	Shire of Brookton	CBFCO and FCO's	A Harvest and Vehicle Movement Ban may be imposed for any length of time but is generally imposed for the 'heat of the day' periods and may be extended or revoked by the local government should weather conditions change.
5.	Local Emergency Management Arrangements	Local Emergency Management Arrangements	Shire of Brookton	St John Ambulance (SJA), WAPOL, DFES Dept of Child Protection Dept of Education	Annual review of emergency plans and arrangements through the LEMC.

	Control	Action or Activity Description	Lead Agency	Other Stakeholder(s)	Notes and Comments
				CBFCO Gt Southern DEMC OEM ~~Shire of Brookton~~	
6.	State Planning Policy 3.7, Planning and Development (Local Planning Schemes) Regulations 2015, and Local Planning Scheme No 4	Planning in Bushfire Prone Areas BAL assessment imposed as condition of planning approval and prior to issue of building permit Requirement for some new developments to complete a Fire Management Plan endorsed through the Dept of Fire and Emergency Services (if in a Bushfire Prone area)	Dept of Planning	Shire of Brookton WA Planning Commission DFES	Land developers are required to implement a Fire Management Plan to ensure risk is managed and other controls implemented and monitored. Where a Fire Management Plan has been endorsed by DFES and the Shire, the affected land owners will be responsible for the ongoing implementation of the "land owners' responsibilities" as specified in that Fire Management Plan.
7.	Total Fire Bans	• Restriction of activities that may cause or contribute to the spread of a bushfire	Department of Fire and Emergency Services	Shire of Brookton	A Total Fire Ban (TFB) is declared because of extreme weather conditions or when widespread fires are stretching firefighting resources. A TFB is declared by DFES subject to weather conditions.
8.	Public preparedness and education campaigns	• Public preparedness and education campaign	Shire of Brookton	DFES, WA Police, WA Government CBFCO, FCO, community	Local promotion activities of state campaigns held when opportunity arises to promote preparedness including local contractors, bushfire brigades and Bushfire Ready Groups

Appendix 4 – Declared Rare Flora and Fauna in the Shire of Brookton

The following has been taken from the Protected Matters Report abstracted by the Federal Department of Agriculture, Water and the Environment in November 2020 This report provides general guidance on matters of national environment significance and other matters protected by the *Environmental Protection and Biodiversity Conservation (EPBC) Act 1999*.

Threatened Ecological Communities		[Resource Information]
For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.		
Name	Status	Type of Presence
Eucalypt Woodlands of the Western Australian Wheatbelt	Critically Endangered	Community likely to occur within area

Threatened Species		[Resource Information]
Name	Status	Type of Presence
BIRDS		
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calyptorhynchus banksii naso Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat known to occur within area
Calyptorhynchus baudinii Baudin's Cockatoo, Long-billed Black-Cockatoo [769]	Endangered	Species or species habitat likely to occur within area
Calyptorhynchus latirostris Carnaby's Cockatoo, Short-billed Black-Cockatoo [59523]	Endangered	Species or species habitat known to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pezoporus occidentalis Night Parrot [59350]	Endangered	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
MAMMALS		
Bettongia penicillata ogilbyi Woylie [66844]	Endangered	Species or species habitat known to occur within area
Dasyurus geoffroii Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat known to occur within area

Myrmecobius fasciatus Numbat [294]	Endangered	Species or species habitat known to occur within area
Phascogale calura Red-tailed Phascogale, Red-tailed Wambenger, Kenngoor [316]	Vulnerable	Species or species habitat known to occur within area

OTHER

Idiosoma nigrum Shield-backed Trapdoor Spider, Black Rugose Trapdoor Spider [66798]	Vulnerable	Species or species habitat likely to occur within area

PLANTS

Acacia ataxiphylla subsp. magna Large-fruited Tammin Wattle [64823]	Endangered	Species or species habitat may occur within area
Acacia brachypoda Western Wheatbelt Wattle [55594]	Endangered	Species or species habitat known to occur within area
Acacia cochlocarpa subsp. cochlocarpa Spiral-fruited Wattle [23877]	Endangered	Species or species habitat may occur within area
Acacia volubilis Tangled Wattle, Tangle Wattle [6476]	Endangered	Species or species habitat may occur within area
Banksia aurantia Orange Dryandra [82763]	Critically Endangered	Species or species habitat may occur within area
Banksia cuneata Matchstick Banksia, Quairading Banksia [9827]	Endangered	Species or species habitat known to occur within area
Banksia oligantha Wagin Banksia [20697]	Endangered	Species or species habitat likely to occur within area
Boronia capitata subsp. capitata a shrub [29156]	Endangered	Species or species habitat likely to occur within area
Caladenia dorrienii Cossack Spider-orchid [6596]	Endangered	Species or species habitat likely to occur within area
Caladenia hoffmanii Hoffman's Spider-orchid [56719]	Endangered	Species or species habitat may occur within area
Caladenia williamsiae Williams Spider Orchid [68732]	Endangered	Species or species habitat known to occur within area
Dasymalla axillaris Native Foxglove [38829]	Critically Endangered	Species or species habitat may occur within area
Diuris micrantha Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat may occur within area
Diuris purdiei Purdie's Donkey-orchid [12950]	Endangered	Species or species habitat may occur within area
Eleocharis keigheryi Keighery's Eleocharis [64893]	Vulnerable	Species or species habitat known to occur within area

Name	Status	Type of Presence
Eremophila viscida Varnish Bush [2394]	Endangered	Species or species habitat may occur within area
Grevillea christineae Christine's Grevillea [64520]	Endangered	Species or species habitat may occur within area
Grevillea dryandroides subsp. hirsuta Hairy Phalanx Grevillea [64577]	Endangered	Species or species habitat known to occur within area
Grevillea scapigera Corrigin Grevillea [12195]	Endangered	Species or species habitat known to occur within area
Hakea aculeata Column Hakea [11191]	Vulnerable	Species or species habitat known to occur within area
Lasiopetalum rotundifolium Round-leaf Lasiopetalum [2885]	Endangered	Species or species habitat known to occur within area
Pultenaea pauciflora Narrogin Pea [14013]	Vulnerable	Species or species habitat known to occur within area
Roycea pycnophylloides Saltmat [21161]	Endangered	Species or species habitat likely to occur within area
Symonanthus bancroftii Bancrofts Symonanthus [12837]	Endangered	Species or species habitat may occur within area
Thelymitra dedmaniarum Cinnamon Sun Orchid [65105]	Endangered	Species or species habitat may occur within area
Thomasia montana Hill Thomasia [12136]	Vulnerable	Species or species habitat known to occur within area
Verticordia fimbrilepis subsp. fimbrilepis Shy Featherflower [24631]	Endangered	Species or species habitat known to occur within area

Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Motacilla cinerea		
Grey Wagtail [642]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within
Calidris melanotos		
Pectoral Sandpiper [858]		Species or species habitat may occur within area
Numenius madagascariensis		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]		Species or species habitat may occur within area