Shire of Woodanilling
Bushfire Risk Management Plan

2017 – 2022

Adopted by Council – 18/07/2017

Contents

Document Control

Document Name	Bushfire Risk Management Plan	Current Version	2.0
Document Owner	Woodanilling CEO	Issue Date	16/06/2017
Document Location	Shire Office	Next Review Date	16/06/2022

Document Endorsements

Shire of Woodanilling 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 Woodanilling 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 Woodanilling Council satisfies the endorsement obligations under section 2.3.1 of the *State Hazard Plan for Fire* (*Westplan Fire*).

In approving this BRM Plan, the Shire of Woodanilling Council is acknowledging the assets that have been identified and the risk ratings and treatment priorities assigned. Approval of the plan is a commitment by the Shire of Woodanilling to work with land owners and managers to address unacceptable risk within the community. Endorsement of this plan is not committing the Shire of Woodanilling 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]

Local Government	Representative	Signature	Date
Shire of Woodanilling	CEO		Adopted by Council – 18/07/2017

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

Amendment List

Version	Date	Author	Section
1.0	12 June 2017	P Cupitt & D Morgan	Initial version submitted to OBRM for compliance review
2.0	16 June 2017	P Cupitt & D Morgan	- Renamed section 1.3 - Amended OEM references - Amended Section 3.1.1 - Added Tenure table - Added information on demographics to section 3.1.3 - Amended 'mitigation zone' to 'bushfire management zone' - Amended Section 3.2.1 - Added reference re Natural Resource Zone - Added information to Section 3.2.3 - Moved 'Cultural Considerations' to Section 3.1.5 - Amended intro to Section 4 - Included H&VMB in LG Wide Controls Comms Strategy: - Added Comms Roles and Responsibilities of the LG - Amended OBRM role

Publication Information

1.   Introduction

1.1   Background

Under the *State Hazard Plan for Fire* (*Westplan Fire*) an integrated Bushfire Risk Management Plan (BRM Plan) is to be developed for local government areas with significant bushfire risk. This BRM Plan has been prepared for the Shire of Woodanilling in accordance with the requirements of *Westplan Fire* and the *Guidelines for Preparing a Bushfire Risk Management Plan* (Guidelines).

The risk management processes used to develop this BRM Plan are aligned to the key principles of *AS/NZS ISO 31000:2009 Risk management – Principles and guidelines* (AS/NZS ISO 31000:2009), as described in the Second Edition of the *National Emergency Risk Assessment Guidelines (NERAG 2015)*. This approach is consistent with the policies of the State Emergency Management Committee.

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

1.2   Aim and Objectives

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

The objective of the BRM Plan is to effectively manage bushfire risk within the Shire of Woodanilling in order to protect people and assets including assets of local value.

Specifically, the objectives of this BRM Plan are to:

- Guide and coordinate a tenure blind, multi-agency bushfire risk management program over a five year period;

- Document the process used to identify, analyse and evaluate risk, determine priorities and develop a plan to systematically treat risk;

- Facilitate the effective use of the financial and physical resources available for bushfire risk management activities;

- Integrate bushfire risk management into the business processes of local government, land owners and other agencies;

- Ensure there is integration between land owners and bushfire risk management programs and activities;

- Monitor and review the implementation of treatments to ensure treatment plans are adaptable and risk is managed to an acceptable level.

1.3   Legislation, Policy and Standards

The legislation, policy, standards and references considered applicable to the development and implementation of the BRM Plan are detailed at *Appendix 1.*

2.   The Risk Management Process

The risk management processes used to identify and address risk in this BRM Plan are aligned with the international standard for risk management AS/NZS ISO 31000:2009.   The Shire of Woodanilling has adopted AS/NZS ISO 31000:2009 throughout the development of the Shire's governance framework as detailed in the *Corporate Business Plan 2012-2022* (adopted 12 August 2013), noting that some variations may have been applied during the development of this BRM Plan to best suit the bushfire risk management context. A diagram of the AS/NZS ISO 31000:2009 process is provided at *Appendix 2*.

2.1   Roles and Responsibilities

The following table outlines the identified key stakeholders for this Bushfire Risk Management Plan and their roles and responsibilities in line with the development, implementation, monitoring and review of the BRM Plan and resulting 'Treatment Schedule'.

Table 1 – Roles and Responsibilities

Stakeholder Name	Roles and Responsibilities
Shire of Woodanilling	- As part of the approval process, submission of the draft BRM Plan to the Office of Bushfire Risk Management (OBRM) to review it for consistency with the Guidelines. - As part of the approval process, submission of the final BRM Plan to council for their endorsement and adoption. - As custodian of the BRM Plan, coordination of the development and ongoing monitoring and review of the integrated BRM Plan and treatment schedule. - Making stakeholders and landowners aware of identified risks. - Negotiation with land owners to treat risks identified in the BRM Plan. - As treatment manager, identification and implementation of treatment strategies.
Department of Fire and Emergency Services (DFES)	- Participation in and contribution to the development and implementation of BRM Plans and treatment schedules, as per responsibilities as the Westplan Fire Hazard Management Agency (HMA). - Support to local government through expert knowledge and advice in relation to the identification, prevention and treatment of bushfire risk. - Facilitation of local government engagement with state and federal government agencies in the local planning process. - Undertake treatment strategies, including prescribed burning on behalf of Department of Lands for Unmanaged Reserves and Unallocated Crown Land <u>within</u> gazetted town site boundaries.

Stakeholder Name	Roles and Responsibilities
	▪ In accordance with Memorandums of Understanding and other agreements, implementation of treatment strategies for other landholders.
Office of Bushfire Risk Management (OBRM)	▪ Under the OBRM Charter, ensure bushfire risk is managed in accordance with AS/NZS ISO 31000. ▪ Reporting on the state of bushfire risk across Western Australia. ▪ Review BRM Plans for consistency with the Guidelines prior to final endorsement by council.
Department of Parks and Wildlife (DPAW)	▪ Participation in and contribution to the development and implementation of BRM Plans and treatment schedules. ▪ Providing advice for the identification of environmental assets that are vulnerable to fire and planning appropriate treatment strategies for their protection. ▪ As treatment manager, implementation of treatment strategies on department managed land and for Unmanaged Reserves and Unallocated Crown Land <u>outside</u> gazetted town site boundaries. ▪ In accordance with Memorandums of Understanding and other agreements, implementation of treatment strategies for other landholders.
Other State and Federal Government Agencies • Dept of Lands • LandCorp • Landgate • Main Roads WA • Dept of Education • Dept of Aboriginal Affairs • Forest Products Commission • Water Corporation • Dept of Water	▪ Assist the local government by providing information about their assets and current risk treatment programs. ▪ Participation in and contribution to the development and implementation of BRM Plans and treatment schedules. ▪ As treatment manager (where applicable), identification and implementation of treatment strategies.
Public Utilities • Western Power	▪ Assist the local government by providing information about their assets and current risk treatment programs. ▪ Participation in and contribution to the development and implementation of BRM Plans and treatment schedules. ▪ As treatment manager, identification and implementation of treatment strategies.
Corporations and Private Land Owners • Telstra • Rail	▪ Assist the local government by providing information about their assets and current risk treatment programs. ▪ Participation in and contribution to the development and implementation of BRM Plans and treatment schedules.

Stakeholder Name	Roles and Responsibilities
• Agriculture • Private Land Owners	▪ As treatment manager, identification and implementation of treatment strategies.
Other • Chief Bushfire Control Officer (CBFCO) • Bushfire Advisory Committee (BFAC) • District Operations Advisory Committee (DOAC) • Local Emergency Management Committee (LEMC) • Bushfire Brigades (BFB's) and other Emergency Services Volunteers • Landcare • South West Aboriginal Land and Sea Council • Wagyl Kaip Corporation	▪ Participation in and contribution to the development and implementation of BRM Plans and treatment schedules. ▪ Providing advice for the identification of assets that are vulnerable to fire. ▪ Providing advice on appropriate treatment strategies for asset protection.

2.2   Communication & Consultation

As indicated in **Appendix 2**, communication and consultation throughout the risk management process is fundamental to the preparation of an effective BRM Plan. To ensure appropriate and effective communication occurs with relevant stakeholders throughout the life of this plan, including during the development, implementation and review phases, a *Communication Strategy* has been prepared. The strategy is provided at **Appendix 3**.

3. Establishing the Context

3.1 Description of the Local Government and Community Context

3.1.1 Strategic and Corporate Framework

The Shire of Woodanilling has a *Strategic Community plan (2012 – 2022)* and a *Corporate Business Plan 2012 - 2022 (adopted 2013)* both of which feature a strong 'community safety' focus, reflect the Shire's commitment to this end and confirm that the BRM Plan will be a valuable document that, once endorsed, should integrate easily into existing Shire planning frameworks.

The *Strategic Community Plan* and *Corporate Business Plan* reflect themes and objectives in the following areas:

1. Social
   - Community Facilities
   - Community Well-being
2. Environmental
3. Civic Leadership
   - Law & Order
   - Customer Service
   - Governance
4. Economic

Upon review of the *Strategic Community Plan* and *Corporate Business Plan*, the following themes, goals and actions are identified as having direct relevance to the objectives of this BRM Plan, with the primary focus on protecting *"people, assets and other things of local value"*[2]:

THEME 1	SOCIAL	Community Well-Being (CW)
CW 3	Expand Fire Awareness	

- Promote fire awareness in the community
- Utilise CESM to support programs and assisting in sourcing funding for programs
- Fire awareness educational/ promotional program
- Brigade support program

CW 10	Ensure significant heritage buildings and places under Councils care and/or ownership are preserved and where possible restored

- Identify buildings of significant heritage value
- Prepare Heritage Management Plan(s)

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[2] *Strategic Community Plan (2012 – 2022)*

CW 11	Develop Community Pride programs that are reflected by the high standard of maintenance and development of private properties within the town

- Needs assessment and program establishment

THEME 2	**ENVIRONMENT (EN)**

EN 1	Restore and protect natural environment and landscape

- Roadside weed control
- Weed control in reserves
- Revegetate roadsides to reduce weed burden

EN 2	Protect landscapes and remnant bushland

- Undertake roadside conservation survey and develop plans for future re-vegetation works on roadside areas to enhance ecological value and natural aesthetics

EN 6	Increase capacity of community to implement Natural Resource Management (NRM) and Improve NRM information

- Develop local clearing policies and develop and distribute educational information to include environmentally sensitive and community high priority areas

THEME 3	**CIVIC LEADERSHIP**	**Law & Order (LO)**

LO 2	Implementation of Fire Management Plan

- Support Bush Fire Advisory Committee and local Brigades
- Annual review of Woodanilling Townsite Fire Management Plan
- Utilise CESM to support programs
- Support education programs
- Implement recommendations from Townsite Fire Management Plan

LO 6	Local Emergency Management to ensure preparedness for local emergencies

- Review Local Emergency Management Arrangements
- Continue involvement with Shires of Katanning and Kent for local emergency management and utilise CESM to develop joint and local strategies

THEME 3	**CIVIC LEADERSHIP**	**Customer Service (CS)**

CS 6	Enhance the image of the Shire and establish a relationship with the public to reflect credibility on the organisation.

- Develop adopt and implement Communication Strategy and
- Identify and liaise with key community members

THEME 3	CIVIC LEADERSHIP	Governance (GO)

GO 2	Preparation of Land Use Strategies for town and rural areas

- Identify existing and forecast future land uses within the Shire

GO 6	Preparation of relevant local laws as determined by community need.

- Identify need and develop required new local laws

GO 10	Implementation of community consultation processes that link the Council and the community to ensure open and accountable government.

GO 11	Corporate Risk Management Plan

- Develop and Implement a Corporate Risk Management Plan

The following functions within the Shire of Woodanilling's administration team have been identified as having specific roles and responsibilities in line with the successful implementation of the BRM Plan.

Table 2: Functions within the Shire of Woodanilling with roles and responsibilities associated to the Bush Fire Risk Management Plan

Function	Roles & Responsibilities
Corporate Leadership Team	- Oversight of the implementation, review and monitoring of the Bushfire Risk Management Plan - Sourcing and approving funding and expenditure - Ensure implementation and review of the Bushfire Risk Management Plan - Monitoring the implementation of agreed treatments - Liaison with key stakeholders - Participation on Local Emergency Management Committee (LEMC)
Person Tasked with Emergency Management within the Shire Administration Team	- Develop practices for fire management on LG, UCL and UMR land - Planning annual schedule of works - Build knowledge and understanding of fire management practices within the community - Participation on Bushfire Advisory Committee (BFAC) - Support bushfire meetings and committees - Oversee burning programs and support from local brigades - Contributing to treatment planning - Negotiating with stakeholders

Chief Bushfire Control Officer	▪ Oversee burning programs and support from local brigades ▪ Contributing to treatment planning ▪ Negotiating with stakeholders ▪ Fire breaks inspection and enforcement
Works Department	▪ Undertake planned works
Planning	▪ Ensure adherence to building codes ▪ Bushfire prone mapping
Finance	▪ Accessing grants and funding

NOTE: Some functions outlined above are fulfilled through the employment of contract personnel.

A copy of the organisational structure is attached at ***Appendix 4.***

The Shire of Woodanilling was identified as a priority local government in the first round of funding arrangements for the WA State Government's Bushfire Risk Management Project. This resulted in the temporary appointment of a Bushfire Risk Planning Coordinator (BRPC) and Bushfire Risk Management Officer (BRMO) using project funding managed through the Department of Fire and Emergency Services (DFES). The role of the BRPC and BRMO was to assist the Shire to develop a Bushfire Risk Management Plan including a comprehensive Asset Risk Register and Treatment Schedule. Both the BRMO and BRPC positions were funded until 30 June 2017.

The Shire, supported by the Department of Fire and Emergency Services (DFES), currently has access to the services of a Community Emergency Services Manager (CESM). This position is managed by a Memorandum of Understanding (MOU) and is a shared resource between Woodanilling and neighbouring Shires. A significant role of the CESM is to *ensure the Shire's Volunteer Bush Fire Brigades and other Emergency Management Volunteers are supported, trained, equipped and capable of providing appropriate fire services to the community*.[3] It was also envisaged that the CESM position would have a key role throughout the implementation, monitoring and review phases of this BRM Plan once the plan is endorsed. At the time of finalising this plan, the term of the CESM MOU was concluding (July 2017) with negotiations ongoing in relation to the future of the position within the Shire. The CESM position has strong support from the emergency services volunteers including the Bushfire Advisory Committee and the Chief Bushfire Control Officer[4] however given the changing priorities, funding limitations and political landscape the CESM position may not be able to be supported into the future. Should this position not continue the CESM responsibilities will be allocated to the '*person tasked with emergency management within the Shire*'.

The Shire of Woodanilling recognises the importance of leadership and coordination in emergency management and has an established Local Emergency Management Committee (LEMC) with multi agency membership. This committee provides an important forum to enable consultation around the BRM Plan.

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[3] *Memorandums of Understanding – Provision of a shared Community Services Manager, July 2014*
[4] *Shire of Woodanilling Council Meeting – Minutes – May 2017*

The LEMC has endorsed Local Emergency Management Arrangements (LEMA) for the Shire. In the development of the LEMA, the Committee undertook a risk assessment process resulting in a 'Risk Treatment Schedule and Plan' being developed that outlines identified risks, risk levels and treatment options. The Shire of Woodanilling 'Risk Register reflects Bushfire as a 'high' risk to the Shire.

The Shire also has an active Bushfire Advisory Committee (BFAC). The BFAC membership reflects considerable bushfire fighting knowledge and experience. This forum has been integral to the development of the plan and will continue to be a key stakeholder in the implementation and review of the plan.

In 2013 the Shire had a Fire Management Plan commissioned, with a focus on the Woodanilling townsite, confirming the Shire's commitment and proactive approach to Bushfire Risk Management. In addition to the townsite plans primary aim of *"managing the bush fire threat within and around the townsite and to ensure that the community (life), residences and infrastructure (property) and areas of conservation and heritage value (environment) are protected from fire"* [5], the plan also details further objectives being:

- *Reduction in fire incidents*
- *Preparation and implementation of an annual works program*
- *Improved compliance with Councils firebreak notice*
- *Improved community awareness and acceptance of fire management and hazards*
- *Greater membership of local volunteer bush fire brigades*
- *Improved inter agency cooperation in hazard management* [6]

This plan further identifies that:

- *The most likely risk of ignition will be from human activity, either accidental or deliberate.*
- *Based upon fire history there is a 'likelihood' that there may be a localised bush fire within the vicinity of the townsite with the consequences dependent upon how aware and prepared the community and landowners are.*
- *The principle bush fire threat relevant to the townsite is a grass/scrub fire.*
- *The assessment of existing development in the townsite, in compliance against the 'Planning for Bush Fire Protection' performance criteria, highlights little separation between the vegetated areas, with an extreme hazard rating, and existing residential development.*
- *There are no formal hazard separation zones between areas of high fire danger and residential areas.*
- *Management of vacant land, with absentee owners, is an ongoing concern.*
- *Unallocated Crown Land (UCL) is not well managed* [7]

It is important to note that whilst the 2013 plan focusses on the Woodanilling townsite, not the Shire as a whole, the recommendations detailed in the *Woodanilling Townsite Fire Management Plan* have been incorporated into this BRM Plan which reflects a broader 'whole of Shire' approach. These recommendations focus on:

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[5] *Woodanilling Townsite Fire Management Plan, February 2013, TME Town Planning Management Engineering Pty Ltd*
[6] *Woodanilling Townsite Fire Management Plan, February 2013, TME Town Planning Management Engineering Pty Ltd*
[7] *Woodanilling Townsite Fire Management Plan, February 2013, TME Town Planning Management Engineering Pty Ltd*

- Strategic fire breaks
- Access ways.

The local primary school, which presently caters to less than 20 students, was placed on the Education Departments 'Bushfire Risk Register' in 2011. An independent risk assessment was undertaken in 2015 with a number of recommended treatments identified. These were completed in early 2016. The school has developed a Fire Management Plan in accordance with Department of Education requirements. It is interesting to note that the original Woodanilling Primary School was lost to fire in July 1949. [8]

3.1.2 Location, Boundaries and Tenure

Woodanilling is named after a spring in the Boyerine Creek one kilometre south of the townsite. The Shire is located approximately 3 hours (290 km) from Perth, 2.5 hours from Bunbury and 2 hours Albany. The Shire of Woodanilling is situated on the south-western edge of the Wheat Belt region in the Central Great Southern region of Western Australia and is linked by the Great Southern Railway line which was an important transport route for the early colony.

Figure 1 – Location of the Shire of Woodanilling [9]

The Shire of Woodanilling is 1126 square kilometres and contains approximately 107 kilometres of sealed roads and 415 kilometres of unsealed roads.

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[8] Website: Trove, National Library of Australia, sourced 23 May 2017, www.trove.nla.gov.au
[9] Website: http://www.gsdc.wa.gov.au/our-region/local-governments/shire-of-woodanilling/

Geographic Statistics	Woodanilling
Distance from Perth by Road (RAC 2013)	293km
Distance from Perth by Air (Google Earth 2013)	235km
Area (km², Shire website)	1,126km2

Figure 2 – Shire of Woodanilling Geographic Statistics [10]

The Shire is bordered by the local government authorities of West Arthur, Wagin, Dumbleyung, Katanning and Kojonup.

Figure 3 – Location of the Shire of Woodanilling and surrounding Shires [11]

The main localities within the Shire are Beaufort River, Boyerine, Glencoe, Cartmetricup, Kenmare, Westwood and Woodanilling Town.[12]

The Woodanilling town site contains the shire council administration centre and depot, a general store, a primary school, a well-equipped recreation/ function centre, an historic two storey tavern, a caravan park, an archery park and a grain receivable site.

There are 4 major transport routes through the Shire, including:

- Albany Highway
- Robinson Road
- Great Southern Highway
- Katanning / Dumbelyung Road

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[10] *Strategic Community Plan 2012 - 2022*
[11] *Website: Google Maps*
[12] *Website: Shire of Woodanilling Website, Council and Community Hand in Hand*

Bushfire incidents impacting any of these routes have the potential to create concerns for the Shire of Woodanilling as well as surrounding Shires, particularly in the context of vehicle movement around the Great Southern Region.
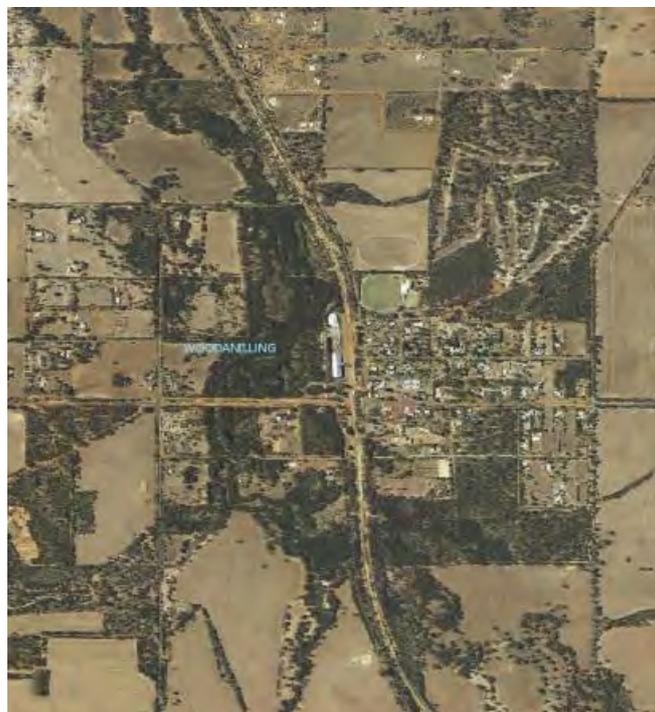
Figure 4 – The Townsite of Woodanilling [13]

Tenure

Within the Shire of Woodanilling, Department of Parks and Wildlife have approx. 1.2% of tenure. Significant land in the Shire is vested to private landownders predominantly agriculturally based. The other tenures in the Shire are combination of Local Government, Department of Lands, Deptartment of Water, Forest Products Commission and a range of other private owners. There are parcels of Unallocated Crown Land (UCL) and Unmanaged Reserves (UMR) in the townsite of Woodanilling. The Shire has 1328 hectares of Nature Reserve which equates to 1.2% of the Shires total area. [14]

Table 3 – Overview of Land Tenure and Management within the Shire of West Arthur

Land Manager/Agency*	% of Plan Area
Local Government	1.2%
Department of Parks and Wildlife	1.2%
Other – i.e. Department of Lands	3.7%
Private Land Owners (Agriculture)	93.9% [15]
Total	100%

[13] *Source: DFES Mapping System (FESMaps)*
[14] *Website: Australian Bureau of Statistics www.abs.gov.au*
[15] *Website: Australian Bureau of Statistics www.abs.gov.au*

3.1.3   Population and Demographics

An article published on 14 April 2016, in The Australian Business Review, titled *"Growth and Loss: how Australia is being reshaped"* makes the observation that *"great swathes of population loss is spreading across Australia's farmlands punctuated by growth in places like Woodanilling".* This observation is supported by the WA Department of Planning document '*West Australia Tomorrow, Population Report No 7, 2006 to 2026, February 2012'*, that predicts at least a 1% annual growth increase in Woodanilling until 2026. This goes against the trend of declining population in many regional areas.

The most recent Australian Bureau of Statistics (ABS) data is from 2015. This reflects the population of Woodanilling as 422. The median age, of 38.3 years, is in line with the national average of 37.4 years.

The majority of the Shire's population is concentrated around the townsite of Woodanilling although, as the Shire is predominantly agriculturally focused, some of the population is dispersed throughout the Shire's broad acre farms. Many of the families in the Woodanilling Shire are long term generational farming families and there is minimal cultural diversity.

Woodanilling (S) (LGA)
Western Australia

		Period	Woodanilling (S)
People	Persons (no.)	2015	422
	Male (no.)	2015	224
	Female (no.)	2015	198
	Median Age - Persons (years)	2015	38.3

Figure 5 –Shire of Woodanilling Demographics [16]

The 2011 Census data reflects that 206 residents of the Shire were employed with 48.1% engaged directly within the Agricultural Industry, 7.3% engaged in Manufacturing, Construction and Public Administration and Safety respectively.

The age profile for the Shire varies from the State and National averages in the 15 – 29 year age group, which can be explained by people moving away from the area for educational purposes. This age group in particular may raise concerns in line with succession planning within the local Emergency Services Brigades. The 45 – 49 age group is noticeably higher than the State and National averages. The unemployment rate of 2.4% is lower than both the State and National averages of 4.7% and 5.6% respectively.

The 2011 ABS Census reflects that 37.7% of the total population over the age of 15 are engaged in some form of volunteer work, this includes those engaged as Emergency Services Volunteers. This rate is significantly higher than both the State and National averages that sit at 16.9% and 17.8% respectively. This statistic is noteworthy as fire response within the Shire is solely undertaken by volunteer emergency services personnel.

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[16] *Website: Australian Bureau of Statistics www.abs.gov.au*

Age	Woodanilling	%Western Australia	%	Australia	%
People					
0-4 years	34	8.1	151,262	6.8	1,421,050	6.6
5-9 years	38	9.1	142,774	6.4	1,351,921	6.3
10-14 years	39	9.3	146,035	6.5	1,371,054	6.4
15-19 years	11	2.6	148,208	6.6	1,405,798	6.5
20-24 years	14	3.3	159,010	7.1	1,460,673	6.8
25-29 years	20	4.8	167,944	7.5	1,513,236	7.0
30-34 years	31	7.4	156,152	7.0	1,453,775	6.8
35-39 years	18	4.3	161,526	7.2	1,520,138	7.1
40-44 years	29	6.9	166,731	7.4	1,542,879	7.2
45-49 years	45	10.8	159,859	7.1	1,504,142	7.0
50-54 years	34	8.1	150,369	6.7	1,447,404	6.7
55-59 years	35	8.4	133,894	6.0	1,297,244	6.0
60-64 years	16	3.8	120,531	5.4	1,206,116	5.6
65-69 years	22	5.3	86,324	3.9	919,319	4.3
70-74 years	13	3.1	66,219	3.0	708,090	3.3
75-79 years	13	3.1	49,832	2.2	545,263	2.5
80-84 years	3	0.7	38,284	1.7	436,936	2.0
85 years and over	3	0.7	34,217	1.5	402,681	1.9

Figure 6 –Shire of Woodanilling Age Profile, Census 2011 [17]

In the context of the four stages of emergency management – *Prevention, Preparation, Response and Recovery*[18]*,* the Shire of Woodanilling has a strong and proactive approach to bushfire response. As bushfire events can directly impact a farmer's livelihood, colloquially *'if the smoke goes up'* the response will be strong and fast with farmer response units arriving from neighbouring farms and further afield. The downside to this is that anecdotal evidence suggests that records reflecting the number of fires in the region are not accurate as not all fires are reported.

With statistics reflecting that 25% of the Shires population are registered Emergency Services Volunteers, this bodes well for the Shire as this would infer that 25% of the community would have at least some level of awareness, and therefore increased appreciation of bushfire risk and what to do when there is a fire. When it comes to preparatory efforts (i.e. in line with prevention and preparedness), community engagement is a little more challenging; mainly due to time constraints, conflicting priorities and the tyranny of distance. Nevertheless, compliance in line with landowner responsibilities, detailed in the Shire's annual *Bush Fire Notice*, is generally good.

3.1.4 Economic Activities and Industry

The Shire of Woodanilling is predominantly a sheep and grain producing area and these industries continue to be the Shire's economic mainstay. Agricultural activities are dominated by grain, wool and sheep with beef and pigs also increasing in prominence. In recent years, a sheep and goat meat abattoir, agroforestry, a dolomite (lime) fertilizer business and other agricultural based export markets have been added to the mix.[19]

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[17] *Website: Australian Bureau of Statistics www.abs.gov.au*
[18] *Shire of Katanning, Woodanilling and Kent Local Emergency Management Arrangements, Oct 2016*
[19] *Website: Shire of Woodanilling Website www.woodanilling.wa.gov.au*

Farms are generally getting bigger or becoming increasingly diverse in order to remain profitable with most farms expanding to undertake both crop and livestock ventures as well as exploring less traditional activities such as pig and goat farming. Agriculture has been the primary industry within the Shire since the mid 1800's, needless to say; agriculture continues to be vitally important to the local economy.

In the period 2012 – 2015, 68% of the businesses in the Shire of Woodanilling were Agricultural enterprises. 14% of businesses were in the rental, hiring and real estate industries and 4% in the Manufacturing Industry, 4% in Construction, 4% in Financial and Insurance Services and 4% in Accommodation and Food Services. [20]

Woodanilling (S) (LGA)
Western Australia

		Period	Woodanilling (S)
Economy	Total number of businesses (no.)	2015	84
	Building Approvals - Value of Total Building ($m)	2016	1
	Houses - median sale price ($)	2014	175,000
	Median total income (excl. Government pensions and allowance) ($)	2013	44,663

Figure 7 –Shire of Woodanilling Economic Profile, Census 2011 [21]

In 1996/97 the gross value of agricultural production (GVAP) for the Shire was in the vicinity of $19 Million, there were 67 registered farms and the area of land used for farming was 90.5% of the Shires land area. [22] Comparatively, in 2001, the GVAP was $19.9 Million, an increase of 4.7%. In 2006, the GVAP was $25.9 Million, an increase of 30%, with farming enterprises making up 93.9% of the Shires land tenure. [23]

AGRICULTURAL COMMODITIES * - year ended 30 June

Total area

Area of holding	ha	105 791.1
Cereals for grain	ha	23 181.2
Vegetables for human consumption	ha	0.0
Orchard trees (including nuts)	ha	0.0
All fruit (excluding grapes)	ha	0.0
Non-cereal broadacre crops	ha	10 089.8

Total number

Sheep and lambs	no.	278 430
Milk cattle (excluding house cows)	no.	0
Meat cattle	no.	907
Pigs	no.	500

Figure 8 – Shire of Woodanilling Agricultural Commodities, 2006 [24]

The Local Emergency Management Arrangements note that the predominant agricultural activities occur between May – July, which is the seeding season, with harvest occurring between November to January.

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[20] Website: Australian Bureau of Statistics www.abs.gov.au
[21] Website: Australian Bureau of Statistics www.abs.gov.au
[22] Source: Agricultural Statistical Overview 96/97, July 2000, Department of Agriculture WA
[23] Website: Australian Bureau of Statistics www.abs.gov.au
[24] Website: Australian Bureau of Statistics www.abs.gov.au

In a bushfire context, whilst the shire may be seen as lower risk of bushfire due to somewhat lower fuel loads in comparison to traditional high risk areas such as forests, the peak of the harvest season coincides with the high risk summer periods. There is a heightened risk of fires starting during the harvest period with cropping practices potentially resulting in ignition. Stubble burning, post cropping, increases the possibility of accidental escapes and increased ignitions as a result of machinery (i.e. Headers). Modern harvesters have many potential ignition sources which need to be carefully managed. Bearings, hot exhausts, turbochargers, electrical circuits and belts combined with dry straw, dust, chaff, oil and leaking distillate provide the perfect environment for fire. The movement of these vehicles through cured grain paddocks means this is the most likely time for a farm fire. There is also risk of spontaneous ignition within hay stacks, hay sheds and chaff heaps. Crop fires tend to have a very rapid rate of spread.[25] There is also increased concern that farming practices, and therefore fire risk, can change dramatically year to year dependent upon what activities are likely to be the most profitable for the farmer.

The economic impact of fires on agricultural holdings should not be underestimated with potential costs associated with machinery replacement, stock and crop losses including feed and grazing pastures as well as massive curbs on agricultural production in following seasons. Studies from the Black Saturday (Victorian) Fires show that Agricultural impacts were found to be the highest contributor to total losses at 25%.[26] A more recent crop fire, in 2015 in Adelaide, resulted in "*tens of thousands of hectares of crops, livestock and expensive farm machinery*" being destroyed. The economic loss to farmers was estimated to be over $100 million dollars. [27]

The Shire has controls in place pursuant to the *Bush Fires Regulations 1954*, to reduce the risk of crop related bushfires; these controls are reviewed annually by the Bushfire Advisory Committee (BFAC). This risk is further reduced once harvest is completed and the paddocks opened to grazing. However the risk is increased as result of the drive to explore alternative crops as some crops (i.e. canola or rapeseed) burn at a higher temperature and can be harder to extinguish and mop up. The risk is also increased as farmers move to employ innovative farming practices and technology.

The Shire has six bridges located around the region, the majority of which are timber construction and are therefore considered a strategic risk. Some of these bridges are located along significant routes and have the potential to impact movement around the area should they be impacted by fire, with economic impacts also likely.

3.1.5 Cultural Considerations

The Shire has 224 assets deemed to have cultural significance that are listed on the Heritage Council of WA 'InHerit' Register. One of these, the 'Carrolup Bridge' is listed on the State Heritage Register as a 'place of State significance' and is therefore protected under the *Heritage of Western Australia Act 1990*. [28]

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[25] Source: Department of Fire and Emergency Services (2014), Homeowner Bushfire Survival Manual, pp. 37

[26] Source: Estimating the net cost of the 2009 Black Saturday Fires to the affected regions - C. Stephenson, Centre for Risk and Community Safety, RMIT University and Bushfire CRC, J. Handmer, Centre for Risk and Community Safety, and A. Haywood, Department of Sustainability and Environment, Victoria

[27] Website: www.adelaidenow.com.au Farmers in Mid-North start counting loss from Pinery fire devastation, A, Hough, The Advertiser, November 27, 2015

[28] Website: http://inherit.stateheritage.wa.gov.au/Public/Search

3.2 Description of the Environment and Bushfire Context

3.2.1 Topography and Landscape Features

Topography impacts this BRM Plan as it contributes to risk by influencing fire rate of spread (ROS), intensity and because of the potential for the terrain to impede access for suppression forces. The risk associated with topography is considered in the context of access, as a variable in predicting fire behaviour and in the calculation of the bushfire management zone for each community/asset.

The Shire is located within the Yilgarn Craton. The Shire is a combination of ancient gneiss (course grained rock), porphyritic granitoid (glassy rock) and even grained granitoid (crystalline rock) with a cover of alluvium in the major valleys. Generally the basement rocks are mantled by a lateritised, deeply weathered profile. To the east of the Shire, the sandplain soils of the ancient plateau are extensively preserved. To the west, greater stripping of the landscape has produced shallow duplex soils formed on the lateritic profile and results in the surface drainage system being better defined than that to the east. [29]

On the ground, the landscape reflects as 'gently undulating' with vast expanses of seemingly level terrain. This tends to indicate that response would not necessarily be impeded by the nature of the topography.

The map below reflects the geological characteristics of the area:
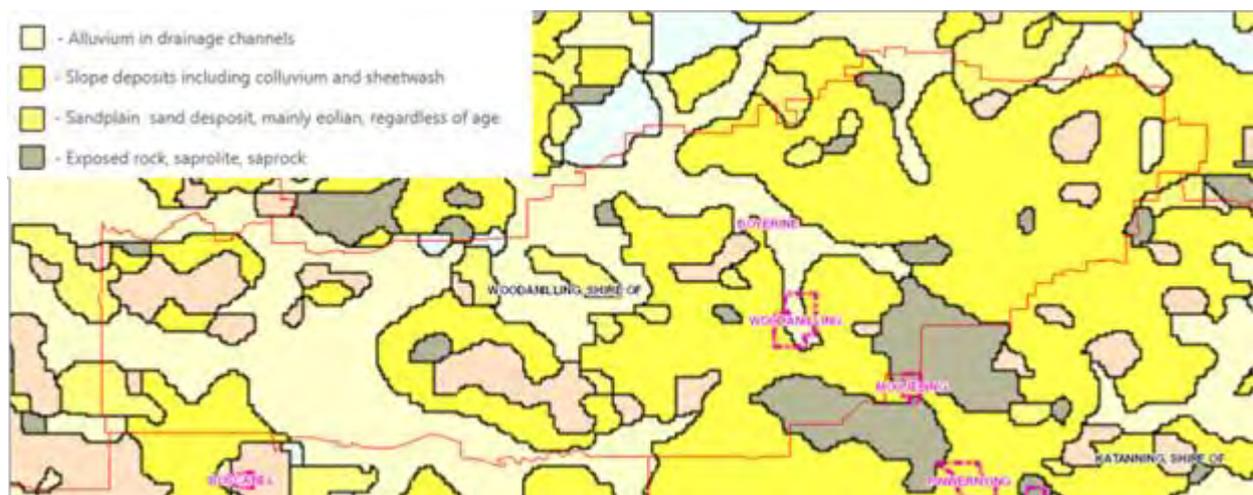
Figure 9 – Shire of Woodanilling Geology [30]

The townsite is situated in a shallow broad valley with the Boyerine Creek running through town. The topography is generally undulating with gradients of less than 10%. A small ridge and exposed granite outcrops are located on the northern edge of the townsite where the Whispering Winds Estate is located. [31] A key consideration associated with these granite

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[29] *Native Vegetation Handbook for the Shire of Woodanilling, S Grein, 1994*
[30] *Website: GeoVIEW.WA www.geoview.dmp.wa.gov.au*
[31] *Woodanilling Townsite Fire Management Plan, February 2013, TME Town Planning Management Engineering Pty Ltd*

outcrops is the potential for this terrain to draw lightning strikes with weather factors (such as lightening) having been identified as the most significant contributor to fire occurrences in the Shire.

All of the Shire is located in the Blackwood River Catchment and is drained by the upper reaches of the Carolup and Carlecatup Rivers. Chains of wetlands and lakes occur naturally across the landscape.

Bushfire Prone Mapping

The intent of the WA Governments *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.[32] The *State Planning Policy 3.7 – Planning for Bushfire Prone Areas* relates to the protection of <u>future</u> assets and, whilst this BRM Plan focuses on improving protection of <u>existing</u> assets, the *Map of Bush Fire Prone Areas* has been included as it provides a useful framework for analysing fire risk and a means of validating the risk assessments made, and ratings applied, within this BRM Plan.[33]

The Bushfire Prone areas are shown in 'pink' on the map below. The map identifies areas that are designated as subject to, or likely to be subject to, bushfire attack. Where a bush fire prone area cuts across a portion of a parcel of land, the entire parcel is considered to be Bush Fire Prone. Bush Fire Prone areas are subject to new planning and construction requirements. These are addressed through the Shire of Woodanilling Town Planning Scheme.
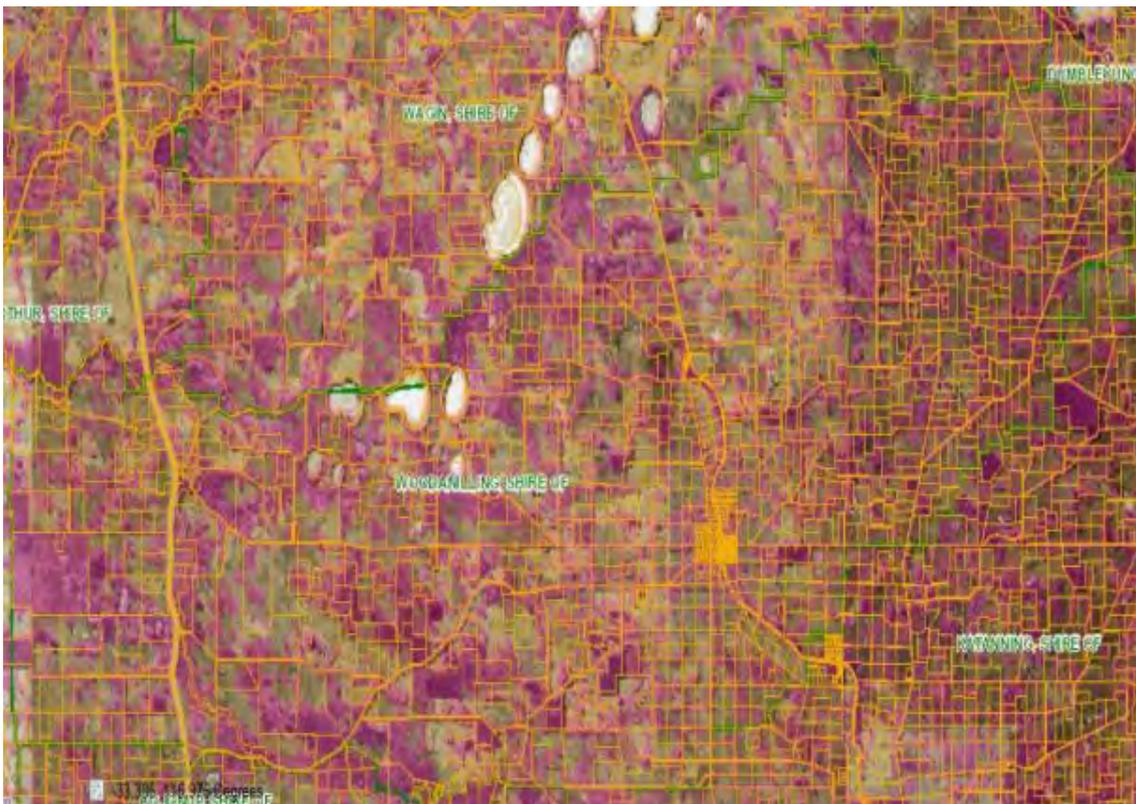
Figure 10 – Map of Bush Fire Prone Areas within Woodanilling Shire [34]

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[32] *WA State Planning Policy 3.7 – Planning in Bushfire Prone Area, Dec 2015*
[33] *Guidelines for Planning in Bushfire Prone Areas, WA Dept of Planning, Version 1.1, February 2017*
[34] *Source: Map of Bush Fire Prone Areas 2016 – Dept of Fire and Emergency Services*

3.2.2   Climate and Bushfire Season

The Shire of Woodanilling is described as having a Mediterranean type climate, experiencing cool winters and long, hot summers. Winter months are characterised by cold fronts that generate in the Southern Ocean. Winds tend to come from the west and north-west. Rainfall in the Wheatbelt generally decreases from west to east. [35]

The following table reflects the annual climatic conditions for the Shire of Woodanilling over the period 2016 – 2017:

Table 3: Annual Climatic Conditions 2016 – 2017 – Woodanilling Weather Station [36]

Record Date ↓=	Air Temp° min	Air Temp° max	Air Temp° avg	Rain mm	Rainy Days	RH% min	RH% max	RH% avg	Wind km/h max	Wind km/h avg	Min Battery V	Days of Data
2017	0.2	41.2	16.4	202.2	28	8.5	96.6	64.5	132.44 N	9.9	12.43	143.4
2016	-2.5	41.1	12.6	359.4	128	6.6	99.6	76.8	67.25 W	7.6	12.5	256.6

The following table provides the monthly weather conditions during 2016/2017:

Table 4: Monthly Climatic Conditions (2016/2017) – Woodanilling Weather Station [37]

Record Date ↓=	Air Temp° min	Air Temp° max	Air Temp° avg	Rain mm	Rainy Days	RH% min	RH% max	RH% avg	Wind km/h max	Wind km/h avg	Days of Data
MAY-2017	1.7	28.0	14.1	37.8	9	21.6	98.6	72.8	46.87 W	7.7	23.6
APR-2017	0.2	29.5	16.5	3.0	3	18.4	98.2	68.2	37.26 S	8.6	29.6
MAR-2017	3.1	35.9	18.3	31.4	9	24.0	97.8	68.9	52.49 WNW	10.3	30.9
FEB-2017	7.9	36.2	20.2	129.8	6	16.3	96.6	65.6	132.44 N	11.4	28.0
JAN-2017	6.8	41.2	22.2	0.0	0	8.5	94.7	49.1	58.18 W	10.9	31.0
DEC-2016	2.7	41.1	19.2	50.0	5	8.1	97.1	56.7	47.05 SW	10.8	31.0
NOV-2016	1.3	39.7	18.2	7.2	3	6.6	98.9	57.5	42.8 N	8.1	29.9
OCT-2016	-1.6	29.4	12.4	28.2	14	16.1	99.4	74.2	52.42 WSW	7.1	31.0
SEP-2016	-1.8	21.6	9.1	32.2	18	38.4	99.6	83.7	52.74 W	6.5	30.0
AUG-2016	-1.3	18.5	9.0	86.8	22	43.4	99.6	86.5	42.66 WNW	6.5	31.0
JUL-2016	-2.5	19.4	9.0	46.8	20	48.5	99.6	85.4	53.21 SW	7.5	30.9
JUN-2016	1.0	20.5	10.6	41.8	21	49.2	99.6	86.0	43.6 S	7.1	29.9
MAY-2016	2.5	24.8	12.5	55.6	21	27.7	99.5	83.1	67.25 W	7.0	30.8
APR-2016	5.2	24.8	15.1	10.8	4	43.3	99.2	79.3	46.98 SW	8.1	12.0

Please note that these statistics are taken from the Woodanilling Weather Station that has only been active since April 2016.

Bushfire risk is determined by the combination of a number of factors including climatic conditions such as air temperature, relative humidity, wind speed and rainfall. Bushfire threat is typically associated with very hot (above average temperatures), dry (less than 20% humidity) and windy (above 12 – 15 Km per hour) conditions and high fuel loads. Climatic data provides an indication of fuel availability for bushfires throughout the year, but in particular during the fire season, and is used to calculate the Fire Danger Index (FDI), and thereby the associated likely fire behaviour. This data is also used to determine the Southern WA fire season.

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[35] *Woodanilling Townsite Fire Management Plan, February 2013, TME Town Planning Management Engineering Pty Ltd*
[36] *Website: Department of Agriculture and Food - www.agric.wa.gov.au/weather-stations*
[37] *Website: Department of Agriculture and Food - www.agric.wa.gov.au/weather-stations*

The Southern WA fire season is typically from November through to April with the Shire of Woodanilling determining their 'Restricted Burning' times as follows:

- 19th September to 31st October: Restricted Burning (permits required)
- 1st November to 14th February: Prohibited Burning
- 15th February to 15th April: Restricted Burning (permits required)

The *Bush Fires Act 1954*, sections 17 and 18, provides for the 'declaration and gazettal' of Prohibited and Restricted Burning Times as well as the ability to adjust burning times to suit changing weather conditions.

3.2.3 Vegetation

The total area of native vegetation in the Shire of Woodanilling has been significantly reduced through rapid broad scale clearing for agricultural purposes. However, much of the native vegetation that remains in public reserves and on private land is similar in composition to that which existed previously, although the extent of the cover has been significantly reduced. [38] Only around 16% of remnant vegetation remains, of which only 3% is within conservation estates or State Forest. [39]

The vegetation in large areas of the town and especially along the creek lines is characterised by Jam Wattles (*Acacia acuminata*) and Sheoaks (*Casuarina obesa*). The Sheoaks usually occur with closely packed narrow trunks with a dense understory which often has weed infestation. On the higher land there are areas of White gum (*Eucalyptus wandoo*) and Salmon gums (*Eucalyptus salmonophloia*). [40]

Woodanilling is within the boundaries of the Blackwood River Catchment. Within the Shire the catchment gives rise to a number of lakes and many seasonal water courses. Prior to the 1940s these lakes were relatively fresh and supported a diverse variety of vegetation and animal life but with extensive clearing of native vegetation to allow for agricultural development, these lakes are now saline. With the removal of naturally occurring vegetation, the hydrology of the region has changed dramatically. Ground water is rising through the subsoil to the surface, transporting salts contained within the soil profile with it. Increasing salinity within soils and water bodies is now a major problem throughout the Wheatbelt. Woodanilling is one of the most salt affected areas in Western Australia's south-west with more than 15% of land in the area lost to salinity with a further 15% of remnant vegetation and agricultural land at high risk of salinisation between now and 2026. [41]

The South-west of Western Australia has been divided into districts, called Natural Resource Zones (NRZ), [42] on the basis of their natural resources i.e. vegetation type, drainage/catchment system and rainfall. The Shire of Woodanilling contains a mosaic of vegetation types, from three zones, which are discussed below. These include the Beaufort Vegetation System, the Wagin Vegetation System and the Dumbleyung Vegetation System.

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[38] *Native Vegetation Handbook for the Shire of Woodanilling, S Grein, 1994*
[39] *Source: Landscapes of the Upper Blackwood, South West NRM Strategy, www.swnrmstratety.org.au*
[40] *Woodanilling Townsite Fire Management Plan, February 2013, TME Town Planning Management Engineering Pty Ltd*
[41] *Source: Wagin Woodanilling Landcare, NRM WA, Project 14045 submission*
[42] *Native Vegetation Handbook for the Shire of Woodanilling, S Grein, 1994*
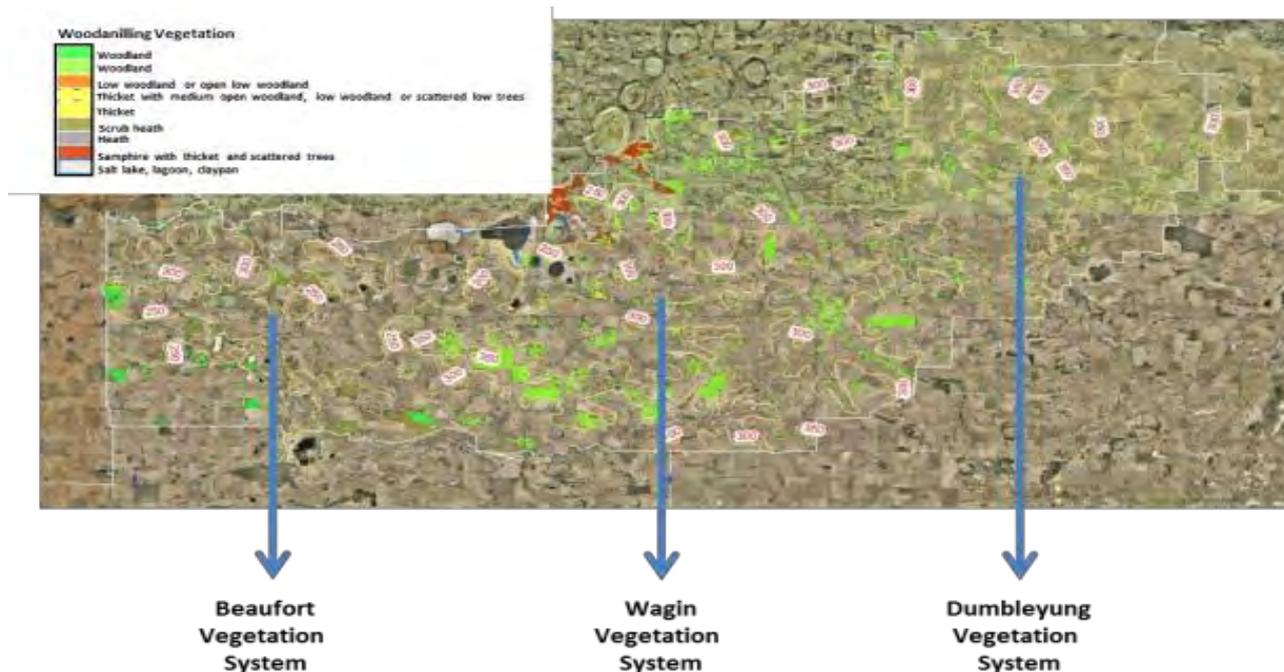
Figure 11 – Woodanilling Vegetation Types and Systems [43]

The **Beaufort Vegetation System** covers a small area in the western edge of the Shire. Sandy deposits occur along sections of the Carrolup River and carry a variety of plant communities. The principle elements of this vegetation system landscape are woodland of wandoo and York gum and wandoo on undulating country and woodland of York gum and flat-topped yate (Eycalyptus occidentialis) on sandy patches. Often there is a mosaic of different combinations of Eucalyuptus spp. (including Marri) woodland on a variety of landscapes. [44]

The **Wagin Vegetation System** covers the entire Shire in a belt from Beaufort River Flats to Woodanilling. The landscape is undulating and well dissected with only small remnants of laterite cappings on ridges, some granite domes and broad valleys containing salt marshes. The dominant vegetation is comprised of a mosaic of brown mallet (Eucaluptus astringens) and wandoo (Eucalytptus wandoo) woodland on laterite mesas and low woodland of York gum (Eucalyptus loxophleba) and wandoo on the slopes of undulating country. Brown mallet was joined by red morrel (Eucalyptus longicornis) near the townsite of Woodanilling. Heaths occur on scattered patches of laterite, occasionally associated with wandoo, but more frequently with the Drummond's gum (Eucalyuptus drummondii). Dryandra spp. are generally the dominant species in heath vegetation. [45]

The **Dumbleyung Vegetation System** is the most prominent System in the Blackwood Catchment and covers the eastern third of the Shire of Woodanilling. In the Shire, the landscape is gently undulating. Woodlands of York gum (Eucalyptus loxophleba) and

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[43] Map Source: Conservation Science Western Australia Journal, Department of Parks and Wildlife, Volume Nine, Number One, October 2013, the vegetation of Western Australia at the 1:3,000,000 scale. Explanatory memoir. Second edition. JS Beard, GR Beeston, JM Harvey, AJM Hopkins and DP Shephard.)

[44] Native Vegetation Handbook for the Shire of Woodanilling, S Grein, 1994

[45] Native Vegetation Handbook for the Shire of Woodanilling, S Grein, 1994

wandoo (Eucalyptus wandoo) occupy the undulating country with Drynadra spp. scrub on the laterite residual. Brown (Eucalyptus astringens) mallet woodland and low woodland occur on weathered laterite residuals and slopes. Woodlands formed are ether mallet or York gum, salmon gum, morrell and wandoo. [46]

In the context of bushfire risk, of particular note in relation to the Woodanilling townsite, are the abundant sheoaks. The volume of sheoaks, and the density of scrub, increases the potential for a fire to impact the Woodanilling townsite with the sheoaks potentially acting as a 'wick' to draw the fire into the town settlement.

Environmental Considerations – Flora and Fauna

Flora and Fauna represent particular significance for the Shire as they are not only recognised environmental assets in their own right, but also impact the treatment options available for identified risks in relation to other assets.

A recent study titled '*A Resilient Blackwood Basin in a Changing Climate Concept Plan, February 2013*' states the following in relation to threats to the Blackwood Basin*: "Bushfire and its positive effects on native vegetation are well known. Of concern however, is the lack of knowledge and an appropriate Fire Management Plan specific to the catchments within the region that are aimed at preserving life, conserving native vegetation and reducing the influx of invasive species. Conflicting information exists which requires a major investment in time and resources to ensure a best management approach is taken. Little is understood of post-fire management which has seen a rapid invasion by weedy grasses into once pristine bushland, further increasing the risk of fire in the future."* [47]

All treatments need to be assessed in line with the requirements of the identified flora and fauna. As an example, one of the Declared Rare Flora located within the Shire - *ADENANTHOS PUNGENS SUBSP EFFUSA Nelson* – indicates fire management as follows:

RESPONSE TO FIRE

Adult plants killed, good seedling regeneration after fires Needs burning on a ca 20 year cycle (E. Nelson/S. Patrick, pers. comm.).

Figure 12 – Fire Management of Declared Rare Flora – *Adenanthos Pudgens Subsp Effusa Nelson* [48]

Appropriate authorities and subject matter experts must be consulted prior to any risk treatment works commencing.

A further consideration in relation to both bushfire mitigation and response strategies is the potential spread of *Phytopthora Cinnamomi* (Dieback). Dieback has infected large areas of Jarrah forest. It is easily spread through soil movement from vehicles, animals, water and feet. Other fungal-borne diseases can also be spread through these pathways. This risk must be considered in the context of planned prevention and response strategies and the risk minimised wherever possible. The Shire has also identified a number of noxious weeds including, Wild Oats, Barley Grass, Stinkwort, Cape Tulip, Soursob, Four O'Clock, Wireweed and Bridal Creeper. Any treatments need to minimise the potential spread of disease or unwanted plants. [49]

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[46] *Native Vegetation Handbook for the Shire of Woodanilling, S Grein, 1994*
[47] *A Resilient Blackwood Basin in a Changing Climate Concept Plan, February 2013*
[48] *Declared Rare Flora in the Katanning District, Department of Conservation and Land Management, 2000*
[49] *Website: Shire of Woodanilling www.woodanilling.wa.gov.au*

Road Reserves

"Roads and railways criss-cross Western Australia, forming an interlinked network. This network, which ranges from freeways to quiet country roads and from busy passenger rail lines to long haulage routes, plays an essential role in connecting people, places and produce. The road and rail reserves also play a key role in the conservation of the State's unique flora and fauna.

In many parts of the south west of Western Australia, such as the Shire of Woodanilling, the majority of vegetation has been cleared for agriculture. In these landscapes, the native vegetation remaining on uncleared portions of road and rail reserves provide natural habitat for flora and fauna, serve as wildlife corridors that enable fauna to move between larger patches of remnant vegetation, and provide essential habitat for Declared Rare Flora.

The majority of road and rail reserves, however, are only narrow strips of vegetation which makes them particularly vulnerable to degradation. Thus, actions in these reserves are important, as this will determine the longevity and function of the vegetation. These actions include how we use and manage fire.

In Australia, some ecosystems have evolved to survive fire and some plants may even require fires to regenerate. However, fire can have both strong negative and positive impacts on natural populations of both flora and fauna, and thus careful management is required." [50]

Flora

Threatened flora found within the Shire of Woodanilling includes:

Conostylis setigera subsp. dasys Hopper

Caladenia luteola Hopper & A.P.Br.

Jacksonia velveta Chappill

Verticordia fimbrilepis Turcz. subsp. Fimbrilepis [51]

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[50] *Website: https://www.dpaw.wa.gov.au/images/documents/conservation-management/off-road-conservation/ rcc/rcc fire_ guidelines.pdf*
[51] *Website: Flora Database https://florabase.dpaw.wa.gov.au*

Adenanthos pungens subsp.
effusus E.C.Nelson

Figure 13 – Declared Rare Flora, Florabase [52]

Woodanilling is also home to a further six (6) species designated **Priority 1 Flora**, all of which are native to Western Australia:

- *Schoenus sp. Beaufort*
- *Leucopogon ozothamnoides*
- *Hemigenia rigida Benth.*
- *Thomasia sp. Arthur River*
- *Calandrinia sp. Piawaning*
- *Banksia lepidorhiza*

A Flora Road is one which has special conservation value because of the vegetation contained within the road reserve and would therefore reflect environmental significance for any Shire. Flora Roads also provide important habitat for fauna. There are currently three (3) registered Flora Roads in the Shire of Woodanilling, these are:

1. **Link Road**.
2. **River Road**
3. **Robinson Road West** [53]

Fire management in road and rail reserves present a challenge in balancing the risk from fire to adjoining life and property with the biodiversity values of the native vegetation. [54] As road reserves are considered a potential ignition source they are a focus of mitigation treatments and care needs to be taken during treatment planning.

Where possible, areas of environmental significance relating to priority flora have been reflected on the BRMS. Due to the sensitive nature of information around rare flora, some discretion has been applied to the amount of information recorded so further advice will need to be sought from subject matter experts (DPAW, Landcare, Friends of the Reserve etc.) to confirm the location of environmental assets and the potential impact of both mitigation and response strategies.

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[52] *Website: Flora Database https://florabase.dpaw.wa.gov.au*
[53] *Website: https://www.dpaw.wa.gov.au/management/off-reserve-conservation/93-roadside-conservation*
[54] *Biodiversity Conservation and Fire in Road and Rail Reserves: Management Guidelines, March 2011*

Fauna

The *Wildlife Conservation Act 1950* provides for native fauna (and flora) to be protected where they are under an identifiable threat of extinction and, as such, are considered to be "threatened". Based upon data from DPAW, fourteen (14) species of threatened and priority fauna have been recorded or sighted throughout the Shire of Woodanilling, these are listed below.[55]

- ➢ Birds
  - Carnaby's Cockatoo - *Calyptorhynchus latirostris*
  - Hooded Plover - *Charadrius rubricollis*
  - Peregrine Falcon - *Falco peregrinus*
  - Australian Peregrine Falcon - *Falco peregrinus subsp. macropus*
  - Western Rosella - *Platycercus icterotis subsp. Xanthogenys*

- ➢ Mammals
  - Woylie, Brush-tailed Bettong - *Bettongia penicillata subsp. ogilbyi*
  - Western Quoll - *Dasyurus geoffroii (Chuditch)*
  - Southern Brown Bandicoot - *Isoodon obesulus subsp. fusciventer*
  - Tammar - *Macropus eugenii subsp. derbianus*
  - Western Brush Wallaby - *Macropus irma*
  - Numbat - *Myrmecobius fasciatus*
  - Red-tailed Phascogale - *Phascogale calura*
  - Southern Brush-tailed Phascogale *Phascogale tapoatafa subsp. Tapoatafa*

- ➢ Reptiles
  - Carpet Python - *Morelia spilota subsp. Imbricate* [56]

Figure 14 – Red Tailed Phascogale [57]

The Red Tailed Phascogale is an endangered marsupial that is now largely confined to the Southern Wheatbelt of Western Australia with a healthier population found in the Woodanilling Shire. It is possum-like in its habits, feeding and sheltering in trees. It favours mature wandoo and rock oak habitat, but may be found in other types of woodland such as the abundant sheoak found in the area. Most of its remaining habitat has been severely fragmented by agriculture.

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[55] *Website: https://naturemap.dpaw.wa.gov.au/*
[56] *Source: Survey of Roadside Conservation Values in the Shire of Woodanilling*
[57] *Website: http://www.wagin.wa.gov.au/red-tailed-phascogale.aspx*

Mating occurs between May to July, with babies born around August meaning that babies are yet to be weaned during the periods most suited to the majority of treatments. The breeding cycle of the Phascogale may restrict the period in which prescribed burns can be undertaken due to the need to ensure nests are not disturbed during the breeding season. Recent studies have also shown that frequent burning can remove mature-age vegetation which the species occupies. [58] When determining treatment options in areas likely to be inhabited by the Phascogale, consideration must be given to ensure minimal disruption.

3.2.4 Bushfire Frequency and Causes of Ignition

DFES records show that from 01/01/2007 – 31/12/2016, a total of 36 landscape (bush) fire incidents were reported in the Shire of Woodanilling, approximately 4 per year. 50% of reported fires covered an area greater than 1 hectare. The cause of ignition was predominantly as a result of weather conditions reflecting 39% of the reported fires. The ignition factor was unable to be determined in 14% of the reported fires. 14% of reported fires were attributed to vehicles or electrical faults.

Note: As detailed in **Section 3.1.3**, anecdotal evidence would suggest that not all fires in the region are reported and therefore will not be reflected in these statistics.

Table 5: Reported Landscape Fires in the Shire of Woodanilling 2007 – 2016 [59]

Number of Reported Landscape Fires	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total
Fire - Landscape	2	2	4	2	1	4	3	7	9	2	36

Table 6: Size of Reported Landscape Fires in the Shire of Woodanilling 2007 – 2016 [60]

Number of Landscape Fires breakdown by Size	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total
Greater than 1 Hectare	2	1	4	1	1	3	1	0	4	1	18
Less than or equal to 1 Hectare	0	1	0	1	0	1	2	7	5	1	18
Total	2	2	4	2	1	4	3	7	9	2	36

Vehicle Movement Bans

Harvest and Vehicle Movement Bans may be issued as a result of the risk posed by agricultural practices during severe weather events.

Harvest and Vehicle Movement Bans are issued by the Chief Bushfire Control Officer (CBFCO), as the Local Government representative in consultation with relevant stakeholders. A Harvest and Vehicle Movement Ban is a ban that individual local governments are responsible for issuing under the *Bush Fires Regulations 1954 Section 38A, and/or Section 24C*. Local government can impose the ban when their CBFCO is of the opinion that the use of engines, vehicles, plant or machinery during the prohibited burning times or the restricted burning times (or both) is likely to cause a fire or contribute to the spread of a bushfire.

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[58] *Website: www.dpaw.wa.gov.au/images/documents/plants-animals/animals/animal_profiles/red-tailed-phascogale*
[59] *Source: Department of Fire and Emergency Services*
[60] *Source: Department of Fire and Emergency Services*

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.

Whilst detailed records have not been kept for Vehicle Movement Bans within the Shire, it is believed that on average, five (5) Harvest and Vehicle Movement Bans are issued annually. [61]

Total Fire Bans

A Total Fire Ban (TFB) is declared because of extreme weather conditions or when widespread fires are seriously stretching firefighting resources. A TFB is declared by DFES following consultation with local governments. TFB's apply to whole of local government boundaries and will often apply to more than one LG area.

A total of fourteen (14) Total Fire Bans, impacting the Shire of Woodanilling, were declared over the period 2011 – 2016 as follows:

Table 7: Total Fire Bans Declared in the Shire of Woodanilling between 2011-2016 [62]

Shire	Declarations 2011	Declarations 2012	Declarations 2013	Declarations 2014	Declarations 2015	Declarations 2016
Woodanilling	0	1	1	1	10	1

Response Capacity

The community of Woodanilling has a strong *'Emergency Services'* volunteering culture however, consistent with State trends, this number is on the decline. Currently, as at April 2017, there were 104 registered volunteers in the Shire of Woodanilling. 17.5% of current volunteers are female. 44% (both males and females) of volunteers are aged between 46 – 60yrs with 22.5% aged between 16 – 45 yrs. The age demographics of the Emergency Service Volunteers highlights the need for a considered approach to succession planning.

The figures above however do not reflect the many farmer response personnel, sometimes referred to as 'spontaneous volunteers', who are not officially registered as Emergency Services (ES) Volunteers, but spring into action upon the first sight or smell of smoke. In line with the Shire's demographics, it is expected that the majority of registered ES Volunteers are farmers.

Together with the additional farmer response personnel this has inherent benefits including:

- Access to mobile fire units
- Bushfire fighting skills and knowledge
- Familiarity with the terrain, tracks, landmarks, landowners etc.

The high reliance upon farmers for response can become an issue at the completion of harvest. The local agricultural industry peaks in late October through to late December with the curing of crops and harvesting. Following this many farmers take their annual leave which often involves leaving the Shire with their families. The consequence of this is the potential for fewer resources

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being available for observing and reporting bushfires and possibly reduced response and suppression capability during the critical summer months.

Table 8: Emergency Services Volunteer Brigades within the Shire of Woodanilling as at May 2017 [63]

	Local Government Volunteer Summary Count for **WOODANILLING (S)** Printed: 19/05/2017	
Brigade Nº	**Brigade Name**	**Volunteers**
6039	BEAUFORT RIVER BFB	5
6081	BOYERINE/WESTWOOD BFB	14
6130	CARTMETICUP BFB	46
6254	GLENCOE BFB	6
6337	KENMARE BFB	11
6682	WOODANILLING CENTRAL BFB	22
TOTALS		**104**

Of the six Brigades in the Shire, all but the Woodanilling Central Brigade are classified as 'Farmer Response Brigades' meaning that they do not have their own issued fire appliance, rather relying upon privately owned 'farmer response' firefighting units. Woodanilling Central Brigade has been assigned a Rural Tanker.

Table 9: Emergency Services & Volunteer Appliances within the Shire of Woodanilling as at May 2017 [64]

Resource Name	Resource Type
Shire of Woodanilling FCO Vehicle	Car
Shire of Woodanilling Grader	Grader
Shire of Woodanilling Grader	Grader
Shire of Woodanilling Water Carrier	Water Carrier – 1000 Ltr
Woodanilling Central BFB	4.4 Rural

In addition to the registered firefighting appliances detailed above, most farmers have private firefighting units including decommissioned DFES appliances. Farmer response units within the Shire are seen as a critical resource as they are the mainstay of the Shire's response capacity.

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[63] Source: Department of Fire and Emergency Services
[64] Source: Department of Fire and Emergency Services

4.   Asset Identification and Risk Assessment

The following sections of the BRM Plan detail the application of the risk assessment model in the context of bushfire risk management.

4.1   Planning Areas

The Shire of Woodanilling has been divided into three planning areas: Woodanilling West, Woodanilling Central and Woodanilling East. Attached at **Appendix 5** is a map showing the boundaries of the planning areas identified within the Shire of Woodanilling.

4.1.1   Priorities for Asset Identification and Assessment

The *Planning Area Assessment Tool* was applied to each planning area to determine the priorities for asset identification and assessment. Using the tool, each planning area was rated against six risk factors, with the highest scoring planning area being the first priority for asset identification and risk assessment.

Assets were identified and assessed in each planning area, based on the results of the planning area assessment outlined in the following table.

Table 10 – Planning Area Assessment Summary

Risk Factor	Woodanilling West	Woodanilling Central	Woodanilling East
1. % of LG Population in Planning Area	20	320	20
2. Fuel Structures	40	40	40
3. Assets	20	60	20
4. Rural Urban Interface	20	60	20
5. Suppression response times	40	20	40
6. Suppression strategies	60	40	60
TOTAL	200	540	200
PRIORITY	2/3	1	2/3

4.2   Asset Identification

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

- Human Settlement
- Economic
- Cultural
- Environmental

A detailed description of each category, including subcategories can be found at *Appendix 6.*

4.3   Assessment of Bushfire Risk

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

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

Table 11 – Asset Category Proportions

Asset category	Proportion of identified assets
Human Settlement	89.4%
Economic	6.7%
Environmental	0.6%
Cultural	3.3%

4.3.1   Likelihood Assessment

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

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

Table 12 – 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; and/or - Strong likelihood the event will recur; and/or - Great opportunity, reason or means to occur; - May occur more than once in 5 years.
Likely (Probable)	- Regular recorded incidents and strong anecdotal evidence; and /or - Considerable opportunity, reason or means to occur; - May occur at least once in 5 years.

Likelihood Rating	Description
Possible (feasible but < probable)	• Should occur at some stage; and/or • Few, infrequent, random recorded incidents or little anecdotal evidence; and/or • Some opportunity, reason or means to occur.
Unlikely (Improbable, not likely)	• Would only occur under exceptional circumstances.

4.3.2 Consequence Assessment

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

There are four possible consequence ratings:

- minor
- moderate,
- major
- catastrophic

An explanation of each of these ratings can be found at *Appendix 7.*

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

- Human Settlement Assets - Consequence Rating

  The outcome or impact of a bushfire event on the asset, or a group of assets, measured by the threat posed by the hazard vegetation and the vulnerability of the asset.

- Economic Assets - Consequence Rating

  The outcome or impact of a bushfire event on the asset, or a group of assets, measured by the level of economic impact and the recovery costs.

- Environmental Assets - Consequence Rating

  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.

- Cultural Assets - Consequence Rating

  The outcome or impact of a bushfire event on the asset, or a group of assets, measured by the threat posed by the hazard vegetation and the vulnerability of the asset.

Determining Bushfire Threat

The level of bushfire threat for human settlement and cultural assets is determined using a quantified bushfire threat assessment model. [65]   The model is based on the methodology set out in *AS3959-2009 Construction of buildings in bushfire prone areas* that is used to undertake a Bushfire Attack Level (BAL) assessment. The threat assessment is used to measure the severity of an asset's potential exposure to ember attack, radiant heat and direct flame contact.

Criteria applied when undertaking the bushfire threat assessment is as follows:

- **Assessment in the context of Fire Danger Index (FDI) 80**. - The fire danger index reflects the chance of a fire starting, its rate of spread, its intensity and the difficulty of its suppression, according to various combinations of air temperature, relative humidity, wind speed and both the long and short term drought effects. The asset assessment is to be in the context of possible fire runs in weather conditions of FDI 80 reflecting an 'Extreme' fire danger rating. The higher the rating, the less chance of controlling a fire until weather conditions improve. From the FDI predictions can be made regarding a fire's rate of spread, intensity and the potential for various suppression tactics to succeed. The FDI is the basis for determining the Fire Danger Rating, shown below, which is a scale developed to assist communities to better understand information about fire danger. [66]

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Figure 15 – Fire Danger Ratings[67]

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[65] *Source: WA Guidelines for Preparing a Bushfire Risk Management Plan (2015)*
[66] *Source: Department of Fire and Emergency Services*
[67] *Source: Department of Fire and Emergency Services*

- **Classification of vegetation -** This is viewed out to 100 metres from the asset/s, further (150m) if classified fuels are continuous, view vegetation as if it is in its worst state or condition.
- **Fuel loads and vegetation ratings** - These are taken into account using AS3959-2009 methodology.
- **Separation Distance** - from asset/s to classified vegetation, which includes the Asset Protection Zone (20 metres) and the Hazard Separation Zone (80 metres).
- **Effective slope** - under the classified vegetation.
- **Fire spread mechanisms**
  - Ember attack – noting that over 90% of houses destroyed or damaged by bushfire are ignited by ember attack.
  - Radiant heat.
  - Direct flame contact.

4.3.3 Assessment of Environmental Assets

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

4.3.4 Local Government Asset Risk Summary

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

At the time of endorsement, **183** Shire assets have been identified as being 'at risk from bushfire'.

Table 13 – Local Government Asset Risk Summary

Risk Rating / Asset Category	Low	Medium	High	Very High	Extreme
Human Settlement	-	5.6%	67.7%	15%	1.1%
Economic	-	3.9%	2.8%	-	-
Environmental	-	-	-	0.6%	-
Cultural	-	2.2%	1.1%	-	-

5. Risk Evaluation

5.1 Evaluating Bushfire risk

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

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

5.2 Treatment Priorities

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

Table 14 – Treatment Priorities

Consequence / Likelihood	Minor	Moderate	Major	Catastrophic
Almost certain	3D (High)	2C (Very High)	1C (Extreme)	1A (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)

5.3 Risk Acceptability

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

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

Table 15 – Criteria for Acceptance of Risk and Course of Action

Risk Rating	Criteria for Acceptance of Risk	Course of Action
Extreme (Priorities 1A, 1B, 1C)	Only acceptable with excellent controls. Urgent treatment action is required. Treatment plans to be explored and implemented.	Routine controls are not enough to adequately manage the risk. Immediate attention required as a priority. **Specific action is required in the first year of BRM Plan with an annual review prior to each fire season.**
Very High (Priorities 2A, 2B, 2C)	Only acceptable with excellent controls. Treatment action is required.	Routine controls are not enough to adequately manage the risk. Specific action will be required during the period covered by the BRM Plan. **Specific action is required in the first year of BRM Plan with a review every 2 years.**
High (Priorities 3A, 3B, 3C, 3D)	Only acceptable with adequate controls. Treatment action may be required.	Specific action may be required. Risk may be managed with routine controls and/or specific procedures and is subject to bi-annual monitoring.
Medium (Priorities 4A, 4B, 4C)	Acceptable with adequate controls. Treatment action is not required, but risk must be monitored regularly.	Specific action may not be required. Risk may be managed with routine controls and/or procedures and monitored as required throughout the life of the BRM Plan.
Low (Priorities 5A, 5B, 5C)	Acceptable with adequate controls. Treatment action is not required, but risk must be monitored.	Need for specific action is unlikely. Risk will be managed with routine controls and monitored as required.

6.   Risk Treatment

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

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

6.1   Local Government-Wide Controls

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

- *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, Total Fire Bans and Vehicle Movement Bans for the local government;

- Public education campaigns and the use of DPAW and DFES state-wide programs, tailored to suit local needs; including programs such as the State-wide arson prevention programs developed in conjunction with WA Police and DFES (*Bushfire Action Month, Are You Ready Campaign* etc);

- 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;

- Monitoring performance against the BRM Plan and reporting annually to the local government council and OBRM;

- Other practices and programs undertaken by local government or state agencies 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:

    o   Department of Parks and Wildlife Master Burn Program

    o   Water Corporation Bushfire Risk Management Plan

    o   Western Power annual asset inspection and vegetation management program

    o   Code of Practice for Timber Plantations in Western Australia

    o   Department of Education Memorandum of Understanding

    o   Main Roads WA Bridge Assessment and Maintenance Works Plan

- Shire works program; and

- Other mitigation activities through grants (i.e. UCL / UMR).

A *Local Government-Wide Controls and Multi-Agency Work Plan* is attached at *Appendix 8.* The plan details work to be undertaken as a part of normal business, to improve current controls or to implement new controls to better manage bushfire risk across the local government.

6.2   Asset-Specific Treatment Strategies

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

- **Fuel management** - Treatment reduces or modifies the bushfire fuel through manual, chemical and prescribed burning methods and grazing;

- **Ignition management** - Treatment aims to reduce potential human and infrastructure sources of ignition in the landscape such as management or power lines and restricting access as well as arson prevention activities and fire restrictions when camping;

- **Preparedness** - Treatments aim to improve access and water supply arrangements to assist firefighting operations such as maintaining fire access roads and firebreaks, hydrant availability and maintenance, water points and tanks, asset fire protection systems as well as training and exercising.

- **Planning** - Treatments focus on developing plans to improve the ability of community and firefighters to respond to bushfire such as identification of 'safer places', evacuation and relocation planning and the development of fire management plans; and

- **Community Engagement** - Treatments seeking to build relationships, raise awareness and change the behaviour of people exposed to bushfire risk including Prepare-Act-Survive Program, Bushfire Ready Groups, School Education Programs, targeted messaging and signage etc. Activities are targeted based upon different levels of engagement: Inform, Consult ,Involve, Collaborate, Empower.

- **Other** – there may be instances when an asset specific treatment is not required or not possible. In these circumstances local government wide controls, such as planning policies and guideline, will be used to manage the risk.

6.3   Determining the Treatment Schedule

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

Land owners are ultimately responsible for treatments implemented on their own land. This includes any costs associated with the treatment and obtaining the relevant approvals, permits or licences to undertake an activity.

Where agreed, another agency may manage a treatment on behalf of a land owner. However, the onus is still on the land owner to ensure treatments detailed in this BRM Plan are completed.

6.4   Privacy Issues and Release of Information

Information captured through the Bushfire Risk Management System (BRMS) includes data considered 'personal' in nature including the names and addresses of landholders. There is therefore the potential for the data collected through the BRMS to be used for purposes other than bushfire risk mitigation (i.e. Insurance companies using this information to set insurance premiums). BRMS reports produced for the public domain are not to include information considered personal in nature. The Chief Executive Officer is to be consulted prior to any Bushfire Risk Management data being released to the public domain.

The Shire of Woodanilling, as a matter of course, will provide reports to stakeholders that detail the assets and treatments that the stakeholders (landowners) have responsibility for in order to actively encourage and support the implementation, monitoring and review of agreed actions.

7.   Monitoring and Review

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

7.1   Review

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

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

7.2   Monitoring

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

The Shire of Woodanilling has determined that:

- Assets rated 'Extreme' will be re-evaluated annually, prior to the bushfire season
- Assets rated 'Very High' will be re-evaluated every second year (as a minimum)

7.3   Reporting

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

8. Glossary

Asset	A term used to describe anything of value that may be adversely impacted by bushfire. This may include residential houses, infrastructure, commercial, agriculture, industry, environmental, cultural and heritage sites.
Asset Category	There are four categories that classify the type of asset – Human Settlement, Economic, Environmental and Cultural.
Asset Owner	The owner, occupier or custodian of the asset itself. Note: this may differ from the owner of the land the asset is located on, for example a communication tower located on leased land or private property.
Asset Register	A component within the Bushfire Risk Management System used to record the details of assets identified in the Bushfire Risk Management Plan.
Asset Risk Register	A report produced within the Bushfire Risk Management System that details the consequence, likelihood, risk rating and treatment priority for each asset identified in the Bushfire Risk Management Plan.
Bushfire	Unplanned vegetation fire. A generic term which includes grass fires, forest fires and scrub fires both with and without a suppression objective.[68]
Bushfire Management Plan	A document that sets out short, medium and long term bushfire risk management strategies for the life of a development.[69]
Bushfire risk management	A systematic process to coordinate, direct and control activities relating to bushfire risk with the aim of limiting the adverse effects of bushfire on the community.
Bushfire Threat	The threat posed by the hazard vegetation, based on the vegetation category, slope and separation distance.
Consequence	The outcome or impact of a bushfire event.
Draft Bushfire Risk Management Plan	The finalised draft Bushfire Risk Management Plan (BRM Plan) is submitted to the OBRM for review. Once the OBRM review is complete, the BRM Plan is called the 'Final BRM Plan' and can be progressed to local government council for endorsement.
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.

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[68] *Australasian Fire and Emergency Service Authorities Council 2012, AFAC Bushfire Glossary, AFAC Limited*
[69] *Western Australian Planning Commission 2015, State Planning Policy 3.7: Planning in Bushfire Prone Areas, WAPC, Perth.*

	These plans help inform the ongoing development of Local Emergency Management Arrangements (LEMA) and Westplans.
Geographic Information System (GIS)	A data base technology, linking any aspect of land-related information to its precise geographic location.[70]
Geographic Information System (GIS) Map	The mapping component of the Bushfire Risk Management System. Assets, treatments and other associated information is spatially identified, displayed and recorded within the GIS Map.
Land Owner	The owner of the land, as listed on the Certificate of Title; or leaser under a registered lease agreement; or other entity that has a vested responsibility to manage the land.
Likelihood	The chance of something occurring. In this instance, the chance of a bushfire igniting, spreading and reaching the asset.
Locality	The officially recognised boundaries of suburbs (in cities and larger towns) and localities (outside cities and larger towns).
Planning Area	A geographic area determine by the local government which is used to provide a suitable scale for risk assessment and stakeholder engagement.
Priority	See Treatment Priority.
Recovery Cost	The capacity of an asset to recover from the impacts of a bushfire.
Responsible Person	The person responsible for planning, coordinating, implementing, evaluating and reporting on a risk treatment.
Risk acceptance	The informed decision to accept a risk, based on the knowledge gained during the risk assessment process.
Risk analysis	The application of consequence and likelihood to an event in order to determine the level of risk.
Risk assessment	The systematic process of identifying, analysing and evaluating risk.
Risk evaluation	The process of comparing the outcomes of risk analysis to the risk criteria in order to determine whether a risk is acceptable or tolerable.
Risk identification	The process of recognising, identifying and describing risks.
Risk Manager	The organisation or individual responsible for managing a risk identified in the Bushfire Risk Management Plan; including review, monitoring and reporting.

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[70] Website: Landgate 2015, Glossary of terms, Landgate, Perth, www.landgate.wa.gov.au

Risk Register	A component within the Bushfire Risk Management System used to record, review and monitor risk assessments and treatments associated with assets recorded in the Bushfire Risk Management Plan.
Risk treatment	A process to select and implement appropriate measures undertaken to modify risk.
Rural	Any area where in residences and other developments are scattered and intermingled with forest, range, or farm land and native vegetation or cultivated crops.[71]
Rural Urban Interface (RUI)	The line or area where structures and other human development adjoin or overlap with undeveloped bushland.[72]
Slope	The angle of the ground's surface measured from the horizontal.
Tenure Blind	An approach where multiple land parcels are consider as a whole, regardless of individual ownership or management arrangements.
Treatment	An activity undertaken to modify risk, for example a prescribed burn.
Treatment Objective	The specific aim to be achieved or action to be undertaken, in order to complete the treatment. Treatment objectives should be specific and measurable.
Treatment Manager	The organisation, or individual, responsible for all aspects of a treatment listed in the Treatment Schedule of the Bushfire Risk Management Plan, including coordinating or undertaking work, monitoring, reviewing and reporting.
Treatment Priority	The order, importance or urgency for allocation of funding, resources and opportunity to treatments associated with a particular asset. The treatment priority is based on an asset's risk rating.
Treatment Schedule	A report produced within the Bushfire Risk Management System that details the treatment priority of each asset identified in the Bushfire Risk Management Plan and the treatments scheduled.
Treatment Strategy	The broad approach that will be used to modify risk, for example fuel management.
Treatment Type	The specific treatment activity that will be implemented to modify risk, for example a prescribed burn.
Vulnerability	The susceptibility of an asset to the impacts of bushfire.

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[71] *Australasian Fire and Emergency Service Authorities Council 2012, AFAC Bushfire Glossary, AFAC Limited*
[72] *Australasian Fire and Emergency Service Authorities Council 2012, AFAC Bushfire Glossary, AFAC Limited*

9.   Common Abbreviations

APZ	Asset Protection Zone
BFAC	Bushfire Advisory Committee
BRMB	Bushfire Risk Management Branch
BRMO	Bushfire Risk Management Officer
BRMP	Bushfire Risk Management Planning
BRM Plan	Bushfire Risk Management Plan
BRMS	Bushfire Risk Management System
BRPC	Bushfire Risk Planning Coordinator
CBFCO	Chief Bushfire Control Officer
DEMC	District Emergency Management Committee
DFES	Department of Fire and Emergency Services
DPAW	Department of Parks and Wildlife
DOAC	District Operations Advisory Committee
FDR	Fire Danger Rating
FMP	Fire Management Plan
GIS	Geographic Information System
HSZ	Hazard Separation Zone
LEMA	Local Emergency Management Arrangements
LEMC	Local Emergency Management Committee
LG	Local Government
LMZ	Land Management Zone
OBRM	Office of Bushfire Risk Management
OEM	Office of Emergency Management
SEMC	State Emergency Management Committee
SLIP	Shared Land Information Platform

UCL	Unallocated Crown Land
UMR	Unmanaged Reserves
WAPC	Western Australian Planning Commission

10. Appendices

Appendix 1 – Legislation, Policy and Standards

Appendix 2 – Risk Management Process

Appendix 3 – Communications Strategy

Appendix 4 – Shire of Woodanilling Organisational Structure

Appendix 5 – Planning Area Map

Appendix 6 – Asset Categories and Sub Categories

Appendix 7 – Consequence Rating

Appendix 8 – Local Government-Wide Controls and Multi-Agency Work Plans

Appendix 1 – Legislation, Policy and Standards

1.3.1 Legislation

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

1.3.2 Policies, Guidelines and Standards

- National Emergency Risk Assessment Guidelines (NERAG) (Second Edition 2015)
- State Emergency Management Policy 2.5 – Local Arrangements
- State Emergency Management Policy 3.2 – Emergency Risk Management Planning
- State Emergency Management Prevention Procedure 1 – Emergency Risk Management Planning
- State Emergency Management Preparedness Procedure 7 – Local Emergency Management Committee (LEMC)
- State Emergency Management Preparedness Procedure 8 – Local Emergency Management Arrangements
- State Hazard Plan for Fire (Westplan Fire)
- State Planning Policy 3.7: Planning in Bushfire Prone Areas
- State Planning Policy 3.4: Natural Hazards and Disaster
- Guidelines for Planning in Bushfire Prone Areas (2015)
- Western Australian Emergency Risk Management 2015
- A Guide to the Use of Pesticides in Western Australia (Dept. of Health 2010)
- Guidelines for Plantation Fire Protection (DFES 2011)
- Firebreak Location, Construction and Maintenance Guidelines (DFES)
- Bushfire Risk Management Planning – Guidelines for preparing a Bushfire Risk Management Plan (2015)
- AS/NZS ISO 31000:2009 - Risk management – Principles and guidelines
- AS 3959-2009 Construction of buildings in bushfire-prone areas
- Building Protection Zone Standards (DFES)

1.3.3 Shire of Woodanilling References

- Woodanilling Corporate Business Plan 2013
- Woodanilling Strategic Community Plan 2013
- Woodanilling Policy Manual

- Woodanilling Townsite Fire Management Plan 2013
- Shire of Katanning, Woodanilling and Kent Local Emergency Management Arrangements
- Roadside Vegetation and Conservation Values in the Shire of Woodanilling, May 2013
- Shire of Woodanilling Fire Break Notice 2016/2017
- Town Planning Scheme Handbook
- Town Planning Scheme No. 1, Dec 2014
- Native Vegetation Handbook for the Shire of Woodanilling, S Grein, 1994

1.3.4 Other Related Documents

- National Strategy for Disaster Resilience
- National Statement of Capability for Fire and Emergency Services (AFAC 2015)
- Public Service Circular No. 88 Use of Herbicides in Water Catchment Areas (Dept. of Health 2007)
- Code of Practice for Timber Plantations in Western Australia (Forest Products Commission 2006)
- Bushfire Risk Management Planning Handbook
- Bushfire Risk Management System (BRMS) User Guide
- Bushfire Protection Zones Standards (DFES)

Appendix 2 – Risk Management Process Overview
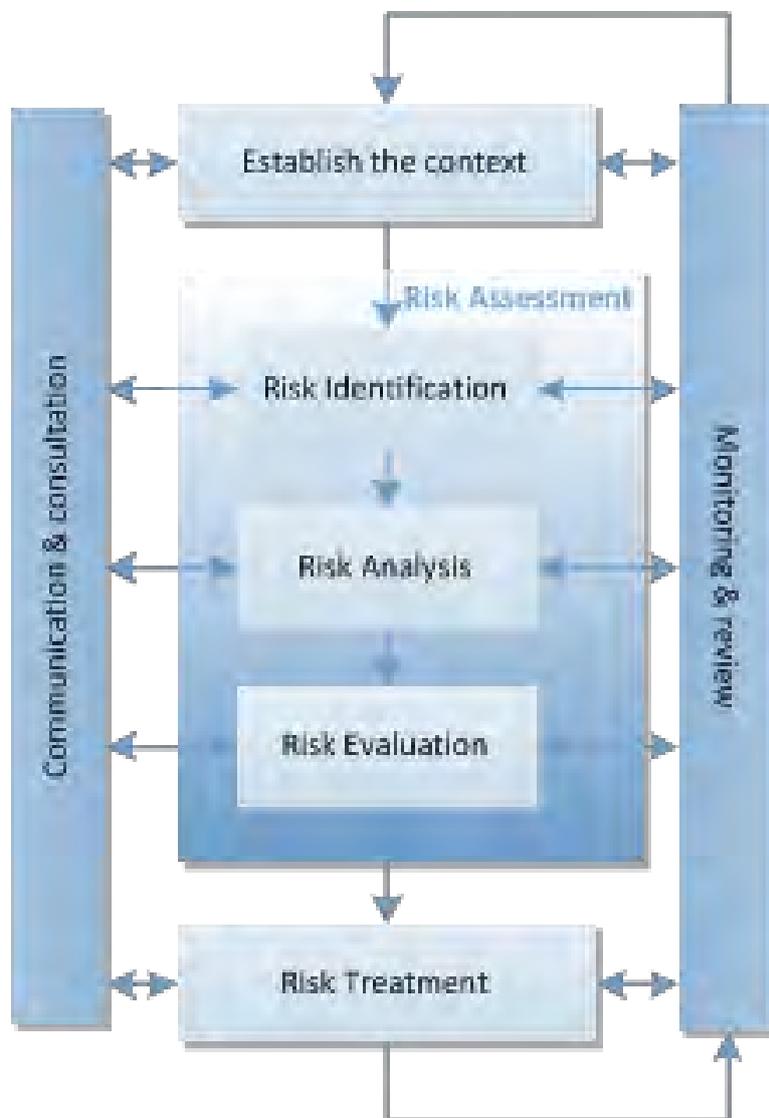
Figure 15 – Risk Management Process [73]

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[73] *Source: AS/NZS ISO 31000:2009, Figure 1, reproduced under SAI Global copyright Licence 1411-c083.*

Shire of Woodanilling
Bushfire Risk Management Plan
Communication Strategy

Document Control

Document Name	Bushfire Risk Management Plan Communications Strategy	Current Version	2.0
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Related Documents

Title	Version	Date
Shire of Woodanilling Bushfire Risk Management Plan	2.0	

Amendment List

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 Woodanilling. This Communication Strategy accompanies the BRM Plan for the Shire of Woodanilling.   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 OVERVIEW

Communication Objectives:

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

- Shire of Woodanilling 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.

Key Stakeholders for Communication

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

Stakeholder	Role or interest	Level of impact of outcomes	Level of engagement
Shire of Woodanilling	Significant role in plan and treatment development, implementation and review. Responsible for treatments as a land owner/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
Office of Bushfire Risk Management	Significant role in plan development and review.	Medium	Inform, consult and collaborate
Department of Parks and Wildlife	Significant role in plan and treatment development, implementation and review. Responsible for treatments as a land owner/manager.	High	Inform, consult, involve, collaborate and empower
Forest Products Commission	Role in plan and treatment development, implementation and review. Responsible for treatments as a land owner/manager.	Medium	Inform, consult, involve, collaborate and empower
Main Roads WA	Role in plan and treatment development, implementation and review. Responsible for treatments as a land owner/manager Critical infrastructure interest.	High	Inform, consult, involve, collaborate and empower
Telstra	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 and empower
Department of Lands, LandCorp & Landgate	Role in plan and treatment development, implementation and review	Low	Inform, consult, involve, collaborate and empower
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 and empower
Department of Education	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 and empower
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 and empower
Rail	Role in plan and treatment development, implementation and review. Responsible for treatments as a land owner/manager. Critical infrastructure interest.	Low	Inform, consult, involve, collaborate and empower

Chief Bushfire Control Officer	Significant role in plan and treatment development, implementation and review.	High	Inform, consult, involve, collaborate and empower
Bushfire Brigades and other Emergency Services Volunteers	Significant role in plan and treatment development, implementation and review	High	Inform, consult, involve, collaborate and empower
Bushfire Advisory Committee, District Operations Advisory Committee & Local Emergency Management Committee	Role in plan development, implementation and review	Medium	Inform, consult, involve, collaborate and empower
Landcare, Friends of the Reserve	Role in plan and treatment development, implementation and review	Medium	Inform, consult and involve
Traditional Owners, Wagyl Kaip Regional Corporation, South West Aboriginal Land and Sea Council & Department of Aboriginal Affairs	Role in plan and treatment development, implementation and review	Medium	Inform, consult and involve

Communications Plan

Timing of Communication	Stakeholder (s)	Communication Objectives (Refer to Page 5x)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring & Evaluation Method
Development of the BRM Plan								
Life of the Plan	Shire of Woodanilling 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	CEO or Delegate	• 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
Life of the Plan	Shire of Woodanilling Building and Works	2,3 & 5	• Email • Face to face meetings • Phone	• Input into plan and treatments	CEO or Delegate	• Limited time • Conflicting priorities	• Plan meetings	• Stakeholder's willingness to participate • Contributions to treatment plan
Annually	Bushfire Advisory Committee (BFAC) and District Operations Advisory Committee (DOAC)	1 – 3 & 5	• Face to face meeting • Presentation	• Inform and consult • Confirm project objectives • Seek input into treatment plans • Project updates	CEO or Delegate	• Stakeholder's willingness to participate	• Preparation • Ensure current information on the BRM Plan Project is available	• Seek feedback on the presentation and (anecdotal) community feedback
Quarterly	Local Emergency Management Committee (LEMC)	1 – 3 & 5	• Email • Face to face meetings • Presentation	• Confirm project objectives • Seek input into treatment plans • Project updates	CEO or Delegate	• Stakeholder's willingness to participate	• Preparation • Ensure current information on the BRM Plan Project is available	• Feedback on the presentation
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	CEO or Delegate	• Time constraints • No plan, unorganised • Availability of	• Clarify misunderstandings and intentions of plan • Confirm benefits	• Feedback • Support for BRMP process • Level of engagement

				updates • Identify Risk and share information		volunteers	• Preparation • Ensure current information on the BRM Plan Project is available	
Biannually	Dept of Parks and Wildlife (DPAW) and Forest Products Commission (FPC)	1 – 3 & 5	• Face to face meetings • Email • Telephone	• Confirmation of environmental assets • Identification of DPAW and FPC burn plans • Confirming project objectives, seeking input into treatment plans and providing project updates • 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 • Environmental assets in BRMS
Annually and as required	Stakeholders – Landowners / Land Managers	1 – 3 & 5	• Email • Face to face meeting • Telephone • Presentations • Community Engagement activities	• Asset identification/ confirmation • Outline BRMP process and objectives • Identify assets at risk • Identify existing controls/programs • Development of treatment options	CEO or Delegate	• Time constraints and travel • Level of interest and engagements in process • Lack of resourcing	• Select appropriate channel of communication • Prepare materials and good planning • Communicate funding opportunities when available	• Engagement and participation levels • Feedback • 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	CEO or Delegate	• 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	Landcare	1 – 3 & 5	• Face to Face meetings • Email • Telephone	• Confirmation of environmental assets • Confirming project objectives	CEO or Delegate	• Time constraints • Level of interest and	• Select appropriate communication method • Prepare materials	• Engagement and participation levels

				• Seeking input into treatment plans • Providing project updates		engagement in process	• Plan communications	• 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 • Sharing information • Identifying funding opportunities	CEO or Delegate	• Time constraints • Conflicting priorities • Response obligations	• Plan communications • Share information	• Other planned works identified • Funding opportunities identified • UCL/UMR treatments included on BRMS
Implementation of the BRM Plan								
Life of the plan	Shire of Woodanilling CEO, Senior Leadership Team and Council	1 – 3 & 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 the Plan	Shire of Woodanilling 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	• Clarify misunderstandings and intentions of plan • Plan communications • Regular updates	• Treatments applied • Positive feedback received on treatment supplied • Risk ratings reduced

						completion of works		
Life of the Plan	LEMC, BFAC & DOAC, CBFCO, CAPTS	1 – 3 & 5	• Email • Face to face meetings	• Report on progress to plan • Report issues/constraints	CEO or Delegate	• Availability • Time • 'Buy in'	• Collate data and report on success to plan • Compliance to plan • Keep informed	• Feedback received • Level of engagement • Issues identified and addressed
Life of the 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 • Risk ratings reduced
Life of the Plan	Stakeholders – Others	1 – 3 & 5	• Face to face • Presentations • Community Engagement • Telephone • Email	• 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	• Planned sharing of information • Negotiations conducted • Communicate funding opportunities when available	• Feedback • Commitment to implement agreed controls • Highly engaged • Treatments being completed
Life of the Plan	OBRM, DFES District / Regional Office	1 – 3 & 5	• Face to face meetings • Email • Telephone	• UCL/UMR Management • Status and progress of plan • Treatment status, gaps and issues to be addressed • Continuous	CEO or Delegate	• Time • Conflicting priorities	• Schedule communication opportunities	• Planned works identified • Improvements identified and implemented • Issues addressed

				improvement • Information sharing • Identification of other planned works • Identification of funding opportunities				

Review of the BRM Plan

Annually	Shire of Woodanilling CEO and Councillors	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 • Review not completed by OBRM	• 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	• 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 and as required	Shire of Woodanilling – Building and Works	4, 5	• Face to face meetings	• Report on actions and status of BRM Plan • Continuous improvement	CEO or Delegate	• Time • Availability • Conflicting priorities	• Plan Communication • Discuss with Shire Leadership Team	• Feedback on work completed • Risk ratings reduced • Improvements identified and implemented
Biannually and as required	DFES Regional / District Office	4, 5	• Face to face meetings • Email • Telephone	• Report on actions and status of BRMP • Continuous improvement	CEO or Delegate	• Time • Availability • Conflicting priorities	• Plan communications	• Feedback on work completed • Risk ratings reduced • Improvements

								• identified and implemented
Annually	BFAC, DOAC, LEMC, CBFCO, Captains	4, 5	• Face to face meetings • Email • Telephone • Presentations	• Report on actions and status of BRMP • Continuous improvement	CEO or Delegate	• Availability • Time • Conflicting priorities • Buy in	• Keep informed • Share the wins	• Feedback on work completed • Risk ratings reduced • Improvements identified and implemented
Annually and as required	Stakeholders – Land Owners / Land Managers	4, 5	• Face to face meetings • Telephone • Presentation • Community Engagement	• Status of treatments • Success of treatments • Continuous improvement	CEO or Delegate	• Availability • 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	• Status of treatments • Success of treatments • Continuous improvement	CEO or Delegate	• Availability • 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

# Appendix 4 – Shire of Woodanilling Organisational Structure
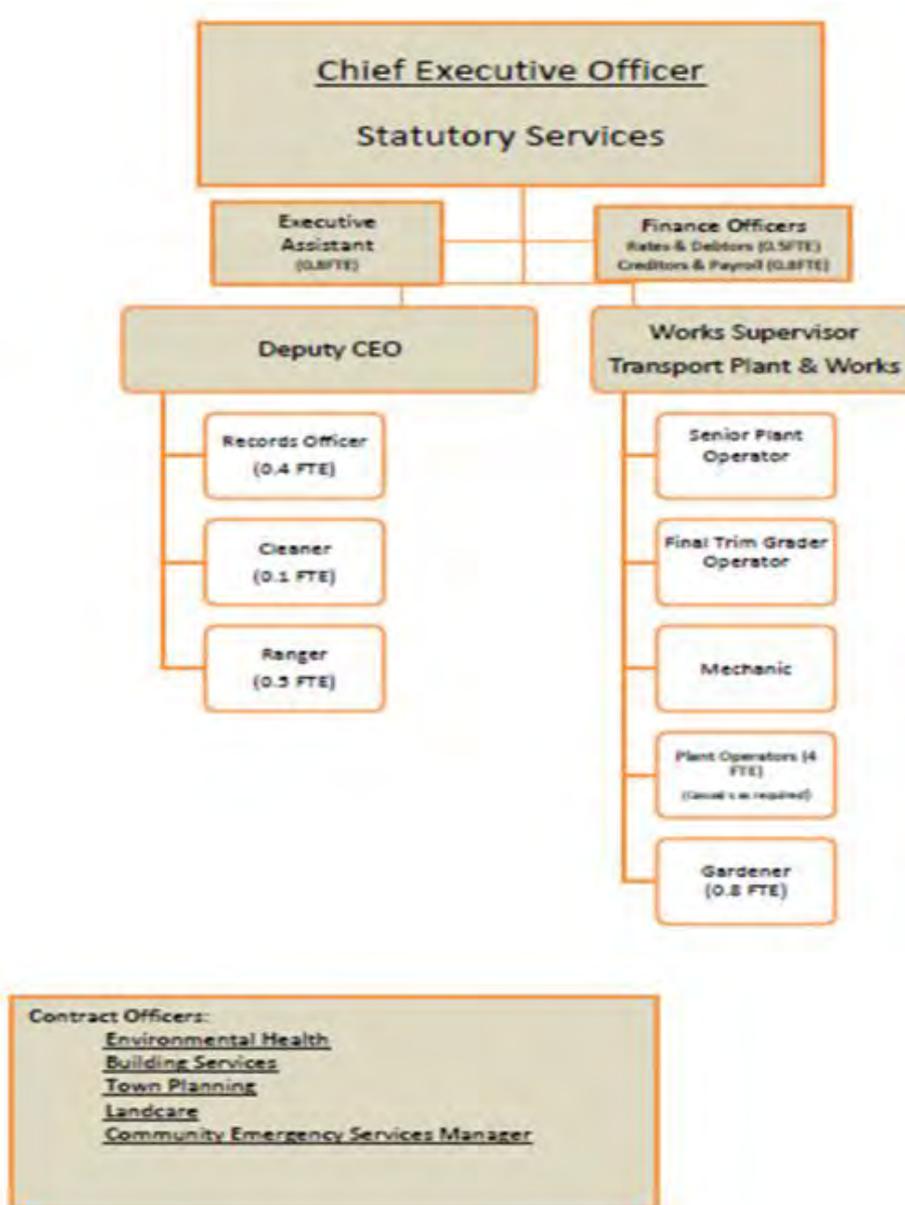
Figure 16 – Shire of Woodanilling Organisational Structure [74]

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[74] Source: Shire of Woodanilling Annual Report 2015/16

Appendix 5 – Planning Area Map [75]

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[75] Source: DFES Mapping System (FESMaps)

Appendix 6 – Asset Categories and Subcategories

Asset Category	Asset Subcategories
Human Settlement	• Residential areas Rural urban interface areas and rural properties. • Places of temporary occupation Commercial, mining and industrial areas located away from towns and population centres (that is, not adjoining residential areas). • Special risk and critical facilities Hospitals, nursing homes, schools and childcare facilities, tourist accommodation and facilities, prison and detention centres, government administration centres and depots, incident control centres, designated evacuation centres, police, fire and emergency services.
Economic	• Agricultural Pasture, grazing, livestock, crops, viticulture, horticulture and other farming infrastructure. • Commercial and industrial Major industry, waste treatment plants, mines, mills and processing and manufacturing facilities and cottage industry. • Critical infrastructure Power lines and substations, water and gas pipelines, telecommunications infrastructure, railways, bridges, port facilities and waste water treatments plants. • Tourist and recreational Tourist attractions and recreational sites that generate significant tourism and/or employment within the local area. • Commercial forests and plantations • Drinking water catchments
Environmental	• Protected Rare and threatened flora and fauna, ecological communities and wetlands. • Priority Fire sensitive species and ecological communities. • Locally important Nature conservation and research sites, habitats, species and communities, areas of visual amenity.
Cultural	• Aboriginal heritage Places of indigenous significance. • Recognised heritage Assets afforded legislative protection through identification by the National Trust, State Heritage List or Local Planning Scheme Heritage List. • Local heritage Assets identified in a Municipal Heritage Inventory or by the

Asset Category	Asset Subcategories
	community. • Other Other assets of cultural value, for example community centres and recreation facilities.

Appendix 7 – Consequence Ratings

Consequence Rating	Descriptions
Minor	- No fatalities. - Near misses or minor injuries with first aid treatment possibly required. - No persons are displaced. - Little or no personal support (physical, mental, emotional) required. - Inconsequential or no damage to an asset, with little or no specific recovery efforts required beyond the immediate clean-up. - Inconsequential or no disruption to community. - Inconsequential short-term failure of infrastructure or service delivery. (Repairs occur within 1 week, service outages last less than 24 hours.) - Inconsequential or no financial loss. Government sector losses managed within standard financial provisions. Inconsequential business disruptions.
Moderate	- 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. - 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

Consequence Rating	Descriptions
	delivery affecting large parts of the community. Initial external support required. (Repairs occur within 2 to 6 months, service outages last less than a month.) • Local or regional economy impacted for a significant period of time with significant financial assistance required. Significant disruptions across industry sectors leading to multiple business failures or loss of employment. • Significant damage to environmental or cultural assets that require major rehabilitation or recovery efforts. • Localised extinction of native species. This may range from loss of a single population to loss of all of the species within the BRM Plan area (for a species which occupies a greater range than just the BRM Plan area).
Catastrophic	• Multiple cases of fatalities. • Extensive number of severe injuries. • Extended and large number requiring hospitalisation, leading to health services being unable to cope. • Extensive displacement of persons for extended duration. • Extensive resources required for personal support. • Extensive damage to assets that will require significant ongoing recovery efforts and extensive external resources. • Community unable to function without significant support. • Long-term failure of significant infrastructure and service delivery affecting all parts of the community. Ongoing external support required. (Repairs will take longer than 6 months, service outages last more than 1 month.) • Regional or State economy impacted for an extended period of time with significant financial assistance required. Significant disruptions across industry sectors leading to widespread business failures or loss of employment. • Permanent damage to environmental or cultural assets. • Extinction of a native species in nature. This category is most relevant to species that are restricted to the BRM Plan area, or also occur in adjoining areas and are likely to be impacted upon by the same fire event. 'In nature' means wild specimens and does not include flora or fauna bred or kept in captivity.

Appendix 8 – Local Government-Wide Controls and Multi-Agency Work Plans

Local Government-Wide Controls

	Control	Action or Activity Description	Lead Agency	Other Stakeholder(s)	Notes and Comments
1.	BRMP Risk Analysis	• Maintain and refine BRM Plan	Shire of Woodanilling	Landowners DFES	Treatment identification and planning for all very high and extreme risk assets within the Shire.
2.	Corporate Business Plan	• As per documented actions	Shire of Woodanilling		As per section 3.1.1 of the Bushfire Risk Management Plan.
3.	Shire of Woodanilling Bush Fire Notice and (*Bush Fires Act 1954*)	• Review annual Fire Access Track Notice • Publish annual Fire Access Track Notice • Inspection of Fire Access Tracks	Shire of Woodanilling	CBFCO, FCO, Captains and the public	Published Annually. Inspect local properties. 'Fire Access Track' has the same meaning as 'Fire Break', in the *Bush Fires Act 1954.*
4.	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 Woodanilling	CBFCO, Ranger, FCO's	Published Annually.
5.	Harvest and Vehicle Movement Bans	Bans imposed when the CBFCO (or nominee) is of the opinion that the use of engines, vehicles, plant or machinery is likely to	Shire of Woodanilling	CBFCO	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

	Control	Action or Activity Description	Lead Agency	Other Stakeholder(s)	Notes and Comments
		cause/contribute to the spread of a bushfire.			change.
6.	Local Emergency Management Arrangements	• Emergency Management Plan	Shire of Woodanilling	St John WAPOL DFES SES Child Protection Education CBFCO Gt Southern DEMC OEM	Annual review of emergency plans and arrangements.
7.	Woodanilling Town Site Fire Management Plan	• Preparedness, mitigation and work conducted within the town site	Shire of Woodanilling	Private Landowners DFES DPAW	
8.	State Planning Policy 3.7	• Planning in Bushfire Prone Areas	Department of Planning	WA Planning Commission LG	Land developers are required to implement a Fire Management Plan to ensure risk is managed and other controls implemented and monitored.
9.	State-wide arson prevention program	• Education and awareness campaigns exist across the state for arson.	WA Police Dept of Fire and Emergency Services	LG	Participation as required. The Shire participates in campaigns for arson prevention.
10.	Bushfire Action Month	• Public preparedness and education campaign	Department of Fire and Emergency Services	CBFCO, FCO, Rangers and the public	During Bushfire Action Month, brigades and community groups hold a number of events across the State, to help you prepare your home and family ahead of the bushfire season. These

	Control	Action or Activity Description	Lead Agency	Other Stakeholder(s)	Notes and Comments
					events include street meets, property walk throughs and fire brigade open days where the community can speak to volunteer firefighters and Bushfire Ready groups about how to prepare for bushfires.
11.	Are you Ready Campaign	• Community Engagement	WA Government	LG, CBFCO, ES Volunteers and the public	The key message of this campaign is - preparing for and responding to bushfires is a team effort and everyone needs to play their part www.areyouready.wa.gov.au
12.	Local Planning Scheme No 2	• Requirement for new developments to complete a Fire Management Plan endorsed through the Dept of Fire and Emergency Services	Shire of Woodanilling	DFES	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.
13.	Town Enhancement Plan, Feb 2012	• Encourage residents to tidy up flammable material and make entire properties as fire resistant as possible • Conduct whole of town fire drill and debrief • Clear potential fire fuel from railway land	Shire of Woodanilling		

	Control	Action or Activity Description	Lead Agency	Other Stakeholder(s)	Notes and Comments
14.	Shire Policy 40	• Guidelines for Plantation Fire Protection	Shire of Woodanilling		

Multi-Agency Work Plans

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1.	UCL / UMR Land Management	• Preparedness, mitigation work conducted on lands owned by DoL and managed by DFES under an MOU	DFES – Narrogin District Office	LG, P&W, Local Brigades	Annual funding is allocated to UCL/UMR land within gazetted boundary with priorities identified in consultation with stakeholders and managed through DFES Narrogin Office
2.	Water Corporation Bushfire Risk Management Plan	• A Bushfire Risk Management Project is under way for the Water Corp. • Great Southern Region Annual Works Plan. Watercorp assets are managed / maintained at the regional level. Each asset has an asset no. and a management plan referred to as an SAP.* • Watercorp has an agreement with DPAW for undertaking	Water Corporation	DFES, LG, DPAW	A plan is currently being developed. High risk areas are identified and treatments planned then completed. Treatments and risk assessments are available through Water Corp BRM department. Some high risk areas have been identified in the Shire to date. The Water Corp Plan will be aligned to this BRM Plan's risk treatment schedule. *The SAPs only address very basic maintenance (inc. firebreaks as per Firebreak notice but not fuel load management etc., however any treatments from BRMS would be put through the SAP in order to raise a works order.

		mitigation and land management activities on their estate. • Works include fuel load management on water reserves			
3.	Western Power annual asset inspection and vegetation management program	• Western Power Bushfire Plan	Western Power	DFES, LG, DPAW	Annual vegetation management and asset inspections are completed to ensure risk is managed. Full asset inspections are completed every 4 years.
4.	Department of Parks and Wildlife Master Burn Plan	• DPAW have a 6 season burn program that is published on their website. Yearly plans are available.	Parks and Wildlife	LG, DFES, Local Brigades	The plans can be accessed via their website, by sharing shape files (GIS) and are communicated at Local BFAC, ROAC and other various meetings.
5.	Code of Practice for Timber Plantations in Western Australia	• A fire management plan should be available for each plantation. The size of plantation compartments and firebreak specifications should comply with the Bush Fires Act (1954), the Guidelines for Plantation Fire Protection (FESA) and local government firebreak notices.	Forest Products Commission	DPAW	The purpose of this Code is to provide goals and guidelines to plantation managers so that plantation operations in Western Australia are conducted in a manner that is in accordance with accepted principles for good plantation management.

6.	Dept of Education Memorandum of Understanding	• Coordination of bushfire risk management activities	Dept of Fires and Emergency Services Dept of Education	Woodanilling Primary School	Including the identification and planning of treatment options for bushfire risks on DoE school sites as listed on the DoE bushfire zone register and agreed to annually by DFES and DoE. Woodanilling Primary School is one of the 121 schools on the State Bushfire Zone Register. Woodanilling Primary underwent a Bushfire Risk Assessment in 2015 and had identified treatment works completed in 2016.
7.	Dept of Education – Bushfire Plan – Woodanilling Primary School	• A plan designed to assist staff to prepare for a total fire ban, catastrophic fire danger rating, or a bushfire.	Dept of Education	DFES, LG	This plan was developed in accordance with the Emergency and Critical Incident Management Policy and the Principal's Guide to Bushfire with input from local emergency management agencies.
8.	The Principal's guide to Bushfire - Department of Education	• All schools should include their plan for dealing with bushfire as a part of their *Emergency and Critical* Incident *Management* Plan.	Dept of Education	DFES	
9.	MRWA Bridge assessment & maintenance works plan	• As per MRWA Structures Inspection and Information Management Policy (2013) • Ensure that all bridges, gantries, culverts and	Main Roads	LG	Bridges and culverts are critical assets in the road network, and represent a major investment of community resources. Because of their strategic function, any failure or load capacity reduction may limit or severely restrict traffic over a large part of the road network, with consequent inconvenience and economic loss. Walls and

		walls on the road network are kept in a safe condition with the most efficient use of resources.			gantries are minor structures that too can have an impact on the road network. It is therefore imperative that these assets are properly managed to ensure they are maintained in a safe and serviceable condition.