



Shire of Toodyay

Bushfire Risk Management Plan

2019 – 2024

*Office of Bushfire Risk Management (OBRM) Bushfire Risk Management (BRM) Plan reviewed 13th
August 2019*

Local Government Council BRM Plan endorsement 27th August 2019

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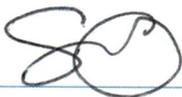
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Document Endorsements

The Shire of Toodyay 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 Toodyay 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 The Shire of Toodyay Council satisfies their endorsement obligations under section 2.2.7 of the *State Hazard Plan for Fire (Interim, Nov 2017)* (formerly *Westplan Fire*).

Local Government	Representative	Signature	Date
The Shire of Toodyay	Stan Scott CEO		29 AUG 2019

Amendment List

Version	Date	Author	Section
V1	02/11/2017	John Hansen	Entire Document
V2	03/04/2018	John Hansen and Tyron McMahan	Post Quality Assessment
V3	30/05/2019	John Hansen	OBRM feedback
V4	13/08/2019	John Hansen	OBRM+ A.Marston feedback

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1. Introduction

1.1 Background

Under the *State Hazard Plan for Fire* (formerly *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 Toodyay in accordance with the requirements of the *State Hazard Plan for 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, specifically the *State Emergency Management Policy 3.2 and State Emergency Management Prevention and Mitigation Procedure 1*.

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

1.2 Aim and Objectives

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

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

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

1.3 Legislation, Policy and Standards

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

1.3.1 Legislation

- *Bush Fires Act 1954*
- *Emergency Management Act 2005*

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

1.3.2 Policies, Guidelines and Standards

- National Emergency Risk Assessment Guidelines (NERAG) (Second Edition 2015)
- State Emergency Management Policy and Procedures
- State Hazard Plan for Fire (Interim) (formerly Westplan Fire)
- State Planning Policy 3.7: Planning in Bushfire Prone Areas
- State Planning Policy 3.4: Natural Hazards and Disasters
- Guidelines for Planning in Bushfire Prone Areas (2017)
- Western Australian Emergency Risk Management Guidelines (OEM 2015)
- 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 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)
- Shire of Toodyay Strategic Community Plan 2013 – 2023
- Shire of Toodyay Corporate Business Plan 2015 – 2019
- Shire of Toodyay Risk Management Policy November 2014
- Local Emergency Management Arrangements 2016
- Local Emergency Management Plan for the Provision of Welfare Support Northam District (2016)
- Shire of Toodyay - Annual Fire Break Notice
- Toodyay District High School - Responding to Bush Fire (2017)
- Assessment of the Conservation value of roadside vegetation in the Shire of Toodyay (1990)

- Strategic review of Bushfire policy – Bushfire Prone Planning (Nov 2015)
- Shire of Toodyay Environmental Management Strategy (Feb 2015)
- Shire of Toodyay Municipal Inventory and Heritage List (Dec 2012)
- Chatcup fire report Toodyay (Feb 2007)
- FESA Investigation of house losses - Toodyay Fire (2009)
- Toodyay Bridge Inventory (Main Roads Sept 2017)
- Avon Valley Response Plan 2017 – 2018
- Bindoon Defence Training Area Bushfire Management Plan 2016 – 2020
- Shire of Toodyay Local Planning Scheme No. 4 (2017)
- Shire of Toodyay - Reserve Management Reports Strategic Bushfire Risk Assessment Report (Brookfield Rail May 2017)

2. The Risk Management Process

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

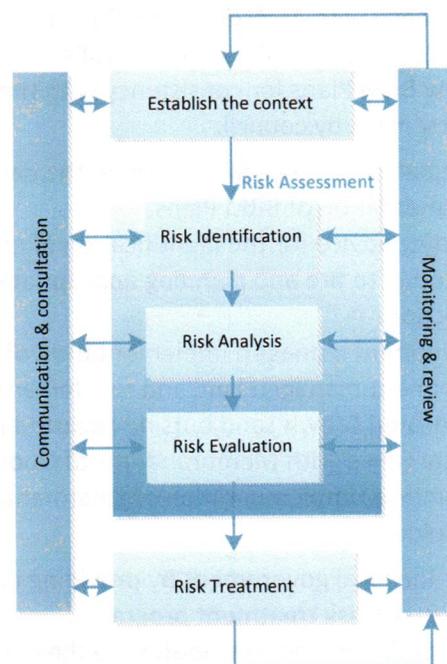


Figure 1 - An overview of the risk management process ¹

2.1 Roles and Responsibilities

Table 1 – Roles and Responsibilities

Stakeholder Name	Roles and Responsibilities
Local Government	<ul style="list-style-type: none"> ▪ As custodian of the BRM Plan, coordination of the development and ongoing review of the integrated BRM Plan. ▪ Negotiation of commitment from land owners to treat risks identified in the BRM Plan.

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

Stakeholder Name	Roles and Responsibilities
	<ul style="list-style-type: none"> ▪ As treatment manager, implementation of treatment strategies. ▪ As part of the approval process, submission of the draft BRM Plan to the Office of Bushfire Risk Management (OBRM) to review it for consistency with the Guidelines. ▪ As part of the approval process, submission of the final BRM Plan to council for their endorsement and adoption.
Department of Fire and Emergency Services (DFES)	<ul style="list-style-type: none"> ▪ Participation in and contribution to the development and implementation of BRM Plans, as per their agency responsibilities as the Hazard Management Agency for fire. ▪ Support to local government through expert knowledge and advice in relation to the identification, prevention and treatment of bushfire risk. ▪ Facilitation of local government engagement with state and federal government agencies in the local planning process. ▪ Undertake treatment strategies, including prescribed burning on behalf of Department of Lands for Unmanaged Reserves and Unallocated Crown Land within gazetted town site boundaries. ▪ In accordance with Memorandums of Understanding and other agreements, implementation of treatment strategies for other landholders.
Office of Bushfire Risk Management (OBRM)	<ul style="list-style-type: none"> ▪ Under the OBRM Charter, to ensure bushfire risk is managed in accordance with AS/NZS ISO 31000 and reporting on the state of bushfire risk across Western Australia. ▪ Review BRM Plans for consistency with the Guidelines prior to final endorsement by council.
Department of Biodiversity, Conservation and Attractions - Parks and Wildlife Service (PWS)	<ul style="list-style-type: none"> ▪ Participation in and contribution to the development and implementation of BRM Plans. ▪ Providing advice for the identification of environmental assets that are vulnerable to fire and planning appropriate treatment strategies for their protection. ▪ As treatment manager, implementation of treatment strategies on department managed land and for Unmanaged Reserves and Unallocated Crown Land outside gazetted town site boundaries. ▪ In accordance with Memorandums of Understanding and other agreements, implementation of treatment strategies for other landholders.
Other State and Federal Government Agencies	<ul style="list-style-type: none"> ▪ Assist the local government by providing information about their assets and current risk treatment programs. ▪ Participation in and contribution to the development and implementation of BRM Plans. ▪ As treatment manager, implementation of treatment strategies.
Public Utilities	<ul style="list-style-type: none"> ▪ Assist the local government by providing information about their assets and current risk treatment programs. ▪ Participation in and contribution to the development and implementation of BRM Plans. ▪ As treatment manager, implementation of treatment strategies.
Corporations and Private Land Owners	<ul style="list-style-type: none"> ▪ As treatment manager, implementation of treatment strategies.

2.2 Communication & Consultation

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

3. Establishing the Context

3.1 Description of the Local Government and Community Context

3.1.1 Strategic and Corporate Framework

Between 2000 and 2014, the Shire of Toodyay experienced several major level 3 fires that resulted in a tragic loss of life and property and required an extended multi-agency response. The significant impact of these events on the community and local landscape prompted the Shire to engage a consultant to conduct a strategic review of the Shire's bushfire policy and network of strategic fire access tracks. The subsequent report was adopted by the Shire as a strategic shire document, with the review recommendations informing the Shire's Strategic Community Plan and corporate business planning processes. In 2016, Council adopted a resolution to progress the recommendations contained within the report and implement an annual review process at the conclusion of each fire season.

The Shire's Strategic Community Plan – Toodyay 2028 was reviewed in 2017/18 and lists development of the BRM Plan as a short term (1-2 years) priority. Once developed this BRM Plan will guide the prioritisation of bushfire risk for treatment within the Shire, further building on the work completed to date to implement the recommendations from the strategic review.

During the community consultation process undertaken in relation to development of the Strategic Community Plan bushfire management was identified as a priority community service. Adoption of the BRM Plan is a significant step in addressing this aspiration and will benefit the community into the future.

The Shire's Local Emergency Management Committee (LEMC) and Bushfire Advisory Committee (BFAC) are identified as key stakeholders in the development, implementation and review of the BRM Plan. Their input and advice is critical to the bushfire risk management process and will provide an important forum for consultation, joint-agency partnerships and the resolution of local issues affecting bushfire risk management.

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

3.1.2 Location, Boundaries and Tenure

The Shire of Toodyay borders the north-eastern edge of the Perth Metropolitan Region and the Toodyay town site is situated approximately 80 kilometres from the Perth CBD.

It spans an area of 1683 square kilometres and represents the localities of Bejoording, Bindoon Training Area, Coondle, Culham, Dewars Pool, Dumbarton, Hoddy’s Well, Julimar, Moondyne, Morangup, Nunile, Toodyay, Wattening and West Toodyay.

Settlement is consolidated primarily around the Toodyay town site or accommodated within one of the special rural subdivision areas located throughout the Shire.

Toodyay forms part of the Western Australian Wheatbelt and a significant proportion of its land is used for agricultural activities. This results in a significant management resource required during fire season to mitigate the escape of crop burning. This is a challenge as many of the local volunteers are also farmers who are harvesting at this time. The high proportion of agricultural activities mean that there are large areas of continuous farming land that can carry large fires. Much of this land is mixed agriculture supporting both cropping and grazing activities with scattered paddock trees, this can make fire response challenging.

As seen in table 2 the private land estate is the largest land tenure in the shire, as a result there is a large number of land owners and stakeholders involved in land and fire management. This means that there is a wide range and high number of people to engage in education programs, mitigation works and other aspects of the shire’s fire management.

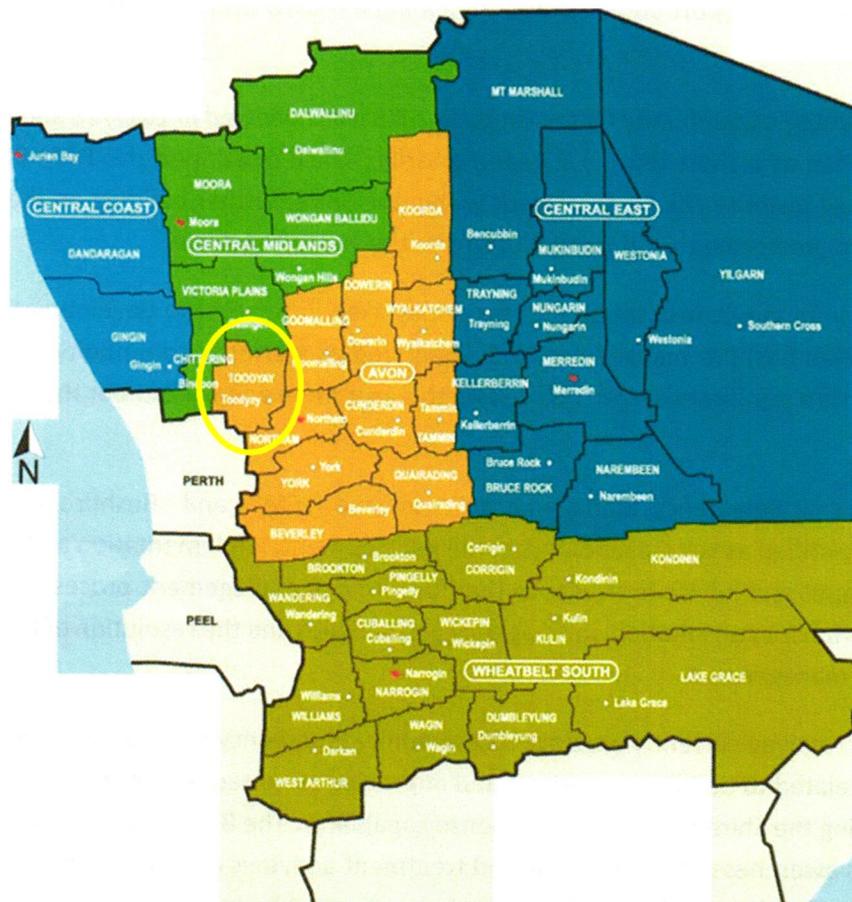


Figure 2 - The Shire of Toodyay²

² Adapted from Wheatbelt Development Commission

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

Land Manager/Agency*	% of Plan Area
Local Government	0.3% (5 sq Km)
Private	63.7% (1078 sq Km)
Department of Bio-Diversity, Conservation and Attractions	24.8% 420 sq Km)
Department of Planning, Lands and Heritage	0.2% (4 sq Km)
Main Roads	1.3 (22 sq Km)
Other	9.7 (165 sq Km)
Total	100% (1694 sq Km)

Source: FES Maps

3.1.3 Population and Demographics

The resident population of Toodyay was 4,439 in 2016, compared to 4,387 in 2011. (Census 2011 and 2016).

Toodyay has an aging population and one that reflects a much higher average than that for WA as a whole. In the 55 to 74-year age group Toodyay shows this to represent 9.9% of the population whereas the same group in WA is only 5.7%. The median age has also increased from 47 years to 51 years (ABS Census 2016). According to the Western Australian Planning Commission’s forecasts for population growth to 2026, this trend of an ageing population will continue. Children aged 0-14 years make up 14.7% of the population, those aged 15-64 account for 61.9% and people aged 65 years and over make up 23.4% of the population (ABS Census 2016).

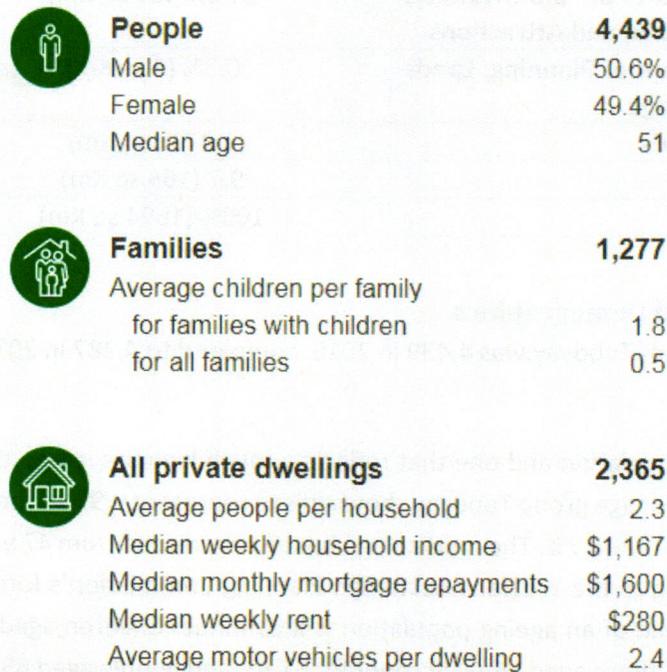
Elderly people are a known vulnerable group in fire management, they are likely to have less capacity to defend property or protect themselves during a fire event and have additional needs in evacuation. As a result of this there is need for additional planning for this group to ensure that they are considered in fire management planning, communications during events, community education and mitigation works. There is a need to ensure that there is tailored advice provide to this group during season preparation as well as during actual events.

The continued aging trend is likely to impact the availability and capability of volunteers to respond to fire. The Shire will need to consider how to encourage the younger members of the community to volunteer with brigades as well as how to better incorporate aging volunteers in an appropriate manner.

The Shire has experienced a migration of people from the Perth metropolitan area who are seeking an alternative semi-rural lifestyle or weekend retreats. With commuter train services available and increasing numbers of people working from home, this trend is likely to continue. There is challenge in engaging and educating people who are not familiar with the fire risks associated with the shires landscape. These people are often not well connected with the local community and are often unaware of the ‘normal’ community engagement activities and land management obligations that longer term residents understand. The challenges of weekend and commuter populations are significant in fire management as these groups are highly variable and may be absent at the time of an event, unaware of unfolding events or in transit during events. This means that there is complex planning needed for these groups in the response phase as well as the preparation and mitigation space.

Toodyay (S)

Code LGA58330 (LGA)

[Search for a Community Profile](#)Figure 3 - Shire of Toodyay Community Profile³**3.1.4 Economic Activities and Industry**

The Shire of Toodyay is located within the Avon sub region of the Wheatbelt. This region is built on a solid agricultural foundation and has a key role as a transport and logistic hub. However, broad acre agriculture has become relatively less significant for the overall economic profile of the Shire of Toodyay. Tourism, retail and lifestyle sectors are becoming increasingly important in the shires economy, Table 3 shows that 19% of the shire's workforce are employed in retail or tourism related fields. This is likely to continue into the future as "the appeal of Toodyay's heritage buildings and natural amenity has resulted in large visitor numbers and "tree-changers" moving to the area. Localised retail developments have ensued in response to visitation to the town and increasing population". (Avon Sub-Regional Economic Strategy, 2012).

Table 3 ABS Census 2016 Employment Data

Industry Type of Employment	% Employment
Agriculture, Forestry and Fishing	17%
Mining	1%
Manufacturing	5%
Electricity, Gas, Water and Waste Services	<1%
Construction	10%
Wholesale Trade	1%
Retail Trade	10%
Accommodation and Food Services	8%
Transport, Postal and Warehousing	4%

³ Source: ABS

Information Media and Telecommunications	<1%
Financial and Insurance Services	1%
Rental, Hiring and Real Estate Services	2%
Professional, Scientific and Technical Services	4%
Administrative and Support Services	3%
Public Administration and Safety	9%
Education and Training	9%
Health Care and Social Assistance	4%
Arts and Recreation Services	1%
Other Services	4%
Inadequately described/Not stated	6%
Total	100%

Agriculture, retail, tourism and their associated fields account for a majority of the employment in the shire. These industries are known to be impacted by fire events through both physical loss and post fire impacts such as reduced tourism activity. This is an important part of the Shire's fire management planning and assets associated with these activities have been identified in the BRM Plan.

3.2 Description of the Environment and Bushfire Context

3.2.1 Topography and Landscape Features

Topography contributes to bushfire risk by influencing fire rate of spread (ROS) (and therefore intensity), impeding access for suppression resources and limiting options for fuel reduction, as inappropriate removal of vegetation can lead to erosion and other issues. The influence topography has on bushfire risk is considered in relation to its effect on treatment and response access, and as a variable in predicting the potential fire behaviour assets may be exposed to, including the likelihood of significant ember attack.

To the west of the Shire are the forested areas of the Darling Plateau, including the Avon Valley National Park and Julimar Conservation Park. This is a dissected, rolling landscape, studded by domed granite outcrops. This topography restricts and in many cases prevents access by fire appliances. This means that tactics to directly attack a fire in difficult terrain are often not possible or limited to aerial response, and ground crews must wait until access can be established or the fire reaches an area of suitable topography to actively suppress the fire front. As a result, fires can be larger in size and have time to grow into full developed fires with higher intensities and rates of spread. When fighting larger, more intense fires alternate methods of fire control such as specially constructed fire access tracks made by heavy machinery are required.

Strategic fire access tracks can be very expensive and complex to establish due to a range of constraints, including environmental and construction issues. Fire access tracks can be established in response to a fire, but take valuable time to construct. Pre-planning fire access tracks that are carefully located and constructed is preferable. This is an area of work the Shire of Toodyay continues to invest in as part of its bushfire management and preparedness activities.

The forested areas include mainly gnarled jarrah with banksia and grass trees. Rough, grey, red-stained Marri is found mainly on the loamy soils of lower valley slopes, often with Wandoo. The valley floors, with deeper clay soils, support Wandoo and Blackbutt. The dense understory of this woodland includes Bull Banksia, Scratchy Parrot Bush, Couch Honey-pot and The Bushy Snail Hakea. The combination of vegetation and slope result in quick moving fires that produce a large amount of embers, often creating spot fires ahead of the main fire front. This type of fire behaviour can increase

the spread of the fire and be dangerous for fire fighters if caught between the spot fires. The ability of embers to travel well ahead of the main fire is why land owners are advised and encouraged to reduce fuels around their properties and remove items that may easily ignite from around their homes.

The Avon River, dissects the surface of the darling uplands with diverse valleys and irregular slopes. In river valley areas, flooded gum and paperbarks may be found. Access into the valley is, in many areas, not possible for firefighting appliances as the terrain and fuel loads make entry far too dangerous.

Clearing for agriculture has taken place mainly on the red alluvial soils of the slopes and valleys. Further East, the area is dominated by agricultural land use and the natural vegetation has been extensively cleared. This area presents a significant bushfire hazard, especially during harvest season (November to March) when harvesting activities have the greatest potential to ignite a fire and crops are cured. Fortunately, the landscape in these areas is gently undulating with broad fields and scattered remnants on the periphery, making access for firefighting appliances easier than in the Northern and Western forested areas.

3.2.2 Climate and Bushfire Season

The Shire of Toodyay experiences a Mediterranean climate, characterised by cool, wet winters and hot, dry summers. On average, the annual rainfall is 515 mm in Toodyay. However, rainfall distribution varies markedly throughout the Shire. Most of the rain falls during the cool winter months of May to August, and is associated with the passage of winter cold fronts. Thunderstorms may locally provide rain during the summer, however lightning associated with these storms can also be a source of fire ignition when not accompanied by rain.

Annual maximum temperatures (between 2013 and 2018) range from 20°C to 46°C with minimum temperatures ranging from -2°C to 12°C. In the Avon Valley dense air falls to the valley floor resulting in temperature inversions during winter months, which are responsible for winter fogs. Frosts occur from May to September, and are most frequent in July and August.

Windy conditions are experienced in the Shire from late winter through spring and summer. The predominant and prevailing winds in summer are from a South/South Easterly to South Easterly direction, as evidenced by the weather Rose readings from the Northam station, shown below. However, historical evidence points to occasional very high winds ranging from Westerly to North Westerly, these unstable atmospheric conditions are usually as a result of cyclonic activity in the North of the State and tend to bring with them dry lightning. These conditions coupled with other high risk fire conditions have produced some of the worst fire events in Toodyay (see section 3.2.4).

The harvest season, typically around January/February, is a high risk for the Shire. The summer conditions of high temperatures, low rainfall, strong summer winds and low humidity mean that fires are likely to build quickly. Harvesting activities can lead to ignitions, which will rapidly develop under the severe fire weather conditions commonly experienced at this time of year..

The fire season is typically from October through to April, this statement is supported by the fact that the Shire of Toodyay has Gazetted Restricted Burning Times in place starting on 1st October and finishing on 30th April annually. The Prohibited Burning Times commence on 1st November and end on the 8th March. (Government Gazette, 3rd February 2012 No.16)

The Shire of Toodyay falls within the Lower West Inland Forecast District. The Fire Danger Rating (FDR) for the Shire is based upon the Forest Fire Danger Index (FFDI). Information from the Bureau of Meteorology (BoM) shows from the 1st July 2014 through until the 1st July 2016 the Shire has observed

7 days with a FDR of Severe, 1 day with a rating of Extreme and 0 days with a rating of Catastrophic. Based on past data, days with a Catastrophic FDR are not expected to occur annually and represents days that are likely to occur infrequently. It is important to remember that large landscape fires with significant impacts will occur at lower FDRs and the community must remain vigilant on days with a lower FDR as the risk of fire events still remains, particularly under very dry and windy conditions.

The following graphs represent data taken over a five-year period, 2012 – 2017, from the weather station located at Northam (This is the closest available station to Toodyay, located approximately 27Km away in a South Easterly direction).

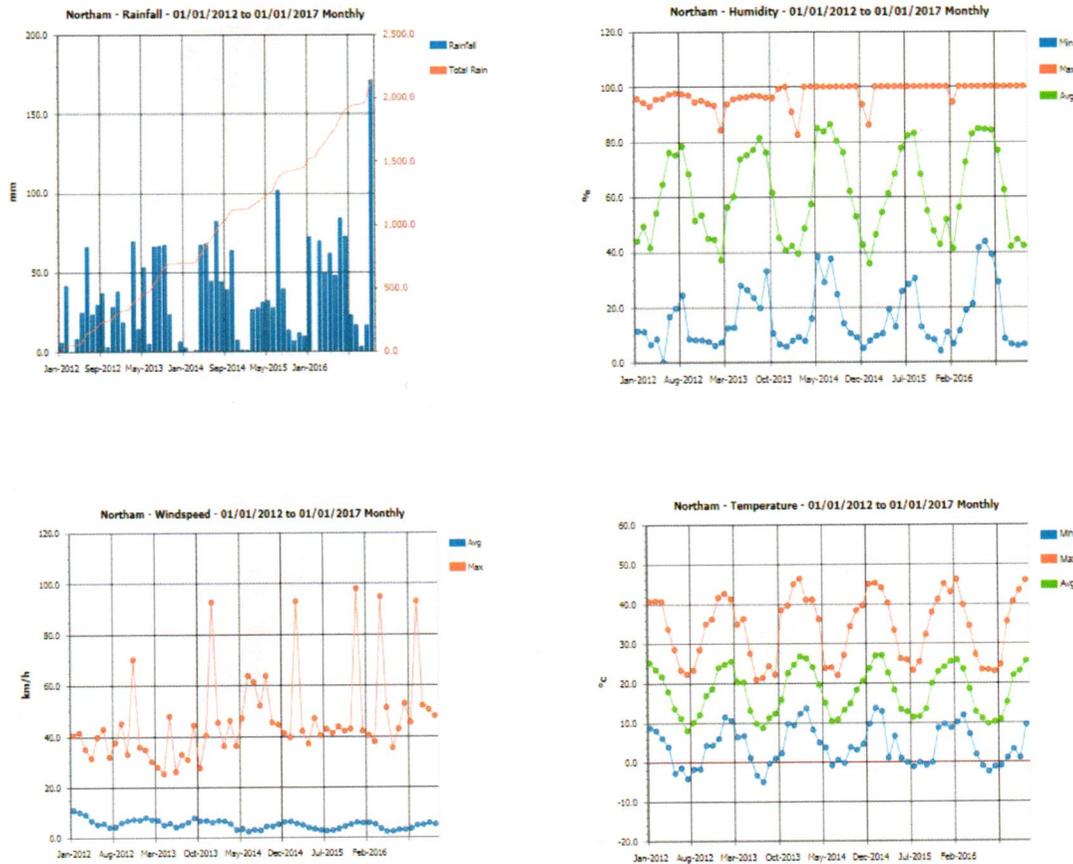
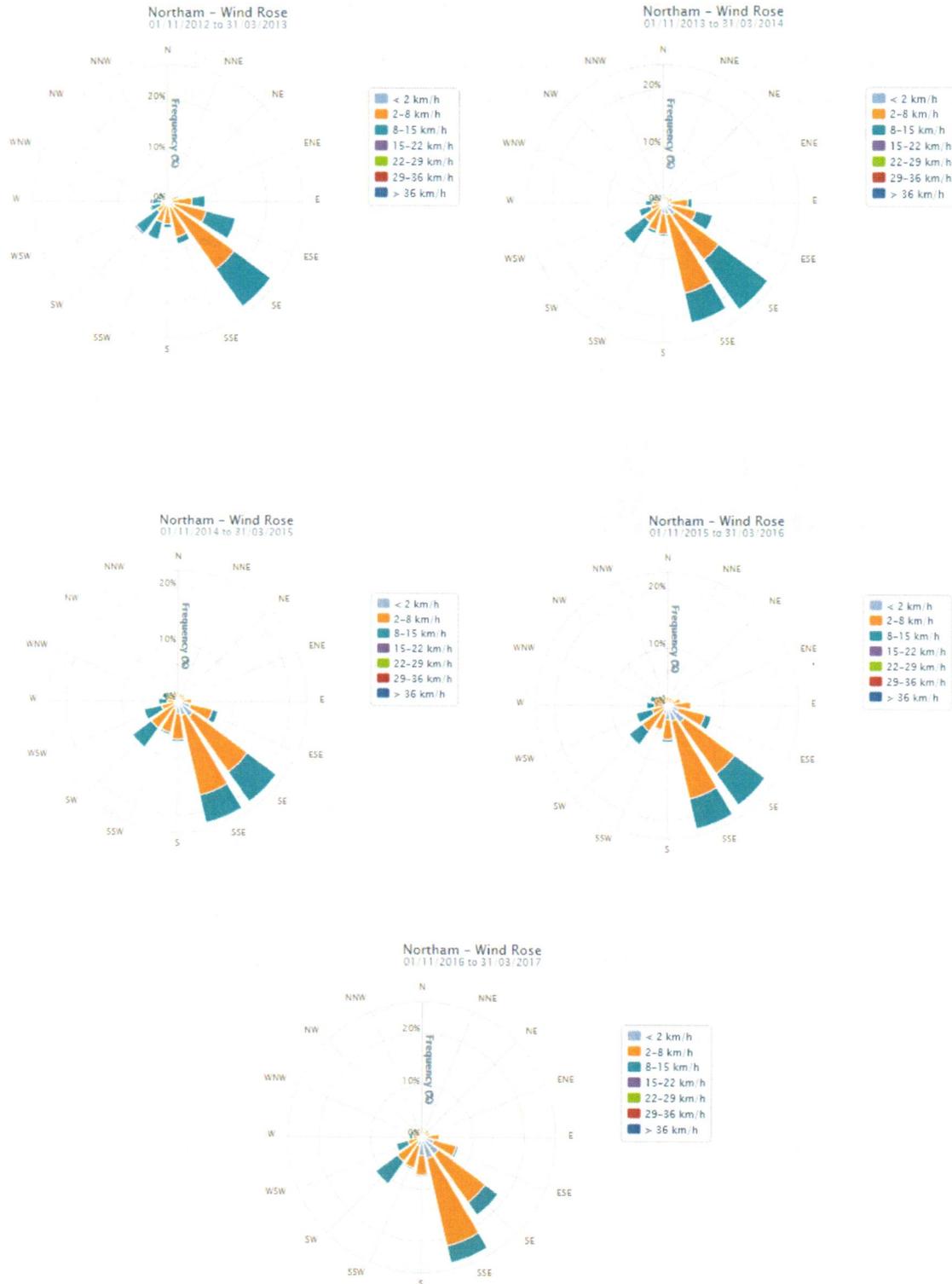


Figure 4 - Shire of Toodyay weather data⁴

⁴ <https://www.agric.wa.gov.au/weather-stations>

Northam Wind Rose for 2012/13 – 2016/7 during Fire Season – November to March



3.2.3 Vegetation

Nine vegetation associations have been identified in the Shire of Toodyay and broadly represent the decreasing occurrence of rainfall as fronts move inland from west to east.

The Jarrah/Marri forest and the Marri/Wandoo woodlands occur in the south-west corner of the Shire, which coincides with the area of highest rainfall. In-fact, this area denotes the north-eastern limit of the Jarrah dominated forest of the greater South West. This vegetation typically has higher fuel loads and carries a diverse understory. These dense understories provide excellent fuels and in many cases form a “Ladder”, allowing a fire burning under the right conditions to enter the canopy and possibly develop into a crown fire. To reduce the potential for this type of fire behaviour cool autumn prescribed burns or mechanical modification, removal or reduction of understorey fuels is of high importance in proximity to priority assets.

The more open Wandoo, York Gum and Powder Bark dominate to the central and eastern parts of the Shire. Soil-type associations are demonstrated throughout the Shire with intermittent areas of Jam Wattle and Scrub/Heath Sandplain. The presence of the shrubby form of the wattles and Jam trees in these ecosystems means that there is little separation between the ground layer vegetation and the canopy. This results in canopy fires developing more readily in this vegetation type.

The riparian zones of the Avon River and its various tributaries within the Shire are dominated by She-oak, Flooded Gum and Swamp Paperbark. This ecosystem is quite diverse and has been highly modified in many areas due to stock grazing and altered hydrology. As a result, the riparian areas vary from highly managed parkland areas to natural dense vegetation. These structures influence the likely fire behaviour experienced in the different areas.

In the Wongamine area of the eastern part of the Shire, vegetation is typical of the Wheatbelt and is the only known occurrence of Salmon Gums within the Shire. Despite broad scale clearing, weed infestation and environmental degradation, the vegetation types and individual flora species of the Shire are of inestimable biological value. Fires in areas of weed infestation tend to be high intensity and quick moving. These fires often carry into other areas rapidly. Post fire, fast growing weeds and invasive species will come back quickly and increase in density, often spreading into adjoining areas that have been impacted and increasing fuel loads. The highly fragmented and disturbed nature of these areas makes the small amount of remanent native vegetation critical for ecosystem function and landscape connectivity. Any fire that impacts on this vegetation is likely to have significant and detrimental impacts on the local environment.

Environmental Considerations – Flora and Fauna

A comprehensive report is attached at **Appendix two**, compiled by the Shire of Toodyay’s, Reserves Management Officer.

3.2.4 Bushfire Frequency and Causes of Ignition

Potential fire paths include the Avon River Valley, which runs through the Toodyay townsite, and the forested area in the North and West of the Shire, which has the potential to impact adjacent residential properties.

There have been 2 significant fires in the Shire of Toodyay since 2007. Both of these fires occurred under severe fire weather conditions (high temperatures, low humidity and dry fuels) and were driven by very high winds ranging from Westerly to North Westerly, with unstable atmospheric conditions as a result of cyclonic activity in the North of the State.

The Chatcup Fire of 2007 started from clashing power lines, which caused hot metal to fall into dried stubble and ignite. The 44 km/hr North Westerly winds, relative humidity of 8% and an ambient temperature of 46°C saw the fire quickly develop. The fire raced through the landscape with rates of spread of approximately 9km/hr, impacting several farms and resulting in a fatality.

The bushfire that occurred near Toodyay on the 29th December 2009 was considered at the time to be one of the most destructive, in terms of house loss, to ever occur in contemporary Western Australia. The fire ignited at around 1pm in a harvested barley crop that retained around 20 to 30-centimetre-tall stem residue that was 100 percent cured. There were 38 homes destroyed in the bushfire. Even though the fire was extremely fast moving, at times on very steep slopes and quite intense, there was no loss of life associated with the fire event.



Government of Western Australia
Department of Fire & Emergency Services



All Landscape Fires
LGA of TOODYAY (S)
from 01/07/2012 to 30/06/2017

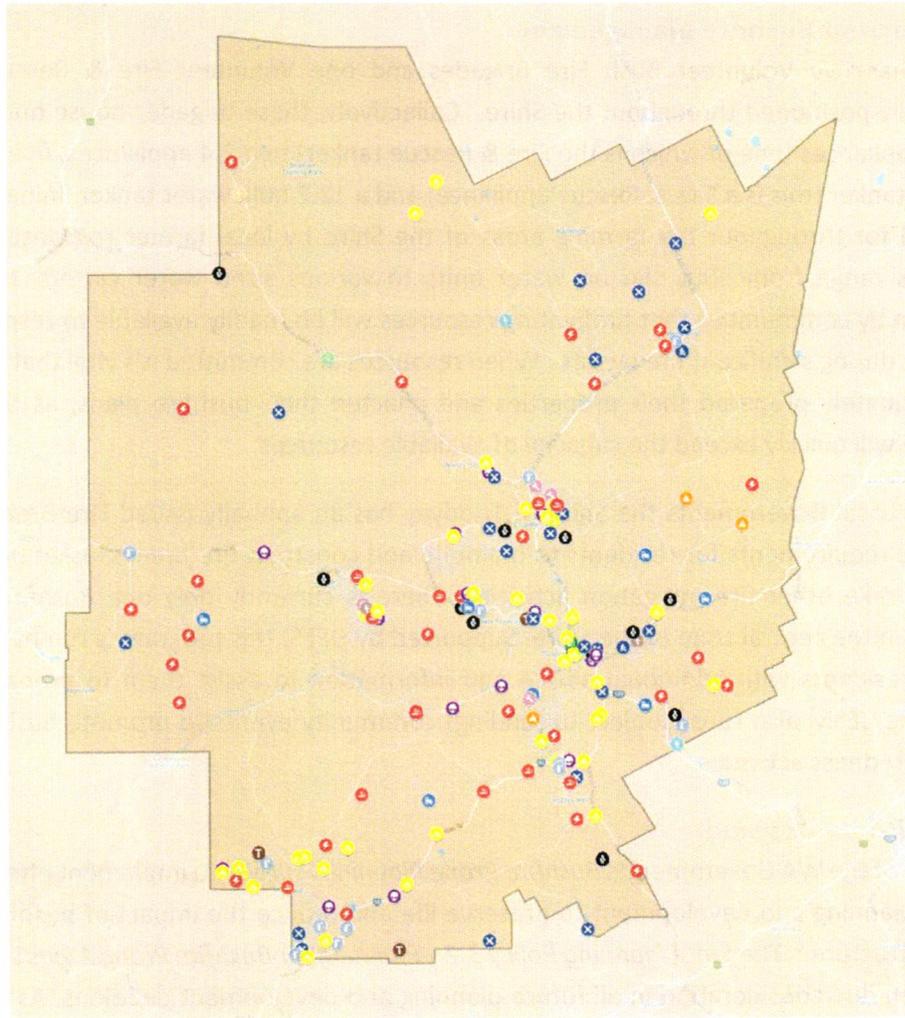
Bushfires Summary of Ignition

	2012/ 2013	2013/ 2014	2014/ 2015	2015/ 2016	2016/ 2017	Total
Total Number of Bushfires:	35	31	61	36	49	212
Burn off fires	3	6	13	6	22	50
Campfires/bonfires/outdoor cooking	0	1	1	0	0	2
Cigarette	0	0	4	3	7	14
Electrical distribution (excl. power lines)	1	0	1	0	0	2
Equipment - Mechanical or electrical fault	0	1	2	0	1	4
Equipment - Operational deficiency	0	0	2	0	0	2
Hot works (grinding, cutting, drilling etc..)	0	1	3	0	0	4
Human Error (Left on, knock over, unattended etc.)	0	0	0	0	1	1
Improper Fuelling/Cleaning/Storage/Use of material ignited	0	0	1	0	0	1
Indoor Appliances - cause unknown	1	0	0	0	0	1
Other open flames or fire	2	1	1	0	0	4
Power lines	1	0	0	0	1	2
Reignition of previous fire	2	5	5	3	1	16
Suspicious/Deliberate	8	2	4	7	1	22
Undetermined	5	3	5	2	1	16
Unreported	4	4	9	2	11	30
Vehicles (incl. Farming Equipment/Activities)	1	2	0	1	3	7
Weather Conditions - Lightning	6	5	9	12	0	32
Weather Conditions (High winds, natural combustion etc. Excludes Lightning)	1	0	1	0	0	2

Bushfire Ignition Report June 2012 – June 2017⁵

On review of the above ignition data it is indicated that “Burn Offs” are the most frequent cause of bushfire within the Shire. This is consistent with statistics from similar locations, such as the Shires of Northam and York that rank “Burn Offs” as their second highest cause of ignition. This trend has prompted a further investigation to be conducted by the Shire’s CESM to understand factors contributing to burn off related fires and improve permit issuing practices and education.

⁵ Source: DFES



-  Burn off fires (50)
-  Weather Conditions - Lightning (32)
-  Unreported (29)
-  Suspicious/Deliberate (22)
-  Reignition of previous fire (16)
-  Undetermined (16)
-  Cigarette (14)
-  Vehicles (incl. Farming Equip... (7)
-  Equipment - Mechanical or el... (4)
-  Hot works (grinding, cutting, ... (4)
-  Other open flames or fire (4)
-  Campfires/bonfires/outdoor ... (2)
-  Electrical distribution (excl. ... (2)
-  Equipment - Operational defi... (2)
-  Power lines (2)
-  Weather Conditions (High wi... (2)
-  Human Error (Left on, knock ... (1)
-  Improper Fuelling/Cleaning/... (1)
-  Indoor Appliances - cause un... (1)

Figure 5 - Ignition type and location

3.2.5 Current Bushfire management

Toodyay has five Volunteer Bush Fire Brigades and one Volunteer Fire & Rescue Service unit strategically positioned throughout the Shire. Collectively, these brigades house one 4.4 appliance, two 3.4 appliances (one of which is the Fire & Rescue tanker) two 2.4 appliances, five 1.4 appliances, one Light tanker (this is a Fire & Rescue appliance) and a 12.2 bulk water tanker. Initial suppression is supported for throughout the farming areas of the Shire by local farmer response units. Private appliances range from 500L slip on water units to various sized water carters. It is a common perception by communities that firefighting resources will be readily available to respond to calls for assistance during significant fire events. When resources are committed it's vital that the community have adequately prepared their properties and enacted their bushfire plans, as the demand for assistance will quickly exceed the capacity of available resources.

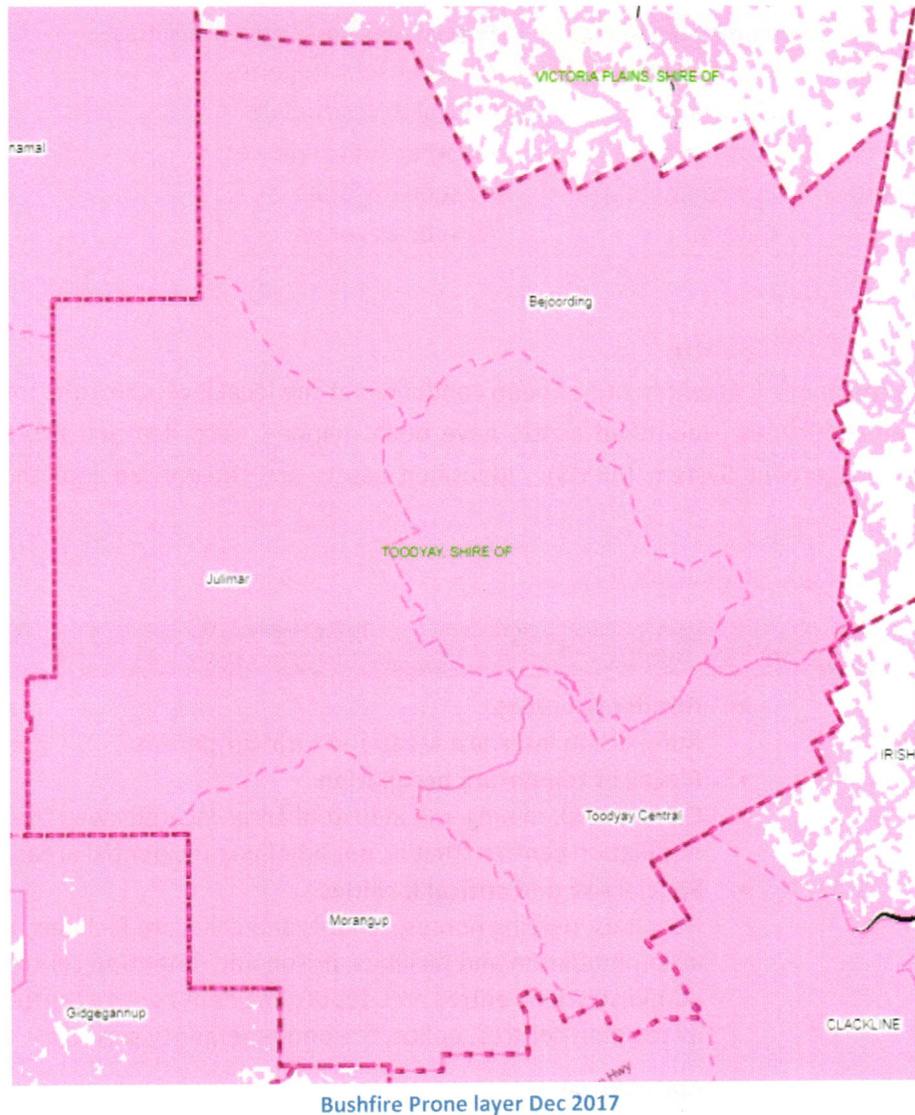
Like most Local Governments the Shire of Toodyay has an annually issued Fire Break notice which details the requirements for residents to maintain and construct fire breaks, asset protection zones and undertake other fire mitigation activities. There is currently only one Bushfire Ready Group operating in the central zone of the Shire. Supported by DFES, this program is run by volunteers and provides residents with additional advice and information to assist them to prepare for bushfire events. The CESM also runs (subject to funding) community events to promote bushfire awareness and preparedness activities.

Bushfire Prone Mapping

The intent of the WA Government's *Bushfire Prone Planning Policy* is to implement effective risk based land use planning and development to preserve life and reduce the impact of bushfire on property and infrastructure.⁶ The *State Planning Policy 3.7 – Planning for Bushfire Prone Areas* ensures bushfire risk is given due consideration in all future planning and development decisions. As the policy does not apply retrospectively and focuses on individual developments and buildings, the BRM Plan focuses on identifying existing bushfire risk and establishing an effective treatment plan to manage unacceptable community risks.

The Shire of Toodyay has designated the entire local government area as Bushfire Prone, as evidenced by the associated map (the 2019 Map of Bushfire Prone Areas are shown in 'pink' on the map below). Bushfire Prone Areas are subject to increased planning and construction requirements. These are addressed through the Shire of Toodyay Local Planning Scheme No 4, including deemed provision for Local Planning Scheme amendment as provided for under the Planning and Development (Local Planning Scheme amendment) Regulations 2015.

⁶ Source: *State Planning Policy 3.7 – Planning in Bushfire Prone Areas*



4. Asset Identification and Risk Assessment

4.1 Planning Areas

The Shire of Toodyay has been divided into six planning areas they are:-

- Toodyay Town Site
- Bejoording
- Julimar
- Morangup
- Toodyay Central
- Coondle

Attached at **Appendix three** is a map showing the boundaries of the planning areas identified within the Shire of Toodyay.

4.1.1 Priorities for Asset Identification and Assessment

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

Table 4 – Priorities for Asset Identification and Assessment

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

4.2 Asset Identification

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

Table 5 – Asset Categories and Subcategories

Asset Category	Asset Subcategories
Human Settlement	<ul style="list-style-type: none"> • Residential areas Rural urban interface areas and rural properties. • Places of temporary occupation Commercial, mining and industrial areas located away from towns and population centres (that is, not adjoining residential areas). • Special risk and critical facilities Hospitals, nursing homes, schools and childcare facilities, tourist accommodation and facilities, prison and detention centres, government administration centres and depots, incident control centres, designated evacuation centres, police, fire and emergency services.
Economic	<ul style="list-style-type: none"> • Agricultural Pasture, grazing, livestock, crops, viticulture, horticulture and other farming infrastructure. • Commercial and industrial Major industry, waste treatment plants, mines, mills and processing and manufacturing facilities and cottage industry. • Critical infrastructure Power lines and substations, water and gas pipelines, telecommunications infrastructure, railways, bridges, port facilities and waste water treatments plants. • Tourist and recreational Tourist attractions and recreational sites that generate significant tourism and/or employment within the local area. • Commercial forests and plantations • Drinking water catchments
Environmental	<ul style="list-style-type: none"> • Protected Rare and threatened flora and fauna, ecological communities and wetlands. • Priority Fire sensitive species and ecological communities. • Locally important Nature conservation and research sites, habitats, species and communities, areas of visual amenity.
Cultural	<ul style="list-style-type: none"> • Aboriginal heritage

Asset Category	Asset Subcategories
	Places of indigenous significance. <ul style="list-style-type: none"> • Recognised heritage Assets afforded legislative protection through identification by the National Trust, State Heritage List or Local Planning Scheme Heritage List. • Local heritage Assets identified in a Municipal Heritage Inventory or by the community. • Other Other assets of cultural value, for example community centres and recreation facilities.

4.3 Assessment of Bushfire Risk

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

The 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 6 – Asset Category Proportions

Asset category	Proportion of identified assets
Human Settlement	87%
Economic	8.5%
Environmental	4%
Cultural	0.5%

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 7 – Likelihood Ratings

Likelihood Rating	Description
Almost Certain (Sure to Happen)	<ul style="list-style-type: none"> • Is expected to occur in most circumstances; • High level of recorded incidents and/or strong anecdotal evidence; and/or • Strong likelihood the event will recur; and/or • Great opportunity, reason or means to occur; • May occur more than once in 5 years.
Likely (Probable)	<ul style="list-style-type: none"> • Regular recorded incidents and strong anecdotal evidence; and /or • Considerable opportunity, reason or means to occur; • May occur at least once in 5 years.
Possible (feasible but < probable)	<ul style="list-style-type: none"> • Should occur at some stage; and/or • Few, infrequent, random recorded incidents or little anecdotal evidence; and/or • Some opportunity, reason or means to occur.
Unlikely	<ul style="list-style-type: none"> • Would only occur under exceptional circumstances.

Likelihood Rating	Description
(Improbable, not likely)	

4.3.2 Consequence Assessment

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

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

Table 8 – Consequence Ratings

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

Consequence Rating	Descriptions
	<ul style="list-style-type: none"> • Significant damage to assets, with ongoing recovery efforts and external resources required. • Community only partially functioning. Widespread inconvenience, with some services unavailable. • Mid to long-term failure of significant infrastructure and service delivery affecting large parts of the community. Initial external support required. (Repairs occur within 2 to 6 months; service outages last less than a month.) • Local or regional economy impacted for a significant period of time with significant financial assistance required. Significant disruptions across industry sectors leading to multiple business failures or loss of employment. • Significant damage to environmental or cultural assets that require major rehabilitation or recovery efforts. • Localised extinction of native species. This may range from loss of a single population to loss of all of the species within the BRM Plan area (for a species which occupies a greater range than just the BRM Plan area).
Catastrophic	<ul style="list-style-type: none"> • Multiple cases of fatalities. • Extensive number of severe injuries. • Extended and large number requiring hospitalisation, leading to health services being unable to cope. • Extensive displacement of persons for extended duration. • Extensive resources required for personal support. • Extensive damage to assets that will require significant ongoing recovery efforts and extensive external resources. • Community unable to function without significant support. • Long-term failure of significant infrastructure and service delivery affecting all parts of the community. Ongoing external support required. (Repairs will take longer than 6 months, service outages last more than 1 month.) • Regional or State economy impacted for an extended period of time with significant financial assistance required. Significant disruptions across industry sectors leading to widespread business failures or loss of employment. • Permanent damage to environmental or cultural assets. • Extinction of a native species in nature. This category is most relevant to species that are restricted to the BRM Plan area, or also occur in adjoining areas and are likely to be impacted upon by the same fire event. 'In nature' means wild specimens and does not include flora or fauna bred or kept in captivity.

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

- **Consequence Rating - Human Settlement Assets**

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

- **Consequence Rating - Economic Assets**

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

- **Consequence Rating - Environmental Assets**

The outcome or impact of a bushfire event on the asset, or a group of assets, measured by the vulnerability of the asset and the potential impact of a bushfire or fire regime.

- **Consequence Rating - Cultural Assets**

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

4.3.3 Assessment of Environmental Assets

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

4.3.4 Local Government Asset Risk Summary

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

Table 9 – Local Government Asset Risk Summary

Risk Rating \ Asset Category	Low	Medium	High	Very High	Extreme
Human Settlement	1.4%	2.9%	8.6%	12.2%	62%
Economic	0.2%	0.2%	0.5%	2.5%	5%
Environmental		0.2%	1.4%	0.7%	1.7%
Cultural					0.5%

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 9 shows how likelihood and consequence combine to give the risk rating and subsequent treatment priority for an asset.

Table 10 – 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 11 – Criteria for Acceptance of Risk and Course of Action

Risk Rating	Criteria for Acceptance of Risk	Course of Action
<p>Extreme (Priorities 1A, 1B, 1C)</p>	<p>Requires asset specific treatment strategies to be applied.</p> <p>Treatment action is required within 1 Year for Rural Urban interface areas and 2 years for all others of the plan being endorsed.</p> <p>It is unlikely that Local Government Wide Controls would be adequate to manage the risk.</p>	<p>Specific action is recommended in the first 2 years of BRM Plan</p> <ul style="list-style-type: none"> • Treatment priorities will include <ul style="list-style-type: none"> ○ treatments that will have maximum benefit to multiple assets and critical infrastructure ○ Identification of partnerships with other agencies for strategic mitigation • Ideally, a face to face meeting (on site) should be held with landowner. Or alternatively a letter sent to reinforce hazard status • Treatments Should include activities that modify the hazard vegetation where possible. • Risk assessment to be reviewed prior to the fire season (September) each year • Asset to be included on Fire Break Inspection. • Private landholders will be encouraged to join local Bush fire ready groups Via letter or face to face meeting
<p>Very High (Priorities 2A, 2B, 2C)</p>	<p>Requires asset specific treatment strategies to be applied.</p> <p>Treatment action is required within 2 years of the plan being endorsed.</p> <p>It is unlikely that Local Government Wide Controls would be adequate to manage the risk.</p>	<p>Specific action(s) required in the first 3 years of the BRM Plan</p> <ul style="list-style-type: none"> • Treatment priorities will include <ul style="list-style-type: none"> ○ treatments that will have maximum benefit to multiple assets and critical infrastructure ○ Identification of partnerships with other agencies for strategic mitigation • Assets within the townsite to be included on Fire Break inspection list <p>Communication with stakeholders as per the Communications Plan</p>

<p>High (Priorities 3A, 3B, 3C, 3D)</p>	<p>Asset specific treatment strategies will likely be required to adequately manage the risk.</p>	<p>Specific action(s) required in the first 4 years of the BRM Plan where resourcing and funding permits</p> <ul style="list-style-type: none"> • Priorities will include <ul style="list-style-type: none"> ○ Assets that fall adjacent to Extreme or Very High risk assets ○ treatments that will have maximum benefit to multiple assets and critical infrastructure ○ Identification of partnerships with other agencies for strategic mitigation <p>Communication with stakeholders as per the Communications Plan</p>
<p>Medium (Priorities 4A, 4B, 4C)</p>	<p>Asset specific treatments are not required, but risk should be monitored.</p> <p>Local government wide controls should be sufficient to manage the risk</p> <p>If there is a change in the landscape / environment these assets may need to be reassessed more frequently.</p>	<ul style="list-style-type: none"> • Addressed through Local Government Wide Controls • Specific action is not required
<p>Low (Priorities 5A, 5B, 5C)</p>	<p>Asset specific treatments are not required, but risk should be monitored.</p> <p>Local government wide controls should be sufficient to manage the risk</p> <p>If there is a change in the landscape / environment these assets may need to be reassessed more frequently.</p>	<ul style="list-style-type: none"> • Addressed through Local Government Wide Controls and/or Community Education • Specific action is not 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 Toodyay. 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 Toodyay:

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

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

6.2 Asset-Specific Treatment Strategies

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

- **Fuel management** - Treatment reduces or modifies the bushfire fuel through manual, chemical and prescribed burning methods;
- **Ignition management** - Treatment aims to reduce potential human and infrastructure sources of ignition in the landscape;
- **Preparedness** - Treatments aim to improve access and water supply arrangements to assist firefighting operations;
- **Planning** - Treatments focus on developing plans to improve the ability of firefighters and the community to respond to bushfire; and
- **Community Engagement** - Treatments seek to build relationships, raise awareness and change the behaviour of people exposed to bushfire risk.

- **Other** - Local government-wide controls, such as community education campaigns and planning policies, will be used to manage the risk. Asset-specific treatment is not required or not possible in these circumstances.

6.3 Determining the Treatment Schedule

Efforts will be made to finalise the Treatment Schedule within twelve months of this BRM Plan being endorsed by OBRM. The Treatment Schedule will be developed in broad consultation with land owners and other stakeholders. In extreme cases where a property is assessed as at extreme risk it is planned that individual consultation with the land owner will occur, this will be subject to available time and funding. However, on many occasions these privately owned lands are often at this risk level due to neighbouring bush lands that are under the management of the Shire or other Government departments'. In these cases, funding will be sought to enable mitigation/treatment works on these lands, in an effort to reduce the exposure of the residence.

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

7. Monitoring and Review

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

7.1 Review

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

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

7.2 Monitoring

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

7.3 Reporting

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

7.3.1 Privacy Issues and Release of Information

Information captured through the Bushfire Risk Management System (BRMS) includes some sensitive data and information such as the location of culturally and environmentally significant sites, land ownership details and risk information. Additionally, the Asset Risk Register is, by its nature, a living evolving document. Appending a copy of the Asset Risk Register report to the BRM Plan only provides

a snapshot of the asset and risk information for a particular point in time and does not show changes in the risk profile over time.

The Shire of Toodyay, 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.

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. ⁷
Bushfire Hazard	The hazard posed by the classified vegetation, based on the vegetation category, slope and separation distance.
Bushfire Management Plan	A document that sets out short, medium and long term bushfire risk management strategies for the life of a development. ⁸
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.
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 <i>State Emergency Management Policy 2.9</i>) that describes how an organisation(s) intends to undertake the activities of emergency risk management based on minimising risk. These plans help

⁷ Australasian Fire and Emergency Service Authorities Council 2012, *AFAC Bushfire Glossary*, AFAC Limited, East Melbourne.

⁸ Western Australian Planning Commission 2015, *State Planning Policy 3.7: Planning in Bushfire Prone Areas*, WAPC, Perth.

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. ⁹
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.

⁹ Landgate 2015, *Glossary of terms*, Landgate, Perth

Risk Manager	The organisation or individual responsible for managing a risk identified in the Bushfire Risk Management Plan; including review, monitoring and reporting.
Risk Register	A component within the Bushfire Risk Management System used to record, review and monitor risk assessments and treatments associated with assets recorded in the Bushfire Risk Management Plan.
Risk treatment	A process to select and implement appropriate measures undertaken to modify risk.
Rural	Any area where in residences and other developments are scattered and intermingled with forest, range, or farm land and native vegetation or cultivated crops. ¹⁰
Rural Urban Interface (RUI)	The line or area where structures and other human development adjoin or overlap with undeveloped bushland. ¹¹
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.

¹⁰ Australasian Fire and Emergency Service Authorities Council 2012, *AFAC Bushfire Glossary*, AFAC Limited, East Melbourne

¹¹ Australasian Fire and Emergency Service Authorities Council 2012, *AFAC Bushfire Glossary*, AFAC Limited, East Melbourne

- Treatment Strategy** The broad approach that will be used to modify risk, for example fuel management.
- Treatment Type** The specific treatment activity that will be implemented to modify risk, for example a prescribed burn.
- Vulnerability** The susceptibility of an asset to the impacts of bushfire.

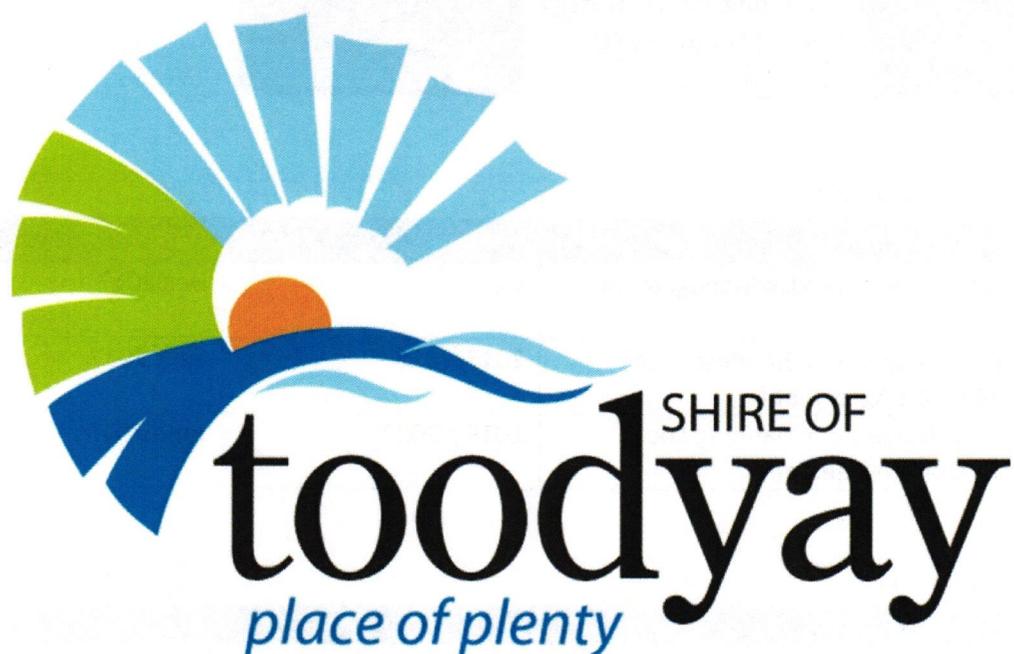
9. Common Abbreviations

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

Appendices

- 1 Communication Strategy**
- 2 Environmental Considerations (Bushfire Mitigation)**
- 3 Planning Area Map**
- 4 Local Government-Wide Controls, Multi-Agency Treatment Work Plan**

Appendix One



Shire of Toodyay

Bushfire Risk Management Planning

Communication Strategy

Version: 1

Date: December 2017

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

- *CEO, Shire of Toodyay, responsible for endorsement of the BRM Plan Communications Strategy.*
- *CESM, Shire of Toodyay, responsible for overseeing the implementation of the BRM Plan.*
- *Bushfire Risk Management Planning Coordinator, Shire of Toodyay, responsible for operational-level communication between the Shire and the Department of Fire and Emergency Services.*
- *Area Officer, Department of Fire and Emergency Services, responsible for strategic-level communication between the Shire and the Department of Fire and Emergency Services.*

- Bushfire Risk Planning Coordinator, Shire of Toodyay, responsible for the development of the BRM Plan.

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 Toodyay	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 governance.	High	Inform, consult and collaborate
Department of Biodiversity Conservation and Attractions, Parks and Wildlife Service	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	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
Public Transit Authority and ARC Infrastructure	Significant role in plan and treatment development. Responsible for treatments as a land owner/manager Critical infrastructure interest.	High	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.	Medium	Inform, consult, involve, collaborate and empower
Telecommunication Service Providers	Role in plan and treatment development, implementation and review. Responsible for treatments as a land owner/manager Critical infrastructure interest.	Medium	Inform, consult, involve, collaborate and empower
Department of Lands, Landcorp & Landgate	Role in plan and treatment development, implementation and review	Medium	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
Department of Health	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
Business Owners	Role in plan and treatment development, implementation and review. May have responsibilities for treatments as land owners/managers. Critical infrastructure interest.	Medium	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
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 and treatment development, implementation and review	High	Inform, consult, involve, collaborate and empower
Toodyay Naturalist Club, Caring for the Avon River Environment, Toodyay Friends of the River	Role in plan and treatment development, implementation and review	Medium	Inform, consult and involve
Indigenous Representation, South West Aboriginal Land &	Role in plan and treatment development, implementation and review	Medium	Inform, consult and involve

Sea Council & Department of Aboriginal Affairs											
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Communications Plan

Timing of Communication	Stakeholder (s)	Communication Objective(s)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring & Evaluation Method
Development of the BRM Plan								
Life of the Plan	Shire of Toodyay CEO, Senior Leadership Team and Council	1 – 3 & 5	<ul style="list-style-type: none"> Email Face to face meetings 	<ul style="list-style-type: none"> Inform and consult Confirm accountability and responsibilities Input into plan and treatments 	BRMPC	<ul style="list-style-type: none"> Resource constraints could limit their ability to participate 	<ul style="list-style-type: none"> Clarify misunderstandings and intentions of plan Express value of meeting 	<ul style="list-style-type: none"> Stakeholder's willingness to participate Feedback on the presentation
Life of the Plan	Shire of Toodyay Building and Works	2,3 & 5	<ul style="list-style-type: none"> Email Face to face meetings Phone 	<ul style="list-style-type: none"> Input into plan and treatments 	BRMPC BRMO	<ul style="list-style-type: none"> Limited time Conflicting priorities 	<ul style="list-style-type: none"> Plan meetings 	<ul style="list-style-type: none"> Stakeholder's willingness to participate Contributions to treatment plan
Annually	Bushfire Advisory Committee (BFAC) and District Operations Advisory Committee (DOAC)	1 – 3 & 5	<ul style="list-style-type: none"> Face to face meeting Presentation 	<ul style="list-style-type: none"> Inform and consult Confirm project objectives Seek input into treatment plans Project updates 	BRMPC BRMO	<ul style="list-style-type: none"> Stakeholder's willingness to participate 	<ul style="list-style-type: none"> Preparation Ensure current information on the BRM Plan Project is available 	<ul style="list-style-type: none"> Seek feedback on the presentation and (anecdotal) community feedback
Quarterly	Local Emergency Management Committee (LEMC)	1 – 3 & 5	<ul style="list-style-type: none"> Email Face to face meetings Presentation 	<ul style="list-style-type: none"> Confirm project objectives Seek input into treatment plans Project updates 	BRMPC BRMO	<ul style="list-style-type: none"> Stakeholder's willingness to participate 	<ul style="list-style-type: none"> Preparation Ensure current information on the BRM Plan Project is available 	<ul style="list-style-type: none"> Feedback on the presentation
Quarterly or as required	Chief Bushfire Control Officer (CBFCO), Bushfire Brigades,	1 – 3 & 5	<ul style="list-style-type: none"> Email Face to face meetings 	<ul style="list-style-type: none"> Confirm project objectives Seek input into treatment plans and providing project 	BRMPC	<ul style="list-style-type: none"> Time constraints No plan, unorganised Availability of 	<ul style="list-style-type: none"> Clarify misunderstandings and intentions of plan 	<ul style="list-style-type: none"> Feedback Support for BRMP process Level of engagement

Timing of Communication	Stakeholder (s)	Communication Objective(s)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring & Evaluation Method
	Brigade Captains			updates <ul style="list-style-type: none"> Identify Risk and share information 		volunteers	<ul style="list-style-type: none"> Confirm benefits Preparation Ensure current information on the BRM Plan Project is available 	
Biannually	DBAC, Parks and Wildlife Service and Forest Products Commission (FPC)	1 – 3 & 5	<ul style="list-style-type: none"> Face to face meetings Email Telephone 	<ul style="list-style-type: none"> 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 	BRMPC BRMO	<ul style="list-style-type: none"> Resource constraints could limit their ability to participate Willingness to release 'confidential' data re environmental assets 	<ul style="list-style-type: none"> Clarify misunderstandings and intentions of plan Provide undertakings re the release of confidential data Restrict release of information and document in plan 	<ul style="list-style-type: none"> Level of engagement Environmental assets in BRMS
Annually or as required	Stakeholders – Landowners / Land Managers	1 – 3 & 5	<ul style="list-style-type: none"> Email Face to face meeting Telephone Presentations Community Engagement activities 	<ul style="list-style-type: none"> Asset identification/ confirmation Outline BRMP process and objectives Identify assets at risk Identify existing controls/programs Development of treatment options 	BRMPC BRMO	<ul style="list-style-type: none"> Time constraints and travel Level of interest and engagements in process Lack of resourcing 	<ul style="list-style-type: none"> Select appropriate channel of communication Prepare materials and good planning Communicate funding opportunities when available 	<ul style="list-style-type: none"> Engagement and participation levels Feedback Contributions to treatment strategies
Annually or as required	Stakeholders – Others	1 – 3 & 5	<ul style="list-style-type: none"> Email Face to face meeting Telephone 	<ul style="list-style-type: none"> Asset identification/ confirmation Inform of BRMP process 	BRMPC BRMO	<ul style="list-style-type: none"> Time constraints and travel Level of 	<ul style="list-style-type: none"> Select appropriate channel of communication 	<ul style="list-style-type: none"> Engagement and participation levels

Timing of Communication	Stakeholder (s)	Communication Objective(s)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring & Evaluation Method
			<ul style="list-style-type: none"> • Presentations • Community Engagement activities 	<ul style="list-style-type: none"> • Identify assets at risk • Identify existing controls/programs • Development of treatment options 		<ul style="list-style-type: none"> • interest and engagements in process 	<ul style="list-style-type: none"> • Prepare materials • Plan communication 	<ul style="list-style-type: none"> • Feedback
Annually or as required	Landcare	1 – 3 & 5	<ul style="list-style-type: none"> • Face to Face meetings • Email • Telephone 	<ul style="list-style-type: none"> • Confirmation of environmental assets • Confirming project objectives • Seeking input into treatment plans • Providing project updates 	BRMPC BRMO	<ul style="list-style-type: none"> • Time constraints • Level of interest and engagement in process 	<ul style="list-style-type: none"> • Select appropriate communication method • Prepare materials • Plan communications 	<ul style="list-style-type: none"> • Engagement and participation levels • Feedback
Monthly	All BRMOS, BRMPC, BRMB	1 – 3 & 5	<ul style="list-style-type: none"> • Email • Telephone 	<ul style="list-style-type: none"> • Roles and responsibilities of the DFES Bushfire Risk Management Officers and LG Bushfire Risk Planning Coordinators • New ideas or programs available • Information sharing • Funding sources and availability 	BRMB	<ul style="list-style-type: none"> • Timing • Availability 	<ul style="list-style-type: none"> • Plan communications • Leverage off of other forums and opportunities to network 	<ul style="list-style-type: none"> • Engagement and participation levels • Ideas shared • Improvements made
Annually or as required	Office of Bushfire Risk Management	1 & 2	<ul style="list-style-type: none"> • Email • Face to face meetings 	<ul style="list-style-type: none"> • Compliance and governance • Plan endorsement 	BRMB	<ul style="list-style-type: none"> • Government funding • Government priorities • Identified non compliances 	<ul style="list-style-type: none"> • Stay up to date with process improvements 	<ul style="list-style-type: none"> • Plan endorsed
Bi-annually or as required	Dept of Fire and Emergency Services (DFES) – District/Regional Office	1 – 3 & 5	<ul style="list-style-type: none"> • Email • Face to face meetings • Telephone 	<ul style="list-style-type: none"> • UCL/UMR planned works • Identification of treatment strategies • Identification of other 	BRMO BRMB	<ul style="list-style-type: none"> • Time constraints • Conflicting priorities • Response 	<ul style="list-style-type: none"> • Plan communications • Share information 	<ul style="list-style-type: none"> • Other planned works identified • Funding opportunities

Timing of Communication	Stakeholder (s)	Communication Objective(s)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring & Evaluation Method
				<ul style="list-style-type: none"> planned works Sharing information Identifying funding opportunities 		obligations		<ul style="list-style-type: none"> identified UCL/UMR treatments included on BRMS
Implementation of the BRM Plan								
Life of the Plan	Shire of Toodyay CEO, Senior Leadership Team and Council	1 – 3 & 5	<ul style="list-style-type: none"> Email Face to face meetings 	<ul style="list-style-type: none"> Inform and consult Confirm accountabilities and responsibilities. Progress update Issues identification and action planning 	BRMPC or Director of Corporate & Community Services	<ul style="list-style-type: none"> Time constraints Availability Lack of understanding Budget (for LG mitigation) 	<ul style="list-style-type: none"> Planning and time management Clear purpose Targeted communication Regular updates 	<ul style="list-style-type: none"> Feedback, Questions raised Level of support received
Life of the Plan	Shire of Toodyay Building and Works/Reserve Management Officer	1 -3 & 5	<ul style="list-style-type: none"> Email Face to face meetings 	<ul style="list-style-type: none"> Reduction of fuel loads on LG managed lands Upgrades to strategic firebreaks 	BRMO BRMPC	<ul style="list-style-type: none"> Poor organisation, Limited time, Not preparing Poor communication from stakeholders and LG on completion of works 	<ul style="list-style-type: none"> Clarify misunderstandings and intentions of plan Plan communications Regular updates 	<ul style="list-style-type: none"> Treatments applied Positive feedback received on treatment supplied Risk ratings reduced
Life of the Plan	LEMC, BFAC & DOAC, CBFCO, BFB, CAPTS	1 – 3 & 5	<ul style="list-style-type: none"> Email Face to face meetings 	<ul style="list-style-type: none"> Report on progress to plan Report issues/constraints 	BRMPC BRMO	<ul style="list-style-type: none"> Availability Time 'Buy in' 	<ul style="list-style-type: none"> Collate data and report on success to plan Compliance to plan Keep informed 	<ul style="list-style-type: none"> Feedback received Level of engagement Issues identified and addressed
Life of the Plan	Stakeholders – Landowners / Land Managers	1 – 3 & 5	<ul style="list-style-type: none"> Email Face to face meetings 	<ul style="list-style-type: none"> Inform and consult Confirm accountability and 	BRMPC BRMO	<ul style="list-style-type: none"> Availability Time Loss of 	<ul style="list-style-type: none"> Planned sharing of information Negotiations 	<ul style="list-style-type: none"> Feedback Commitment to implement

Timing of Communication	Stakeholder (s)	Communication Objective(s)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring & Evaluation Method
			<ul style="list-style-type: none"> • Presentations • Community Engagement 	<ul style="list-style-type: none"> responsibility • Status and progress of plan • Treatment status, gaps and issues to be addressed 		<ul style="list-style-type: none"> commitment • Access to treatment resources • Funding 	<ul style="list-style-type: none"> conducted • Communicate funding opportunities when available 	<ul style="list-style-type: none"> agreed controls • Highly engaged • Treatments being completed • Risk ratings reduced
Life of the Plan	Stakeholders – Others	1 – 3 & 5	<ul style="list-style-type: none"> • Face to face • Presentations • Community Engagement • Telephone • Email 	<ul style="list-style-type: none"> • Inform and consult • Confirm accountability and responsibility • Status and progress of plan • Treatment status • Gaps and issues to be addressed 	BRMPC BRMO	<ul style="list-style-type: none"> • Availability • Time • Loss of commitment 	<ul style="list-style-type: none"> • Planned sharing of information • Negotiations conducted • Communicate funding opportunities when available 	<ul style="list-style-type: none"> • Feedback • Commitment to implement agreed controls • Highly engaged • Treatments being completed
Life of the Plan	BRMB, BRMPCs, BRMOs, OBRM, DFES District / Regional Office	1 – 3 & 5	<ul style="list-style-type: none"> • Face to face meetings • Email • Telephone 	<ul style="list-style-type: none"> • UCL/UMR Management • Status and progress of plan • Treatment status, gaps and issues to be addressed • Continuous improvement • Information sharing • Identification of other planned works • Identification of funding opportunities 	BRMPC BRMO BRMB	<ul style="list-style-type: none"> • Time • Conflicting priorities 	<ul style="list-style-type: none"> • Schedule communication opportunities 	<ul style="list-style-type: none"> • Planned works identified • Improvements identified and implemented • Issues addressed
• Review of the BRM Plan								
Annually	Shire of Toodyay, CEO and Councillors	4, 5	<ul style="list-style-type: none"> • Email • Face to face meetings 	<ul style="list-style-type: none"> • Governance and compliance • Review, monitoring 	BRMPC/BRMO	<ul style="list-style-type: none"> • Poor reporting and recording of information 	<ul style="list-style-type: none"> • BRPMC & BRMO to record data and information 	<ul style="list-style-type: none"> • Feedback received • Planned works

Timing of Communication	Stakeholder (s)	Communication Objective(s)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring & Evaluation Method
				and reporting to Council <ul style="list-style-type: none"> Status update Continuous improvement 		<ul style="list-style-type: none"> Review not completed by BRMB and OBRM 	<ul style="list-style-type: none"> appropriately Approved by BRMB and OBRM for LG 	<ul style="list-style-type: none"> completed Reporting & Statistics Risk ratings reduced
5 Yearly (Shire, DFES and OBRM)	OBRM, BRMO, BRMB, BRMPC & LG Council	4, 5	<ul style="list-style-type: none"> Email Face to face meetings Telephone 	<ul style="list-style-type: none"> Governance and compliance Review, monitoring and reporting Future planning 	BRMPC/BRMO	<ul style="list-style-type: none"> Poor reporting and recording of information Review not completed by BRMB and OBRM 	<ul style="list-style-type: none"> BRMPC & BRMO to record data and information appropriately Approved by BRMB and OBRM for LG 	<ul style="list-style-type: none"> Feedback received Planned works completed Reporting & Statistics Risk ratings reduced
Quarterly	Shire of Toodyay – Business Areas	4, 5	<ul style="list-style-type: none"> Face to face meetings Email Telephone 	<ul style="list-style-type: none"> Report on actions and status of BRMP Continuous improvement 	BRMPC	<ul style="list-style-type: none"> Objectives not clear Key actions not identified 	<ul style="list-style-type: none"> Discuss with Shire CEO Clear objectives set 	<ul style="list-style-type: none"> Good reporting and feedback on work completed Improvements identified and implemented
Quarterly or as required	Shire of Toodyay – Building and Works	4, 5	<ul style="list-style-type: none"> Face to face meetings 	<ul style="list-style-type: none"> Report on actions and status of BRMP Continuous improvement 	BRMPC	<ul style="list-style-type: none"> Time Availability Conflicting priorities 	<ul style="list-style-type: none"> Plan Communications Discuss with Shire Leadership Team 	<ul style="list-style-type: none"> Feedback on work completed Risk ratings reduced Improvements identified and implemented
Biannually or as required	DFES Regional / District Office	4, 5	<ul style="list-style-type: none"> Face to face meetings Email Telephone 	<ul style="list-style-type: none"> Report on actions and status of BRMP Continuous improvement 	BRMPC BRMO	<ul style="list-style-type: none"> Time Availability Conflicting priorities 	<ul style="list-style-type: none"> Plan communications 	<ul style="list-style-type: none"> Feedback on work completed Risk ratings reduced Improvements identified and

Timing of Communication	Stakeholder (s)	Communication Objective(s)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring & Evaluation Method
								implemented
Annually	BFAC, DOAC, LEMC, CBFCO, BFBs, Captains	4, 5	<ul style="list-style-type: none"> • Face to face meetings • Email • Telephone • Presentations 	<ul style="list-style-type: none"> • Report on actions and status of BRMP • Continuous improvement 	BRMPC BRMO	<ul style="list-style-type: none"> • Availability • Time • Conflicting priorities • Buy in 	<ul style="list-style-type: none"> • Keep informed • Share the wins 	<ul style="list-style-type: none"> • Feedback on work completed • Risk ratings reduced • Improvements identified and implemented
Annually or as required	Stakeholders – Land Owners / Land Managers	4, 5	<ul style="list-style-type: none"> • Face to face meetings • Telephone • Presentation • Community Engagement 	<ul style="list-style-type: none"> • Status of treatments • Success of treatments • Continuous improvement 	BRMPC BRMO	<ul style="list-style-type: none"> • Availability • Time • Conflicting priorities • Buy in • Access to resources 	<ul style="list-style-type: none"> • Plan communication • Target communication • Planned and prepared 	<ul style="list-style-type: none"> • Feedback on work completed • Risk ratings reduced • Improvements identified and implemented
Every 2 years	Stakeholders – Other	4, 5	<ul style="list-style-type: none"> • Face to face meetings • Telephone • Presentations • Community Engagement 	<ul style="list-style-type: none"> • Status of treatments • Success of treatments • Continuous improvement 	BRMPC BRMO	<ul style="list-style-type: none"> • Availability • Time • Conflicting priorities • Buy in • Access to resources 	<ul style="list-style-type: none"> • Plan communication • Target communication • Planned and prepared 	<ul style="list-style-type: none"> • Feedback on work completed • Risk ratings reduced • Improvements identified and implemented
Annually or as required	BRMB, BRMOs, BRMPCs	4, 5	<ul style="list-style-type: none"> • Face to Face meetings • Workshops • Telephone 	<ul style="list-style-type: none"> • Continuous Improvement • Sharing information 	BRMB	<ul style="list-style-type: none"> • Availability • Time • Conflicting priorities 	<ul style="list-style-type: none"> • Plan communication 	<ul style="list-style-type: none"> • Improvements identified and implemented

Appendix Two

SHIRE of TOODYAY

ENVIRONMENTAL CONSIDERATIONS (Bushfire Mitigation)

The Toodyay Shire is rich in environmental and heritage assets. It contains comparatively large areas of remnant native vegetation, much of it high quality and often forming vital wildlife corridors. With its varied vegetation types and geomorphology the Toodyay Shire is a habitat and bio-diversity zone of inestimable value. As such, any proposal(s) to undertake fire mitigation treatments need to be considered within that context. Factors such as animal and plant breeding cycles, feeding requirements and community values need to be fully explored prior to undertaking mitigation management activities.

FAUNA

The wide range of vegetation types across the Shire support diverse fauna. Several species are on the edge of their geographic range such as the reptile species, Mountain Devil *Moloch horridus* and the Western-netted Dragon *Ctenoporus reticulatus*. The Toodyay Naturalists' Club Inc. have recorded over 150 species of birds in six different habitat types within a 20 km radius of the Toodyay town site. Members of the Bird Life Australia (Wheatbelt Branch) regularly record water bird numbers along the Avon River and to date identifying over 65 species including migratory waders. Native mammal species known to occur in the Shire number 24 species. Threatened fauna species recorded within the Shire include:

- Chuditch, Western Quoll *Dasyurus geoffroii*
- Woylie, Brush-tailed Bettong *Bettongia penicillata ogilby*
- Red-tailed Phascogale, Red-tailed Wambenger *Phascogale calura*
- Tammar Wallaby *Macropus eugenii*
- Western brush-Wallaby *Macropus irma*
- Southern Brown Bandicoot *Isodon obesulus*
- Peregrine Falcon *Falco peregrinus*
- Rainbow Bee-eater *Merops ornatus*
- Baudin's Cockatoo *Calyptorhynchus baudinii*
- Carnaby's Cockatoo *Calyptorhynchus latrostris*
- Barking Owl *Ninox connivens*

Source: Wildlife Conservation Act 1950 Special Protected Fauna Notice 2016
Nature map Species report.

Previously extant mammal species within the Shire include;

- Black-flanked Rock Wallaby *Petrogale lateralis*
- Numbat *Myremecobius fasciatus*



Mountain Devil (Moloch horridus) photographed at West Coondle, Toodyay.

VEGETATION TYPES

Nine vegetation associations have been identified in the Toodyay Shire and broadly represent the decreasing rainfall occurrence west to east.

The Jarrah/Marri forest and the Marri/Wandoo woodlands occur in the southwest corner of the Shire which coincides with the highest rainfall area. In-fact this area denotes the north-eastern limit of the Jarrah dominated forest of the greater South West.

The more open Wandoo, York Gum and Powder Bark dominate to the central and eastern parts of the Shire.

Soil-type associations are demonstrated throughout the Shire with intermittent areas of Jam Wattle and Scrub/Heath Sandplain.

The riparian zones of the Avon River and its various tributaries within the Shire are dominated by She-oak, Flooded Gum and Swamp Paperbark.

In the Wongamine area of the eastern part of the Shire vegetation is typical of the Wheatbelt and where the only Salmon Gums *Eucalyptus salmonophloia* in the Shire occur.

Despite broad scale clearing, weed infestation and environmental degradation the vegetation types and individual flora species of the Toodyay Shire of high

biological value. A “Nature Map” online report will reveal over 1,400 species of biota within a 20 kilometre radius of the Dawn Atwell Nature Reserve alone.

Declared rare Flora Species (DRF) in the Shire of Toodyay include;

- Zig-Zag Grevillea *Grevillea flexuosa*
- Star Sun Orchid *Thelymitra stellate*



*Declared Rare Flora species, Grevillia flexuosa
photographed in Rugged Hills Reserve, Toodyay.*

FLORA ROADS

Some 58 priority flora species occur within the Toodyay Shire many of them found growing along road verges. The Toodyay Shire and Community have recognised the value of this roadside vegetation and have taken steps to ensure its preservation. Roadside vegetation management protocols are in place and no less than nine roads within the shire have been designated as official “Flora Roads” by the Roadside Conservation Committee. The establishment of the Flora Road network has involved sign posting, pull-in bays and brochure production. Toodyay’s Flora Roads have contributed to the protection of important species while adding appreciable value to Toodyay’s Tourist attractions.



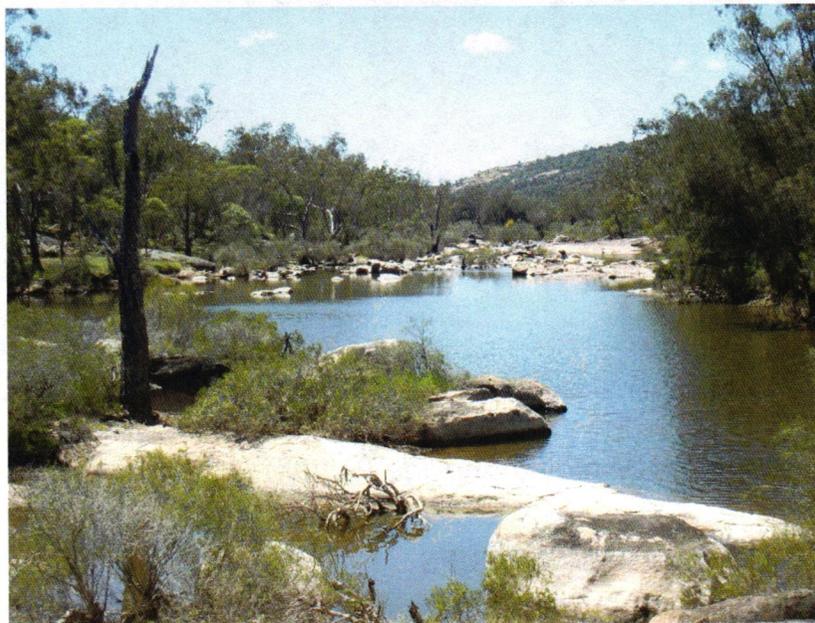
Sandplain Road, Toodyay. One of nine designated "Flora Roads" in the Toodyay Shire

RESERVES

Scattered across the 1,600 square kilometres of the Toodyay Shire and numbering some 166 reserves account for nearly a quarter of the entire Shire area. These reserves consist of a plethora of vesting, purposes and management orders. In addition to Shire reserves there are Department of Biodiversity and Attractions (DBCA), Department of Defence, Department of Water and Environmental Regulation, Crown Land, Unallocated Crown Land, Main Roads etc. Some of the reserves are no more than re-generated gravel pits and some have been incorporated into farm land. They range in size and usage greatly from under one hectare to 1,000's of hectares, from purely conservation purpose as in the case of Dawn Atwell Reserve to land for the waste transfer station and cemeteries. DBCA are by far the biggest holder of reserve land in the Shire with 20 reserves totally over 40,000 hectares. DBCA conduct prescribed burning and other management activities as a part of a broader district program. The Shire of Toodyay have adopted a "tenure-blind" approach to reserve management and carries out management activities including hazard reduction on land over which an appropriate management order and authority sits. Thorough assessment and engagement is conducted prior to implementing management activities with necessary licences obtained e.g. "licence to take" in the case of Declared Rare Flora localities.

RIVER and RIPARIAN

A 30 kilometre section of the Avon River runs through the Toodyay Shire from its eastern boundary with the Shire of Northam downstream to the City of Swan boundary and the Avon Valley Nation Park. Here is the start of the exposed basalt river bed that creates the white water rapids during times of high flow. Upstream, lies the dramatic West Toodyay bend where the river abruptly changes course from north-westerly to south westerly. The river has significant heritage, cultural and environmental values although it has been severely degraded over the past 100 years. Practices such as the River Training Scheme of the 50's and 60's, broad scale clearing of the catchment, the use of chemicals and fertilizers have contributed to declining water quality, loss of bio-diversity, sedimentation, weed invasion and high fire risk. This combination presents significant challenges to land managers and community environmental groups. The main river channel and the associated riparian zone is for the most part contained within a strip of Unallocated Crown Land. Due to this tenure the Shire is somewhat limited in its capacity and jurisdiction to conduct management activities here. The Department of Fire and Emergency Services (DFES) issues contracts to private mitigation companies to conduct annual fire management work on selected areas considered to present the highest risk e.g. Town, School and LIA areas.



The Avon River near southern Shire boundary.

WALK TRACKS & FACILITIES

Currently, two developed walk tracks are maintained and promoted in the Shire. The Bilya (River) Walk Track runs for 6 kilometres along the western bank of the Avon River passing significant environmental and heritage sites. The track features picnic facilities and interpretation and has proved popular with residents and visitors alike. At the annual Avon Descent white water event increased view point location access has significantly enhanced the spectator experience. The Toodyay Friends of the River Inc. created the Bilya Track in 2011 and in conjunction with the Shire continue to maintain it. Further benefits of the track include increased management and monitoring opportunities such as hazard reduction and invasive weed control. A network of sign posted walking tracks are located in Pelham Reserve covering 50 ha of hilly terrain south of the town.



Pink Everlasting display alongside Pelham Reserve walk track.

COMMUNITY ENVIRONMENTAL GROUPS

Two main Community Environmental groups are active in Toodyay namely the Toodyay Friends of the River Inc. and the Toodyay Naturalists' Club Inc. The Toodyay Naturalists Club celebrated its 50th anniversary in 2018. Both these groups have a long history of significant conservation and successful community engagement outcomes. They would be considered main stakeholders in any consultation process.

CULTURAL HERITAGE Traditionally, Toodyay is the tribal home of the Ballardong people and anecdotally Toodyay takes its name from a derivation of the word “Duidgee” purported to mean “Place of Plenty”. The confluence of waterways and the presence of native grasslands provided good sustenance for Aboriginal people. The River is called “Gulgulga Bilya” by the Ballardong, is sacred to Aboriginal people and has significant sites situated along its course. The same productive land drew the first European settlers in the early 1830’s whereby farms were established on the alluvial soils of the river banks and flood plains especially of the Toodyay Valley. Other sites of cultural significance are located across the expanse of the Shire. Any proposed fire mitigation activities or other management work should be cognisant of cultural values and sensitivities with appropriate engagement secured. In addition to aforementioned groups the Toodyay Historical Society Inc. and the Northam Aboriginal Advisory Group are effective points of contact and consultation.



DRF species, a Sun Orchid (Thelymitra stellata) photographed at the Dawn Atwell Nature Reserve, Julimar, Toodyay

PROTECTING NATURAL & CULTURAL ASSETS DURING MITIGATION WORKS

A thorough assessment of any area proposed to be mitigated needs to be conducted prior to the commencement of works. This should be a multi-pronged approach ranging from desk top assessments to on ground surveys. The presence of such assets as Declared Rare Flora, Threatened Fauna,

revegetation/rehabilitation areas or significant European and Indigenous cultural sites must be determined. Community and land holder engagement is an essential element in the process of identifying assets of value that may be impacted by fuel load management techniques. In some cases it may be necessary to obtain a licence or permit, especially in the case of rare flora or fauna before mitigation can occur.

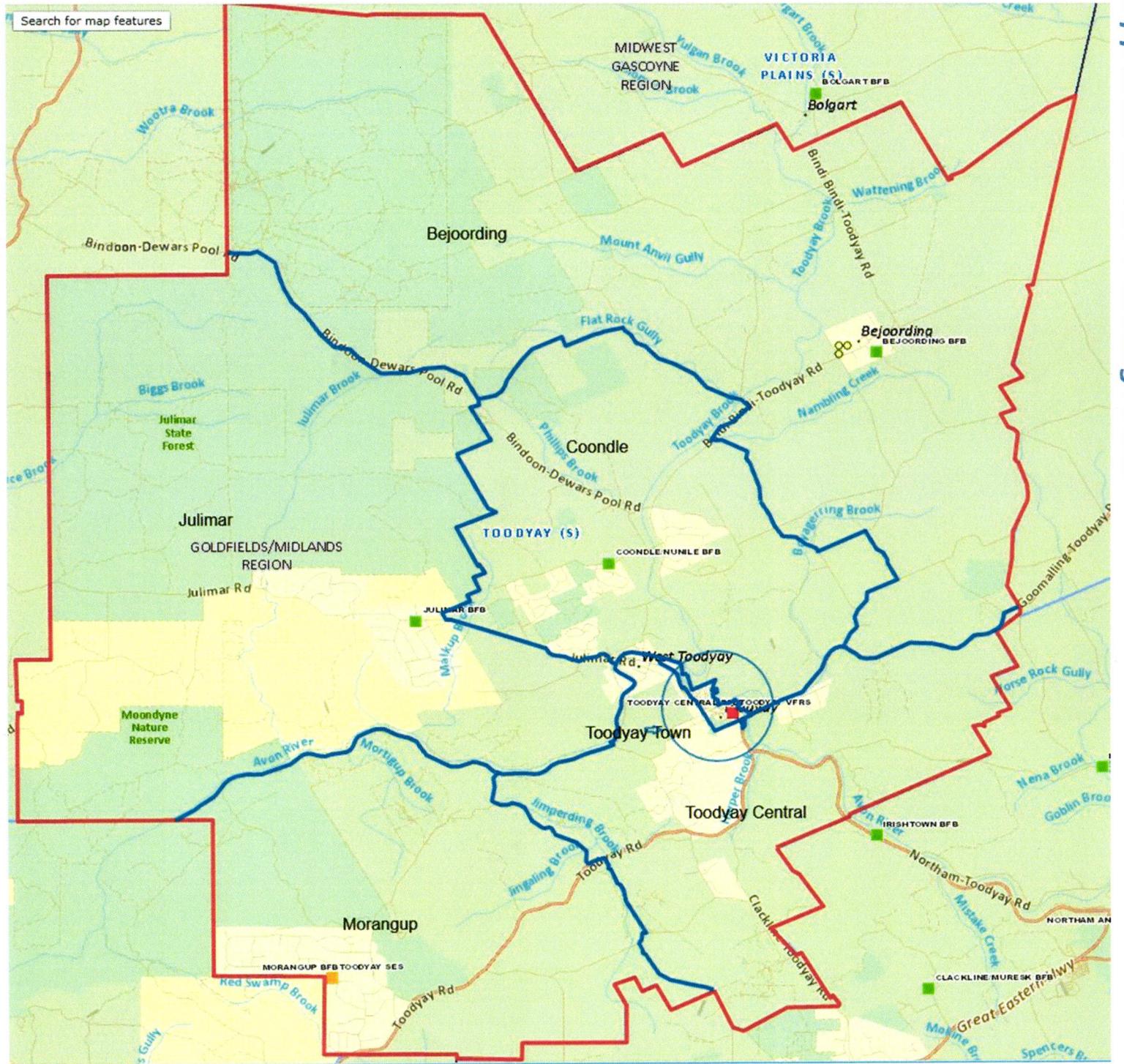
Seasonal considerations are paramount when planning mitigation. Conducting activities in spring will have significantly greater impacts on wildlife especially nesting birds. Even the presence smoke will be enough to disturb some bird species from their nesting sites. Slashing or mulching in spring will have a negative visual impact on areas of wild flower blooming and inevitably destroy the nests of scrub or ground nesting birds. Reptiles will also become active at this time and be vulnerable. Autumn and winter are preferred times for mitigation activities.

Increasingly, the undertaking of earthworks to facilitate improved access for fire appliances and or management vehicles and the installation of fire breaks and gating is being implemented. Initially, this type of work often causes a negative response from the public especially if within proximity of walk trails, public areas and nature reserves. Community engagement such as sign posting, letter drops and media out puts are recommended prior to commencement.

Protection of vulnerable trees from planned fire can be ensured by “pre-mop up”, a technique whereby litter leaf and other combustible material is cleared from the base of the trunks. This will prevent fire entering the dead wood that is found from ground level and along the trunks of many Eucalypts species. Once fire ignites this dead tissue it is often impossible to extinguish and inevitably leads to the loss of the tree. Low flame heights will reduce impacts on habitat such as nest sites and hollows by restricting scorch heights. Ensure clear demarcation of individual plants or zones of significant vegetation to denote exclusion of fire, chemical or mechanical mitigation. The use of chemical near waterways should be prohibited.

Pre and post activity briefings with all personnel involved in the mitigation activity is essential to re-inforce the requirements and protocols of the asset protection. Heightened awareness and appreciation of natural assets along with community values needs to be instilled with operators and managers. This will greatly assist the acceptance and on-going success of mitigation programs.

*Report and photographs by Greg Warburton:
Shire of Toodyay Reserve Management Officer 16/1/18*



Search for map features

Appendix Four: Multi-Agency Treatment Work Plan – Local Government Wide Controls

Control	Action/Activity Description	Lead Agency	Other Stakeholder(s)	Implementation Notes
BRMP Risk Analysis	Maintain and refine BRMP	Local Government	Landowners DFES	Treatment identification and planning for all very high and extreme risk assets within the Shire
Shire of Toodyay, Local firebreak and hazard reduction laws (<i>Bushfires act 1954</i>)	Annual Firebreak and Fuel Reduction Notice	Local Government	FCO's, brigades and land owners	Local law established to ensure land owners understand and comply to firebreak specifications as well as appropriately reducing fuel load and risk on their properties. Notice reviewed annually. Rangers inspect compliance to the notice and fines apply if non-compliant.
Shire of Toodyay Prohibited, Restricted and Open burn times (<i>Bush Fires act 1954</i>)	Annual Firebreak and Fuel Reduction Notice. Requirement to obtain "Burn Permit" during restricted times.	Local Government	Chief FCO, CESM, Rangers and the public.	Prohibited and restricted burn times are designed to force the community to apply for "Burn Permits" thereby reducing the risk during very high to catastrophic fire danger rating days. Notice reviewed annually and dates can be subject to change as required by the Chief and Deputy FCO's.
Shire of Toodyay mitigation works	The Shire's Works team has annual works programs to reduce fuel load and remove hazards on road verges	Local Government, Parks and Gardens	Public (reporting hazards and concern of risk) The Shire's Works team and Ranger	Work includes, slashing, spraying, mulching, pruning and other mechanical treatments on all Shire roads
DFES UCL/UMR land Management	Preparedness, mitigation work conducted on lands owned by DoL and managed by DFES under a MOU	DFES Goldfields-Midlands	P&W, LG, Local brigades	Annual budgeting has been completed to include mitigating risk on UCL/UMR.
Department of Biodiversity Conservation & Attractions (Parks and Wildlife) Master Burn Plans	P&W have a 6 season burn program that is published on their website. Yearly plans are available.	Parks & Wildlife	Local brigades, DFES, LG	The plans can be accessed via their website, by sharing shape files (GIS) and are communicated at Local BFAC and other various meetings.
Water Corporation Bushfire Risk Management Program	Bushfire Risk Management Plan. A Bushfire Risk Management Project is under way for the Water Corp.	Water Corporation	DFES, LG	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 BRMP department.
State-wide arson prevention programs	Education and awareness campaigns exist across the state for arson.	WA Police	DFES, LG	Participation as required. The Shire participates in campaigns for arson prevention.
Reserve Management Officer	Bushfire Mitigation Works on Shire land	Local Government	Fire Mitigation contractors and VBFB	RMO coordinates a documented list of Shire properties requiring Mitigation works
Local Emergency Management Arrangements	Emergency Management Plan	Shire of Toodyay	SJA WAPOL DFES DC	Annual review of emergency plans and arrangements.

Control	Action/Activity Description	Lead Agency	Other Stakeholder(s)	Implementation Notes
			Education CBFCO Office of Emergency Management (OEM) Silver Chain	
Five Minute Fire Chat	Community Engagement	State Government	LG, Chief FCO, CESM, Rangers, Bushfire Ready Groups and the public	The key message of this campaign is - preparing for and responding to bushfires as a team effort and everyone needs to play their part https://www.dfes.wa.gov.au/firechat/Pages/default.htm
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.
Department of Education Memorandum of Understanding	Coordination of bushfire risk management activities	DFES	DoE	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



Our Ref: D00419
Your Ref: LEG021//OCR43568

Mr Stan Scott
Chief Executive Officer
Shire of Toodyay
PO Box 96
Toodyay WA 6566

Dear Mr Scott

RE: SUBMISSION OF DRAFT BUSHFIRE RISK MANAGEMENT PLAN TO THE OFFICE OF BUSHFIRE RISK MANAGEMENT (OBRM)

Thank you for the draft Bushfire Risk Management Plan (BRM Plan) for Shire of Toodyay received on 23 July 2019.

I am pleased to inform you that the draft BRM Plan has been reviewed by OBRM and meets the required standard as per the *Bushfire Risk Management Planning – Guidelines for Preparing a Bushfire Risk Management Plan* (the Guidelines). The BRM Plan should now be presented to Council for approval and formal adoption. It would be appreciated if you would advise OBRM in writing of Council's approval of the BRM Plan.

Within six months of this, the Shire of Toodyay is requested to finalise the Treatment Schedule in the Bushfire Risk Management System (BRMS) and provide written notification to OBRM. Please note, it is not necessary to provide further updates to OBRM if any individual treatments are subsequently added, edited, rescheduled or deleted from the original schedule after this time.

As per the Guidelines, at the end of each financial year the Shire of Toodyay will be required to prepare and submit a report to OBRM detailing progress against the BRM Plan. The annual report is a standard report generated within BRMS and comments may be added to the report should you wish to provide further context. A reminder will be sent to all Local Governments providing further instructions for the submission of the report.

Yours sincerely

PAUL SIMPSON
A/DIRECTOR OBRM
13 August 2019