



Shire of Cunderdin

BUSHFIRE MANAGEMENT PLAN

2023-2028

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Document Control

Document name	Cunderdin BRMP	Current version	1.1
Document owner	CEO Shire of Cunderdin	Issue date	DD/MM/YYYY
Document location	Shire of Cunderdin	Next review date	DD/MM/YYYY

Document Endorsements

The Shire of Cunderdin Council endorses that the Bushfire Risk Management Plan (BRM Plan) has been reviewed and assessed by the Office of Bushfire Risk Management as consistent with the standard for bushfire risk management planning in Western Australia, the Guidelines for Preparing a Bushfire Risk Management Plan. The Shire of Cunderdin 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 approval of the BRM Plan by the Shire of Cunderdin Council satisfies their endorsement obligations under State Hazard Plan Fire.

Local Government	Representative	Signature	Date
Shire of Cunderdin	CEO Shire of Cunderdin		

Version	Date	Author	Section

Publication Information

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1. Introduction

1.1. Background

Under the State Hazard Plan Fire an integrated Bushfire Risk Management (BRM) Plan is to be developed for local government areas with significant bushfire risk. This BRM Plan has been prepared for the Shire of Cunderdin in accordance with the requirements of the Guidelines for Preparing a Bushfire Risk Management Plan (the Guidelines) from the Office of Bushfire Risk Management (OBRM) within the Department of Fire and Emergency Services (DFES). The risk management processes used to develop this BRM Plan are aligned to the key principles of AS/NZ ISO 31000:2009 Risk management – Principles and Guidelines and those described in the National Emergency Risk Assessment Guidelines. This approach is consistent with State Emergency Management (SEM) Policy and SEM Prevention and Mitigation Procedure 1.

This BRM Plan is a strategic document that facilitates a coordinated approach towards the identification, assessment and treatment of assets exposed to bushfire risk. 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 and Treatment Schedule to ensure treatment strategies are collaborative and efficient, regardless of land tenure.

1.2. Aim and Objectives

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

- guide and coordinate a tenure blind, multi-agency BRM program over a five-year period;
- document the process used to identify, analyse and evaluate risk, determine priorities and develop a plan to systematically treat risk;
- facilitate the effective use of the financial and physical resources available for BRM activities;
- integrate BRM into the business processes of local government, land owners and other agencies;
- ensure there is integration between land owners, BRM programs and activities; and
- document processes used to monitor and review the implementation of treatment plans to ensure they are adaptable and that risk is managed at an acceptable level.

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 and Policy

- Aboriginal Heritage Act 1972
- Biodiversity Conservation Act 2016
- Building Act 2011
- Bush Fires Act 1954
- Conservation and Land Management Act 1984
- Country Areas Water Supply Act 1947
- Emergency Management Act 2005
- Environmental Protection Act 1986
- Environmental Protection and Biodiversity Conservation Act 1999 (Cth)
- Fire Brigades Act 1942
- Fire and Emergency Service Act 1998
- Metropolitan Water Supply, Sewerage and Drainage Act 1909
- Bush Fires Regulations 1954
- Emergency Management Regulations 2006
- Planning and Development (Local Planning Scheme) Regulations 2015
- SEM Plan (State Emergency Management Committee (SEMC) 2019)
- SEM Policy (SEMC 2019)
- SEM Prevention and Mitigation Procedure 1 (SEMC 2019)
- State Hazard Plan Fire (SEMC 2019)
- State Planning Policy 3.4: Natural Hazards and Disasters (Western Australian Planning Commission (WAPC) 2006)
- State Planning Policy 3.7: Planning in Bushfire Prone Areas (WAPC 2015, as amended)

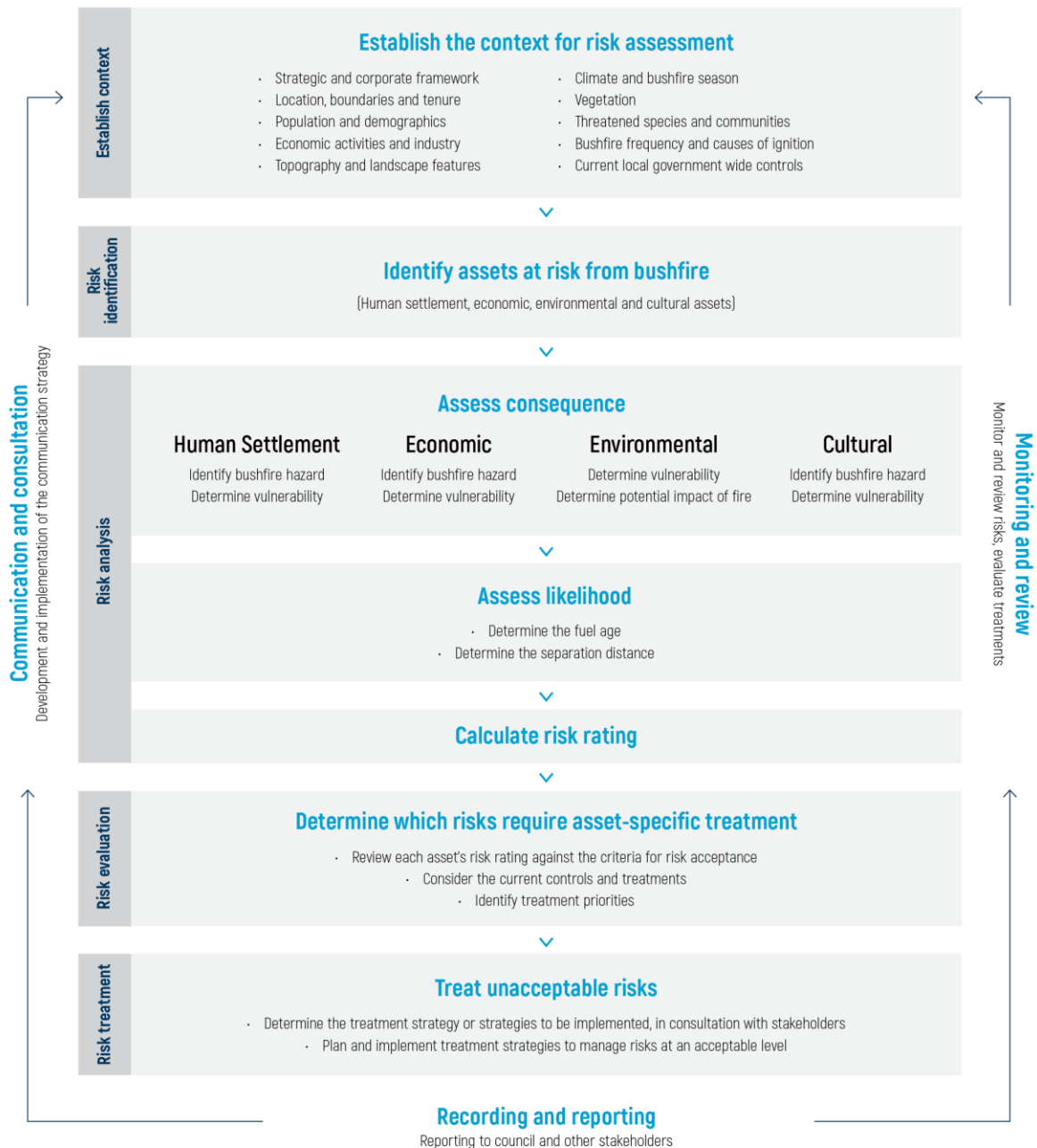
1.3.2 Other Related Documents

- A Capability Roadmap: Enhancing Emergency Management in Australia 2016 (Australasian Fire and Emergency Services Authorities Council 2016)
- A Guide to Constructing and Maintaining Fire-Breaks (DFES 2018)
- AS 3959:2009 Construction of Buildings in Bushfire-Prone Areas (Standards Australia 2009)
- AS/NZ ISO 31000:2009 Risk Management – Principles and Guidelines (Standards Australia 2009)
- Australian Disaster Resilience Handbook 10: National Emergency Risk Assessment Guidelines (Australian Institute for Disaster Resilience 2015)
- Guidelines for Preparing a Bushfire Risk Management Plan 2020 (DFES 2020)
- Bushfire Risk Management Planning Handbook (DFES 2018)
- Code of Practice for Timber Plantations in Western Australia (Forest Products Commission (FPC) 2006)
- Guidelines for Planning in Bushfire Prone Areas (WAPC 2017)
- Guidelines for Plantation Fire Protection (DFES 2011)
- National Disaster Risk Reduction Framework (Department of Home Affairs 2018)
- National Strategy for Disaster Resilience (Attorney-General's Department 2011)
- Native Vegetation Handbook for the Shire of Cunderdin
- Public Service Circular No. 88 Use of Herbicides in Water Catchment Areas (Department of Health 2007)
- Shire of Cunderdin Local Emergency Management Arrangements
- Shire of Cunderdin Strategic Plan 2022 – 2032
- Shire of Cunderdin Firebreak Notice 2021/22
- Shires of Cunderdin Quairading & Tammin Joint Local Planning Strategy
- Western Australian Emergency Risk Management Guide (SEMC 2015)

2. The Risk Management Process

The risk management processes used to identify and address risk in this BRM Plan are aligned with the international standard for risk management, *AS/NZ ISO 31000:2009 Risk Management – Principles and Guidelines*. This process is outlined in Figure 1.

Figure 1 – An overview of the risk management process¹



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

2.1. Roles and Responsibilities

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

Table 1 – Roles and Responsibilities

Stakeholder Name*	Roles and Responsibilities
Local Government	<ul style="list-style-type: none"> • Custodian of the Bushfire Risk Management Plan (BRM Plan) • Coordinate the development and ongoing review of the integrated BRM Plan. • Negotiate a commitment from land owners to treat risks identified in the BRM Plan. • Undertake treatments on lands owned or managed by them. • Submit the draft BRM Plan to DFES's Office of Bushfire Risk Management (OBRM) for review and endorsement. • Submission of the OBRM endorsed BRM Plan to council for their approval and adoption.
Department of Fire and Emergency Services	<ul style="list-style-type: none"> • Participate in and contribute to the development and implementation of BRM Plans. • Support to local government through expert knowledge and advice in relation to the identification, prevention and treatment of bushfire risk. • Facilitate local government engagement with state and federal government agencies in the local planning process. • Undertake treatments on Unmanaged Reserves and Unallocated Crown Land within gazetted town site boundaries. • In accordance with Memorandums of Understanding and other agreements, implement treatment strategies for other land owners. • Review BRM Plans for consistency with the Guidelines prior to final approval by council. • Administer and coordinate the Mitigation Activity Fund Grants Program.
Department of Biodiversity, Conservation and Attractions	<ul style="list-style-type: none"> • Participate in and contribute to the development and implementation of BRM Plans. • Provide advice for the identification of environmental assets that are vulnerable to fire and planning appropriate treatment strategies for their protection. • Undertake treatments on department managed land, and Unmanaged Reserves and Unallocated Crown Land outside gazetted town site boundaries and land in which they have an agreement for.

Stakeholder Name*	Roles and Responsibilities
Forest Products Commission	<ul style="list-style-type: none"> • Participate in and contribute to the development and implementation of BRM Plans. • Provide information about their assets and current risk treatment programs. • Undertake treatments on lands owned or managed by them.
Department of Planning, Lands and Heritage	<ul style="list-style-type: none"> • Provide advice for the identification of their assets and infrastructure, specifically Aboriginal and European heritage.
Other State and Federal Government Agencies and Public Utilities	<ul style="list-style-type: none"> • Provide information about their assets and current risk treatment programs. • Participate in and contribute to the development and implementation of BRM Plans. • Undertake treatments on lands they manage.
Corporations and Private Land Owners	<ul style="list-style-type: none"> • Provide information about their assets and current risk treatment programs.

2.2. Communication and Consultation

Communication and consultation throughout the risk management process is fundamental to the development, implementation and review of the BRM Plan. To ensure appropriate and effective communication occurred with relevant stakeholders at each stage of the BRM planning process, a *Communication Strategy* was prepared (Appendix A).

3. Establishing the Context

3.1. Description of the Local Government and Community Context

3.1.1 Strategic and Corporate Framework

The Shire of Cunderdin Strategic Community Plan (2022 - 2032) outlines the Shire's vision:

A thriving and progressive community

To achieve this vision, the Shire has set out six key strategic directions:

1. Community and Social

- *Community members have the opportunity to be active, engaged and connected.*
- *A healthy and safe community is planned for.*
- *Advocate for the provision of quality health services, health facilities and programs in the Shire.*
- *Support emergency services planning, risk mitigation, response and recovery.*

Having a strong and social community can be integral in managing the vulnerability in the event of an emergency and lead to a strong recovery. Many residents within the Shire assist in emergencies including farmer response to fires and volunteering within brigades, the Shire recognises the importance to support the emergency services planning, response and recovery.

The BRM Plan will assist the Shire of Cunderdin in better preparing the community for bushfires by identifying and assessing assets of value within the Shire and recommending appropriate treatments where appropriate to reduce bushfire risk. With the BRM plan, the Shire will be able to engage with appropriate stakeholders when developing a better understanding of bushfire risk in the community.

2. Economy

- *Facilitate local business retention and growth.*
- *Renew and improve the visibility of the Shire of Cunderdin brand.*
- *Build economic capacity.*
- *Encourage local workforce participation.*

As part of the risk rating process assets are identified in level of vulnerability to assess whether the impact affect is local, regional or state level. This allows assets to be identified in the early stages and be managed accordingly to limit the impact. The BRM Plan will improve planning and preparation of this by allowing the Shire to work with existing asset owners to understand their risk.

3. Built Environment

- *Safe, efficient and well maintained road infrastructure.*
- *Enhance connectivity between places.*
- *Enhance public open spaces and townscapes.*
- *Protect and preserve heritage.*

The BRM Plan will assist in working with asset owners to ensure critical infrastructure and heritage assets are identified, risk rated and have treatments applied as required to manage the potential impact on the community. The Shire is committed to maintaining its infrastructure including road networks and community assets which will ensure safer escape routes and support community evacuation/welfare centres.

4. Natural Environment

- *Maintain a high standard of environmental health services.*
- *Conservation of our natural environment.*
- *Demonstrate sustainable practices of waste management.*

With most of the natural environment previously affected by mass clearing it is important that bushfire mitigation treatments implemented under this plan do not have a negative effect on the now limited areas of natural environment. This can include having appropriate burning regimes and limit clearing to only where necessary to manage the risk.

5. Civic Leadership

- *Shire communication is consistent, engaging and responsive.*
- *Forward planning and implementation of plans.*
- *Implement systems and processes that meet legislation and audit obligations.*

The Shire recognises the importance of leadership and coordination in emergency management and has an established Local Emergency Management Committee (LEMC) including members from multiple agencies. The Shire also has an active Bushfire Advisory Committee (BFAC) with its membership holding a considerable amount of experience. The BFAC members will continue to be kept aware of this BRM Plan and their input and advice incorporated within.

Through the BRM Plan, the Shire will be able to identify the areas and assets with the greatest risk. By identifying unacceptable bushfire risks on private and other government lands, the BRM Plan will enable the Shire to involve land owners in treatment planning and encourage the implementation of their own mitigation programs.

The Shire of Cunderdin CEO will be the document owner and therefore be accountable for implementing, monitoring and reviewing the BRM Plan, further roles and responsibilities are identified within the Communications Plan. In addition, the Shire currently has access to the services of a Community Emergency Service Manager (CESM) which is shared with the Shires of Quairading, Tammin and Kellerberrin. The CESM's primary responsibility is to ensure the Shire's volunteer Bush Fire Brigades (BFB's) and emergency services volunteers are supported, trained, equipped and capable of providing appropriate emergency services within the community. It is also envisaged that the CESM position will have responsibility for the maintenance of the BRM Plan, once the plan is endorsed.

3.1.2 Location, Boundaries and Tenure

Located in the Wheatbelt region of Western Australia, the Shire of Cunderdin is 156km East of Perth and covers an area of 1872km². The Shire encompasses the towns of Meckering and Cunderdin and is bounded by the Shires of Northam, Goomalling, Dowerin, Wyalkatchem, Tammin, Quairading and York as shown in Figure 2.

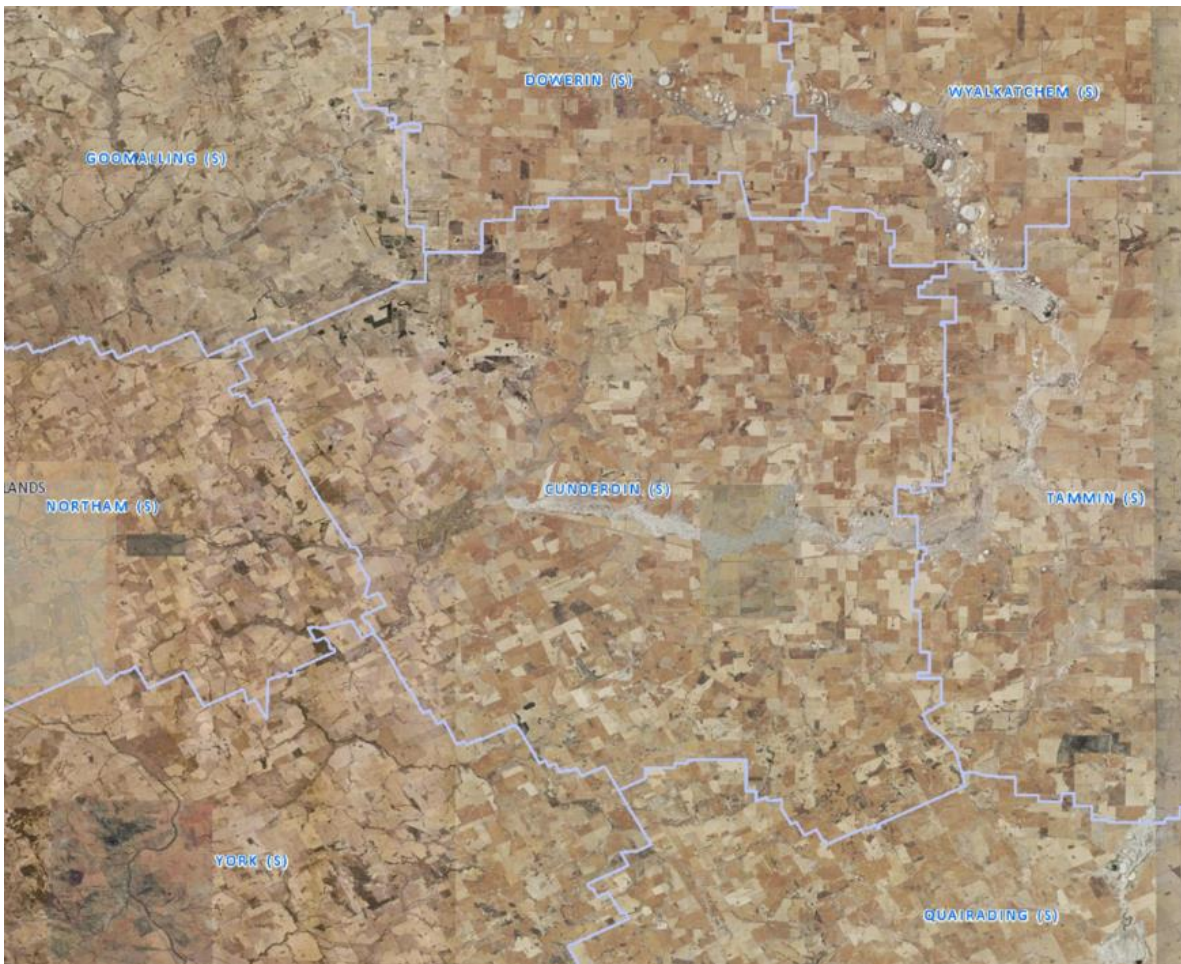


Figure 2: Shire of Cunderdin Local Government Boundary

A large portion of the Shire is privately owned, as seen in Table 2 below, for agricultural broad acre farming consisting of 185,084 ha of land, this will greatly influence the way in which treatment strategies are implemented and the importance of how stakeholder engagement is undertaken. Challenges can arise when a landowner does not comply with the Shires local laws as this can then influence multiple adjoining landowners and increase the risk to them. Private land ownership communication and engagement will require an understanding of land use and will require information related to preparedness and response as well as potential impact.

Table 2 Overview of Land Tenure and Management within the Shire of Cunderdin

Land Manager/Agency	Percent of Local Government Area
Private	95.39%
State Government	2.43%
Road (road not in State)	1.68%
Shire of Cunderdin	0.13%
Other	0.27%
Reserve UML	0.04%
Unallocated Crown Land	0.03%
Department of Biodiversity, Conservation and Attractions	0.02%
Total	100%

Source: [Department of Fire and Emergency Services](#)

The town sites of Meckering and Cunderdin consist of small parcels of UCL/UMR which have been identified and risk rated appropriately by the DFES Bushfire Risk Management Officer for the region. Majority of the parcels pose a low risk however some parcels within the town sites are rated at extreme although have regular slashing treatments allocated to them to manage this risk.

3.1.3 Population and Demographics

In the 2016 Census there were 1,457 people in the Shire of Cunderdin, of these 55.3% were male and 44.7% were female with the Australian equivalent being 49.3% male and 50.7% female. Aboriginal and/or Torres Strait Islander people made up 1.9% of the population with the Australian average being 2.8%. The median age of people was 37 years. Children aged 0 - 14 years made up 19.3% of the population and people aged 65 years and over made up 15.4% of the population. The Shire population has gradually grown over the past 10 years as seen below in Table 3, it is expected that no areas within the Shire will see a rapid growth in the near future. Vulnerable populations within the Shire need to be considered carefully as they may have less capacity to prepare or protect themselves during an emergency and may also require assistance with evacuation. Increased planning is required for these vulnerable groups to ensure they are considered during preparation, communication and education programs with each group requiring a personalised approach.

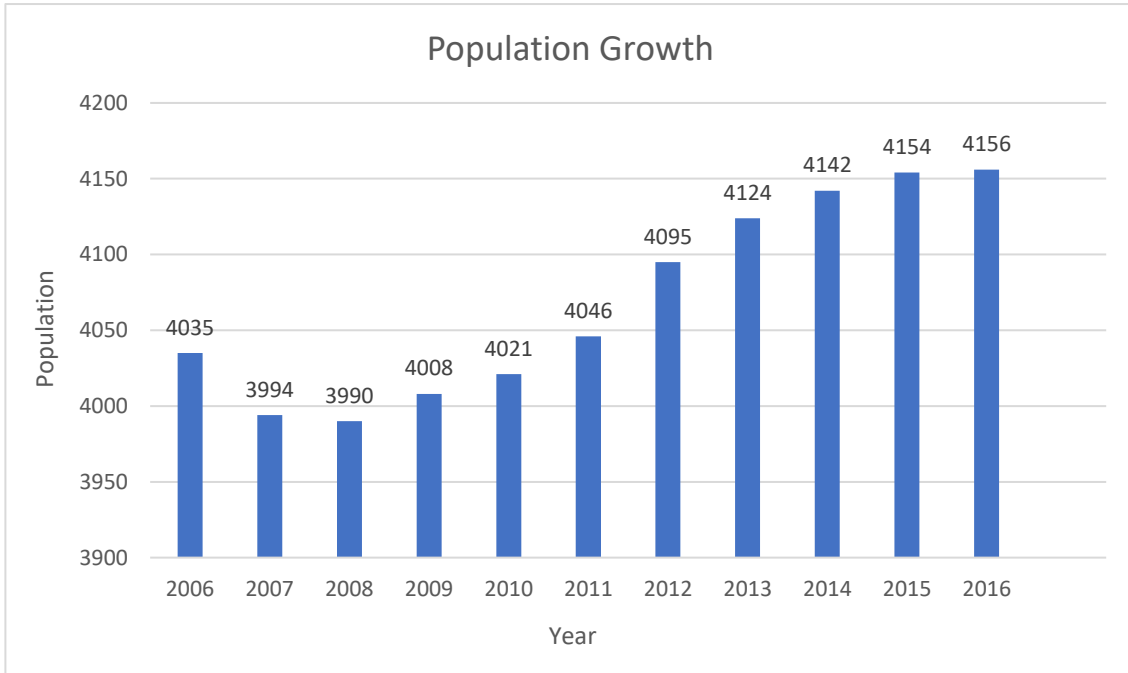
Within the Shire 78% of the total population speak English only, with other languages spoken including Filipino (3.1%), Tagalog (2.7%), Afrikaans 0.9%, Mandarin 0.8% and Shona 0.8%. Cunderdin has historically had a large population turnover of workers due to the agriculture industry being the main employment influence. This brings a number of seasonal workers to the Shire during the summer bushfire season, which includes harvest. A percentage of these seasonal workers are from overseas, so their English may be limited, which could make communicating during a bushfire difficult. Seasonal workers are not normally experienced in fire prevention or fire behaviour, while also lacking knowledge of the local area and emergency procedures, as not all have been trained in bushfire firefighting. There is a need to ensure that tailored advice is provided to this group by employers during pre-fire season preparation, as well as during bushfire events. The shire will encourage employers to consider this in their planning and consider referencing it in the Local Emergency Management Arrangements (LEMA).

The Cunderdin Western Australian Agricultural College can have between 50 – 150 students residing at the facilities during the school holiday periods which is an added risk during the fire season. These times vary, and are usually the start of April, start of July, end of September to start of November and from mid-December until the start of February. Having a large number of students boarding during the fire season can have its challenges, if a fire was to occur close to the school it can impact the evacuation and safety of students leaving a large number of people in a vulnerable situation.

The Shire has a large number of broad acre farms which results in a substantial fire risk at and around harvest times, typically from October through to January. There is an added risk to residents during the period, with the heightened risk applied to many parts of the town and state. Total Fire Bans can also be implemented at any time when the weather is deemed to be a significant risk to the community and other adjoining areas. Critical infrastructure can have a major impact in communication within the community and other organisations with communication black spots that occur using both radio and telephone communications in many areas.

A population decrease can be seen over the Christmas Holiday period (December to February), as a large number of farming residents leave the area Post-Harvest. This can result in a lower farmer response to fires within the area during this period as outlined as a special consideration within the LEMA.

Table 3 – Shire of Cunderdin – Population Growth



3.1.4 Economic Activities and Industry

The Shire of Cunderdin’s primary economic contributor is broad acre agriculture with wheat, canola and lupins being the main crops and sheep production being prominent. Accounting for 58% of businesses and some 185,084 ha of land the industry generates approximately \$49.5 million in agricultural production value per annum. Manufacturing, transport and logistics, along with retail, are secondary industries in Cunderdin, with each accounting for 5.3% of local businesses. The town of Cunderdin is home to a number of public facilities that include a hospital, sport and recreation centre, airport and schools. In 2016, employed people in Cunderdin, 10.3% worked in grain growing, with a further 7.8% working in grain-sheep or grain-beef cattle farming. Other major industries of employment included secondary education (10.1%), local government administration (4.4%) and hospitals (4.3%).

With Agriculture being a major industry stakeholder in the Shire, bushfires during harvest season can cause added pressure on farmers due to the considerable financial losses that may occur. Unplanned fires can have a major impact by changing plant composition, reduced growth and carrying capacity in the following season, increase in risk of topsoil erosion by wind and rain which can cause possible additional financial loss in the future. The Shire will continue to work with local land owners and use available controls, such as fire break notices and Harvest Movement Bans to address this risk. To reduce the risk of fires during harvest, it is recommended by the Shire to have an operational firefighting appliance in or adjoining the paddock where harvest operations are occurring.

Critical infrastructure within the Shire can include, communications towers, high voltage power lines and a number of bridges. There are a number of key assets within the Shire that are critical to state, these include; the Cunderdin airport, Mundaring to Kalgoorlie pipeline, rail line and the Great Eastern Highway. Transportation routes are key infrastructure for the transportation of grain and any disruption to these networks due to fire or damage for a period of time, causes a significant economic impact on local businesses and damage to key assets.

3.2. Description of the Environment and Bushfire Context

3.2.1 Topography and Landscape Features

The Shire of Cunderdin is situated within the Avon Catchment and is drained by a branch of the Mortlock River East Branch, now existing as salt flats. The salt flats are situated to the North of both town sites within the Shire and act as a natural barrier containing mainly Succulent Steppe vegetation which does not carry fire very well. Elevations in the Shire range from 200-360m above sea level. Significant features in the landscape include Cunderdin Hill and Bulgin rock, these features can have an effect on fire behaviour locally with altering wind directions and difficult access.

The Shire is part of the Great Plateau of Western Australia and is underlain by the ancient granites, gneisses and migmatites of the Yilgarn block. The ancient plateau is of low relief, mantled by sandy and gravelly surface over weathered mottled and pallid zones. The landscape of the Shire is predominately low-lying and flat farmland with small pockets of hill and rocky outcrops. With the elevations of the land within the shire not altering a vast amount, with the topography being largely flat and having little wind breaks, fires can spread quickly fanned by strong winds.

Infrastructure within the Shire such as water pipelines and rail lines can act as barriers impeding access in the fighting and prevention of fires. The Perth to Kalgoorlie pipeline runs in a West to East direction with branch lines running along road reserves throughout the Shire situated above ground level. In areas, rail lines are also raised and unable to be crossed, except at crossing points. This can allow fires to spot across these obstacles, where firefighters cannot easily access and may have to travel some distance to be able to get around. This can result in delays in firefighting response allowing fires to grow quickly with limited suppression and result in much larger fires.

3.2.2 Climate and Bushfire Season

The Shire of Cunderdin is regarded as Mediterranean style climate with dry hot summers and wet winters and receives on average 309mm of rainfall per annum as shown in Figure 3. The average maximum temperatures range from 33.9° in January to 16.5° in July with the minimum temperatures ranging from 17.6°c in January to 6.3° in July.

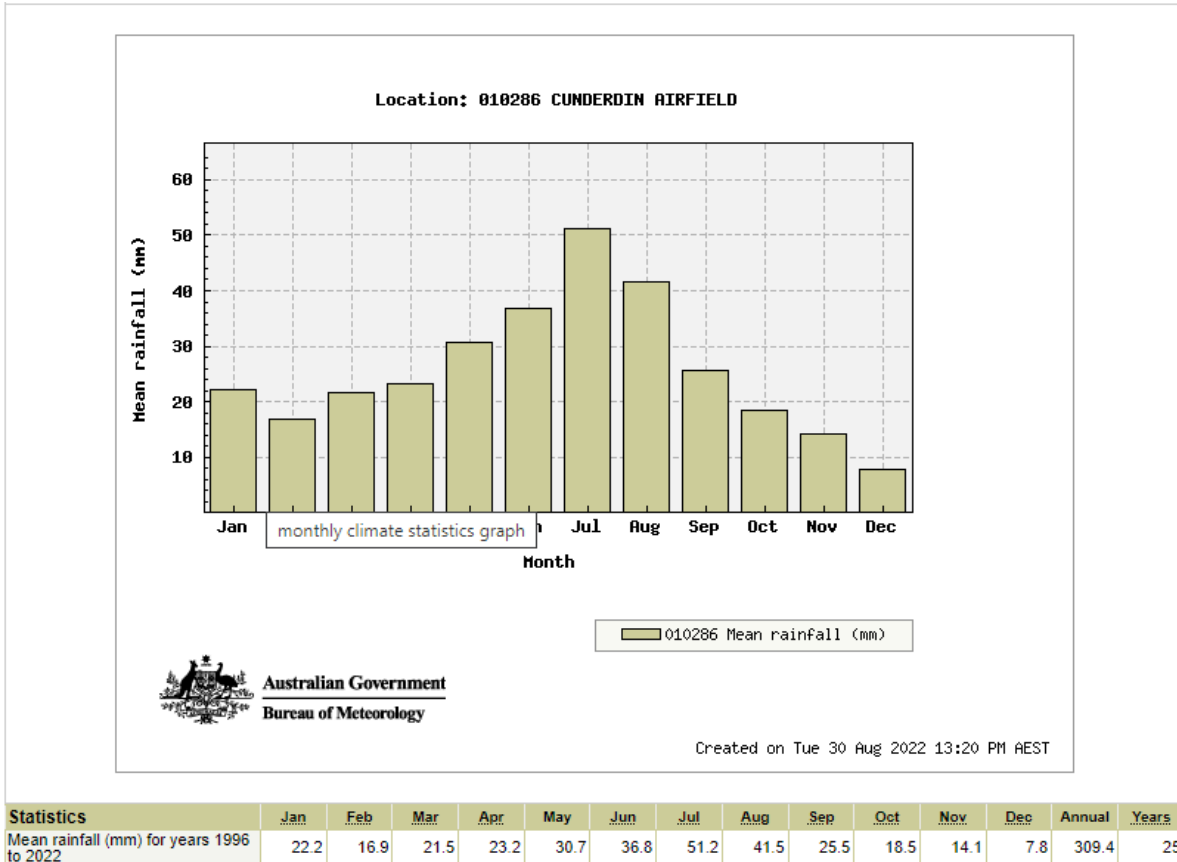


Figure 3: Cunderdin Mean Rainfall 1996-2022

These weather patterns allow for good growth of vegetation (crops and pasture) during the early autumn to late spring period. The period from mid-spring to mid-autumn is generally dry and hot, causing vegetation to dry out increasing fuel loads. During the fire season, the weather can be extreme, with high temperatures, high winds, and low humidity; this combined with the dry vegetation can cause fast-moving, uncontrollable fires.

The yearly average rainfall for Cunderdin is 309.4mm with the wettest months being from May through to August. The fire season can on average see less than 25mm a month with December being the lowest rate for rainfall as seen in figure 10.

The Cunderdin weather station recorded the average yearly maximum temperature to be 26° with the months between November to March being the hottest having average temperatures above 30°. The winter months from June to August all have maximum temperatures reaching below 20°.

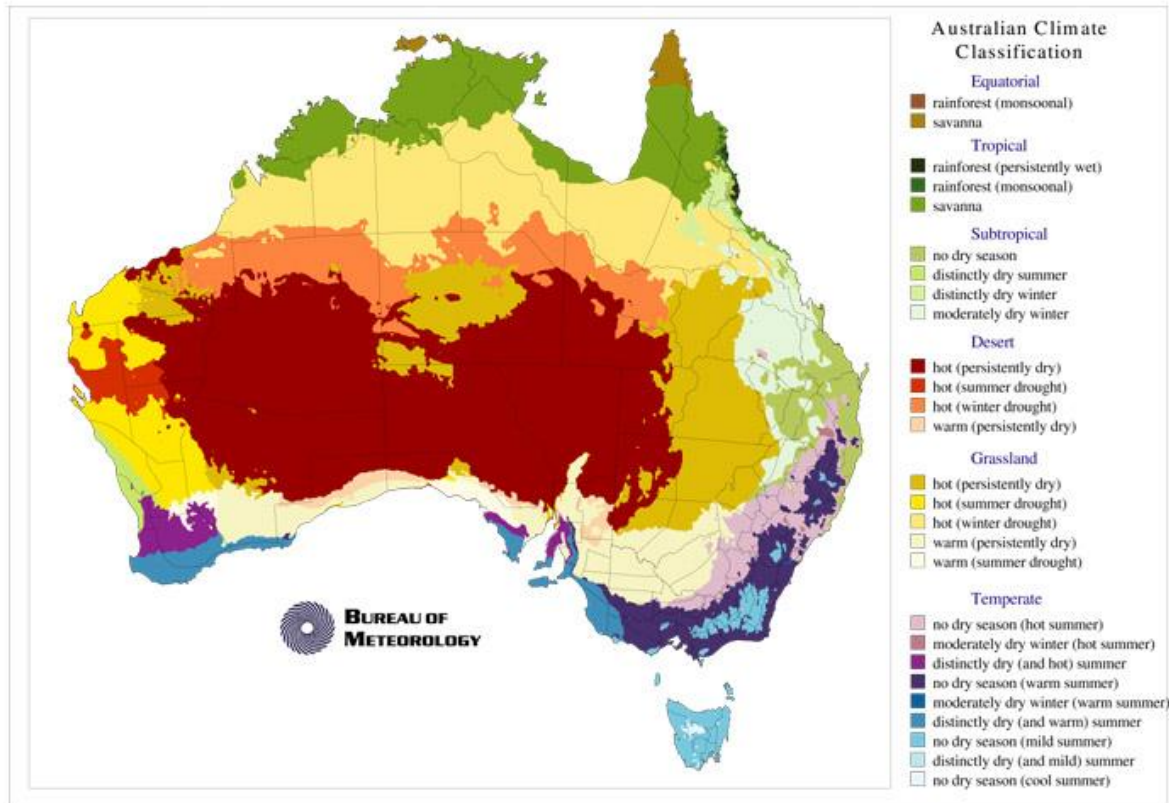


Figure 4: Australian Climate Zones - BOM

The Shire of Cunderdin is located within the Avon Fire Weather District as seen in figure 6. Given the scale of agricultural properties within the district the Fire Behaviour Index (FBI) is worked out mostly from the grassland fuel index. The Fire Danger Rating (FDR) calculates, forecasts and reports fire danger using up-to-date fuel state data, spatial and satellite data, weather data, science and technology. It takes advantage of the many decades of research about how fire behaves, incorporating a wider range of fire behaviour models to represent the variety of Australian vegetation and fuel types. The FBI is the basis for determining the FDR, shown in figure 5 is a scale developed to assist communities to better understand information about fire danger. Since 2016/2017 Cunderdin has had an average of 8 days per year where the FDR was Severe or above.

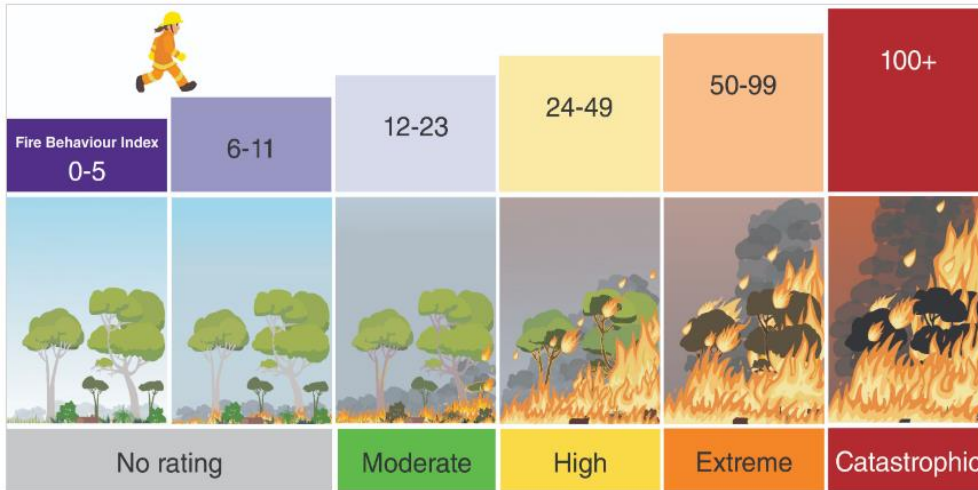


Figure 5: Fire Behaviour Index

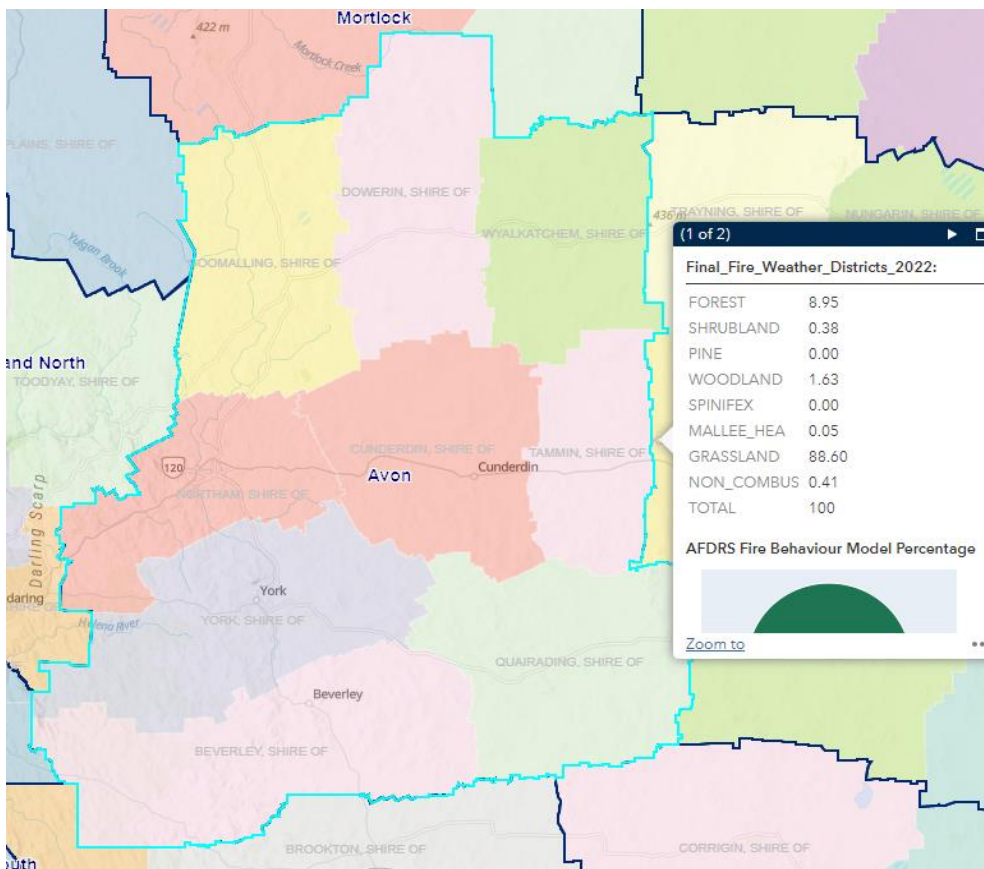


Figure 6: Avon Fire Weather District

Harvesting season (Oct – Jan)

During the months of October and January cured crops ready for harvest create an increased fine fuel loads. During the harvest period, dried crops are extremely flammable and create a significant fire risk with the large amount of machinery movement during this period. Fires that break out during harvest can be difficult to stop, as they can be fast moving and become very large quickly this may increase pressure on farmers who are already busy, which limits the availability of farmer/private appliance response to fires.

Bushfire Season (Oct – March)

Bushfire season can bring unfavourable weather conditions (Catastrophic Fire Danger Index, Total Fire Bans), an increase to crop/bush fire incidents and potential Harvest/Vehicle Movement/Hot Works Bans being imposed.

Figure 7 Shows the average wind direction in Meckering over a 12-year period which demonstrates that the predominate direction is West-North-West but can also experience stronger winds from the South-East. Average winds during the fire season can be seen in Figures 7-11 where in the last 4 years the prevailing direction is South-East, with winds also being the strongest in this direction.

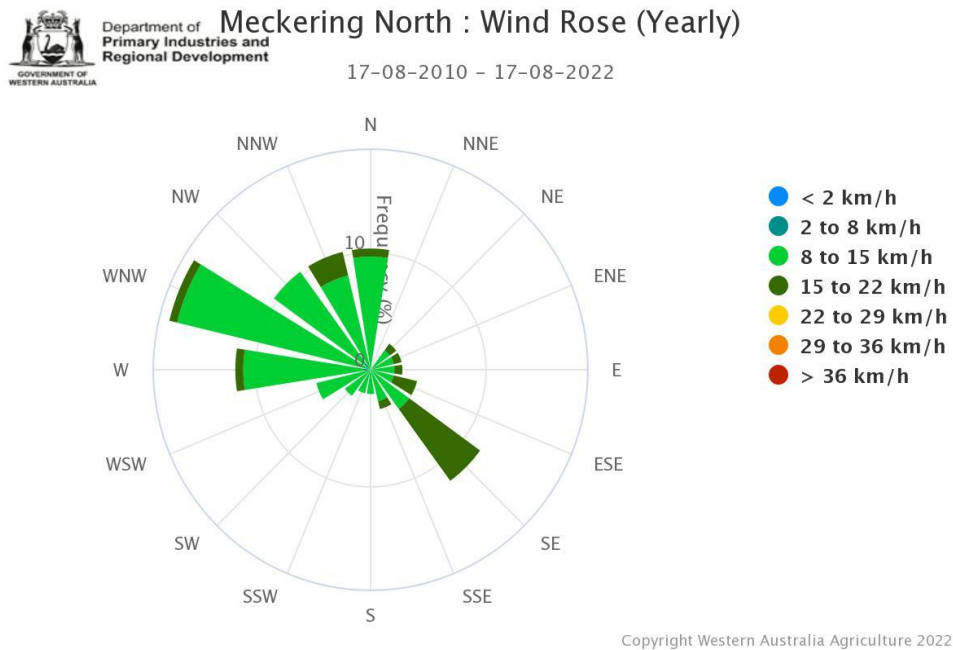


Figure 7: Daily Wind Direction over 10-year period

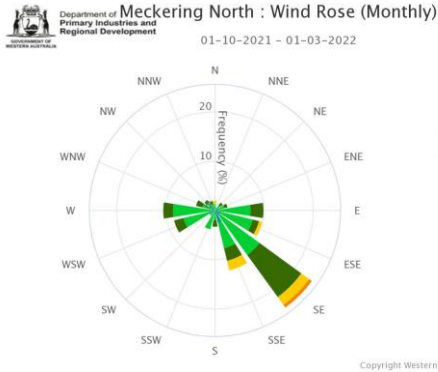


Figure 8: Daily Wind Direction – 21/22 Fire Season

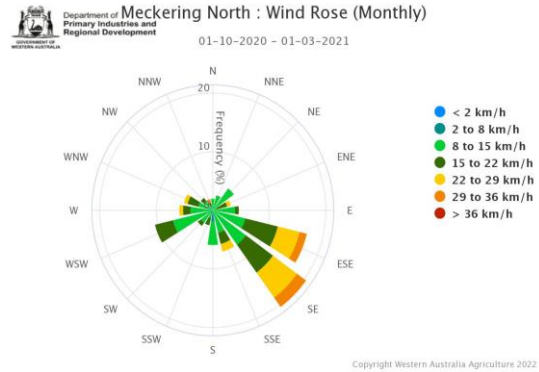


Figure 9: Daily Wind Direction – 20/21 Fire Season

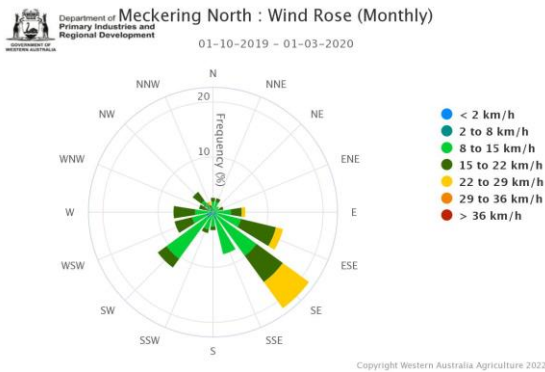


Figure 10: Daily Wind Direction – 19/20 Fire Season

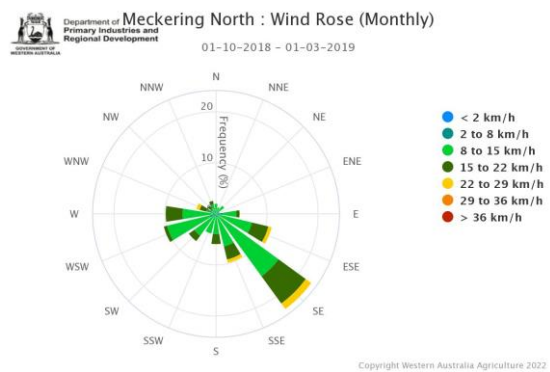


Figure 11: Daily Wind Direction – 18/19 Fire Season

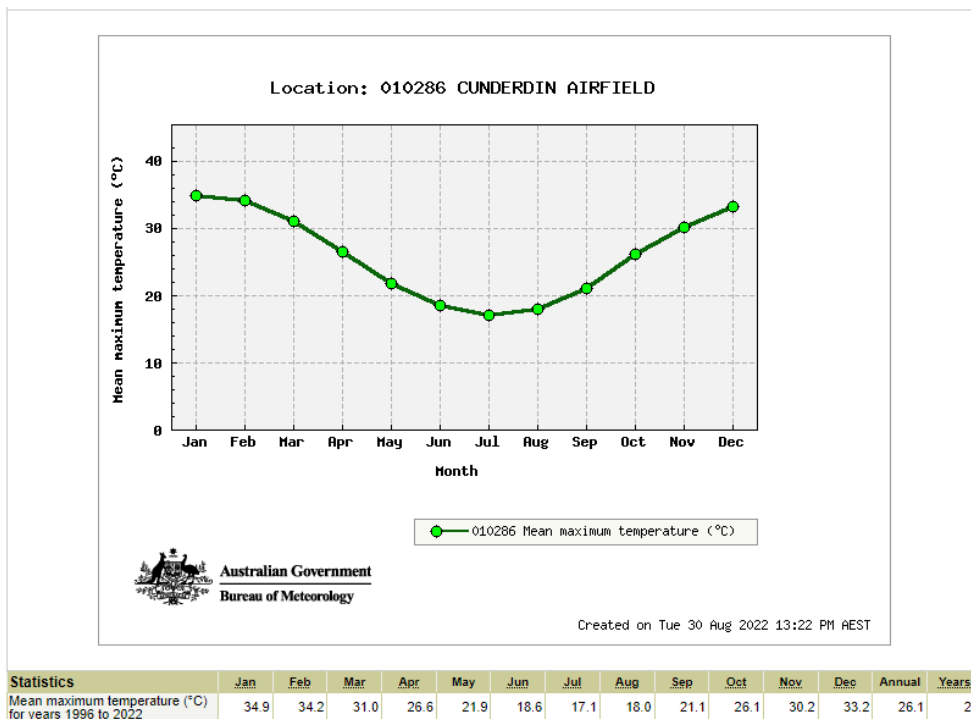


Figure 12: Cunderdin Mean Maximum Temperature 1996 – 2022

3.2.3 Vegetation

The Shire of Cunderdin is located within the Avon Botanical District of the South West Botanical Province and is characterised by native vegetation from the Goomalling and Meckering Vegetation Systems. These Vegetation Systems consist of a series of plant communities occurring in a mosaic pattern that are closely linked to topographic and soil features.

The Goomalling Vegetation System extends from Bolgart to Meckering through almost to Tammin. It is bounded on the north, south and east by salt flats of the Mortlock River East Branch and is an area of extensive sand plains. The native vegetation is scrub-heath or low woodland of Banksia with York and Salmon Gums prevalent lower in the landscape. North of Meckering and Cunderdin the woodland is predominantly York Gum. Major drainage lines comprising of extensive salt flats are characterised by Tea Tree and Samphire. Woodlands generally have surface fuels accumulated only beneath individual trees that are separated by areas of bare ground. Strong winds are required to allow fires to move between these discontinuous clumps of surface fuels. There are usually few shrubs in the understorey and these tend to be separated by bare ground. Combustion of the canopy is rare as the over storey of woodlands tends to be composed of tall Eucalyptus species and there is usually little vertical continuity of fuels. The York and Salmon gums are very sensitive to fire and are easily killed by a low scorch, appropriate mitigation methods need to be adopted to manage this sensitivity, such as raking around the tree to remove fine fuels and prevent scorching.

The Meckering Vegetation System extends south from Mortlock River East Branch. It is typically undulating and comprises mixed woodland of York Gum and Wandoo with the occasional Salmon Gum. York Gum is found predominantly on the lower slopes whereas Wandoo is found on the ridges. Granite outcrops are common and support low woodland of Jam or Mixed Jam and Rock Sheoak. Grass Trees and Eucalyptus Macrocarpa are also found on areas comprising lateritic residuals.

It is now estimated that only 2.59% of the Shire's total land area remains covered by original native vegetation, 1.88% (i.e. 3,551.5 ha) of which is found on private land. The remaining 0.71% (i.e. 1,338.5ha) is situated within Crown reserves, not all of which have a cover of native vegetation. Natural areas of native vegetation that remain are of significant importance, with a large amount being privately owned it is important the significance of these areas are made aware to private landholders to ensure appropriate management occurs. There are currently only two nature reserves within the Shire vested in the Conservation Commission of Western Australia for the purposes of 'Conservation Flora and Fauna'. These areas cover an area of around 20 hectares each and are managed by the DBCA for conservation purposes. With only two small nature reserves within the Shire, special consideration needs to take place to ensure these reserves are looked after and not susceptible to a high frequency of fire events which could be detrimental to the reserve.

Agricultural land consisting of crop and pasture is the main fuel type present within the Shire, this type of fuel poses a low risk for majority of the year. However, harvest season and the fire season coincide increasing the Shire's fire risk significantly during this period. The harvest period can present large scale areas with continuous crop susceptible to large fast moving fires, the nearby Shackleton bushfire in early 2022 is a good example and burnt through more than 40,000 hectares of stubble within an afternoon. Fires within agricultural land can generally be contained relatively easy with the large farmer response and good access, however grass fires can be fast moving and challenging to suppress if not caught early.

3.2.4 Threatened Species and Communities

Native flora and fauna species and ecological communities are of significant value and require consideration in respect to bushfire risk as unplanned fire poses significant risk to these communities. Mitigation treatments implemented as part of this plan should not result in a negative impact on threatened species and ecological communities. Within the Shire of Cunderdin there are nine rare and endangered species as listed in Table 4, one example is:

Daviesia cunderdin which is located throughout Watercarrin, to the North of the Cunderdin town site, and is classed as critically endangered. The main identified threats to the species include inappropriate fire regimes, weed invasion, chemical spraying and firebreak maintenance. Daviesia cunderdin requires fire to stimulate the germination of its soil seed bank, however overly frequent or intense fire events can destroy its population.

Fire management regimes in these TEC's should ensure that life cycles of the component species of the ecological community are not disrupted such as using mosaic burning techniques, applied in a variety of seasons and intensities. Retaining a range of vegetation age classes throughout the mosaic ensures diversity and reduces the likelihood of a whole reserve or patch being lost in a single fire event.

All risk treatments need to consider the requirements of the flora, fauna and communities located on the site. Appropriate authorities must be consulted prior to any mitigation activities commencing. A further consideration in relation to both bushfire prevention and response strategies is the potential spread of weeds or diseases such as Phytophthora cinnamomi (Dieback), which is easily spread through soil movement. This risk must be considered in the context of planned prevention and response strategies and the risk minimised wherever possible.

Table 4 – Threatened Species

Threatened Species	Status
Acacia volubilis	Critically Endangered
Daviesia cunderdin	Critically Endangered
Acacia subflexuosa subsp. capillata	Critically Endangered
Guichenotia seorsiflora	Critically Endangered
Frankenia parvula	Endangered
Hakea aculeata	Endangered
Melaleuca sciotostyla	Endangered
Ptilotus fasciculatus	Endangered
Acacia ataxiphylla subsp. magna	Endangered

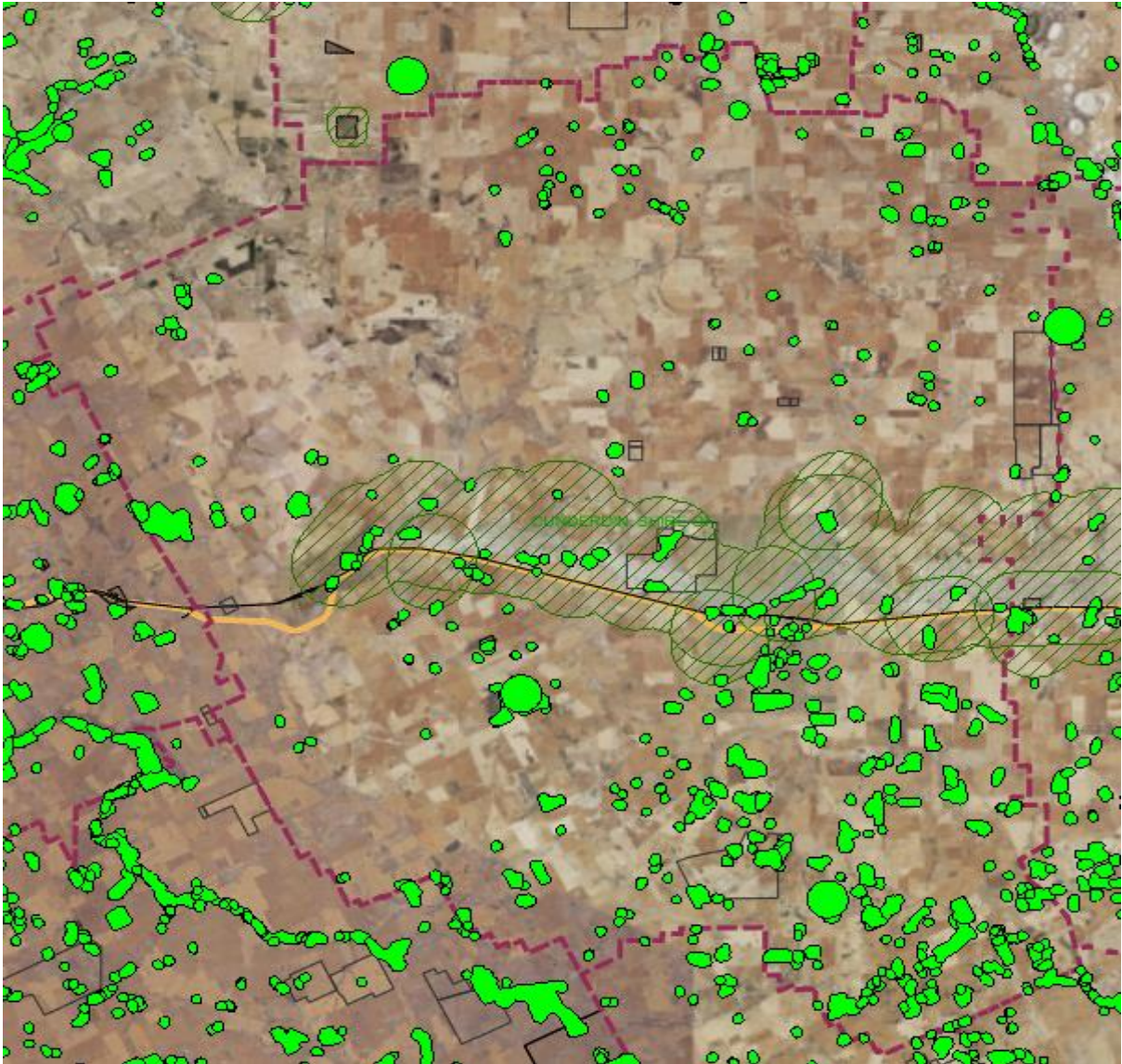


Figure 13: Threatened Ecological Communities Locations – Shire of Cunderdin

3.2.5 Bushfire Frequency and Causes of Ignition

During the summer months' fires are most common during the harvest period when machinery and vehicles are moving through cropped paddocks. Some of the main ignition sources can include lightning strikes from summer thunderstorms, machinery and vehicle movements, escaped stubble burns, spontaneous combustion of hay stacks, fallen power lines and accidental or illegally started fires. As seen in Table 5 between the years of 2012-2022 a total of 97 incidents were recorded within the Shire, a high number of these were The Shire uses Harvest Vehicle Movement Bans to restrict off-road vehicle movements during heightened weather conditions.

Dry lightning thunderstorms are common during summer and can be a major threat to the agricultural industry especially during harvest. Multiple ignition sites can occur rapidly which can commonly be fanned by gusty winds that can increase the size of fires which can travel rapidly in open crop and stubble paddocks. This can put added pressure on response with only limited brigade resources located within the shire, farmer response is heavily relied upon for quick suppression in these situations.

With the agricultural industry only getting bigger each year the main risk of ignitions is during harvest period. Modern harvesters have many potential ignition sources which need to be carefully managed. The movement of these vehicles through cured paddocks means this is the most likely time for a crop fire. Crop fires tend to have a very rapid rate of spread and can be detrimental to the local industry.

Table 5 – Recorded Causes of Ignition

All Bushfires LGA of CUNDERDIN (S) from 01/07/2012 to 30/06/2022

A Bushfire is considered to be any vegetation fire (bush, grass, scrub, forest): of any size

Bushfires Summary of Ignition for CUNDERDIN (S)

	2012/ 2013	2013/ 2014	2014/ 2015	2015/ 2016	2016/ 2017	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021/ 2022	Total
Total Number of Bushfires:	5	6	12	16	7	10	13	10	9	9	97
Bum off fires	2	1	4	0	0	2	2	0	0	2	13
Cigarette	0	0	0	1	1	0	0	0	0	0	2
Electrical distribution (excl. power lines)	0	0	1	0	0	0	0	0	0	0	1
Human Error (Left on, knock over, unattended etc.)	0	0	0	0	1	0	0	0	0	0	1
Improper Fuelling/Cleaning/Storage/Use of material ignited	0	0	0	0	0	0	0	0	0	1	1
Other open flames or fire	1	0	0	0	0	0	0	0	0	0	1
Power lines	0	1	1	3	0	1	0	1	0	0	7
Reignition of previous fire	0	0	1	1	0	0	0	0	0	0	2
Suspicious/Deliberate	0	0	0	0	0	0	1	1	0	0	2
Undetermined	1	0	1	3	0	0	1	0	0	0	6
Unreported	1	2	1	0	1	5	6	2	3	2	23
Vehicles (incl. Farming Equipment/Activities)	0	0	0	1	3	1	1	2	6	2	16
Weather Conditions - Lightning	0	0	1	5	0	1	2	3	0	2	14
Weather Conditions (High winds, natural combustion etc. Excludes Lightning)	0	2	2	2	1	0	0	1	0	0	8

3.2.6 Current Bushfire Risk Management Activities

Local Government Wide Controls are activities that reduce the overall bushfire risk within the Shire of Cunderdin. These types of activities 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.

Further information about the Local Government Wide Controls and how they will support the treatment of bushfire risk can be found in section 6.1 Local Government Wide Controls.

To help manage the risk posed by bushfires a new water tank was recently constructed on the intersection of Wilding Road and Antonio Road with the capacity of 110,000 litres, for the purpose of use within an Emergency Situation to assist with the lack of water supply for fire appliances when fighting fires.

Map of Bushfire Prone Areas

The intent of the WA Government's Bushfire Prone Planning Policy is to implement effective risk based land use planning and development to preserve life and reduce the impact of bushfire on property and infrastructure. The *State Planning Policy 3.7 – Planning for Bushfire Prone Areas* ensures bushfire risk is given due consideration in all future planning and development decisions. This policy does not apply retrospectively, however the BRM Plan can help address this risk for existing development and establishing an effective treatment plan to manage the broader landscape and any unacceptable community risks. The Shire of Cunderdin Bushfire Prone Area is shown in Figure 14.

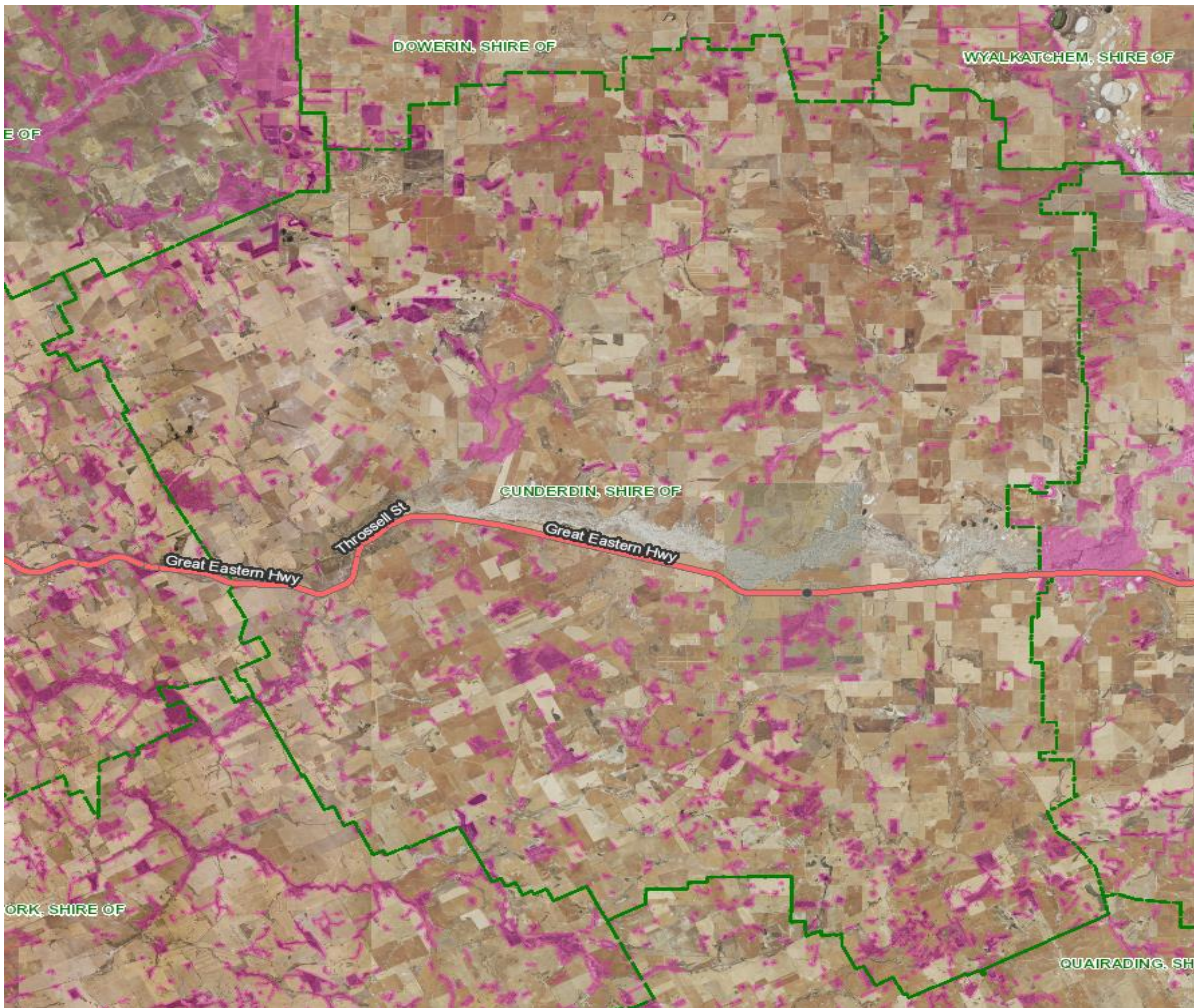


Figure 14: Map of Bushfire Prone Areas

Volunteer Fire Brigades

Within the Shire of Cunderdin there are 4 volunteer fire brigades consisting of one DFES managed Volunteer Fire & Rescue Brigade and 3 Volunteer Bush Fire Brigades managed by the Shire of Cunderdin as listed in Table 6 below.

Table 6 – Volunteer Fire Brigades

Brigade VFRS/ BFB	Appliance Type
Cunderdin VFRS	3.4 urban & light tanker
Cunderdin BFB	3.4 urban
Meckering BFB	4.4 broad acre
Ygnattering BFB	2.4 broad acre

Farmer response makes up a large part of the workforce in fire suppression within the Shire with many landholders owning private fire appliances ranging from 500L slip on units to large water carts. Decreased availability can however occur during harvesting season.

Burning Restrictions

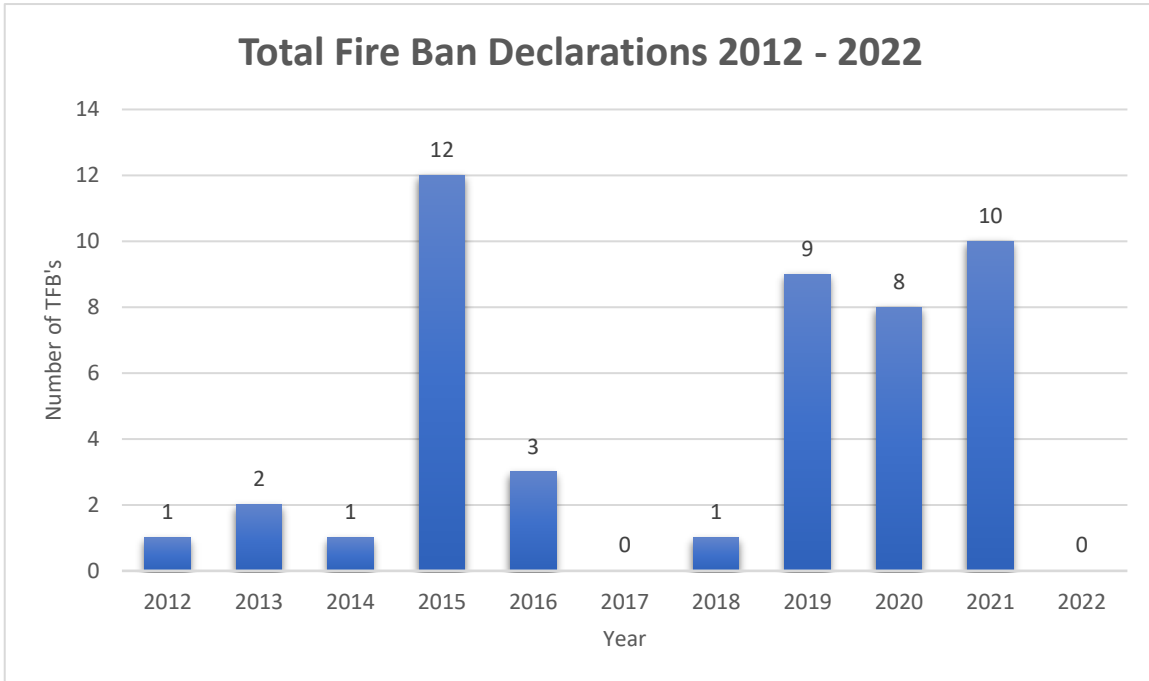
The restricted burning periods can be seen in Table 7 below although these can change due to seasonal conditions, details of changes are published locally and on Council’s website.

Table 7 – Restricted Burning Periods

Restricted Burning	Prohibited Burning	Restricted Burning	Open Burning
Permits required 20 September to 1 November	2 November to 14 February	Permits required 1 April to 31 May	1 April to 19 September

When required Harvest and Vehicle Movement Bans are issued by the Shire and Total Fire Bans are declared by DFES, In the last 10 years 57 Total fire bans have been declared within the Shire.

Table 8 – Total Fire Ban Declarations



***Bush Fires Act 1954* section 33 Fire Management Notices**

The Shire of Cunderdin issues an annual “Fire Break Order”, in accordance with section 33 of the *Bush Fires Act 1945*, which sets out the requirements for fuel reduction and fire break requirements within the town site and rural land. Land owners are required to have firebreaks and flammable material reduced by the 20th day of September each year.

Community engagement activities

Compliance with the annual Fire Break Order within the Shire is generally good, when it comes to property preparation and maintaining asset protection zones there is a level of complacency apparent. With majority of tenure within the Shire privately owned the importance of future community engagement activities to manage the overall bushfire risk is clearly highlighted within this plan. The Shire currently promotes key messages and community awareness through local social media leading up to and throughout the fire season, other engagements may be conducted through community information sessions or workshops.

Other Current Local Government Wide Controls

Local Government Wide Controls are activities that reduce the overall bushfire risk within the Shire of Cunderdin. These types of activities 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. Some notable controls currently in place in the Shire of Cunderdin are:

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

Further information about the Local Government Wide Controls and how they will support the treatment of bushfire risk can be found in section 6.1 Local Government Wide Controls.

4. Asset Identification and Risk Assessment

4.1. Planning Areas

The Shire of Cunderdin has a single planning area based on the Electoral Ward boundaries.

4.2. Asset Identification

Asset identification and risk assessment has been conducted at the local level using the methodology described in the Guidelines using BRMS. Identified assets are categorised into the following categories and subcategories provided in Table 9.

Table 9 – Asset Categories and Subcategories

Asset Category	Asset Subcategories
Human Settlement	<p>Residential areas Residential areas, including dwellings in rural areas and the rural-urban interface.</p> <p>Places of temporary occupation Commercial and industrial areas, mining sites or camps and other locations where people may work or gather.</p> <p>Special risk and critical facilities Locations and facilities where occupants may be especially vulnerable to bushfire for one or more of the following reasons:</p> <ul style="list-style-type: none">• Occupants may have limited knowledge about the impact of bushfires;• Occupants may have a reduced capacity to evaluate risk and respond adequately to bushfire event;• Occupants may be more vulnerable to stress and anxiety arising from a bushfire event or the effects of smoke;• There may be significant communication barriers with occupants;• Relocation and/or management of occupants may present unique challenges or difficulties, such as transportation, or providing alternative accommodation, healthcare or food supplies; or• Facilities that are critical to the community during a bushfire emergency.

Asset Category

Asset Subcategories

Environmental

Protected

Flora, fauna and ecological communities that are listed as a:

- Critically Endangered, Endangered or Vulnerable species under the Environmental Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act 1999) (including associated critical habitat);
- Critically Endangered, Endangered or Vulnerable species under the Biodiversity Conservation Act 2016;
- Critically Endangered, Endangered or Vulnerable ecological community under the EPBC Act 1999 (Cth);
- Critically Endangered, Endangered or Vulnerable Threatened Ecological Community (TEC) endorsed by the Minister for Environment (WA);
- Fauna protected under international conventions; and
- Ramsar wetlands of international importance.

Priority

Flora, fauna and ecological communities that are a:

- Priority species listed on the Priority Flora or Priority Fauna Lists held by DBCA (Priority 1-5).
- Priority Ecological Community (PEC) (Priority 1-5); and
- Wetlands of national or state importance.

Locally important

Species, populations, ecological communities or habitats that the local community or independent scientific experts consider important for the area and for which there is some scientific evidence that protection would be beneficial.

Wetlands of local importance.

Sites being used for scientific research.

Cultural

Aboriginal heritage

Places of indigenous significance identified by the DPLH or the local community.

European heritage

Non-Indigenous heritage assets afforded legislative protection through identification by the National Trust, State Heritage List or Local Planning Scheme Heritage List.

Local heritage

Assets identified in a Municipal Heritage Inventory or by the local community as being significant to local heritage.

Other

Other assets of cultural value to the local community, for example community halls, churches, clubs 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 *Asset Risk Register* at Appendix C shows the consequence and likelihood ratings assigned to each asset or group of assets identified and the subsequent risk rating.

The percentage of assets within the local government in each asset category at the time of BRM Plan endorsement is shown in Table 10.

Table 10 – Asset Category Proportions

Asset category	Proportion of identified assets
Human Settlement	66%
Economic	33%
Environmental	0%
Cultural	1%

4.3.1 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.

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

- **Consequence Rating – Human Settlement, Economic and 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.

- **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.

4.3.2 Likelihood Assessment

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

4.3.3 Assessment of Environmental Assets

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

4.3.4 Local Government Asset Risk Summary

A risk profile for the local government is provided in Table 11. This table shows the proportion of assets at risk from bushfire in each risk category at the time the BRM Plan was endorsed.

Table 11 – Local Government Asset Risk Summary

Asset Category	Risk Rating				
	Low	Medium	High	Very High	Extreme
Human Settlement	0.9%	3.48%	9%	16.8%	36%
Economic	2.6%	6.1%	9.3%	13%	1.7%
Environmental	0%	0%	0%	0%	0%
Cultural	0.58%	0%	0%	0%	0.3%

5. Risk Evaluation

5.1. Evaluating Bushfire Risk

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

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

5.2. Risk Acceptability

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

In most circumstances risk acceptability and treatment will be determined by the 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 12 – Criteria for Acceptance of Risk and Course of Action

Risk Rating	Criteria for Acceptance of Risk	Course of Action
Extreme	Only acceptable with excellent controls. Urgent treatment action is required.	<p>Routine controls are not enough to adequately manage the risk. Specific Actions are required in the first 2 years of the plan with emphasis on highest risk in the first 12 months.</p> <p>Treatments will be approached by:</p> <ul style="list-style-type: none"> • Priorities will be made for treatments that will have maximum benefit to multiple assets and critical infrastructure. • Treatments that benefit vulnerable communities will be given priority. • Identification of partnerships with other agencies for strategic mitigation. • Communication with asset owners in this class will be priorities and focus on increasing understanding of the risk facing these assets (see Communications plan). <p>These assets and treatments are to be reviewed annually/bi-annually/prior to the start of each bushfire season for any significant changes.</p>

Risk Rating	Criteria for Acceptance of Risk	Course of Action
Very High	Only acceptable with excellent controls. Treatment action is required.	<p>Routine controls are not enough to adequately manage the risk. Specific action is required in first 3 years of BRM.</p> <p>Treatments will be approached by:</p> <ul style="list-style-type: none"> • Priorities will be made for treatments that will have maximum benefit to multiple assets and critical infrastructure. • Treatments that benefit vulnerable communities will be given priority. • Identification of partnerships with other agencies for strategic mitigation. • Communication with asset owners will be as per the Communications Plan and focus on increasing understanding of the risk facing these assets. <p>These assets and treatments are to be reviewed every 2 year/prior to the start of each bushfire season for any significant changes.</p>
High	Only acceptable with adequate controls. Treatment action required.	<p>Routine controls are not enough to adequately manage the risk. Specific action is required in the life of the BRM Plan.</p> <p>Treatments will be approached by:</p> <ul style="list-style-type: none"> • Priorities will be made for treatments that will have maximum benefit to multiple assets and critical infrastructure. • Treatments that benefit vulnerable communities will be given priority. • Identification of partnerships with other agencies for strategic mitigation. • Communication with asset owners will be as per the Communications Plan and focus on increasing understanding of the risk facing these assets.

Risk Rating	Criteria for Acceptance of Risk	Course of Action
Medium	Acceptable with adequate controls. Treatment action is not required but risk must be monitored regularly.	Specific actions are not required. Risk may be managed with routine controls and monitored periodically throughout the life of the BRM Plan.
Low	Acceptable with adequate controls. Treatment action is not required but risk must be monitored.	Specific actions are not required. Risk will be managed with routine controls and monitored as required.

5.3. Treatment Priorities

The treatment priority for each asset has been automatically assigned by BRMS and recorded in the *Treatment Schedule*, based on the asset’s risk rating. Table 13 shows how consequence and likelihood combine to give the risk rating and subsequent treatment priority for an asset.

Table 13 – Treatment Priorities

		Consequence			
		Minor	Moderate	Major	Catastrophic
Likelihood	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)

6. Risk Treatment

The purpose of risk treatment is to reduce the likelihood of a bushfire occurring and/or the potential impact of a bushfire on the community, economy and environment. This is achieved by implementing treatments that modify the characteristics of the hazard, the community or the environment. There are many strategies available to treat bushfire risk. The treatment strategy (or combination of treatment strategies) selected will depend on the level of risk and the type of asset being treated. Not all treatment strategies will be suitable in every circumstance.

6.1. Local Government Wide Controls

Local government wide controls are activities that are non-asset specific, rather they reduce the overall bushfire risk within the local government.

A local government wide controls, multi-agency work plan has been developed (Appendix B). The plan details work to be undertaken as a part of normal business (see section 3.2.6 for detailed information on these), improvements to current controls and new controls to be implemented to better manage bushfire risk across the local government area.

6.2. Asset Specific Treatment Strategies

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

- **Fuel management**

Treatment reduces or modifies the bushfire fuel through manual, chemical and planned burning methods;

- **Ignition management**

Treatment aims to reduce potential human and infrastructure sources of ignition in the landscape;

- **Preparedness**

Treatments aim to improve access and water supply arrangements to assist firefighting operations;

- **Planning**

Treatments focus on developing plans to improve the ability of firefighters and the community to respond to bushfire; and

- **Community Engagement**

Treatments seek to build relationships, raise awareness and change the behavior of people exposed to bushfire risk.

6.3. Development of the Treatment Schedule

The treatment schedule is a list of bushfire risk treatments recorded within BRMS. The Shire of Cunderdin will be focusing on developing a program of works that covers activities to be undertaken within the first year after the approval of the BRM Plan. The treatment schedule will evolve and develop throughout the life of the BRM Plan.

The treatment schedule was developed in broad consultation with land owners and other stakeholders including DFES and DBCA.

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's *Treatment Schedule* 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 approval. Significant circumstances that may warrant an earlier review of the BRM Plan include:

- Changes to organisational responsibilities or legislation;
- Changes to the bushfire risk profile of the local government; 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 as described in Table 12 – Criteria for Acceptance of Risk and Course of Action (on page 37). New assets will be added to the Asset Risk Register when they are identified.

7.3. Reporting

The Shire of Cunderdin will contribute information relating to their fuel management activities to assist in the annual OBRM *Fuel Management Activity Report*. Treatment Progress reports will also be submitted as applicable once Mitigation Activity Funding has been sought. Internal reporting will include annual reports to the Shire's executive committee and the Local Emergency Management Committee or the Bush Fire Advisory Committee.

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 (BRMS) used to record the details of assets identified in the Bushfire Risk Management Plan (BRM Plan).
Asset Risk Register		A report produced within the BRMS that details the consequence, likelihood, risk rating and treatment priority for each asset identified in the BRM Plan.
Bushfire		Unplanned vegetation fire. A generic term which includes grass fires, forest fires and scrub fires both with and without a suppression objective.
Bushfire Hazard		The hazard posed by the classified vegetation, based on the vegetation category, slope and separation distance.
Bushfire Management Plan	Risk	A development related document that sets out short, medium and long term bushfire risk management strategies for the life of a development.
Bushfire Risk		The chance of a bushfire igniting, spreading and causing damage to the community or the assets they value.
Bushfire Management	Risk	A systematic process to coordinate, direct and control activities relating to bushfire risk with the aim of limiting the adverse effects of bushfire on the community.
Bushfire Risk		The chance of a bushfire igniting, spreading and causing damage to the community or the assets they value.
Consequence		The outcome or impact of a bushfire event.

Draft Bushfire Risk Management Plan	The finalised draft BRM Plan is submitted to the Office of Bushfire Risk Management (OBRM) for review. Once the OBRM review is complete, the BRM Plan is called the 'Final BRM Plan' and can be progressed to local government council for approval.
Geographic Information System (GIS)	A data base technology, linking any aspect of land-related information to its precise geographic location.
Land Owner	The owner of the land, as listed on the Certificate of Title; or leaser under a registered lease agreement; or other entity that has a vested responsibility to manage the land.
Likelihood	The chance of something occurring. In this instance, it is the potential of a bushfire igniting, spreading and impacting on an asset.
Locality	The officially recognised boundaries of suburbs (in cities and larger towns) and localities (outside cities and larger towns).
Map	The mapping component of the BRMS. Assets, treatments and other associated information is spatially identified, displayed and recorded within the Map.
Planning Area	A geographic area determined by the local government which is used to provide a suitable scale for risk assessment and stakeholder engagement.
Priority	See Treatment Priority.
Risk Acceptance	The informed decision to accept a risk, based on the knowledge gained during the risk assessment process.
Risk Analysis	The application of consequence and likelihood to an event in order to determine the level of risk.
Risk Assessment	The systematic process of identifying, analysing and evaluating risk.
Risk Evaluation	The process of comparing the outcomes of risk analysis to the risk criteria in order to determine whether a risk is acceptable or tolerable.
Risk Identification	The process of recognising, identifying and describing risks.
Risk Register	A component within the BRMS used to record, review and monitor risk assessments and treatments associated with assets recorded in the BRM Plan.
Risk treatment	A process to select and implement appropriate measures undertaken to modify risk.

Rural	Any area where in residences and other developments are scattered and intermingled with forest, range, or farm land and native vegetation or cultivated crops.
Rural Urban Interface	The line or area where structures and other human development adjoin or overlap with undeveloped bushland.
Slope	The angle of the ground's surface measured from the horizontal.
Tenure Blind	An approach where multiple land parcels are consider as a whole, regardless of individual ownership or management arrangements.
Treatment	An activity undertaken to modify risk, for example a planned burn.
Treatment Objective	The specific aim to be achieved or action to be undertaken, in order to complete the treatment. Treatment objectives should be specific and measurable.
Treatment Manager	The organisation, or individual, responsible for all aspects of a treatment listed in the <i>Treatment Schedule</i> of the BRM Plan, including coordinating or undertaking work, monitoring, reviewing and reporting.
Treatment Planning Stage	The status or stage of a treatment as it progresses from proposal to implementation.
Treatment Priority	The order, importance or urgency for allocation of funding, resources and opportunity to treatments associated with a particular asset. The treatment priority is based on an asset's risk rating.
Treatment Schedule	A report produced within the BRMS that details the treatment priority of each asset identified in the BRM Plan and the treatments scheduled.
Treatment Strategy	The broad approach that will be used to modify risk, for example fuel management.
Treatment Type	The specific treatment activity that will be implemented to modify risk, for example a planned burn.
Vulnerability	The susceptibility of an asset to the impacts of bushfire.

9. Common Abbreviations

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

10. Appendices

Appendix A	Communication Strategy
Appendix B	Local Government Wide Controls Table
Appendix C	Asset Risk Register



Shire of Cunderdin

Appendix A

Bushfire Risk Management Planning

COMMUNICATION STRATEGY

Document Control

Document Name	Bushfire Risk Management Plan Communications Strategy
Document Owner	Shire of Cunderdin, CEO
Document Location	Shire of Cunderdin
Current Version	1.1
Issue Date	DD/MM/YYYY
Next Review Date	DD/MM/YYYY

Related Documents

Title	Version	Date
Shire of Cunderdin Bushfire Risk Management	1.1	

Amendment List

Version	Date	Author	Section

11. Introduction

A Bushfire Risk Management (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 Cunderdin. This Communication Strategy accompanies the BRM Plan for the Shire of Cunderdin.

It documents the:

- communication objectives;
- roles and responsibilities for communication;
- key stakeholders;
- stakeholders engaged in the development of the BRM Plan and Treatment Schedule; and
- Communication Plan for the implementation and review of the BRM Plan including: target audiences and key messages at each project stage; communication risks and strategies for their management; and communication monitoring and evaluation procedures.

12. Communications Overview

12.1. Communication Objectives

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

1. Key stakeholders understand the purpose of the BRM Plan and their role in the BRM planning process.
2. Stakeholders who are essential to the BRM 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.
5. The community and other stakeholders engage with the BRM planning process and as a result are better informed about bushfire risk and understand their responsibilities to address bushfire risk on their own land.

12.2. Communication Roles and Responsibilities

The Shire of Cunderdin 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 Cunderdin, is responsible for endorsement of the BRM Plan Communications Strategy.
- CEO, Shire of Cunderdin, responsible for external communication within the local government area.
- Community Emergency Services Manager, Shire of Cunderdin, responsible for operational-level communication between the Shire and the Department of Fire and Emergency Services.

12.3. Key Stakeholders for Communication

The following table identifies key stakeholders in BRM planning process, its implementation and review. 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 Cunderdin	Plan owner. Major role in the development, management and review of the plan. Responsible for treatments on land they own/manage	High	Inform, consult, involve, collaborate and empower
Department of Fire and Emergency Services (DFES)	Major role with support in the development and review of the plan. Support for treatment implementation	High	Inform, consult, involve and collaborate

Stakeholder	Role or Interest	Level of impact of outcomes	Level of engagement
Department of Biodiversity Conservation and Attractions (DBCA)	Major role as land and asset owner/managers with planning. Support with treatment implementation. Interested party	Medium	Inform, consult, involve, collaborate and empower
Private land holders	Major role as land and asset owner/managers. Support with treatment implementation. Interested party	High	Inform, consult, involve, collaborate and empower
Australian Rail Commission (ARC)	Major role as land and asset owner/managers. Support with treatment implementation. Interested party	Medium	Inform, consult, involve, collaborate and empower
Local fire volunteers	Support planning and implementation of treatments	High	Inform, consult, involve, collaborate and empower
Main Roads	Role as land and asset owner/ managers. Support with treatment implementation. Interested party	Medium	Inform, consult, involve, collaborate and empower
Water Corporation	Role as land and asset owner/ managers. Support with treatment implementation. Interested party	Medium	Inform, consult, involve, collaborate and empower
Department of Planning, Lands and Heritage (DPLH)	Major role as land and asset owner/managers. Support with treatment implementation. Interested party	Medium	Consult, involve and collaborate

Stakeholder	Role or Interest	Level of impact of outcomes	Level of engagement
Western Power	Role as asset owner/ managers. Support with treatment implementation. Interested party	Medium	Inform, consult, involve, collaborate and empower
Telecommunications Provider	Role as asset owner/ managers. Support with treatment implementation. Interested party	Medium	Inform, consult, involve, collaborate and empower
Traditional owners	Interested party	Medium	Inform, consult and involve
Shire of Cunderdin Community	Interested party	Medium	Inform, consult and involve

13. Communications Log – Development of the BRM Plan and Treatment Schedule

This Communications Log captures the communications with key internal and external stakeholders that occurred during the development of the BRM Plan and associated Treatment Schedule. Record any significant conversations, community engagement events, emails, meetings, presentations, workshops and other communication initiatives.

Timing of communication	Stakeholders	Purpose	Summary	Communication Method	Lesson Identified	Follow up
Development of the BRM Plan						
When did this communication occur?	Who was the stakeholder or target audience?	What was the purpose of the communication?	What topics were discussed?	What communication method did you use?	Were there any issues or lessons identified?	Was there any follow up required?
August 2022	Shire of Cunderdin Deputy CEO, Shire of Cunderdin CESM	1-3 & 5	Inform and consult Confirm project objectives Input into plan Project Identify Risk and share information	Face to face meeting/ Emails	LG possible lack of capacity	Project updates
September 2022	Shire of Cunderdin Deputy CEO, Shire of Cunderdin CESM	2	Project updates Input into plan	Email	LG lack of capacity With CESM position vacant	Project updates

Timing of communication	Stakeholders	Purpose	Summary	Communication Method	Lesson Identified	Follow up
September 2022	Bushfire Advisory Committee (BFAC)	1-3 & 5	Inform and consult Confirm project objectives Input into plan and treatments Project updates	Face to face meeting		Project updates
	Local Emergency Management Committee (LEMC)	1-3 & 5	Inform and consult Confirm project objectives Input into plan and treatments Project updates	Face to face meeting		Project updates
	DFES – Bushfire Risk management officer	1-3 & 5	Inform and Consult Input into plan and treatments	Email/ Telephone		Project updates
	Office of Bushfire Risk Management (OBRM)	1 & 2	Compliance and governance Plan endorsement	Email		Project updates

14. Communications Plan – Implementation and Review of the BRM Plan

This Communications Plan outlines the key communication initiatives that will be undertaken during the implementation and review of the BRM Plan.

Timing of communication	Stakeholders	Communication Objective(s)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring and Evaluation Method
What is the timeframe or date for this communication?	Who is the stakeholder(s) or target audience?	Which communication objective(s) does this activity support or achieve?	How are you communicating (e.g. email, meetings) and how often? What resources are required?	What is the key message or purpose that needs to be understood?	Who is responsible for planning and undertaking the communication activity?	What could reduce the effectiveness of the communication?	What will be done to reduce the likelihood of this happening?	How will you know if your communication was successful?

Implementation of the BRM Plan

Life of Plan	Shire of Cunderdin CEO, CESM & Council	All (1-5)	Email Meetings	Inform and consult Confirm accountabilities and responsibilities. Progress update Issues identification and action planning	CEO or CESM	LG capacity Lack of understanding Budget (for LG mitigation)	Planning and time management Clear purpose Targeted communication Regular updates	Feedback, questions raised Level of support received
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Timing of communication	Stakeholders	Communication Objective(s)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring and Evaluation Method
Life of Plan	LEMC & BFAC	All (1-5)	Meetings Presentations	Report on progress Report issues or constraints	CESM	Availability Lack of understanding	Collate data and report on success to plan Compliance to plan Keep informed	Report on success
As Required	DFES BRMO	1-3	Email Meetings	UCL/UMR management and status Treatment status and issues to be addressed Identification of other planned works Funding opportunities	CESM	Time Conflicting priorities	Schedule communication opportunities	Planned works identified Issues addressed
As required	DBCA	1-3	Email Meetings	Confirmation of environmental assets Development of treatment options	CESM	Resource constraints/ Lack of capacity	Clarify misunderstandings and intentions of plan	Level of engagement

Timing of communication	Stakeholders	Communication Objective(s)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring and Evaluation Method
As Required	Stakeholders/ Landowners	3, 4 & 5	Email Meetings	Awareness and understanding Accountabilities and responsibilities	CESM	Lack of understanding or capacity to implement	Planned sharing of information Negotiations conducted Communicate funding opportunities when available	Feedback Treatments being implemented
As Required	Community	5	Community engagement activities/ Newsletter	Awareness and understanding Responsibilities of landowners and how to reduce risk	CESM	Community interest Lack of understanding	Plan communication	Feedback Received

Review of the BRM Plan

Timing of communication	Stakeholders	Communication Objective(s)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring and Evaluation Method
Annually	Shire of Cunderdin	All (1 – 5)	Email Face to face meetings	Monitor and report on plan outcomes Review, monitoring and reporting to council Updates and continuous improvements	CEO or CESM	Time constraints LG capacity of understanding	Keep informed Scheduled meetings	Feedback, Questions raised Level of support received
5 Yearly	Shire of Cunderdin & OBRM	All (1 – 5)	Email Face to face meetings	Monitor and report on plan outcomes Review, monitoring and reporting to council Updates and continuous improvements	CEO or CESM	Time constraints LG capacity Lack of understanding BRMP not updated and review not completed by OBRM	CESM & BRMO to record data and information appropriately Endorsement by OBRM	Feedback from OBRM Reporting and Statistics Asset risk ratings reduced

Appendix B

Bushfire Risk Management Planning – Local Government Wide Controls

Control	Action or activity description	Lead agency	Other stakeholder(s)	Notes and comments	
1	Shire of Cunderdin Firebreak Notice (<i>Bush Fires Act 1954</i>)	Review annual Notice Publish annual notice Inspections in accordance with the annual notice	Shire of Cunderdin	DFES Landholder	Published annually
2	Shire of Cunderdin Prohibited and Restricted Burning Periods (<i>Bush Fires Act 1954</i>)	Restricted and Prohibited burning times are set and permits are needed to burn during this time	Shire of Cunderdin	CBFCO and FCOs	Published annually in the Shire of Cunderdin firebreak notice
3	Harvest and Vehicle Movement Ban	Bans are issued when the CBFCO and FCO identifies the use of engines, vehicles, plant or machinery as high bushfire risk activities, during particular times of the day.	Shire of Cunderdin	CBFCO and FCOs	A Harvest and Vehicle Movement Ban are imposed for any period of time determined by the Issuer of the ban
4	Total Fire Ban	Restriction of activities that may cause or contribute to the spread of a bushfire	Department of Fire and Emergency Services	Shire of Cunderdin	A Total Fire Ban (TFB) is declared because of extreme weather conditions or when operational commitments are impacting on the state resources. A TFB is declared by DFES following consultation with the LG.

Control	Action or activity description	Lead agency	Other stakeholder(s)	Notes and comments	
5	Shire of Cunderdin Local Emergency Management Arrangements	Emergency Management Plan	Shire of Cunderdin	SJA, WAPOL, DFES, Dept of Communities, Dept of Education, CBFCO, DEMC	Annual review of emergency plans and arrangements.
6	2019 Joint Planning Strategy Shires of Cunderdin, Quairading & Tammin	As per documented actions	DPLH	Shire of Cunderdin	SPP 3.7 – Planning in Bushfire Prone Areas
7	DBCA Fuel Reduction and Burn Plan	Fuel Reduction Programs on DBCA managed land	Department Biodiversity Parks and Attractions	Shire of Cunderdin	
8	DFES UCL/UMR program - Planning and Maintenance	Mitigation program on Unallocated Crown Land (UCL) and Unmanaged Reserves (UMR) within town boundaries	Department of Fire and Emergency Services	Shire of Cunderdin	Ongoing maintenance on UCL/UMR
9	Australian Rail Commission(ARC) Mitigation Program	Mitigation works in rail corridors	Australian Rail Commission	Shire of Cunderdin	Ongoing maintenance

Control		Action or activity description	Lead agency	Other stakeholder(s)	Notes and comments
10	Main Vegetation Management Program Roads	Mitigation Planning and works in road corridors and adjacent to MRWA infrastructure	Main Roads	Shire of Cunderdin	Ongoing maintenance
11	Western Vegetation Management Program Power	Mitigation Planning and works for power infrastructure and sites	Western Power	Shire of Cunderdin	Ongoing maintenance

Appendix C

Asset Risk Register

Asset ID	Asset Category	Asset Sub Category	Asset Name	Location Description	Planning Area	Likelihood	Consequence	Risk Rating	Priority
CUNCDD0325	Economic	Commercial and Industrial	Meckering Main St	Gabbedy Place Meckering	CDD	Possible	Minor	Low	5A
CUNCDD0326	Economic	Critical Infrastructure	Meckering Bushfire Brigade	Soloman St Meckering	CDD	Unlikely	Minor	Low	5C
CUNCDD0327	Human Settlement	Residential	Marlin St x Dempster St Residential	Meckering	CDD	Likely	Moderate	High	3A
CUNCDD0328	Human Settlement	Residential	1 Combley St	Meckering	CDD	Likely	Moderate	High	3A
CUNCDD0329	Human Settlement	Residential	86 Throssel St	Meckering	CDD	Likely	Catastrophic	Extreme	1B
CUNCDD0330	Human Settlement	Residential	74 Dempster St	Meckering	CDD	Possible	Catastrophic	Very High	2B
CUNCDD0331	Human Settlement	Residential	119 Dempster St	Meckering	CDD	Likely	Major	Very High	2A
CUNCDD0332	Human Settlement	Residential	24 - 32 Throssell St	Meckering	CDD	Possible	Moderate	Medium	4A
CUNCDD0333	Economic	Critical Infrastructure	Meckering Telstra Exchange	Meckering	CDD	Likely	Minor	Medium	4C
CUNCDD0334	Economic	Critical Infrastructure	Ygnattering Bushfire Brigade	Ygnattering Rd	CDD	Likely	Moderate	High	3A

Asset ID	Asset Category	Asset Sub Category	Asset Name	Location Description	Planning Area	Likelihood	Consequence	Risk Rating	Priority
CUNCDD0335	Economic	Critical Infrastructure	Cunderdin BFB	Centenary Place	CDD	Possible	Minor	Low	5A
CUNCDD0336	Economic	Commercial and Industrial	Centenary Place Industrial	Cunderdin	CDD	Possible	Moderate	Medium	4A
CUNCDD0337	Economic	Commercial and Industrial	Lot 72 Olympic Av	Cunderdin	CDD	Possible	Moderate	Medium	4A
CUNCDD0338	Cultural	Local Heritage	Cunderdin Water Tank	Forrest St Cunderdin	CDD	Unlikely	Minor	Low	5C
CUNCDD0339	Human Settlement	Residential	Cunderdin Golf Club	Cunderdin	CDD	Likely	Major	Very High	2A
CUNCDD0340	Economic	Critical Infrastructure	Emergency Water Tank - Antonio Rd x Wilding Rd	Greenwoods Valley	CDD	Likely	Minor	Medium	4C
CUNCDD0341	Economic	Commercial and Industrial	Meckering Waste Transfer Station	Meckering	CDD	Likely	Moderate	High	3A
CUNCDD0342	Economic	Critical Infrastructure	Cunderdin Train Station	Cunderdin	CDD	Likely	Moderate	High	3A
CUNCDD0343	Human Settlement	Residential	22 Fiegert Rd	Cunderdin	CDD	Possible	Catastrophic	Very High	2B
CUNCDD0344	Economic	Critical Infrastructure	Water Corp Tanks	Gt Eastern Highway Cunderdin	CDD	Possible	Major	High	3B