Shire of Tammin

BUSHFIRE RISK MANAGEMENT PLAN

2026-2031

Office of Bushfire Risk Management Bushfire Risk Management (BRM Plan) endorsed XX Month 20XX

Local Government Council BRM Plan approval XX Month 20XX

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Document Endorsements

This Bushfire Risk Management Plan has been endorsed by the Office of Bushfire Risk Management as consistent with the standards detailed in the *Guidelines for Preparing a Bushfire Risk Management Plan 2024*.

The approval of the Bushfire Risk Management Plan by Tammin Council signifies support of the plan's implementation and commitment to working with risk owners to manage bushfire risk. Approval does not signify acceptance of responsibility for risk, treatments or outcomes on land that is not managed by the Shire of Tammin.

Local Government	Representative	Signature	Date
Shire of Tammin			

Publication Information

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1. Introduction

1.1. Background

This Bushfire Risk Management (BRM) Plan provides contextual information to inform a structured approach to identifying, assessing, prioritising, monitoring and treating bushfire risk. The BRM Plan has been prepared by the Shire of Tammin, encompasses all land within the Shire of Tammin and has been written on behalf of all stakeholders within that area. The BRM Plan is informed by consultation and communication with land and asset managers that has occurred throughout its development to ensure an informed and collaborative approach to managing bushfire risk.

The BRM plan and this review has been prepared with due consideration of the requirements stated in the *Guidelines for Preparing a Bushfire Risk Management Plan* (the Guidelines) published by the Office of Bushfire Risk Management (OBRM) including the principles described in *ISO 31000:2018 Risk Management*.

1.2. Objectives of the Bushfire Risk Management planning Program

The BRM planning program supports local governments to reduce the threat posed by bushfire. The Shire of Tammin BRM Plan will contribute to achieving the objective of the BRM program by:

- Guiding and coordinating a cross-tenure, multi-stakeholder approach to BRM planning.
- Facilitating the effective use of the financial and physical resources available for BRM activities.
- Supporting integration between risk owners, strategic objectives and tactical outcomes.
- Documenting processes used to monitor and review the implementation of treatments to ensure risk is managed to an acceptable level.

1.3. Legislation, Policy and Standards

Legislation, policy and standards that were applied in the development of the original BRM Plan 2021 and this subsequent review (2026) can be found in the *Bushfire Risk Management Planning Handbook – Appendix 1 – Summary of Related Legislation, Policy and Guidelines*.

2. The Risk Management Process

The BRM planning process is a cycle of understanding the context and assessing and treating risks. Each of these steps is informed by communication and consultation and supported by monitoring and review. The three products produced during the BRM planning process are the BRM Plan, Asset Risk Register and Treatment Schedule.

Further details on the guiding principles and process for the development of this plan can be found in Chapter 2 of the Guidelines.

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 in the Bushfire Risk Management (BRM) planning process

Stakeholder Name*	Roles and Responsibilities
Local Government	• Custodian of the Bushfire Risk Management Plan (BRM Plan) • Coordinate the development and ongoing review of the integrated BRM Plan. • Undertake bushfire risk assessment of local government area. • Submit the draft BRM Plan to OBRM for review and endorsement. • Develop and implement a Treatment Schedule for local government managed land. • Encourage risk owners to treat identified risks. • Communicate the plan to the community
Department of Fire and Emergency Services (DFES)	• Contribute to the development and implementation of the BRM Plan. • Facilitate involvement of state and federal government agencies in the BRM planning process. • Undertake treatments on unmanaged reserves and unallocated Crown land within gazetted town sites. • By agreement, implement treatment strategies for other land managers. • Endorse BRM Plans as consist with the Guidelines, BRM Program and dynamic risk environment. • Administer the Mitigation Activity Fund Grants Program.
Department of Biodiversity, Conservation and Attractions (DBCA)	• Contribute to the development of the BRM Plan. • Implement their treatment program on DBCA managed land. • Provide advice on environmental assets and appropriate treatment strategies for their protection.
Department of Planning, Lands and Heritage	• Identify managed assets. • Provide advice on management of Aboriginal Cultural Heritage.

Stakeholder Name*	Roles and Responsibilities
Other State and Commonwealth Government agencies and public utilities	• Identify managed assets. • Provide advice on current risk treatment programs. • Contribute to the development of BRM Plans. • Undertake treatments on lands they manage.
Corporations and private landowners	• Identify managed assets. • Provide advice on current risk treatment programs. • Undertake treatments on lands they manage.

2.2. Stakeholder Engagement

Engagement with stakeholders during the development, implementation and review of the BRM Plan ensures planning is based on comprehensive information and considers the values and objectives of the entire community.

The following table identifies key stakeholders in the BRM planning process. 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 as per Table 2 below.

Table 2 Key stakeholders identified in the BRM planning process for the Shire of Tammin.

Stakeholder	Role or Interest	Level of impact of outcomes	Level of engagement
Shire of Tammin	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	Major role with support in the development and review of the plan. Support for treatment implementation	High	Inform, consult, involve and collaborate
Department of Biodiversity Conservation and Attractions	Major role as land and asset owner/ managers with planning. Support with treatment implementation. Interested party	High	Inform, consult, involve, collaborate and empower
Private land holder	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 Corp	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	Major role as land and asset owner/ managers. Support with treatment implementation. Interested party	Medium	Consult, involve and collaborate
Electrical Supplier	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
Tammin Community	Interested party	Medium	Inform, consult and involve

3. Establishing the Context

3.1. Description of the Local Government and Community Context

3.1.1 Strategic and Corporate Framework

The Shire of Tammin Strategic Community Plan (2017–2027) outlines the Shire's vision:

A Place for People, A Place for Community

To achieve this vision the Shire has set out six key Strategic Directions:

1 Social / Community

Grow and sustain the population through planned provision of services. Maintain the sense of community, which is inclusive and welcoming for all.

1.1 A connected, supportive and diverse community that fosters inclusion, resilience and self-sufficiency

- 1.1.2 Continue to support and strengthen community groups and networks
- 1.1.3 Actively promote and support community events and activities

1.2 1.2 A growing, healthy and safe community

- 1.2.3 Support provision of emergency services and encourage community volunteers [2]

In the context of the BRM Plan, the Shire recognizes the importance of a community spirit and values the efforts and dedication of the members of the local volunteer emergency services brigades and is committed to providing the necessary support and resources to enable them to respond to bushfires. Under the BRM Plan, heritage and cultural assets of value are identified and where appropriate, suitable risk treatments implemented for their protection.

2 Environment

Provide leadership and promote local regional sustainability principles and practices. Enhance local natural areas and open spaces.

2.1 A well maintained attractive environment servicing the needs of the community

- 2.1.2 Review planning and building practices to promote sustainability

[2] Shire of Tammin Strategic Community Plan 2017 - 2027

2.2 Protect and enhance our natural environment and reserves

- 2.2.1 Enhance the town's open spaces and roadsides
- 2.2.2 Revegetate local areas as required [2]

In the context of this BRM Plan, the Shire of Tammin understand that there is complex relationship between fire and the environment. Fire may benefit some environments or cause damage to other as well as being impacted by treatments used to protect other assets. The Shire will work with other agency and community to identify environmental assets that need specific consideration and minimizes negative impacts upon the environment for all treatments.

3 Housing & Facilities

3.1 Our local area will be maintained through the provision of housing and employment choices for all ages, whilst protecting our viable farmland.

- 3.1.1 Upgrade and maintain our infrastructure to ensure transport routes are safe
- 3.1.2 Continue to assist the facilitation of regional health services [2]

In the context of the BRM Plan, the Shire of Tammin is committed to maintaining its infrastructure which includes a network of roads and buildings. This supports safer evacuation for community and accesses for fire fighters during an emergency situations. The Shire also works with Department of Communities to ensure a network of Shire buildings that can be used as evacuation/welfare centers. Working with asset owners to ensure adequate protection of critical infrastructure will assist in restoring essential services quickly and efficiently following a bushfire, reducing the impact on the community and local economy.

4 Economic Development

Strengthen local business and employment capacity. Support and encourage sustainable business growth. [2]

Under the BRM Plan, assets that are vital to the local, regional or state economy are identified and where appropriate, suitable risk treatments implemented for their protection. The BRM Plan will allow the Shire to work with economic asset owners to help them understand their risk and improve their preparations and resilience.

[2] Shire of Tammin Strategic Community Plan 2017 - 2027

5 Infrastructure & Transport

Our local town, amenities and facilities will be maintained and enhanced, ensuring that our town is one that the community loves to be in and is proud of.

5.1 A well-connected and serviced community accessible to all

- 5.1.1 Advocate for the needs of our residents for improved levels of health, water, energy, communications and transport infrastructure to be provided by State Government, to meet increasing demand and to support our growth as a community

- 5.1.2 Develop partnerships with government agencies for improved services [2]

In the context of the BRM Plan, the Shire of Tammin is committed to engaging with government agencies and stakeholders on matters related to bushfire risk management.

6 Civic Leadership

Our Councilors and community leaders have vision, are accessible, act with transparency and integrity, and act in good faith on behalf of their constituents.

In the context of the BRM Plan, the Shire will be able to identify the areas of the greatest risk. This will allow the Shire to prioritize funding and mitigation works on Shire owned and managed land to reduce the bushfire risk within the Shire. The BRM Plan will also assist the Shire in identifying unacceptable bushfire risks on private and other government lands, so that land owners can be engaged in treatment planning and encouraged to implement their own mitigation programs to reduce risk.

The Shire's Local Emergency Management Committee and Bush Fire Advisory Committee are an integral part of the development, implementation and review of the BRM plan. The input and advice from these committees is critical in bushfire risk planning. The committees allow for consultation and input from multiple agencies on local area issues and ensure that information discovered during bushfire risk planning is reflected in the arrangements for managing emergencies.

The Shire has outlined the roles and responsibilities in table 2 for the implementation, monitoring and review of the BRM Plan, the Shire has access to the services of a Community Emergency Service Manager (CESM) along with the Shires of Quairading, Cunderdin and Kellerberrin. A significant role of the CESM is to ensure the Shire's volunteer Bush Fire Brigades (BFBs) and emergency services volunteers are supported, trained, equipped and capable of providing appropriate emergency services to their communities. It is also envisaged that the CESM position will take a key role throughout the BRM Plan, once the plan is endorsed.

Local Government Roles and Responsibilities

Function	Roles
Shire of Tammin leadership Team	• Oversight of the implementation, monitoring and review of the Bushfire Risk Management Plan • Sourcing and approving funding and expenditure • Monitoring the implementation of agreed treatments • Liaison with key stakeholders

	• Participation on local Emergency Management Committee (LEMC) • Management of the release of the BRM Plan and BRMS data
Community Emergency Service Manager (CESM)	• Performs mitigation work on Shire managed or owned land or as directed by the Shire • Develops practices for fire management on local government land • In consultation, plans and schedules works including managing grant funding applications and reporting • Builds knowledge and understanding of fire management practice within the community • Participates on the Bushfire Advisory Committee (BFAC) • Supports and represents the Shire at bushfire related meetings and committees • Oversees the Shire's burning programs with support from local brigades • Contributes to treatment planning • Negotiates with stakeholders during treatment planning
Works Department	• Contributes to treatment planning • Undertakes planned works
Town Planning	• Ensure adherence to building codes and planning scheme • Review Bushfire Prone Area Mapping
Finance	• Financial management of grants and funding

The community of Tammin has identified areas of concern within the Shire. These include:

- Changes in farming practices increasing the area of cropped land and the reduction of farmworkers;
- The risk of fire spreading along road verges and gazetted roadways;
- Limited water supply in some areas of the Shire and reduced flow rates from mains;
- Areas of vegetation adjoining or adjacent to critical infrastructure, for example railway lines, communication towers, power and water infrastructure.

The Shire will work on addressing the concerns of the community by prioritise funding to the assets at the greatest risk and working with other agencies to minimise the bushfire risk as identified in the BRMS program.

3.1.2 Land Use and Tenure

The Shire of Tammin is in the Wheatbelt region of Western Australia specifically in the Avon Zone. The town site of Tammin is approximately 184km East of Perth and is situated along Great Eastern Hwy and the railway line. Both of these are the main freight connection with the Eastern States of Australia. The Shire also includes the Localities of Bungulla and Yorkrakine.

Tammin Shire covers an area of 1100 square kilometres and has a population of 386 approximately 50% living in the gazetted town site of Tammin, according to the 2021 Census. Tammin share its boundaries with Cunderdin, Quairading, Kellerberrin and Wyalkatchem. The Shire has been vastly cleared for farming, creating areas of gentle undulating land for sheep and cropping, leaving the remnant vegetation highly fragmented. Despite this there are 9 nature reserves in the Shire ranging in size from 24 Ha to 799Ha. Other areas of natural vegetation located within the Shire are along roadsides and on private property.

Listed in Table 3 is an overview of the land tenue and managers of land within the Shire of Tammin. The area of privately owned lands is 96.3%, with 87% of the Shire of Tammin (or about 96134 Ha) used for agricultural production, primarily broad acre farming. The private land holdings are predominantly larger parcels of land owned by local families, some of the challenges coming from this are:

- A reduced population in local towns and communities to help in fire prevention and fighting of fires.
- The high percentage of privately owned land within the Shire means that they will need to be engaged as stakeholders with education and consultation being the key factor in regards to the BRM Plan and mitigation.
- If one landholder does not act in accordance with Council policies this can increase the risk to other landowners, particularly those on adjoining properties.

Land Manager/Agency	Percent of Local Government Area
Local Government	1.8
Private	96.5
Department of Biodiversity, Conservation and Attractions	1.2
Department of Planning, Lands and Heritage	0.3
Other	0.2

Total	100

Table 3 – Overview of Land Tenure and Management within the Shire of Tammin Source: GIS DFES

3.1.3 Community Demongraphics and Values

The population within the Shire of Tammin has declined at a low rate but is reasonably steady for a regional area. Over a ten-year period, the population of the Shire was 404 in 2011, 402 in the 2016 and 386 in 2021 according to census data. The forecast growth for the Shire is uncertain due to social and economic criteria, however over recent years since the 2021 Census, empirically young people over recent years have been returning to the area to return to farming and start families.

The median age in the Shire is 46 years of age, with children aged 0 – 14 making up 19.8% of the Shire's population, the age groups from 15 to 34 years of age making up 19.2%, the age group of 35 – 65 years of age is 43.9 % and the group aged over 65 make up 17.2 % of the Shire.

Tammin has a large population turnover of migrant workers due to agriculture being the main employment influence. This brings a number of seasonal workers to the Shire during the summer bushfire period, which includes harvest. A high percentage of these seasonal workers are from overseas. 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 customised advice is provided to this group by employers during pre-fire season preparation, as well as during bushfire events.

3.1.4 Cultural Heritage

The Ballardong Noongar people are the traditional owners of the land on which the town of Tammin, Western Australia is located.

All Aboriginal sites are protected by the Aboriginal Heritage Act 1972. As such, consideration of Aboriginal cultural heritage sites is required in all proposals affecting these sites to ensure legal protection from damage, destruction or alteration.

On 8 June 2015, six identical Indigenous Land Use Agreements (ILUAs) were executed across the South West by the Western Australian Government and, respectively, the Yued, Whadjuk People, Gnaala Karla Booja, Ballardong People, South West Boojarah #2 and Wagyl Kaip & Southern Noongar groups, and the South West Aboriginal Land and Sea Council (SWALSC). The ILUAs bind the parties (including 'the State', which encompasses all State Government Departments and certain State Government agencies) to enter into a Noongar Standard Heritage Agreement (NSHA) when conducting Aboriginal Heritage Surveys in the ILUA areas,

unless they have an existing heritage agreement. It is also intended that other State agencies and instrumentalities enter into the NSHA when conducting Aboriginal Heritage Surveys in the ILUA areas. It is recommended a NSHA is entered into, and an 'Activity Notice' issued under the NSHA, if there is a risk that an activity will 'impact' (i.e. by excavating, damaging, destroying or altering in any way) an Aboriginal heritage site. The Aboriginal Heritage Due Diligence Guidelines, which are referenced by the NSHA, provide guidance on how to assess the potential risk to Aboriginal heritage.

Registered Aboriginal Cultural Heritage sites and Protected Areas are shown in the Aboriginal Cultural Heritage Inquiry System (ACHIS). This system will be consulted and appropriate approvals obtained when planning bushfire mitigation activities.

3.1.5 Economic Activities and Industry

Agriculture is the major industry stakeholder in the Shire of Tammin. The period of October through to January is when the crops have matured and cured, ready for harvest. Before harvest, dried crops are particularly flammable, which increases the fuel load. Added to this abundance of fine, dry fuel is the increased use of machinery in the paddocks during this period. Fires can start easily and creating an environment for a fast moving fire that can cover large areas in a short amount of time. This can result in considerable financial losses of crops and infrastructure (fences, machinery, wind breaks), and increase the risk of topsoil erosion by wind and rain causing possible additional financial loss in the future.

One of the factors that has changed in agriculture over the years is the advancement in cropping practices and the increased size and effectiveness of machinery, leading to more hectares being cropped. This has seen a decrease in livestock production which affects two factors;

- decrease in population on farms during the fire season
- increased fuel load and fire risk.

Table 4 – Top 5 Employment by industry for Tammin (2021 Census)

Description	2021
Other (Grain Growing)	24.8
Grain Sheep – Grain Cattle Farming	17.4
Local Government Administration	6.2
Primary Education	5.6
Supermarket and Grocery Store	3.7

The road and rail networks that connect the Eastern States to Perth run through the middle of the Tammin Shire in an east-west direction and pass through the centre of town. Any disruption to these networks due to fire or damage for a period of time, causes a significant

economic impact on local businesses and the State. Another consideration with the rail lines is the reduced movement of firefighting vehicles due to limited crossing points on the line during bushfire and mitigation planning.

3.2. Description of the Environment and Bushfire Context

3.2.1 Topography and Landscape Features

The Shire of Tammin falls into the Avon Catchment and is characterised by a gently, undulating relief. There are extensive salt flats along former channels of the East Mortlock River. The elevation in the Shire range from 220 – 330 m above sea level. Significant features in the landscape are Youering Rock, Tammin Rock, Yorkrakine Hill and Doongin Peak (Native Vegetation Handbook for the Shire of Tammin)

The topography of the Shire of Tammin is mainly gently undulating, these gently slopes don't greatly impact fire behaviour in most areas, however some small localised impacts can be seen in steeper areas such as Yorkrakine Hill and other rocky outcrops. There are areas within the Shire where topography can greatly influence the bushfire risk by limiting access for prevention and combating of Bushfires.

Infrastructure like the water pipelines and train tracks that can cause barriers and challenges in the fighting and prevention of fires. The main pipeline runs in a west – east direction with branch lines running along road reserves throughout the Shire, situated above ground level. In some areas, the pipeline prevents entry to reserves from the roadway. The train tracks are raised and unable to be crossed, except at road crossings. Fires often spot across these features, where firefighters cannot easily cross and may have to travel some distance to be able to get to the other side. This can often result in a significant delay in firefighting response allowing fires to be able to grow quickly with limited suppression. This often results in much larger fires.

3.2.2 Climate and Weather

In Australia, the seasons are defined by grouping the calendar months in the following way:

- Spring - the three transition months September, October and November.
- Summer - the three hottest months December, January and February.
- Autumn - the transition months March, April and May.
- Winter - the three coldest months June, July and August (Bureau of Meteorology)

The climate in Tammin is classed as Temperate with distinctly dry (and hot) summer as shown in Figure 1 the weather pattern for Tammin is to have winter temperatures averaging 17-18°C max. The Shire receives over half the annual rainfall in a 4 month period. The yearly average rainfall for the Shire of Tammin is 370mm. The months of May to August are the wettest months with an average total rain fall of approximately 185mm for the 4 months.

The summer months are dry and hot with an average of approximately 13mm per month and average maximum temperatures of 33.6°C. This weather pattern allows 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 normally dry and hot, causing the vegetation to dry out, which increases fuel load. The months of the fire season can produce weather that is extreme, with high temperature, high winds and low humidity. This combined with the dry vegetation can cause fast moving uncontrollable fires.

The wind predominantly comes from the westerly direction, whereas during the bushfire seasons the wind predominantly comes from the Southeast, as shown for the period of 1st October to 1st April on a yearly basis.

The Shire of Tammin experiences a typical Mediterranean climate, featuring cold winter nights with absolute lowest recorded temperatures reaching down to around -2.7°C, and average winter mean minimums hovering near 5°C to 6°C.

On average the Shire of Tammin has annual maximum temperature of about 26°C to 27.0°C, with extreme daily highs reaching up to 48.5°C on record.

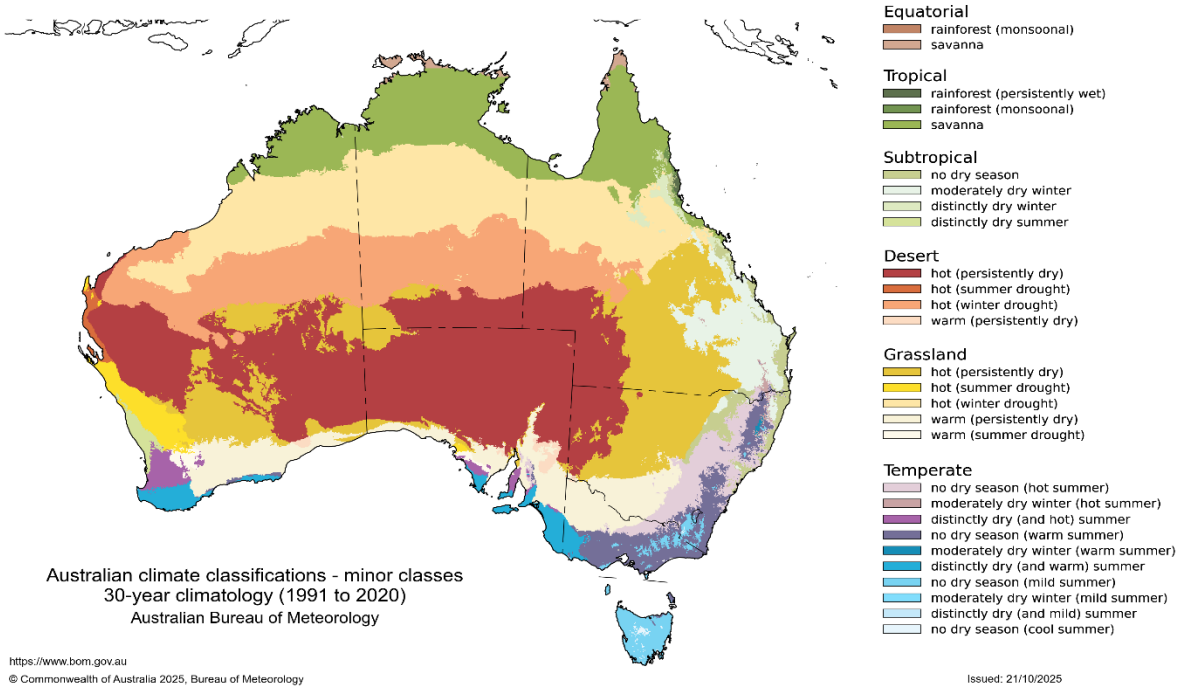


Figure 1 Climate zones Bureau of Meteorology

The weather patterns show that the months of 1st of November to the 1st of April are the bushfire season within the Shire of Tammin. During these month there is high temperature, low rainfall and an average wind speed at 3pm of 14.1km/hr. During these months it is not uncommon to have extreme days of fire weather.

3.2.3 Vegetation and Fuel

The Shire of Tammin falls almost entirely within the Mount Caroline Vegetation Systems. The Shire has been vastly cleared for use as agricultural land and the remnant vegetation is highly fragmented with only 3.7% left within the Shire. Despite this, there are sizable patches of remnant vegetation that could be adversely affected by fire.

Additionally, much of the remnant vegetation is along roadsides, which may provide a way for fire to spread across a large area. The main types of natural vegetation within the Shire are;

- Woodlands
- Scrubland
- Succulent steppe

The largest reserve in the Shire is Charles Gardner Nature Reserve (799Ha). The reserve is made up of Tammin heath/scrub heath mosaic vegetation, which is highly flammable due to their well aerated fine fuels, a tendency for dead foliage to persist on plants and the direct exposure of fuels to wind and solar radiation without a tree canopy to retain surface moisture. These communities therefore remain fire prone throughout much of the year, unlike forest fuels which have deeper litter layers that remain moist for most of the year, or grasslands which have strong seasonal curing patterns. Under low to moderate winds (10-20km/hr) some unburnt or partially burnt patches will remain. However, under intense weather conditions, as occurs in most summers in Western Australia, large areas of shrub heath can be burnt completely and little unburnt dead or live fuels remain.

The main vegetation within the Shire is used for agriculture (primarily crops, with a reducing amount of pasture) and may appear to have a low bushfire risk for most of the year, however the practices of retaining stubble does mean that fire can carry in the right conditions year around. During the harvest periods of the year (October to January), this vegetation becomes a significant bushfire hazard. With large areas of continuous crop, the spread of fire with strong winds can make for a fast moving, large fire.

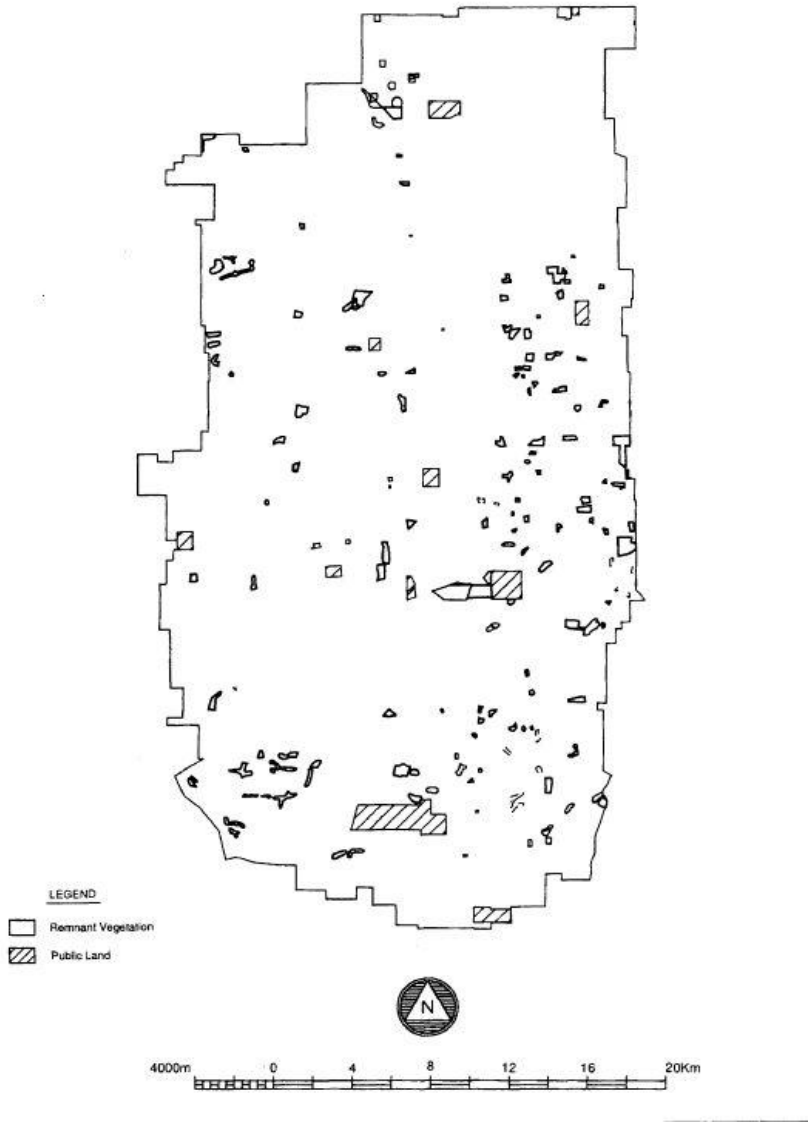


Figure 2 Shire of Tammin showing native vegetation cover. 3.7 % of shire remains under perennial vegetation, with 2.1% on private land (Department of Primary Industries and Regional Development Native vegetation handbook for the Shire of Tammin)

3.2.4 Important Species and Communities

Important species and communities are listed on the Department of Biodiversity, Conservation and Attractions (DBCA) website. This website will be consulted with due diligence practiced to protect identified species and communities when planning and conducting appropriate bushfire mitigation activities.

Native flora and fauna species together with ecological communities are significant values that require consideration in respect to bushfire threat. It is important that mitigation activities do not have a detrimental impact to threatened species and ecological communities. Within the Shire one example of this is;

Yorkrakine Trapdoor spider which is located in the northern part of the Shire and is classed as rare and likely to become extinct. Fire represents a direct threat to the Yorkrakine Trapdoor spider as intense fires have the capacity to result in direct mortality to individuals. Fire also represents an indirect threat through the reduction in the ground litter required for reconstructing burrows and to support the litter-dependent invertebrate food source for the Yorkrakine Trapdoor spider.

While fire regimes provide a number of important ecological functions, inappropriate fire regimes may threaten the survival of the Yorkrakine Trapdoor spider populations. Inappropriate fire regimes relate to:

- Frequency Fires that are too frequent or too infrequent
- Season Fires occurring when a species is particularly vulnerable
- Intensity Fires are too intense resulting in high mortality
- Spatial Fires are too large resulting in no unburnt refuge areas[8]

All treatments need to consider the requirements of all the flora and fauna on site. Response strategies should be environmentally sensitive within the constraints of the incident and the Shire will take every opportunity to remind landowners/managers of their obligation to obtain appropriate clearances and approvals prior to commencing vegetation-based treatments.

General Threatened Ecological Communities

The following map (Figure 3) shows the general location of Threatened Ecological Communities within the Shire.

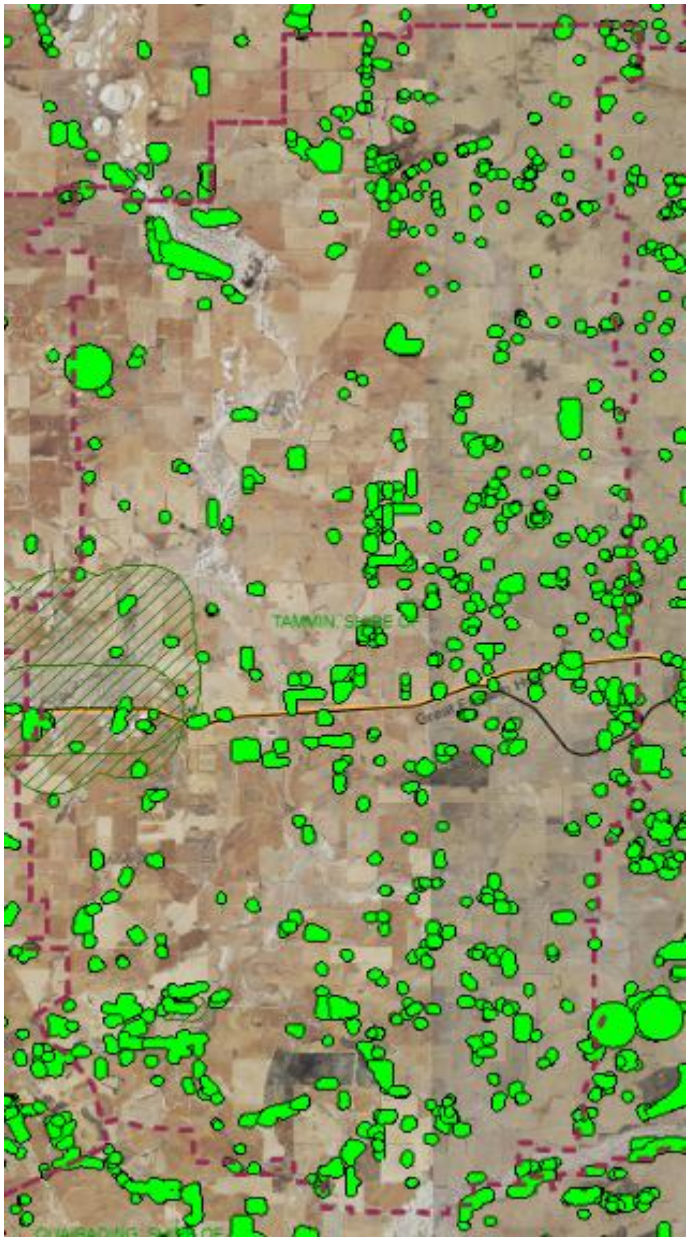


Figure 3- Map reflecting the locations of Threatened Ecological Communities in the Shire of Tammin

3.2.5 2026 Bushfire Frequency and Causes of Ignition

The Shire of Tammin is located within the Avon Fire Weather District. Given the prevalence of agricultural holdings within the Shire of Tammin, the Grass Fire Danger Index is the model applied to determine the Fire Danger Index (FDI). The FDI is a calculated using the degree of fuel curing, the air temperature, relative humidity, and wind speed for a given day.

FDI is estimated using the McArthur Fire Danger Meter for grasslands or forest. The higher the FDI, the higher the fire danger.

From the FDI, predictions can be made regarding a fire's rate of spread, intensity and the potential for various suppression tactics to succeed. The FDI is the basis for determining the Fire Danger Rating (FDR), shown in Figure 4, which is a scale developed to assist communities to better understand information about fire danger.

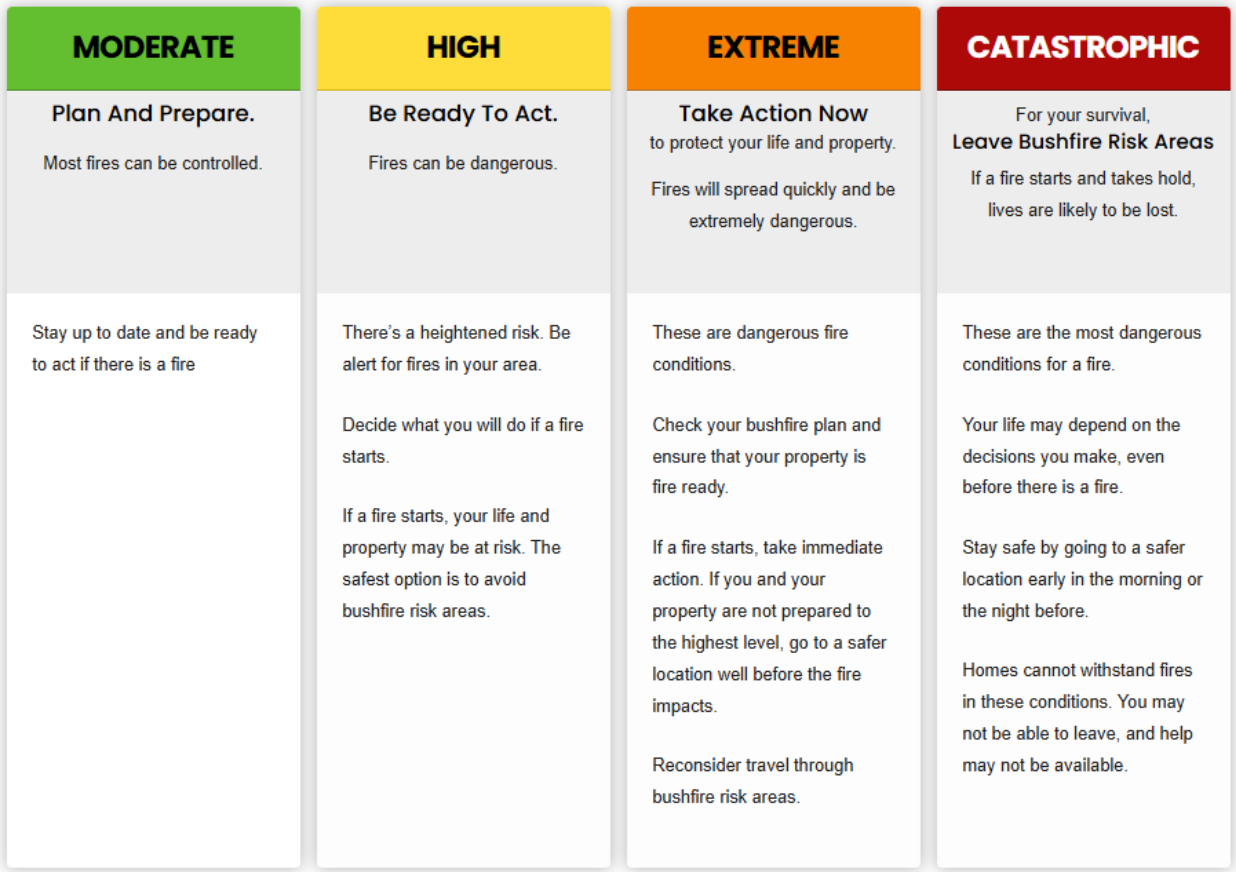


Figure 4 Fire Danger Rating (DFES)

The most common cause of Bushfire ignitions within the Shire of Tammin is due to weather conditions, normally dry lightning storms. Figure 5 show the recorded number, type and extent of fires in the Shire for the period of 4 years starting in 2022/23 to 2025/26.

The main risk of ignitions associated with agriculture is during the harvest period. Vehicles and machinery used during harvesting operations can easily ignite fires in cured crops through sparks or heat and added with the dryness of the crop, fires can spread fast.

Incident Type	2022/2023	2023/2024	2024/2025	2025/2026
Called Off - No Attendance	0	0	0	1
False Call - Good Intent	1	2	1	3
Fire - Bushfire (lge)	1	4	1	3
Fire - Bushfire (sml)	4	13	3	3
Fire - Other/Rubbish/Vehicle	0	0	1	2
Fire - Structure	0	0	1	1
Rescue & Medical	0	0	1	0
Road Crash & Rescue	1	0	0	1

Figure 5 Recorded Fire Incidents

To reduce the risk of agricultural fires, it is required in the Tammin Shire to have an operational firefighting appliance of no less than 600L in the paddock where harvest operations are happening. The Shire uses Harvest and Vehicle Movement Bans to restrict activities likely to cause ignitions, which are applied by a representative of the Shire when weather conditions hit trigger points.

Transportation corridors also contribute to bushfire ignitions within the Shire due to the increased volume of activities occurring, and the concentration of people in an area that are likely to witness and report a fire.

3.2.6 Bushfire Risk Control

Local Government Wide Controls are activities that reduce the overall bushfire risk within the Shire of Tammin. 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 Tammin are detailed below in Table 5.

Table 5 Current bushfire risk controls in the Shire of Tammin

Control	Action or activity description	Lead agency	Notes and comments
What is the control in place?	What is the name of the specific action or activity?	Who is the agency responsible for implementation of the control?	Provide a brief description of the action or activity, including its contribution to bushfire risk management.
Bushfire Prone Areas	Planning and Building Restrictions	Shire of Tammin Department of Planning, Lands and Heritage	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 by establishing an effective treatment plan to manage unacceptable community risks within the broader landscape.
Volunteer Fire Brigades	Volunteer Fire Brigades	Shire of Tammin DFES	There is 1 VFES brigade and 1 BFB within the Shire of Tammin. The BFB currently has approximately 60 members at the moment and is a farmer response brigade using a variety of private appliances normally holding up to 1000l of water. The Shire and CESM manage the Tammin BFB. The Tammin VFES has 59 current members and has a 3.4 Urban appliance that is located in the town site. This brigade can be used for bushfires in the Shire, if called out by DFES. The Shire has no authority and cannot direct the VFES or any of its appliances.

Burning Restrictions	Burning Restrictions	Shire of Tammin	Burning restrictions within the Shire of Tammin are as follows: • Restricted Burning Times - 15th October to the 31st October and 15th February to the 15th March (Permits are needed in this period). • Prohibited Burning Times 1st November to 14th February. When required Harvest and Vehicle Movement Bans are issued by the Shire and Total Fire Bans are declared by DFES.
Bush Fire Act 1954 Section 33 Fire Management Notices	Bush Fire Act 1954 Section 33 Fire Management Notices	Shire of Tammin	The Shire publishes an annual Fire Break Notice Order which sets out the requirements for fuel reduction and fire break requirements with in the town site and rural land. The Section 33 notices are used to achieve community wide asset protection by reducing the spread of fire and allowing access to properties for firefighting efforts.

Community Engagement	Community Engagement Activities	Shire of Tammin	While compliance, in line with landowner responsibilities detailed in the Shire's annual Fire Break Notice, is generally good, when it comes to preparatory efforts (i.e. in line with general prevention and preparedness around individual properties) community engagement is more challenging, mainly due to time constraints and conflicting priorities. A level of complacency (it won't happen to me) is apparent within the community. The Shire promotes key messages regarding community awareness and resilience through local media leading up to fire season.

4. Asset Identification and Risk Assessment

4.1. Identifying and assessing cascading risk

Cascading risk refers to the impacts of a bushfire on the interconnected systems and networks that sustain communities. The concept recognises that a bushfire event can set off a chain reaction with impacts that extend beyond the fire's location. These may affect the social fabric, economy, and environment of the district and can persist long after the fire has been extinguished.

Cascading risks considered relevant to BRM for the Shire of Tammin are provided in Appendix A.

Table 6 – Asset Categories and Subcategories

Asset Category	Asset Subcategories
Human Settlement	**Residential areas** Residential areas, including dwellings in rural areas and the rural-urban interface. **Places of temporary occupation** Commercial and industrial areas, mining sites or camps and other locations where people may work or gather. **Special risk and critical facilities** Locations and facilities where occupants may be especially vulnerable to bushfire for one or more of the following reasons: • Occupants may have limited knowledge about the impact of bushfires; • Occupants may have a reduced capacity to evaluate risk and respond adequately to bushfire 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.
Economic	**Agricultural** Areas under production, such as pasture, livestock, crops, viticulture, horticulture and associated infrastructure. **Commercial and industrial** Major industry, waste treatment plants, mines (economic interest), mills, processing and manufacturing facilities and cottage industry. **Critical infrastructure** Power lines and substations, water pumping stations, tanks/bores and pipelines, gas pipelines, telecommunications infrastructure, railways, bridges, port facilities and waste water treatments plants.

Asset Category	Asset Subcategories
	Tourist and recreational Tourist attractions, day-use areas and recreational sites that generate significant tourism and/or employment within the local area. These assets are different to tourist accommodation described as a Human Settlement Asset (see above). **Commercial forests and plantations** Plantations and production native forests. **Drinking water catchments** Land and infrastructure associated with drinking water catchments.
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

Asset Category	Asset Subcategories
	being significant to local heritage. **Other** Other assets of cultural value to the local community, for example community halls, churches, clubs and recreation facilities.

4.2. Local Government Asset Risk profile

A summary of the risks assessed in Shire of Tammin is shown in Table 5. This table shows the proportion of assets at risk from bushfire in each risk category at the time the BRM Plan was endorsed. This table was correct at the time of publication but may become outdated as risks are treated or additional risks are identified and assessed. A report may be generated from the BRMS to provide the most current risk profile.

Table 7 – Local Government Asset Risk Summary

Asset Category	Risk Rating					
		Low	Medium	High	Very High	Extreme
	Human Settlement	*7%*	*7%*	*26%*	*23%*	*21%*
	Economic	*3%*	*4%*	*2%*	*1%*	*0%*
	Environmental	*0%*	*0%*	*1%*	*1%*	*0%*
	Cultural	*1%*	*1%*	*1%*	*1%*	*1%*

5. Risk Evaluation

5.1. Risk acceptance criteria

The acceptable level of risk for each asset category is shown in Table 8. A risk that is assessed as exceeding these limits will be considered for treatment.

Table 8 Risk acceptance criteria for bushfire risk in the Shire of Tammin.

	Asset category			
	Human settlement	**Economic**	**Environmental**	**Cultural**
Acceptable risk level	High only acceptable with excellent controls. Treatment action is required	High only acceptable with excellent controls. Treatment action is required	High only acceptable with excellent controls. Treatment action is required	High only acceptable with excellent controls. Treatment action is required

Risks below the acceptable level do not require treatment during the life of this BRM Plan. They will be managed by routine bushfire risk controls and monitored to detect any increase in their risk rating.

6. Risk Treatment

The purpose of risk treatment is to reduce the potential impact of 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 to make bushfires less likely or less harmful.

6.1. Treatment Strategy

The Treatment Strategy describes the overall approach to managing bushfire risk in the medium to long term in the Shire of Tammin. The strategy is shaped by factors such as the distribution of risk in the landscape, the community's values and objectives, stakeholders' mitigation programs and constraints on treatment options.

The Shire will prioritise treatment strategies based on regular risk assessments and evolving fire behaviour.

The Treatment strategy helps guide the development of integrated annual treatment schedules.

Local Government Wide Controls

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

The Local Government Wide Controls Table below has been developed. The Table identifies the current controls in place (see section 3.2.6 for detailed information on these), including any work planned to improve current controls, or implement new controls to better manage bushfire risk across the Shire.

Asset Specific Treatment Strategies

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

- **Fuel management**

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

- **Ignition management**

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

- **Preparedness**

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

- **Planning**

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

- **Community Engagement**

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

Bushfire Risk Management Planning – Local Government Wide Controls

Control		Action or activity description	Lead agency	Other stakeholder(s)	Notes and comments
1	Shire of Tammin Bushfire Firebreak Order	Review annual Notice Publish annual notice Inspections in accordance with the annual notice	Shire of Tammin	DFES Landholder	Published annually
2	Shire of Tammin Prohibited and Restricted Burning Periods	Restricted and Prohibited burning time are set and permits are needed to burn during this time	Shire of Tammin	CBFCO and FCOs	Published annually
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 Tammin	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 Tammin	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.
5	Local Emergency Management Arrangements	Emergency Management Plan	Shire of Tammin	SJA, WAPOL, DFES, Dept of Communities, Dept of Education, CBFCO, DEMC	Annual review of emergency plans and arrangements.
6	Corporate Business Plan 2018 - 2022 Strategic Community Plan 2017 - 2027	As per documented actions	Shire of Tammin		As per section 3.1.1 of the Bushfire Risk Management Plan.

7	DBCA Fuel Reduction and Burn Plan	Fuel Reduction Programs on DBCA managed land	Department Biodiversity Parks and Attractions	Shire of Tammin	
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 Tammin	Ongoing maintenance on UCL/UMR
9	Australian Rail Commission(ARC) Mitigation Program	Mitigation works in rail corridors	Australian Rail Commission	Shire of Tammin	Ongoing maintenance
10	Main Roads Vegetation Management Program	Mitigation Planning and works in road corridors and adjacent to MRWA infrastructure	Main Roads	Shire of Tammin	Ongoing maintenance
11	Western Power Vegetation Management Program	Mitigation Planning and works for power infrastructure and sites	Western Power	Shire of Tammin	Ongoing maintenance

6.2. Treatment Schedule

The Treatment Schedule is a list of bushfire risk treatments recorded in the BRMS. It is developed regarding the outcome of the risk assessment process and Treatment Strategy and in consultation with stakeholders.

A treatment schedule for the Shire of Tammin covering 2026-2031 has been entered to BRMS. This is a live document and will be regularly updated throughout the life of the BRM Plan.

Land managers are responsible for implementing agreed treatments on their own land. This includes 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 manager.

7. Monitoring and Review

Monitoring and review processes are in place to ensure that the BRM Plan remains current and considers the best available information.

7.1. Monitoring and Review

The Shire of Tammin will monitor the BRM Plan and BRMS data to identify any need for change. The Plan and BRMS data will be reviewed at least every two years to ensure they continue to reflect the local context, assets at risk, level of risk and treatment priorities.

7.2. Reporting

The Shire of Tammin CEO or their delegate will provide to OBRM the outcomes of the two-year review of the BRM Plan. This is required to maintain OBRM endorsement of the Plan.

The Shire of Tammin will contribute information about their BRM Program to the annual OBRM *Fuel Management Activity Report*.