Shire of Katanning

BUSHFIRE RISK MANAGEMENT PLAN

2026-2028

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Document endorsements

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

The approval of the Bushfire Risk Management Plan by Shire of Katanning 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 Katanning.

Local Government	Representative	Signature	Date
Shire of Katanning Council	Cr Kristy D'Aprile		

Publication information

Chapter 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 document encompasses all land within the Shire of Katanning and has been written on behalf of all stakeholders within that area. The 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 planning. The plan has been prepared by Shire of Katanning with due consideration of the principles in the international risk management standard *ISO 31000:2018 Risk Management* and is consistent with the standards outlined in the *Guidelines for Preparing a Bushfire Risk Management Plan* (the Guidelines) published by the Office of Bushfire Risk Management (OBRM).

1.2. Objective of the Bushfire Risk Management planning program

The objective of the BRM planning program is to support local governments to reduce the threat posed by bushfire. The Shire of Katanning 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 treatment plans to ensure they are adaptable and that risk is managed to an acceptable level.

1.3. Legislation, policy and standards

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

Chapter 2: The Risk Management Process

The BRM planning process is a cycle of understanding the context and assessing and treating risks (Figure 1). 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 (Figure 1).

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

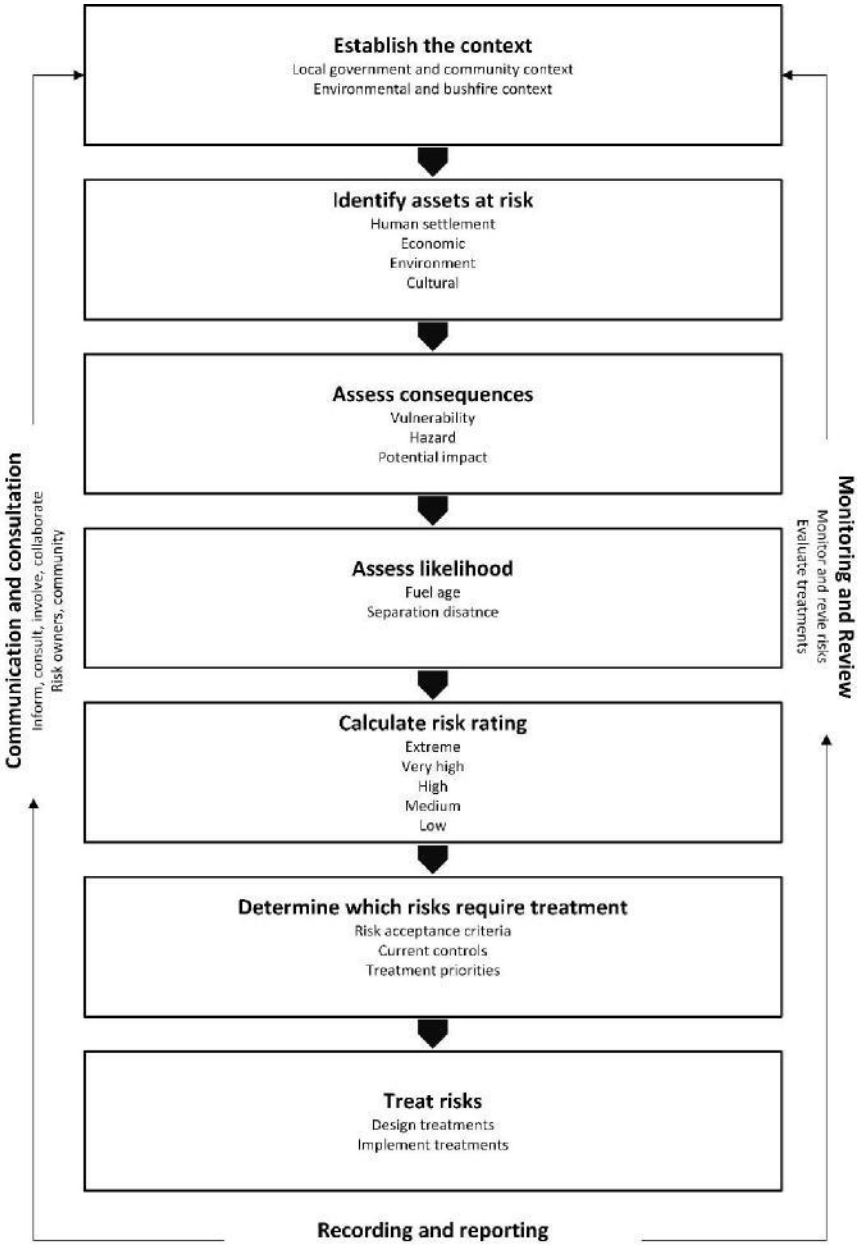


Figure 1. The Bushfire Risk Management planning process

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*	Roles and responsibilities
Local government	• Custodian of the BRM Plan. • Coordinate the development and ongoing review of the 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.
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*	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 land owners	• Identify managed assets. • Provide advice on current risk treatment programs. • Undertake treatments on lands they manage.

2.2. Communication and consultation

Communication and consultation are fundamental to the development, implementation and review of the BRM Plan. A Communication Plan to ensure appropriate and effective communication with relevant stakeholders at each stage of the BRM planning process is at Appendix C. A Communication Log summarising important stakeholder interactions is also provided.

Chapter 3: The Bushfire Risk Management Plan (BRMP)

As a crucial document, the BRMP provides regional and local data obtained during the assessment phase which have been used to determine the risk evaluation and treatments necessary to reduce the bushfire risk. In the development of this plan an emphasis has been placed on the message of 'Shared Responsibility'.

> *Shared responsibility refers to the idea that multiple parties or individuals have a role to play in addressing the bushfire risk. In this approach, each party takes on a portion of the responsibility to address this issue, rather than relying on a single entity or individual.*

In the context of bushfire risk management, shared responsibility involves state and local government agencies, private corporations/businesses, local community groups, residents and rate payers as a collective. Together, the collective work towards Identifying the bushfire hazards, participating in reducing the risk and preparing for emergencies.

The principle of shared responsibility recognises that many challenges are too complex or too significant to be addressed by one entity alone, and that collective effort is needed to achieve sustainable and effective solutions. By working together and sharing responsibility, stakeholders can bring their unique perspectives, resources, and expertise to bear, increasing the chances of success and improving outcomes.

Chapter 4: Establishing the Context

The term "context of bushfire in the landscape" encompasses a comprehensive understanding of the diverse physical, ecological, and societal factors that collectively shape the probability and consequences of bushfires. In the development of this Bushfire Risk Management Plan (BRMP), it is imperative to thoroughly grasp the specific context of bushfires within the Shire of Katanning. This understanding serves as a foundational element of the plan.

The forthcoming sections will provide an in-depth exploration of the Shire's distinctive attributes and framework, including its community dynamics, geographical landscape, environmental characteristics, industrial presence, climatic conditions, historical aspects, prevailing bushfire mitigation strategies, and the invaluable contributions of key stakeholders towards mitigating bushfire risks.

Section 8, labeled as "recommendations," offers guidance on areas of concern that have been identified within the preceding Section 4. While these concerns may not be directly addressed within the Bushfire Risk Management Strategy (BRMS), they are nonetheless recognised as pivotal opportunities for enhancing bushfire risk mitigation.

3.1 Local government and community context

Strategic and corporate framework

The Strategic and Corporate Framework of the Shire of Katanning is deeply entrenched in the fabric of local governance and community dynamics, showcasing a nuanced comprehension of regional characteristics and the diverse needs of residents. This community-driven document encapsulates the collective vision for a secure, vibrant, and inclusive town, placing emphasis on priorities such as safety, crime reduction, and social well-being. While the framework may not explicitly address bushfire risk, it indirectly contributes to these priorities. Therefore, the Bushfire Risk Management Plan plays a crucial role in strengthening and supporting the community's objectives, actively contributing to overarching goals such as community safety, environmental stewardship, infrastructure resilience, collaboration, adaptability, financial sustainability, and public trust.

At its core, the plan resonates with the shared commitment to community safety and well-being, addressing specific risks associated with bushfires while echoing the broader vision of fostering a secure and prosperous environment for residents. Developed with a focus on the strategic plan, particularly its sustainability goals, the Bushfire Risk Management Plan supports environmental sustainability objectives through initiatives like education on sustainable practices for managing native vegetation, promoting urban tree canopy, and supporting local biodiversity.

Moreover, the plan aligns seamlessly with risk management and governance objectives by employing rigorous risk assessments, establishing key performance indicators, and ensuring ongoing evaluation for a proactive and accountable approach. Beyond tangible measures, it plays a crucial role in building and maintaining public trust and

confidence, reinforcing the Shire's commitment to public safety through proactive measures and a collaborative approach to risk mitigation.

In addition to the strategic and corporate framework, the Shire utilises Local Emergency Management Arrangements (LEMA) as a foundational framework to coordinate and manage emergency response efforts within the area. These arrangements are essential for ensuring effective preparedness, response, and recovery from various emergencies, including bushfires. Through LEMA, the risks and vulnerabilities faced by the local community are assessed, response/action plans are developed, and resources are identified. This document guides the BRMP on how best to support the community for bushfire prevention.

Functioning as a bridge between the strategic plan, corporate framework, LEMA and bushfire risk management, this plan interlinks with the emergency management structures of the Shire, including the Local Emergency Management Committee (LEMC) and the Bush Fire Advisory Committee (BFAC). This plan provides essential information to the LEMC, guiding collaborative planning efforts that seamlessly integrate responses to bushfires with broader emergency management initiatives. Similarly, the BFAC draws upon the plan for policy development, community engagement strategies, and recommendations for ongoing updates. Consistent communication strategies, public awareness campaigns, and a feedback loop from real-time responses further solidify the linkages, fostering a dynamic and collaborative emergency management framework that prioritises community safety and resilience.

As an essential document, it guides collaborative planning efforts, integrating responses to bushfires with broader emergency management initiatives. Implementing this Bushfire Risk Management Plan delineates a clear direction for bushfire risk management within the Shire's boundaries, emphasising shared accountability and responsibility. Regular reviews and adaptations ensure ongoing relevance, enabling the community to enhance resilience, protect lives and property, and contribute to overall safety and well-being.

Shire of Katanning BRMP Implementation

This Bushfire Risk Management Plan (BRMP) serves as a comprehensive document designed to furnish the Shire, stakeholders, and the community with a lucid comprehension of bushfire risk within its boundaries. The primary objective is to elevate community awareness, education, and planned treatment activities in localities, facilitating the identification of treatment priorities and enabling future planning and budgeting. While the historical focus of bushfire risk management leaned heavily on response and recovery endeavors, there is now a paradigm shift towards a holistic risk management approach that encompasses preventive and preparatory measures. Continuous review and updates to this plan will ensure its ongoing relevance in the face of evolving bushfire risks.

Endorsed by both the DFES (OBRM) and the Shire of Katanning Council, the sustained execution, implementation, review, and amendment of this plan lie under the purview of the Shire of Katanning's Chief Executive Officer (CEO), Community Emergency Services Manager and advisory committee BFAC. Maintaining the data's relevance and currency is imperative for the Shire to uphold a transparent understanding of the ongoing endeavors directed at managing its responsibilities concerning bushfire risk.

Land use and tenure

The Shire of Katanning encompasses a diverse range of land tenures, from privately owned agricultural lands and residential lots to public amenities, reserves, and conservation areas. This varied landscape, detailed in Figure 2 and Table 2, underscores the complexity of risk ownership associated with bushfires. In a municipality where private landholders predominate, the decentralised nature of land management practices can heighten the risk of bushfires, particularly in a region primarily engaged in crop farming, and sheep husbandry. Land management becomes a pivotal factor in determining risk ownership, with responsibilities and accountabilities distributed between the Shire and individual landowners.

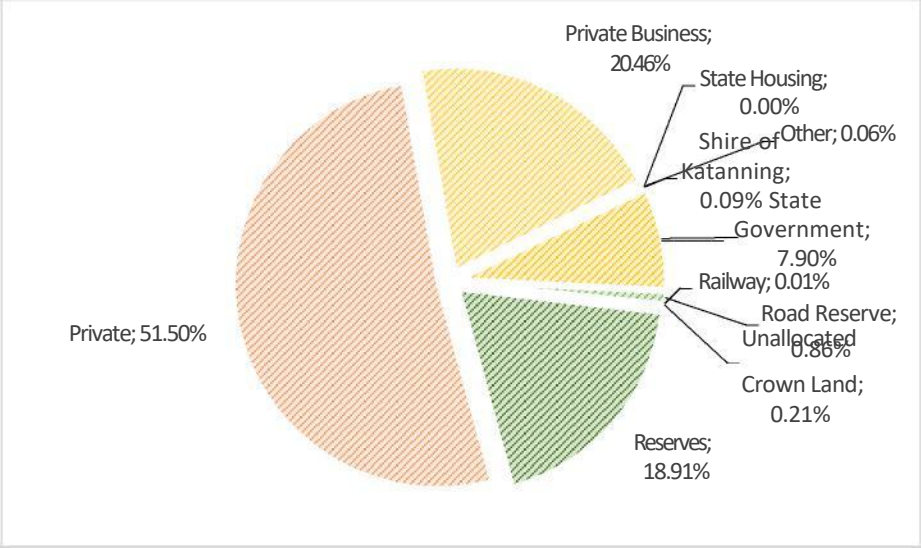


Figure 2 –The Shire of Katanning land tenure

Land Manager/Agency	Percent of Area
State Government	7.90%
Shire of Katanning	0.09%
Private	51.50%
Private Business	20.46%
Public Roads	0.86%
Railway	0.01%
Reserves	18.91%
Unallocated Crown Land	0.21%
Public Housing	0.00%
Other	0.06%
Total	1,541.06 km^2

Table 3 – Summary of land management responsibilities within the Shire of Katanning.

The Shire takes a proactive role in managing public spaces, implementing practices such as firebreak maintenance, controlled burning, and vegetation clearance. Concurrently, private landowners bear the responsibility for adhering to firebreak notices and implementing mitigation measures on their properties. A collaborative approach is promoted, with the Shire providing guidelines and support to align land management practices with broader bushfire risk mitigation strategies.
The BRM Plan acknowledges challenges arising from the significant portions of the Shire managed by private landowners. These challenges necessitate strategic considerations:

Reduced Local Population for Fire Prevention:
The prevalence of privately managed land contributes to a diminished local population, impacting manpower for fire prevention and firefighting efforts.

Engagement of Private Landowners as Stakeholders:
Given the high percentage of privately owned land, proactive engagement with private landowners as key stakeholders is crucial. Education and consultation play pivotal roles in aligning their efforts with the BRM Plan and mitigation strategies.

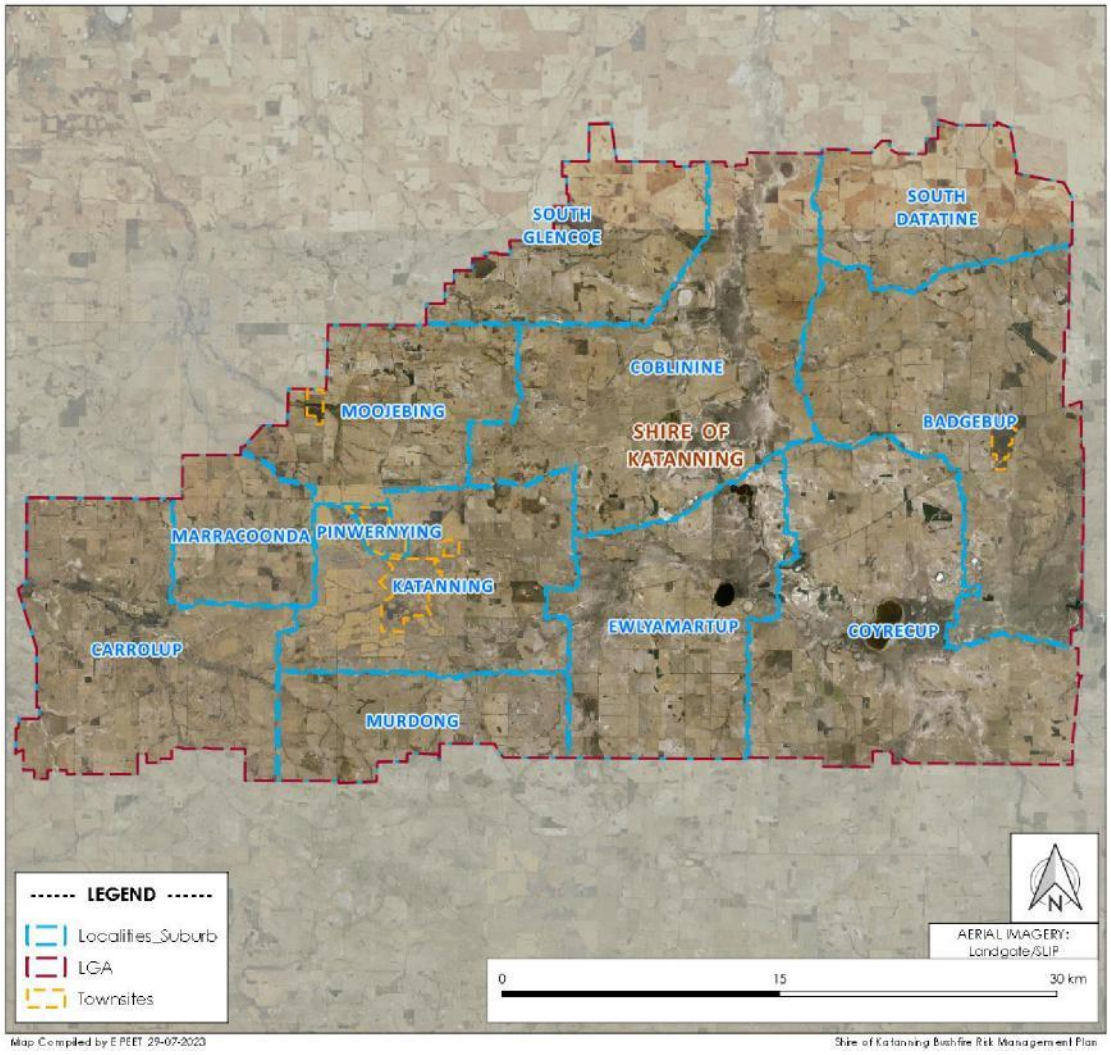
Risk Amplification from Non-Compliance:
Non-compliance with Council policies by one landholder poses an increased risk to neighboring landowners, emphasising the need for consistent adherence to regulations.

Economic and Social Implications of Farm Loss:
The potential loss of one farm, considering predominantly private land management, carries significant economic and social implications for the Shire, necessitating a comprehensive risk assessment.

Balancing Mitigation Impact and Productivity:
Balancing the impacts of mitigation and risk reduction must be carefully considered in the broader context of productivity and associated costs. Striking this balance is essential for sustainable and effective bushfire management practices within the Shire.

To address the bushfire risk posed by hazardous fuels on private land, the enforcement of the Firebreak Order in accordance with the Bush Fires Act remains a traditional yet effective strategy.

The Shire of Katanning stands out as a more developed and urbanised area compared to several other shires within the Great Southern region. The landscape is illustrated by a higher population density and a complex infrastructure network comprising residential, commercial, and industrial zones. The presence of critical facilities such as hospitals and schools adds an additional layer of complexity to the urban fabric. While this development brings certain advantages in terms of access to services and amenities, it also introduces specific risks in the context of bushfire planning. The intricate infrastructure layout and higher population density require meticulous planning for strategic routes and low fuel buffers. The urbanised nature of the Shire increases the potential impact on critical facilities, and the interface with natural vegetation poses challenges in managing ember attacks and rapid fire spread.



Clear communication, resource allocation, and community awareness become critical factors in mitigating the risks associated with bushfires in this more established and built-up environment. Balancing the benefits of expansion with the imperative of effective bushfire planning is a key challenge for the Shire of Katanning.

Additional concern towards the inconsistencies in land management priorities among government agencies owning/managing land within the Shire call for enhanced collaboration. The plan aims to bridge this gap by recognising key stakeholders, identifying relevant contacts, establishing accountability measures, and fostering collaboration. This approach ensures a more cohesive and coordinated strategy for bushfire risk reduction across both private and government-managed lands, fostering resilience and shared accountability within the Shire of Katanning.

Community demographics and values

The Shire of Katanning exhibits a rich and diverse demographic landscape, featuring a blend of agricultural communities and residents in various locations. This diversity is reflected not only in the mix of ethnicities but also in the linguistic tapestry that

characterises the community. Recognising and comprehending these linguistic variations is crucial for evaluating the community's resilience to bushfires, particularly considering potential language and cultural barriers that may impact communication and response strategies.

Managing bushfire risks in a large rural multicultural community like Katanning presents unique challenges due to the array of cultural backgrounds within the population. Communication becomes a focal point, given the multitude of languages spoken. Implementing effective communication strategies, including translation services and culturally sensitive materials, is essential to ensure that crucial information about bushfire risks and emergency procedures reaches all members of the community. Community engagement strategies need to be nuanced, considering diverse cultural practices and preferences.

Identifying vulnerable groups within this diverse population, such as the elderly or individuals with mobility challenges, becomes pivotal for tailoring risk mitigation efforts effectively. The dynamics in Katanning are notably complex, with a substantial portion of the population situated within the Katanning townsite (estimated at 3,700). This concentration necessitates a focused approach to managing bushfire risks around the townsite.

The surrounding rural environment poses both physical and secondary risks to the community. The potential lack of situational awareness during the bushfire season, stemming from a misunderstanding of urban lifestyle in a rural setting, can lead to complacency and non-compliance during heightened periods. This underscores the importance of targeted education and awareness campaigns to address these challenges.

A portion of the population residing in agricultural areas dedicated to farming highlights the necessity of understanding lifestyle and land use patterns. Crafting effective, community-specific bushfire risk management strategies requires an in-depth understanding of how residents in these areas operate and interact with their environment.

The most recent census reported a population of 4,057 for Katanning, indicating a substantial and largely populated rural area. While this characteristic carries inherent disadvantages in mitigating the risk of bushfires, such as increased challenges in managing external areas due to smaller response capabilities, it also offers some advantages. Fewer residents live in high-risk zones, resulting in fewer assets to protect. However, managing a larger population during evacuations requires more resources, facilities, and careful coordination, especially when factoring in cultural and language nuances. The higher number of structures and homes, both in urban-rural environment, poses challenges for emergency services, demanding a strategic and well-coordinated response to contain and extinguish fires effectively.

Table 3 below provides comparison data relating to the 2016 and 2021 Census (courtesy of Australian Bureau of Statistics) for the Shire of Katanning.

Categories	2016	2021	Difference
Population	4,151	4,057	- 2.3%
Median Age	40 years	39 years	- 1%
Over the age of 55	1257 (30.4%)	1278 (31.5%)	+ 1.1%
Under the age of 14	838 (20.3%)	784 (19.4%)	- 0.9%
Male Gender	51.1%	51.4%	+ 0.3%
Female Gender	48.9%	48.6%	- 0.3%
Indigenous Status	7.5%	9.4%	+ 2.1%
Born in Australia	65.8%	67.7%	+1.9%
Myanmar	3.7%	3.3%	- 0.4%
New Zealand	3.4%	3.3%	- 1%
Primary language: English	67.8%	70%	+ 2.2%
Malay	5.5%	5.0%	- 0.5%
Karen	4.1%	4.8%	+ 0.7%
Burmese	1.6%	1.4%	- 0.2%
Education: Completion of year 10 or beyond	63.2%	68.6%	+ 3.4%
Employed Residents	45.1%	58.5%	+13.4%
Meat Processing	16.5%	13.7%	- 3.2%
Primary Education	4.3%	4.6%	+ 0.3%
Hospitals	5.3%	4.6%	- 0.7%
Sheep/Cattle Farming	4.4%	4.0%	- 0.4%

Table 4 – 2016 and 2021 LGA Katanning Census

Farming and Backpackers

The Shire of Katanning has witnessed a significant shift in its agricultural landscape over time, marked by the trend of farm consolidation or amalgamation. This strategic move, driven by the pursuit of economies of scale, involves farmers acquiring or merging neighboring properties to create larger, more efficient farms. While farm consolidation presents economic advantages by spreading fixed costs across a broader area, it also introduces unique challenges to the local labor force.

The consequence of farm consolidation is a reduction in available local labor resources, leading to the outsourcing of labor for seasonal agricultural work. Backpackers, forming a significant part of this outsourced labor, contribute valuable services to the agricultural sector. However, this demographic brings with it factors that heighten the risk of bushfires in the region.

Various factors contribute to the increased bushfire risk associated with backpackers in agricultural settings. These include their limited farming experience, unfamiliarity with fire safety protocols, and ignorance of environmental factors that elevate the bushfire risk, language and communication challenges, inadequate training and supervision, and the short-term nature of their employment. Employers, at times, may fall short in providing adequate training and supervision due to the temporary and transient nature of backpacker employment.

As a result, the responsibility often falls on the local government or the Shire of Katanning to assume a crucial role in providing necessary resources and training for backpackers. This includes managing bushfire brigade memberships, supplying uniforms, and delivering the required training. Effectively addressing the challenges posed by backpacker employment in the agricultural sector requires ongoing management and collaboration between local authorities, employers, and the transient workforce.

Cultural Heritage

Within the Shire of Katanning's boundaries, the state recognises 19 heritage buildings, of which three are considered at bushfire risk. At a local level, the shire acknowledges 102 heritage areas, with 23 located within a bushfire risk area. These at-risk sites, both at the state and local levels, hold historic and social value to the community, necessitating additional measures for preservation.

The Shire of Katanning has adopted a robust Heritage Strategy, embodying a comprehensive approach that acknowledges and preserves all facets of cultural heritage. This strategy demonstrates adaptability, enabling the Shire to bolster its capacities and dedication to heritage conservation as responsibilities evolve over time. Given the community's profound attachment to the identified heritage assets, it is essential to vigilantly monitor and address any potential risks of damage or destruction. Leveraging the Bushfire Risk Management Plan (BRMP) and the Bushfire Risk Management System (BRMS) program, these assets have been systematically identified for streamlined risk assessment and continuous management.

Under the Aboriginal Cultural Heritage Act 1972, the Shire proactively seeks guidance for identifying and assessing areas of potential Aboriginal cultural heritage significance. The Shire maintains established relationships, actively collaborating with Aboriginal communities and Traditional Owners to safeguard cultural heritage during bushfire mitigation efforts. This commitment involves implementing precautionary measures, including potential adjustments to the timing, methods, or locations of activities to protect culturally significant sites.

Local bushfire operational procedures require contact to be made with one of the following cooperations if an incident is going to or has impact vegetation that has not been disturbed through farming practices.

Badgebup Aboriginal Cooperation – Badgebup

Wagyl Kaip Southern Noongar Aboriginal Corporation

Moreover, the Shire plays a vital role in raising awareness within the broader community about the existence of Aboriginal cultural heritage sites and the imperative to safeguard them during bushfire mitigation initiatives. The Shire has registered 14 sites on the Aboriginal Cultural Heritage Inquiry System, providing an additional tool to identify and assess potential impacts on Aboriginal cultural heritage sites. This comprehensive approach aligns with the Shire's dedication to upholding legal obligations while actively preserving and respecting Aboriginal cultural heritage.

Economic activities and industry

The Shire of Katanning, with its diverse economic activities, plays a pivotal role in shaping the local and regional economy. Agriculture, as the cornerstone of economic activity, not only supports the livelihoods of local residents but also contributes significantly to the regional supply chain. The fertile soils and favorable climate facilitate the cultivation of various crops and support livestock farming. Complementing agriculture, the abattoir for livestock, the agribusiness community provides essential services, and the region's role as a hub for retail, healthcare, education, and professional services further bolsters its economic resilience.

Effective bushfire risk management is of paramount importance due to the significant physical and financial consequences that severe bushfires can entail. These events

have the potential to devastate a wide array of assets including crops, livestock, infrastructure, transport routes, feed sources, and can increase the risk of topsoil erosion, exacerbating the overall impact.

A critical period in the bushfire risk calendar spans from mid-October to late November, coinciding with the curing of crops for harvest. This phase is particularly hazardous as matured crops become highly flammable, setting the stage for potential ignition. Subsequently, from late November to January, the commencement of the bushfire season presents heightened risks, especially during crop harvesting. Factors such as machinery operation, hot and dry weather conditions, and fully cured crops contribute to an elevated risk of fire, particularly given the grassland characteristics of many crops.

The regional economy heavily relies on agricultural practices, encompassing crop cultivation and livestock farming. Consequently, bushfires pose a direct threat to these agricultural assets, encompassing crops, livestock, and associated infrastructure. The destruction of farmland and crops can precipitate immediate and long-term consequences for local farmers and businesses. Additionally, the alteration of the landscape due to the loss of native vegetation and the introduction of nonnative plant species as a result of agricultural practices has broader implications for ecosystem integrity and biodiversity. These changes can impact the tourism sector, which relies heavily on the region's natural beauty and biodiversity.

The Bushfire Risk Management Plan illuminates the inherent risks tied to economic activities, particularly agriculture. It identifies extensive landscape modifications, native vegetation removal, and the introduction of annual crops as contributing factors to heightened bushfire risks. Furthermore, the plan underscores the critical timing of key agricultural activities, such as crop curing, which significantly increases the region's vulnerability to bushfire incidents.

The economic significance of agriculture to the Shire's economy means that bushfires pose a direct threat to vital agricultural assets, including crops, livestock, and infrastructure. The potential loss of farmland and crops has immediate consequences for local farmers and businesses, with ripple effects extending to the broader community.

The economic vulnerability extends beyond immediate impacts, with potential repercussions for local businesses, including increased insurance premiums. The long-term recovery and rebuilding efforts after a bushfire incident demand significant financial investments and resources. The interconnectedness of the Shire's economic activities underscores the need for a comprehensive approach to bushfire risk management.

Considering the substantial size, facilities and resources Katanning provides, surrounding shires and towns heavily rely on these services. Any disruption to power or closure/destruction caused by a bushfire, would significantly challenge not only the locals but the surrounding communities too. This could lead to limited access to essential food and supplies, affecting the entire community and disproportionately impacting vulnerable populations. Water supply concerns, strain on medical and emergency services, and potential business disruptions would further compound the challenges. The psychosocial impact on residents, coupled with the extensive recovery process, underscores the need for robust planning, community support systems, and coordinated efforts to address the multifaceted consequences of a bushfire.

Moreover, the reliance on well-developed transportation networks, particularly the Great Southern Highway, is crucial for emergency services, commercial transportation, and tourism-related activities. The potential destruction or disruption of these critical transportation arteries could have cascading effects, including isolation, hindered emergency response, and economic disruptions that extend beyond the immediate aftermath of a bushfire.

In response to some of these challenges, the Shire has implemented measures outlined in the fire break notice, emphasising both prevention and rapid response strategies. The requirement for fire units during harvesting activities and bans on harvest and vehicle movements during high-risk weather conditions, demonstrating a proactive stance toward managing bushfire risks associated with economic activities.

Ultimately, the Shire of Katanning recognises the need for a multifaceted and collaborative approach to bushfire risk management, considering the economic, environmental, and social dimensions. The Bushfire Risk Management Plan serves as a crucial guide in aligning economic activities with broader risk mitigation strategies, fostering resilience, shared accountability, and the safety and well-being of the Shire's residents.

3.2. Environment and bushfire context

Topography and landscape features

The Shire of Katanning's vulnerability to bushfires is intricately tied to its geographic characteristics, predominantly shaped by extensive agricultural land use. The cultivation of crops and grasslands across the region creates vast expanses of dry and flammable vegetation, serving as potential fuel sources during the bushfire seasons. The variability in fuel loads is a nuanced interplay of factors such as the specific types of crops cultivated, prevailing weather conditions, and the agricultural practices implemented.

The undulating landscapes with low relief, while visually pleasing, introduce challenges for fire management. The combination of slopes and elevation changes can expedite the spread of fires, particularly under windy conditions. This dynamic terrain, when combined with dry vegetation, poses challenges for containment and control efforts. Extensive land clearing for agriculture has altered land use patterns, resulting in a mosaic of agricultural and remnant native vegetation. This mosaic landscape further complicates fire management strategies.

Proximity to urban areas adds another layer of complexity, as the interface between rural and residential areas increases the risk to communities. While breaks in dense fuels provide opportunities for fire response tactics, the delicate balance between utilising these breaks and addressing the negative ecological impacts of land clearing requires careful management.

The intricate composition and structure of the native vegetation within the Shire of Katanning significantly contribute to the overall fuel load in the region. Different types of vegetation exhibit varying intensities when burning, creating a mosaic of fire behaviours across the landscape. This diversity in fuel sources plays a pivotal role in shaping the dynamics and outcomes of bushfires.

Furthermore, the presence of continuous stream channels and colluvial processes in specific areas introduces additional complexities to fire movement and intensity. Stream channels can act as natural barriers, influencing the path of fires and potentially aiding in containment efforts.

The semi-arid Mediterranean climate further enhances the fire risk, as prolonged periods of high temperatures and low humidity create favorable conditions for ignition and rapid fire spread. Proximity to urban interfaces, where rural and residential areas meet, introduces a critical factor. The risk to communities increases in these zones, emphasising the importance of strategic planning, community education, and infrastructure protection.

Distinctive features, such as agricultural fencing, emerge as significant factors, creating obstacles for firefighting resources and limiting access to critical areas. The dense network of fences can impede the establishment of strategic control lines, hindering the movement of personnel and firefighting equipment. Addressing these fencing restrictions becomes paramount in planning and executing efficient bushfire response tactics.

The accumulation of unharvested crops poses a notable concern within the Shire of Katanning, contributing to an increased fuel load that elevates the risk and intensity of bushfires. The vast expanse of agricultural lands in the region further compounds this challenge, requiring meticulous planning and proactive measures to address the impact of unharvested crops on fire behaviour.

Unharvested crops act as readily available fuel sources, particularly during dry and hot conditions prevalent in the region. This situation intensifies the potential for rapid fire spread and poses significant challenges for effective fire management. The scale of extensive agricultural lands accentuates the need for strategic and comprehensive approaches to mitigate the consequences of unharvested crops on overall fire dynamics.

The reliance on dams as a crucial water source within the Shire of Katanning is substantial, emphasising their significance for firefighting efforts. However, the impact of the drying climate introduces challenges related to the availability of readily accessible water. The strategic placement and accessibility of dams present additional layers of complexity in responding to bushfires, given that an adequate and easily accessible water supply is paramount for effective firefighting.

The drying climate accentuates the importance of preserving and managing water resources efficiently. The reduced water levels in dams can limit the availability of firefighting water, making it imperative to strategise and optimise the use of existing water reservoirs. Furthermore, the location and accessibility of dams become critical factors in determining the effectiveness of firefighting operations.

In responding to bushfires, the accessibility of water points, such as dams, plays a pivotal role in ensuring a swift and efficient firefighting response. Challenges arising from the remote or challenging terrain can hinder the timely deployment of firefighting resources and equipment. Adequate planning and coordination are essential to overcome these challenges, involving measures such as establishing firebreaks and access points to facilitate the movement of firefighting teams and equipment.

Mitigation strategies need to consider all aspects of the shire's bushfire risks and be tailored to address the specific challenges posed by the region's topography, vegetation, climate, and land use patterns. This comprehensive approach aims to enhance overall preparedness and resilience in the face of bushfire threats.

Climate and weather

The Shire of Katanning is confronted with an elevated risk of bushfires due to its distinctive Mediterranean climate, marked by pronounced seasonal variations. Summers in the region are characterised by high temperatures and low humidity, creating an environment conducive to the rapid ignition and rapid spread of fires. The prevailing wind patterns, primarily from the south/southwest direction, significantly influence the dynamics of fire expansion. These winds, coupled with their strength, have the capability to transport embers across considerable distances, sparking spot fires ahead of the main front and introducing challenges to predictive firefighting strategies.

The heightened bushfire risk is further exacerbated by the prevalence of thunderstorms during the summer months. These storms bring with them the potential threat of lightning strikes, acting as ignition sources that can initiate fires in remote and challenging terrains. Fires originating in less accessible locations pose formidable challenges for firefighting efforts, requiring vigilance for containment and suppression.

Critical to understanding the bushfire risk is the impact of heatwaves, which are prevalent during prolonged summer conditions. These heatwaves contribute to a reduction in soil moisture, rendering vegetation more susceptible to ignition and intensifying the overall fire danger. The seasonal nature of strong prevailing winds persists throughout the entire bushfire season, primarily occurring in the late afternoon. This necessitates strategic planning for risk mitigation, considering the specific challenges posed by wind-driven fires.

Over the years, fire brigades across the Shire have proactively engaged in vegetation management, employing hazard reduction burns as one of the primary strategies. Ideally conducted in autumn or spring, these controlled burns aim to mitigate fuel loads and reduce the risk of uncontrolled Bushfires. However, achieving consistency in implementing these burns has been challenging due to various factors, including volunteer availability and competing priorities, especially during critical agricultural phases such as seeding and harvesting.

In navigating the intersection of land management priorities, careful planning and coordination become imperative to optimise the effectiveness of vegetation management strategies within the Shire. This includes aligning hazard reduction efforts with seasonal considerations, volunteer availability, and broader community engagement initiatives. The Shire's approach to bushfire risk management acknowledges the intricacies of its climate, emphasising proactive and adaptive measures to enhance overall resilience and protect the community and environment from the pervasive threat of bushfires.

Bushfire Season

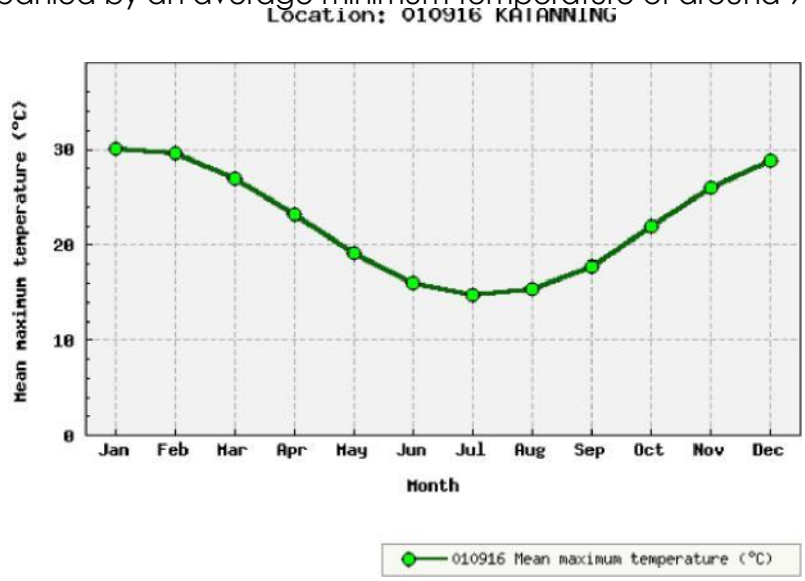
The bushfire season in the Shire of Katanning typically spans from November to March, coinciding with the region's hot and arid summer climate. These months pose a heightened risk of bushfires due to the prevailing weather conditions characterised by high temperatures and low humidity levels.

The peak of fire danger usually occurs from late spring through early autumn, as the vegetation on the ground becomes increasingly dry following the winter rains. This period sees the convergence of heat troughs, particularly in proximity to the Pilbara region, along with the influx of hot air masses from the interior, creating an environment conducive to hazardous fire weather conditions.

As a guide, here are some key characteristics of the average climate in the Shire of Katanning:

Temperature

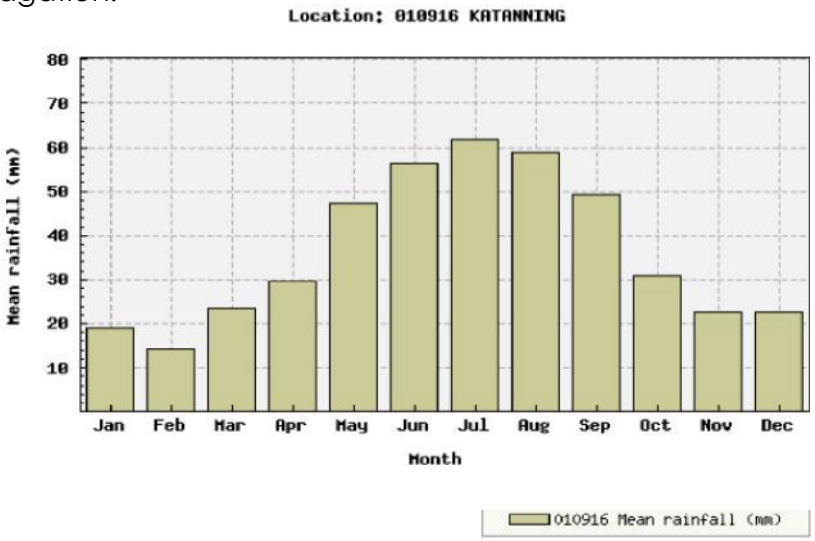
The local climate experiences notable seasonal temperature patterns, with distinct variations throughout the year. In the summer months (November-February), the average maximum temperature remains around 30°C, as depicted in Graph 1. Correspondingly, the average minimum temperature during this period is approximately 15°C. In contrast, during the winter months (June-August), a significant shift occurs, with the average maximum temperature decreasing to approximately 16°C, accompanied by an average minimum temperature of around 9.2°C.



Graph 1 – Mean maximum temperature line graph

Rainfall

On an annual basis, the Shire experiences an average rainfall of approximately 436 millimeters, with the majority of rainfall concentrated during the winter months. Noteworthy trends include January and February emerging as the driest months, while July and August register as the wettest, as illustrated in Graph 2. Understanding this seasonal precipitation pattern is crucial for assessing bushfire risk, as it directly impacts vegetation moisture levels and the overall susceptibility of the landscape to ignition and fire propagation.



Graph 2 – Mean rainfall bar graph

Wind

The Shire of Katanning is susceptible to strong winds throughout the year, with peak wind speeds commonly observed in spring and summer. Prevailing winds predominantly blow from the west-southwest direction in the afternoon, as depicted in Figure 4 and Graph 3. Understanding these wind patterns is essential for evaluating bushfire risk, as they influence the direction and speed of fire expansion, and can carry embers over considerable distances, complicating firefighting efforts.

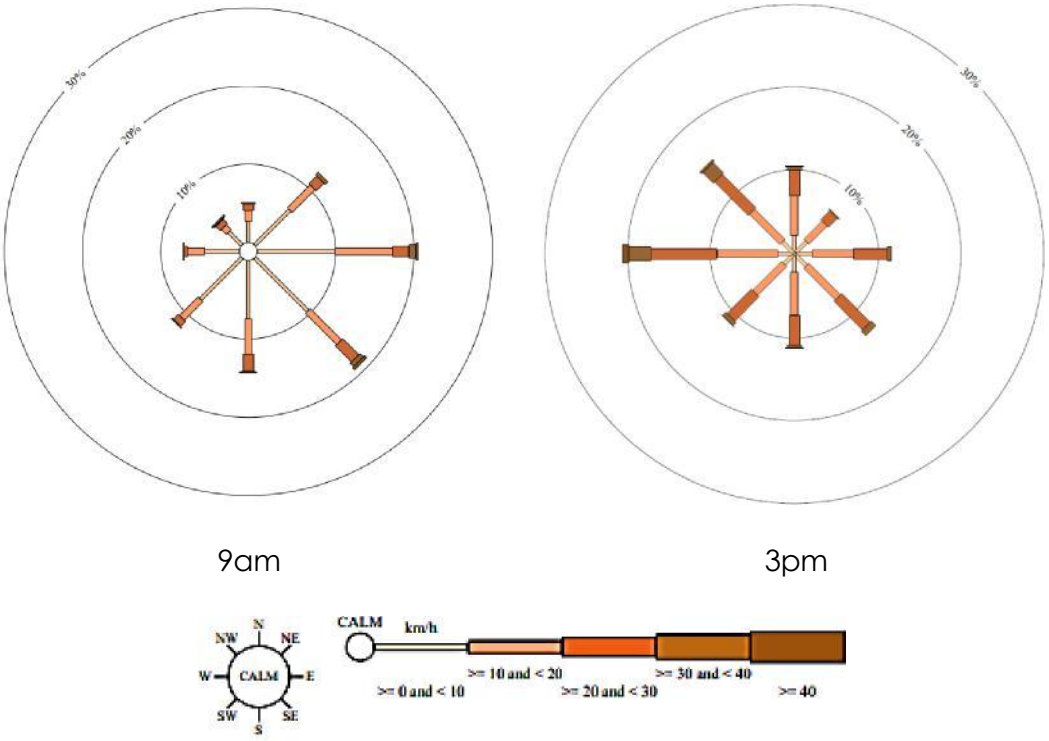
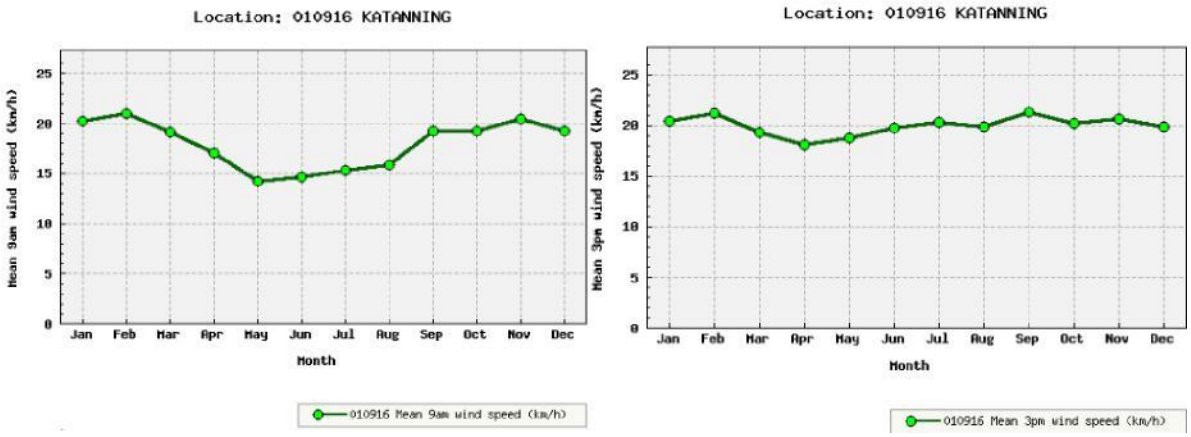


Figure 4 – Wind rose 9am & 3pm



Graph 3 – Mean 9am & 3pm wind speed

Historical weather data is a crucial tool for predicting future patterns, but the dynamic impacts of climate change introduce uncertainties into long-range predictions. Evolving atmospheric variables, shifts in rainfall patterns, and rising sea levels, along with natural phenomena like El Niño and La Niña events, contribute to unpredictable weather patterns.

Between 2020 and 2023, Australia experienced an extended La Niña climate pattern, resulting in cooler and wetter conditions, particularly in Western Australia. While La Niña reduced the risk of bushfires during this period, the conclusion of this cycle and the potential onset of an El Niño cycle pose a heightened threat of grassfires and major forest fires. El Niño induces warmer and drier conditions, reducing rainfall and elevating bushfire risk.

A Climate Council report from February 2023, titled "Powder Keg: Australia Primed to Burn," highlighted future weather predictions and the increased risk of major grass fires. The report emphasised the agricultural nature of the Katanning Shire, making it imperative to consider future risks.

Key findings from the report include:

- The La Niña cycle during 2020-2023 reduced bushfire risk due to cooler and wetter weather patterns, promoting increased vegetation growth.
- Australia anticipates the conclusion of La Niña with the potential onset of El Niño, intensifying the threat of grassfires and major forest fires.
- Historical instances of prolonged La Niña events resulted in prolific vegetation growth followed by extensive fires.
- Recent global events underscore the danger of grass fires, particularly in hot and dry conditions, posing a significant risk to people, wildlife, and property.
- 2026 models indicate transition into La Nino with a 75% probability.

To proactively manage these risks, the Shire of Katanning, along with relevant authorities, monitors weather and fire conditions. Timely warnings and alerts are issued as needed, and residents are strongly advised to take preventative measures, including ensuring the bushfire resilience of their properties and having a well-prepared bushfire survival plan in place.

Native Vegetation

The Shire of Katanning contends with the enduring consequences of extensive land clearing conducted for agricultural purposes, resulting in significant challenges for the sustained viability and, in the event of bushfires, the subsequent regeneration of indigenous flora. This widespread clearance has not only affected native habitats but has also contributed to the emergence of salinity issues across the region. Salinity persists as a pervasive concern in both natural and cultivated landscapes, owing to the absence of natural barriers to salt incursion amidst fluctuating water table levels. Consequently, these areas become unsuitable for agricultural utilisation and witness the degradation of indigenous vegetation. The management of these landscapes profoundly influences their susceptibility to bushfires, with some areas becoming highly combustible due to the presence of dead or dying vegetation, while others transform into barren expanses. The response to bushfire risks must be tailored to the specific conditions of each area, considering the impact of prior land use practices and the resultant landscape modifications on fire behaviour and mitigation strategies.

Native Vegetation Distribution

The extensive land clearing conducted for agricultural purposes has resulted in the fragmentation and isolation of native vegetation within the Shire, presenting both challenges and opportunities. While the breaks in dense vegetation offer additional options for fire response tactics and potentially reduce overall bushfire risk, the introduction of agricultural environments surrounding these vegetated areas has adversely impacted the ecological integrity and survival of native flora. This introduction of non-native plant species has led to various issues, including invasive

species outcompeting native flora, alterations in nutrient and soil composition, and accelerated post-fire regeneration, resulting in changes to vegetation structure and heightened fuel loads. Moreover, the fragmentation and isolation of these areas pose significant risks to the survival of vegetation and biodiversity. Hindrances to species recolonisation, genetic bottlenecking due to reduced genetic diversity, and disruption of natural seed distribution mechanisms exacerbate these challenges. Furthermore, the integration of agricultural practices around vegetated areas has further compounded these ecological impacts, underscoring the need for comprehensive strategies to mitigate the adverse effects on native vegetation and promote ecosystem resilience.

Vegetation Systems

The following vegetation system definitions provide a better understanding of the different formation of native vegetation found in the Shire of Katanning. Figure 5 visually shows the boundaries of the vegetation systems.

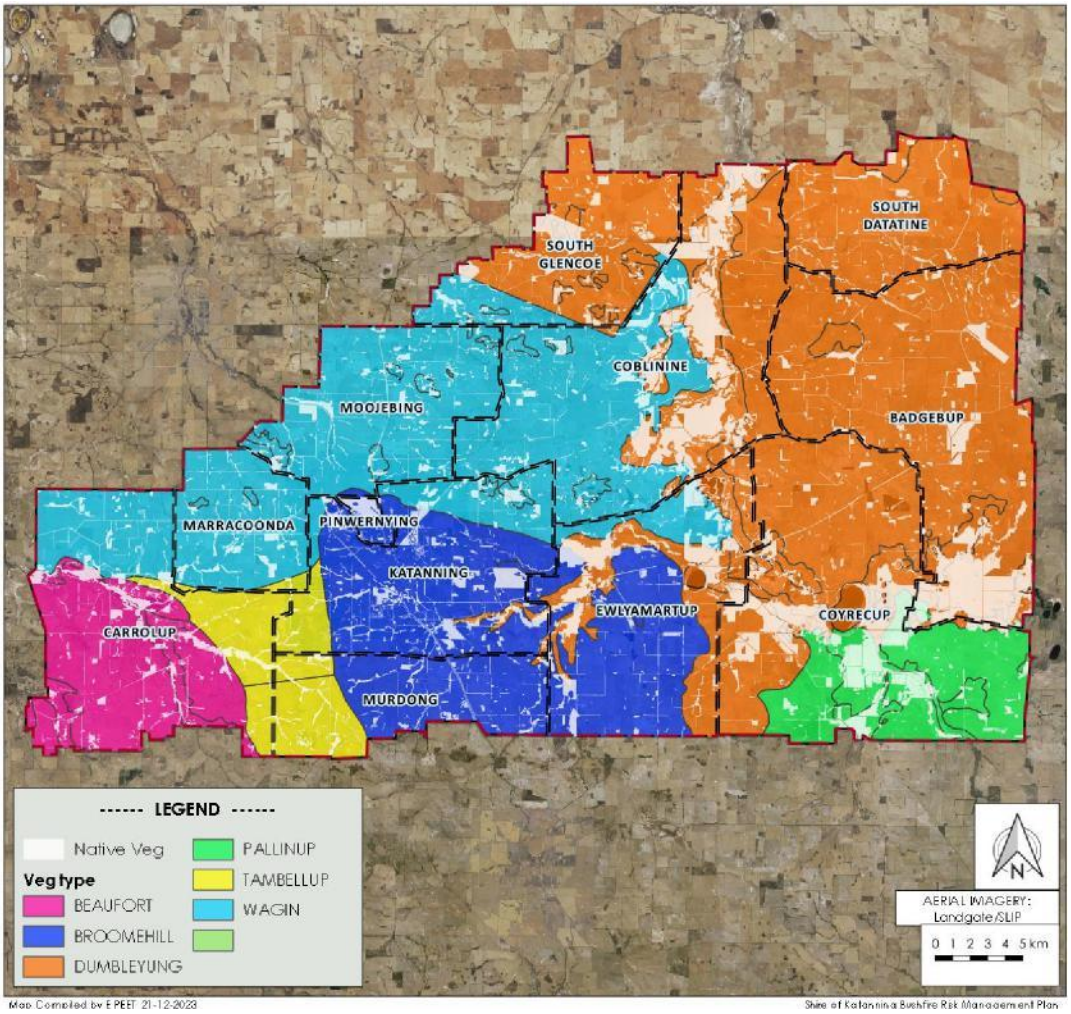


Figure 5 –The Shire of Katanning Vegetation map

Dumbleyung Vegetation:

The eastern boundary of the system corresponds with Mallee country, exhibiting a gently undulating landscape with scattered alternation cappings, particularly in the northern region. The predominant landscape features Dryandra-dominated heath on laterite residuals, encompassing woodlands

characterised by York gum, red morrel, salmon gum, and wandoo on undulating terrain. Mallee and teatree patches are observed on salt flats, accompanied by scrub-heath and low woodland on low-level sandplains.

Wagin Vegetation:

The topography is undulating and well dissected, featuring small remnants of laterite capping on ridges and mesas, as well as granite domes, tors, and broad valleys containing salt marshes. The dominant vegetation includes a mosaic of brown mallets and wandoo woodland on laterite mesas and breakaways, with low woodlands comprised of York gum and wandoo on the slopes of undulating country. Brown mallet, often joined by red morrel, is observed on breakaways near the Katanning townsite. Scattered patches of heaths, occasionally associated with wandoo but more frequently with Drummond's gum, are dispersed throughout the system, with Dryandra species generally dominating the heath vegetation.

In close proximity to the Katanning townsite, native vegetation primarily falls into two categories: Forest and Woodland formations. Situated on the southwest side of town, an expanse of 85 hectares comprises forest vegetation, predominantly dense sheoak stands, nestled between rural residential lifestyle blocks and the rural-urban interface. Adjacent to the township's northern side lies a 285-hectare expanse of forest vegetation, characterised by a mix of eucalypts, acacias, sheoaks, and other low shrubs and grasses. This vegetation arrangement conforms to the criteria for forest classification, with distinct tiers evident in the landscape.

In various patches surrounding the town, areas of wandoo/mallet woodlands are scattered, featuring a diverse array of wandoo/mallet boles and sporadic understory of shrubs and grasses. Within the shire's expanse, eucalypt woodlands, mallee country, and Wheatbelt acacias (scrub-type vegetation) are also present. Structurally, the mallee and scrub-type vegetation typically comprise wooded foliage reaching up to five meters in height, with crown cover ranging from 30 to 100%. Beneath the canopy, a ground layer of herbaceous plants or grasses completes the ecosystem composition.

As illustrated in Figure 5, the white lines demarcate the boundaries delineating the extent of the remaining native vegetation within the Shire.

Fire behaviour:

In contrast of agricultural farmland, native vegetation areas exhibit more varied fuel structures and compositions. Dense vegetation patches interspersed with open areas or natural fire breaks create a mosaic landscape that influences fire behaviour. The topography and landscape configuration of native vegetation areas, including hills, valleys, can further impact fire behaviour by altering wind patterns and fire spread rates. Human activities and infrastructure, such as roads, buildings, and machinery, also play a role in shaping fire behaviour, with agricultural areas typically more heavily influenced by human interventions.

Native vegetation often contains a more diverse landscape with varied fuel types, including trees, shrubs, and grasses, which may not burn as quickly or uniformly as agricultural crops. Additionally, native vegetation may feature natural breaks such as rocky outcrops, streams, or patches of less flammable vegetation, which can impede the fire's progress and slow its spread.

Understanding these differences is crucial for effective fire management and mitigation strategies tailored to each specific environment. While agricultural

farmland and native vegetation areas both pose fire risks, variations in fuel characteristics, management practices, landscape configuration, and human influences necessitate distinct approaches to fire prevention, preparedness, and response.

Species Vulnerability:

While indigenous plants in the Shire of Katanning possess an inherent resilience to fire, it's essential to recognise that overlooking vulnerability or implementing an incorrect fire regime can have detrimental effects on vegetation, ecosystems, and the survival of specific species. Several endemic native plants in the region exemplify susceptibility to fire, emphasising the need for careful consideration in bushfire risk management:

Grass Trees:

- Various species with diverse attributes, including trunks or no trunks and varying leaf sizes.
- Dead leaves contain valuable nutrients released through burning or decay.
- Burning dead leaves promotes the development of a flower spike, crucial for regeneration.
- The skirts of grass trees provide refuge for many animals and insects during extreme weather conditions.

Wandoo Eucalyptus:

- A medium to large-sized tree that regenerates by seeding into an ash bed.
- Resilient to mild or moderate-intensity fires but susceptible to high-intensity bushfires.

Banksia Species:

- Various forms exhibiting varying degrees of susceptibility to fire.
- Seeds require heat from fire and nutrients from ash for germination; smoke may further promote seed germination.

Mitigation planning in the Shire considers two fundamental principles: ecological management of vegetation and the abatement of fire hazard. Correctly managing the remaining native vegetation is paramount. During the planning stages of future mitigation works, careful assessment of native species and their vulnerability will guide appropriate courses of action to ensure the preservation of ecological integrity and effective fire risk reduction.

Introduced Vegetation

A substantial 91%, with ongoing clearing, of the native vegetation in Katanning has been removed to make way for farmland and agricultural use. This trend aligns with broader patterns observed across various regions in Australia, including Western Australia. The loss of native vegetation is a consequence of extensive land clearance driven by agricultural expansion, urban development, and other human activities.

Plantation:

Eucalypt and pine plantations, commonly cultivated for timber production, pose specific and heightened bushfire risks due to their unique characteristics. These risks include high fuel loads with highly flammable foliage and bark, rapid biomass

production rates, and the presence of volatile essential oils in eucalyptus trees. The needle-like leaves of pine trees can easily ignite and contribute to the spread of fire, potentially leading to more intense crown fires. Additionally, these plantations are often monoculture, increasing vulnerability to widespread damage in the event of a fire.

The dense stands in these plantations can create challenging conditions for firefighting efforts, limiting access for firefighting resources. Proximity to urban areas raises concerns about potential impacts on human lives and property, emphasising the need for effective fire prevention and response measures. The combustibility of eucalypts and pine trees increases the risk of ember transport during a fire, potentially igniting new areas and exacerbating the overall fire risk. Effective risk management for these plantations involves a combination of preventive measures, such as firebreaks and thinning, along with preparedness measures, early detection, community education, and collaboration with firefighting agencies. Land-use planning and zoning regulations are crucial for minimising the impact of these plantations on nearby communities.

Agriculture:

The extensive clearance for agricultural purposes, covering approximately 91% of the Shire, necessitates a meticulous understanding and efficient management of introduced vegetation, encompassing crops, plantations, orchards, and weeds. This understanding is crucial in the context of mitigating the risk of bushfires. The following section provides an in-depth examination of key characteristics and considerations pertinent to agricultural land use.

In the realm of agricultural practices, the cultivation of ryegrass, wheat, oats, lupins, and canola is predominant. Each crop presents its own set of characteristics influencing bushfire risk, with variability contingent on factors such as the specific crop type, prevailing climate conditions, and the farming practices employed.

Oats (Cereal Grain):

Oats find applications in both animal feed and human consumption, such as oatmeal or granola. Characterised by a biomass production rate similar to wheat, oats generally carry a lower fuel load than ryegrass, contributing to a nuanced risk profile.

Wheat (Cereal Grain):

This cereal grain, cultivated for human and animal consumption, exhibits a lower biomass production rate compared to ryegrass. While generally associated with a lower fuel load, variations may arise based on the specific wheat type and farming practices.

Ryegrass:

Frequently utilised for forage, pasture, or as a cover crop, ryegrass serves purposes beyond direct human consumption. Notably, its high biomass production rate can result in a substantial fuel load, thereby influencing its impact on bushfire risk.

Lupins (Legumes):

Commonly grown for animal feed and soil improvement, lupins contribute to soil fertility through nitrogen fixation. Characterised by a lower biomass production rate compared to cereal grains, lupins are associated with a potentially lower fuel load.

Canola (Oilseed):

Recognised for its applications in cooking oil and biodiesel production, canola generally exhibits a lower biomass production rate. The specific characteristics of canola contribute to its unique impact on bushfire risk, requiring further exploration for comprehensive risk assessment.

As a general trend, cereal grains like oats and wheat typically entail higher fuel loads compared to legume crops such as lupins or oilseed crops. The precise fuel load of a specific crop is contingent upon several factors, including the particular crop variety, prevailing growing conditions, and farming practices implemented.

In addition to inherent crop characteristics, critical considerations arise from practices employed during the curing or harvesting process, further influencing the overall bushfire risk associated with agricultural activities. These considerations underline the complexity and multifaceted nature of managing bushfire risk in the context of agricultural land use within the Shire.

Chemicals play a pivotal role in agricultural practices, serving purposes like expediting curing processes and suppressing weeds or pests. However, the residue of certain herbicides, when used depending on growing conditions, can possess flammable properties, contributing to the ignition of plant material. Notably, the burning of specific crops, such as canola, with chemical residue can release additional toxins into the air, including polycyclic aromatic hydrocarbons (PAHs) and dioxins. These compounds are associated with an increased risk of cancer, emphasising the importance of considering chemical residues in comprehensive bushfire risk assessments.

In addition to chemical considerations, diseases also pose a notable risk to cereal crops, particularly rye. The presence of diseases, such as the ergot fungus, introduces an additional layer of complexity to agricultural risk management. The ergot fungus produces toxic compounds known as ergot alkaloids and thrives in warm and humid conditions, typically during flowering and grain development. To mitigate the impact of this fungus on the harvest, farmers adopt a strategy of cutting crops higher during seasons with higher rainfall. While this approach aids in reducing the overall abundance of the fungus, it inadvertently results in a higher fuel load during the

subsequent bushfire season. This intricate interplay of agricultural practices, diseases, and fire risk underscores the need for nuanced risk assessment and tailored risk mitigation strategies within the Shire.

Fire behaviour:

The dynamics of fire behaviour differ notably between agricultural farmland and native vegetation due to a myriad of factors influenced by land use and vegetation characteristics. In agricultural settings, crops, grasslands, and pastures emerge as primary fuel sources, particularly during dry seasons or harvest phases. These cultivated lands typically exhibit uniform and contiguous fuel loads, with expansive swathes of crops and grasses providing uninterrupted coverage. Consequently, fires in such environments tend to propagate more swiftly compared to native vegetation. The denser and more consistent fuel distribution sustains continuous combustion, accelerating fire spread. Moreover, agricultural practices often entail the utilisation of dry, combustible materials such as crop residues or hay, which readily ignite and exacerbate fire progression.

Management protocols like plowing, harvesting, and grazing exert a profound influence on fuel characteristics and distribution within agricultural landscapes. Harvested fields, for instance, often leave behind stubble or crop residue, which serve as readily ignitable fuel sources, intensifying fire spread. Grazing activities may mitigate fuel loads in certain areas but can render others more susceptible to fire, contingent upon the timing and intensity of grazing practices.

Overall, the combination of densely packed, uniform fuel sources and open landscapes in agricultural areas creates conditions conducive to rapid intense fire spread, highlighting the importance of effective fire management strategies in these environments.

Important species and communities

The Shire of Katanning encompasses diverse ecosystems that harbor a variety of species and communities safeguarded by both state and Commonwealth legislation. This safeguarded realm extends to include potentially threatened or endangered plant and animal species, as well as distinctive ecological communities. These designated areas play a crucial role in augmenting the overall biodiversity of the region and are subject to meticulous conservation measures. Preservation and stewardship of these protected areas form an integral aspect of the Shire's commitment to environmental sustainability and biodiversity conservation.

Threatened Flora:

Endangered flora within the Shire encompasses plant species that have undergone assessments categorising them as being at risk of extinction. In the Western Australian context, these species hold the official designation of "Declared Rare Flora" (DRF), indicating their critical status and the need for specific protection measures due to their vulnerability to extinction, rarity, or the necessity for specialised safeguarding measures. The Shire, recognising the importance of preserving biodiversity, has identified several priority plant species within its jurisdiction. A detailed reference of these specific species is meticulously cataloged in Table 4, facilitating easy and comprehensive consultation for conservation and management efforts.

Species	Common Name	Conservation Status
Caladenia luteola	Lemon Spider Orchid	T CR

Table 5 – Katanning's Threatened Flora

Threatened Fauna:

The Biodiversity Conservation Act of 2016 intricately defines "threatened fauna" as fauna that is either rare or faces imminent extinction. These species earn the designation of "threatened" subsequent to thorough surveys confirming their rarity, precarious status, or the necessity of specialised protective measures. Additionally, the Act extends its protective umbrella to various other categories of fauna, encompassing migratory birds safeguarded under international agreements, species presumed to be extinct, and other fauna with specific protective designations. A comprehensive inventory of both threatened and specially protected fauna within the jurisdiction of the Shire is meticulously detailed in Table 5. This underscores the imperative of conservation efforts in preserving the diverse and vulnerable wildlife in the region.

Scientific Name	Common Name	Conservation Status
Calidris ferruginea	Curlew Sandpiper	T CR
Calyptorhynchus banksii naso	Forest red-tailed black cockatoo	T VU
Calyptorhynchus baudinii	Baudin's cockatoo	T EN
Calyptorhynchus latirostris	Carnaby's cockatoo	T EN
Calyptorhynchus sp. 'white-tailed black cockatoo'	white-tailed black cockatoo	T EN
Dasyurus geoffroii	chuditch, western quoll	T VU
Leipoa ocellata	malleefowl	T VU
Macrotis lagotis	bilby, dalgyte, ninu	T VU
Myrmecobius fasciatus	Numbat, walpurti	T EN
Pseudocheirus occidentalis	western ringtail possum, ngwayir	T CR

Table 6 – Katanning Threatened Flora

Red/White-tailed, Carnaby, and Baudin Cockatoos, recognised as protected species, have been observed within the Shire, relying on wandoo and other endemic flora as habitat for nesting and residence. In the planning and execution of mechanical and planned burning mitigation works, a meticulous assessment of potential impacts on habitat becomes imperative, particularly in recognised or isolated areas of significance. Careful consideration must be given to the effects of habitat destruction and disturbance, acknowledging the vital role these areas play for Cockatoos and various other native fauna species. Preserving native environmental pockets during mitigation works becomes a priority, contributing significantly to the conservation of habitat for a diverse range of native fauna.

To achieve this conservation objective, the implementation of a strategy involving identifying habitat trees and creating a protection zone by raking the surface and duff fuel away from the tree before undertaking slower, mosaic burning, would be highly recommended. This approach creates security of future long term nesting, while providing additional time for animals and insecta, including the Cockatoos, to find refuge in unburnt pockets. Moreover, it ensures the creation of areas of refuge, facilitating the movement of animals through the landscape once burning activities are completed. Adopting such practices becomes a critical balancing act, effectively conserving essential habitat for Cockatoos and the broader native fauna community in Katanning, while still addressing the imperative need for bushfire risk mitigation. This thoughtful and strategic approach underscores the Shire's commitment to preserving biodiversity and maintaining a delicate equilibrium between conservation efforts and necessary risk mitigation measures.

Threatened Ecological Communities:

The term "Ecological Community" refers to naturally occurring biological groupings that inhabit specific habitat types. Within this ecological context, Threatened Ecological Communities (TECs) are identified and categorised based on the degree of threat they face, with classifications ranging from "Presumed Totally Destroyed" to "Critically Endangered," "Endangered," and "Vulnerable." Notably, certain TECs, such as the nationally recognised "Eucalypt Woodlands of the Western Australian Wheatbelt," situated within the Shire's boundaries, are accorded legal protection under the Environmental Protection and Biodiversity Conservation Act of 1999 (Cth). This legal safeguard underscores the importance of preserving and managing these ecological communities to maintain biodiversity and contribute to broader conservation efforts.

Scientific Name	Common Name	Conservation Status
Eucalypt woodlands of the Western Australian Wheatbelt	Woodlands Wheatbelt	P3 CE

Table 7 – Katanning's Threatened Ecological Communities

Eucalypt woodlands stand as iconic features within the Wheatbelt landscape, comprising 62 distinct vegetation communities, each characterised by unique species compositions and structural features. Dominated by eucalypts with single trunks (not mallees), the understorey exhibits a diverse range, from open grassy areas to shrubby patches. Serving as crucial habitat for numerous plant and animal species, these woodlands provide shelter and sustenance, while also offering essential ecosystem services such as the regulation of local water tables and salinity levels.

Table 6 serves as a comprehensive reference, outlining Threatened Ecological Communities (TECs) within the Shire, detailing their classifications and underscoring the importance of conservation efforts to safeguard these vital habitats.

In areas subject to frequent burns, the suitability of habitats for specific plant and animal species may be compromised. While effective bushfire risk management is integral to species preservation, a meticulous evaluation of potential consequences from these practices is imperative to prevent adverse outcomes.

Due to the confidential nature of information related to protected flora and fauna, a judicious approach has been taken in documenting data. Engaging subject matter experts is essential for verification of the location of environmental assets within the Shire's jurisdiction and assessing potential impacts of mitigation and response strategies.

The Shire places particular emphasis on the significance of flora and fauna, recognising them not only as valuable environmental assets but also as influencers of treatment options for identified risks associated with other assets. The careful selection of treatments is crucial, considering implications for environmental and heritage considerations.

Inadequate treatment selection carries the potential for adverse consequences, including harm to environmentally sensitive areas, loss of biodiversity, destruction of habitats, and impairment of natural, historical, and indigenous values. Consequently, all treatments must undergo assessment in accordance with specified requirements for identified flora and fauna. Furthermore, relevant authorities must be consulted before initiating any mitigation work.

The Shire is committed to reminding landowners and managers, whenever feasible, of their obligation to secure necessary clearances and approvals before undertaking vegetation-based treatments. This obligation extends to areas designated as Environmentally Sensitive Areas, habitats for Threatened Fauna, locations housing Declared Rare Flora, and other designated Threatened Ecological Communities (TECs). This commitment underscores the Shire's dedication to responsible environmental stewardship and sustainable land management.

Historical bushfire occurrence

Recorded Incidents

Fires within the Shire of Katanning are documented through the DFES Incident Reporting System (IRS). It's important to note that the data obtained from this system has inherent limitations, as not all ignitions are reported and recorded within the IRS. Additionally, figures may not comprehensively capture incidents attended solely by the DBCA – Parks and Wildlife Service within the Shire.

In the context of this record, a bushfire is defined as any vegetation fire (bush, grass, scrub, forest) of any size, while a "fire (large)" refers to a bushfire exceeding one hectare in size.

Between July 1, 2012, and June 30, 2022, a total of 228 bushfire incidents were recorded within the Shire. The primary ignition source during this period was suspicious/deliberate fires, accounting for a total of 66 incidents. The second-highest contributor, escaped Burn offs combining for an additional 32 fires. Being the most populated area within the shire, Katanning townsite is the most affected by fire incidents.

These statistics provide insights into the prevalence and sources of bushfires within the Shire of Katanning, though it's important to acknowledge the potential underreporting and the influence of other factors that may impact the accuracy and completeness of the data. The coinciding data can be found in Tables 7, 8, 9.

Historic Bushfires of Katanning

Historical fires have played a pivotal role in shaping the Shire's approach to bushfire risk management. Lessons drawn from these events have been instrumental in refining strategies to effectively address future challenges. Several notable fires, their impacts, and the insights gained have contributed to a more nuanced understanding of risk mitigation.

The Katanning Shire has encountered numerous fires over the years, with one significant event illustrating distinct characteristics and key takeaways for future planning and preparedness.

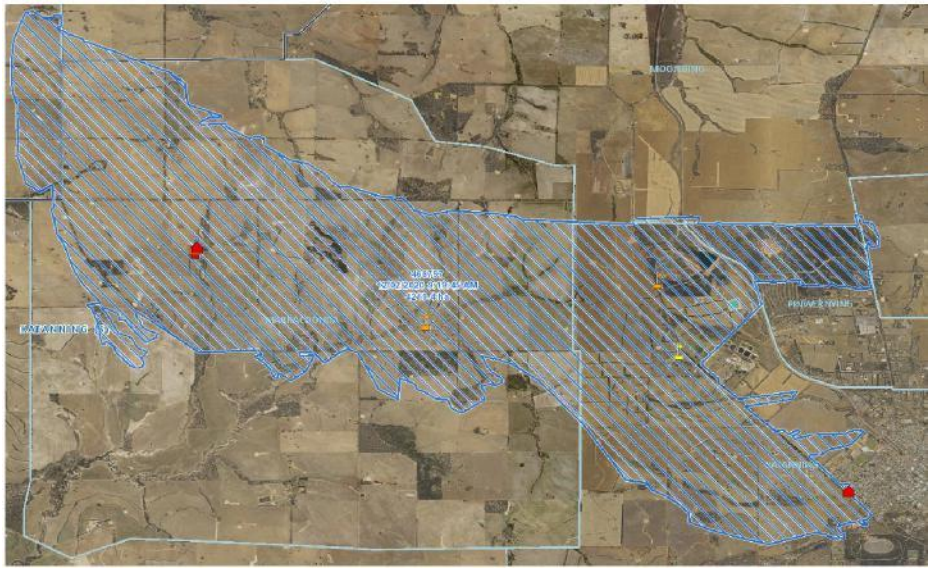
February 2020:

Cause	Lightning Vegetation Unknown		
Locality	Katanning	Area	4,220 hectares burnt
	300 + personnel including Great Southern strike team, two water Response carters, Lat and water bombers.		

40 degrees + temperatures and strong winds, the fire produce a lot of smoke as it jumped between tree branches, reducing visibility and impacting the way in which the fire could be fought, ground crew had difficulties in keeping up with the fire. The fire took 4 days to contain and control.

Narrative 300 locals evacuated to the designated centre during emergency warning.

A harvester destroyed, two properties lost habitable buildings, one house became inhabitable, and one shed was destroyed with three others receiving various levels of damage. 450 livestock destroyed. 80+ kilometers of fencing destroyed.



Several key observations emerged from this event, shedding light on critical aspects of fire behaviour and response strategies. The exceptionally high temperatures exceeding 40 degrees Celsius, coupled with strong winds, exacerbated fire behaviour, leading to rapid fire spread and challenging firefighting conditions. The fire's intensity generated substantial smoke, significantly reducing visibility and impeding ground crews' ability to effectively combat the blaze. This underscores the importance of anticipating and adapting to dynamic fire conditions, including visibility challenges, to optimise response efforts.

Furthermore, the incident resulted in significant property damage and livestock loss, highlighting the profound impact of bushfires on local communities and livelihoods. The destruction of infrastructure, including habitable buildings, sheds, and fencing, underscores the importance of proactive measures to safeguard assets and enhance resilience against future fire events. Additionally, the evacuation of over 300 locals to designated centers during emergency warnings underscores the critical role of community preparedness and evacuation planning in ensuring public safety.

Reflecting on this historic event, it becomes evident that comprehensive risk assessment, robust response planning, and community engagement are paramount in mitigating the impact of bushfires. Analysing the causes, responses, and outcomes of past fires provides invaluable insights into local fire dynamics and informs the development of targeted mitigation strategies. By leveraging lessons learned from past experiences, authorities can enhance their preparedness, response, and recovery efforts, fostering a more resilient and adaptive approach to bushfire risk management.

The historical data from the mentioned incident offers valuable insights into local fire dynamics. Analysing the causes, responses, and outcomes of past fires is crucial for making informed decisions. This historical context helps identify areas with a higher risk of fire initiation and discern underlying patterns or trends. Such knowledge is instrumental in developing and implementing effective treatment strategies to mitigate the impact of future bushfires.

Common Sources of Ignition:

The Shire of Katanning encounters a diverse range of ignition sources and bushfire-prone areas, presenting a multifaceted challenge for effective fire risk management. Lightning strikes, especially prevalent during regional thunderstorms, stand out as a common source of ignition. Human activities, including arson, electrical pole failures, and agricultural equipment use, further contribute to the overall ignition risk landscape.

The regions prone to bushfires within the Shire primarily comprise expansive agricultural lands, characterised by dry vegetation that serves as fuel, especially during specific seasons. Crop residues, grasslands, and dense vegetation in these areas are particularly susceptible to ignition. The interplay of dry environmental conditions, prevailing winds, and ongoing agricultural operations heightens the risk, underscoring the need for a comprehensive approach to address ignition sources and implement strategic measures.

To enhance preparedness and prevention strategies, the Shire's bushfire risk management plan prioritise addressing these key ignition sources and vulnerable regions. By focusing on these aspects, the Shire continuously develops measures to try and mitigate the risk effectively.

Suspicious/Deliberate fires:

The influence of suspicious or deliberate ignition causes on bushfires in the Great Southern region is profound, introducing significant challenges to fire dynamics and exacerbating the consequences of these incidents. One notable impact is the heightened frequency of fires, placing considerable strain on firefighting resources and impeding the prompt response to emerging incidents. The extension of the fire season, attributed to human-induced ignitions, necessitates year-round fire management efforts, adding complexity and resource demands.

Deliberate fire spreading emerges as a particularly concerning aspect, fostering the rapid escalation of uncontrollable blazes that pose substantial threats to both property and lives. Beyond the immediate firefighting challenges, these intentional ignitions divert resources away from proactive fire management measures, such as hazard reduction burns. These controlled burns are pivotal for mitigating the overall fire risk in the region, and their neglect due to deliberate ignitions can have far-reaching consequences.

The economic impact of these intentional ignitions is considerable, encompassing costs related to firefighting operations, property damage, insurance claims, and the loss of tourism revenue. Moreover, the psychological and societal repercussions are profound, as deliberate fires instill fear, uncertainty, and distress within communities, disrupting the social fabric and fostering an atmosphere of unease.

Machinery caused fires:

Vehicle-induced fires have emerged as a significant concern within the Shire of Katanning, with farm machinery identified as a primary contributor to bushfires in the region. The causes of these fires are multifaceted, often stemming from avoidable situations that require minimal negligence or complacency. Key factors include machinery contact with dry vegetation or crops during harvest and the accumulation of plant debris on equipment. Various causes of machinery fires have been identified, each carrying inherent risks:

Electrical Issues:

Faulty wiring, frayed wires, or short circuits leading to electrical sparks.

Fluid Leaks:

Oil or fuel leaks that can ignite upon contact with a hot surface in the engine compartment.

Overheating:

Engine running too hot due to issues like a malfunctioning cooling system, blocked radiator, or non-functioning fan.

Improper Maintenance:

Failure to adequately maintain the vehicle, neglecting worn-out or damaged parts, using incorrect fluids, or irregular oil changes. Additionally if not managed buildup of fine fuels while harvesting will ignite from heat and static.

Collision:

Contact with power lines, stationary items, or fence posts that can result in sparks igniting nearby materials like crops or vegetation.

In the period between 2013 and 2022, the Shire of Katanning documented a minimum of 12 machinery-caused fires. However, it's important to note that the actual number may be underreported due to machinery/equipment fires falling within the broader category of vehicle fires.

Escaped burns:

The Shire of Katanning's recorded instances of 32 escaped burn-off fires underscore a significant concern in the realm of bushfire risk management planning. These incidents, where controlled burns extend beyond their intended areas, pose substantial risks to the community, environment, and property. The increased frequency of such events indicates potential challenges or shortcomings in the planning and execution of hazard reduction activities. Adequate planning, coordination, and monitoring are crucial to ensure that controlled burns serve their intended purpose without escalating into uncontrolled bushfires.

One of the main causes for escaped burn is Crop burning, also referred to as agricultural or stubble burning. The intention of igniting crop residues or leftover agricultural vegetation on farmland. This method is employed for various agricultural purposes, such as removing crop residues, weed control, disease prevention, and preparing fields for the subsequent planting season. While crop burning serves essential agricultural functions, it presents considerable bushfire risks due to the dry and highly flammable nature of stubble. The rapid spread of fires originating from crop burning poses a significant threat to surrounding areas, including vegetation and properties. Additionally, the smoke emitted during stubble burning can compromise air quality, potentially impacting the health of nearby communities.

Despite being conducted during the permit season when risks are perceived as more manageable, crop burning places a substantial responsibility on landowners to comprehend and fulfill their duty to the safety of surrounding residents. This highlights the imperative for landowners to exercise caution, adhere strictly to regulations, and implement robust safety measures when engaging in crop burning activities. Moreover, fostering community awareness and maintaining effective communication channels are pivotal in mitigating the risks linked to this practice, ensuring the safety of both agricultural operations and neighboring residents.

Electrical pole fires

Pole top fires, occurring in electrical power transmission and distribution systems, result from a combination of environmental factors and equipment-related issues. A primary cause involves the accumulation of contaminants like dirt, dust, and salt on insulators or other electrical components on the pole top. These contaminants create a conductive path, enabling electricity to arc across insulators or jump to the pole, leading to sparks or flames that can ignite nearby materials.

Aging or faulty equipment contributes to pole top fires, with factors such as cracked or damaged insulators, overloaded or overheating transformers, and frayed or exposed wiring playing a role. Environmental conditions, including high winds, lightning strikes, and extreme temperatures, can damage electrical equipment and create conditions conducive to igniting nearby materials.

Animal contact with power lines is another potential cause, where birds, lizards, or small mammals can create an electrical arc by touching different parts of the electrical system simultaneously. This can result in sparks or electrical arcs igniting nearby flammable materials like dry vegetation.

The Shire of Katanning recorded a minimum of 12 electrical pole-caused fires between 2013 and 2022. While the natural environment influences these incidents, key stakeholder Western Power's contribution to long-term assistance in mitigating the bushfire risk associated with public electrical poles.

Lightning caused fires

Lightning-induced fires pose a substantial threat in regions characterised by dry vegetation and hot, arid weather conditions. The intense heat generated by electrical discharges during lightning strikes can readily ignite flammable materials on the ground, resulting in the rapid escalation of bushfires. This risk is particularly pronounced in areas with a Mediterranean climate, such as the Great Southern region of Western Australia.

In the Great Southern region, where prolonged dry summers prevail, the conducive conditions make lightning strikes a prevalent cause of fires. The landscape, comprising extensive grasslands, forests, and crop lands, provides abundant fuel for fires to propagate. Table 8 indicates that the Shire of Katanning, situated within the Great Southern region, has documented a minimum of 34 instances of bushfires caused by lightning strikes between 2013 and 2022, underscoring the frequency and impact of such incidents in the area.

Given the susceptibility of the region to fire outbreaks, it is imperative for local authorities, communities, and emergency services to maintain a vigilant stance. Implementing effective prevention and response measures is essential in mitigating the risks associated with lightning-induced fires. Strategies may include early detection systems, strategic land management practices, and public awareness campaigns. By prioritising these initiatives, the safety of residents can be ensured, and valuable natural resources protected from the devastating effects of bushfires.

Current bushfire risk management controls

The Shire of Katanning grapples with a myriad of ignition sources and areas susceptible to bushfires, necessitating a nuanced approach to fire risk management. Lightning strikes, particularly prevalent during regional thunderstorms, stand out as a notable source of ignition. Human activities, including arson, discarded cigarettes, and the use of equipment in agriculture, further contribute to the diverse landscape of ignition risks.

The regions prone to bushfires within the Shire predominantly comprise extensive agricultural lands, characterised by dry vegetation that acts as fuel, especially during specific seasons. Crop residues, grasslands, and dense vegetation near watercourses emerge as particularly vulnerable areas. The convergence of dry environmental conditions, prevailing winds, and ongoing agricultural operations heightens the overall risk, underscoring the imperative to address ignition sources and implement strategic measures.

To fortify preparedness and prevention strategies, the Shire's bushfire risk management plan should prioritise addressing these key ignition sources and vulnerable regions. By concentrating efforts on these aspects, the Shire can develop targeted interventions to mitigate risks and enhance its ability to respond effectively to potential bushfire incidents.

Shire of Katanning

The Shire of Katanning is dedicated to proactively mitigating the impact of bushfires through a multifaceted approach. Taking on the responsibility of overseeing fire mitigation and hazard reduction measures on its land, including parks, reserves, road reserves, recreation areas, and drainage reserves, the Shire implements an annual Bushfire Preventive Works program. This program encompasses various activities such as mechanical works, slashing, chemical spraying, and pruning, strategically designed to minimise fire risks and bolster overall fire safety.

In addition to these preventive measures, the Shire employs prescribed burning as a proactive strategy when needed. Prescribed burns are conducted under controlled conditions to reduce fuel loads, curb the rapid spread of fires, and support biodiversity. This method is executed with precision to achieve specific ecological and fire prevention objectives.

Consistently implementing these fire prevention and hazard reduction measures underscores the Shire's commitment to creating a safer environment for residents, safeguarding valuable assets, and contributing to the community's overall resilience in the face of bushfire risks.

The Shire's contribution to bushfire risk management controls extends to regulatory measures and community engagement:

Fire break Notices:

> The Shire issues Section 33 fire management notices under the Bush Fires Act 1954, providing directives for firebreaks, hazard reduction, and preventive measures.
>
> Restricted Burning Times and Prohibited Burning Times: Governed by the Bush Fires Act 1954, Sections 17 & 18, the Shire manages restricted and prohibited burning times to regulate controlled burns, aligning with seasonal conditions and weather patterns.

Vehicle Movement Bans:

Harvest vehicle movement bans are enforced during heightened fire danger periods to restrict the movement of agricultural vehicles, reducing the risk of fires caused by machinery operation.

Bushfire Advisory and Local Emergency Management Committees:

The Bushfire Advisory Committee offers expert advice for prevention, preparedness, and response, while the Local Emergency Management Committee coordinates efforts for all emergencies, enhancing community resilience.

Volunteer Bushfire Brigades:

The Shire boasts four strategically located volunteer Bushfire Brigades, including Katanning Central, Merribin, Badgebup, and Carrolup. These brigades play a crucial role in early detection, containment, and suppression efforts.

Through this comprehensive array of measures, from regulatory directives to community engagement and firefighting resources, the Shire has established robust bushfire risk management controls, prioritising overall safety and resilience.

Other Local Government Wide Controls:

State Government Legislation:

State Planning Policy 3.7 (SPP 3.7) stands as a foundational framework established by the Western Australian State Government to systematically address and mitigate bushfire risks. This policy framework is specifically designed to govern construction activities within areas identified as prone to bushfires, with the overarching objective of minimising risks to individuals, properties, and the environment. The implementation of SPP 3.7 lies within the purview of local governments, involving a meticulous process of identifying and regulating new developments in these designated areas. This is achieved through third-party assessments, enabling local governments to prescribe planning and construction standards aimed at reducing the inherent bushfire risks. SPP 3.7, as a governing mechanism, enforces strict compliance with recognised standards, including the Australian Standard AS 3959:2018. In tandem with this policy, the Guidelines for Planning in Bushfire Prone Areas, meticulously crafted by the Department of Planning, Lands, and Heritage, serves as a complementary resource. Together, these documents create a robust regulatory framework, contributing significantly to the overarching objective of minimising the impact of bushfires on communities and the natural environment.

Total Fire Bans:

Western Australian Total Fire Ban Declarations constitute official proclamations issued during periods of heightened fire danger. These declarations are strategically crafted to impose restrictions or prohibitions on specific fire-related activities within designated areas. The primary purpose is to prevent the outbreak of uncontrolled wildfires by curbing activities such as open-air fires, the usage of equipment prone to sparking, and certain industrial processes. Adherence to these bans is of paramount importance for public safety. Communication of the bans is effectively disseminated through official channels, including announcements and social media platforms.

Shire of Katanning Historic Total Fire Ban Days												
2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
1	0	2	1	11	2	1	0	10	5	3	3	1

Table 11 – Shire of Katanning Total Fire Ban Record

A list of local government wide controls for reducing bushfire risk in Shire of Katanning is provided in Appendix B.

Key Stakeholders Mitigation Activities

During the assessment phase, consultations with the following key stakeholders were initiated to identify an appropriate point of contact and to ascertain the policies, guidelines, practices, and contributions they are implementing towards bushfire risk mitigation within the Shire of Katanning.

Department of Fire and Emergency Services

The Department of Fire and Emergency Services (DFES) plays a vital role in reinforcing the Shire of Katanning's comprehensive bushfire risk management controls through various programs and financial support mechanisms. As part of the Bushfire Risk Management Program, DFES offers industry expertise, guidance on best practices, and financial support to strengthen the Shire's strategies for mitigating bushfires. In the Community Emergency Service Manager Program, DFES supports training initiatives and provides resources for Community Emergency Service Managers, enhancing their ability to coordinate local emergency services and bolster community resilience efforts.

For unallocated Crown land and unmanaged reserves, DFES collaborates with the Shire, offering planning support and potential financial assistance to implement effective risk reduction measures. Katanning's Volunteer Fire and Rescue Service Brigade receives full financial support from DFES, ensuring they have the necessary resources for operational readiness, training, and equipment. In the event of a bushfire incident exceeding the Shire's capabilities, DFES mobilises resources, coordinates emergency responses, and provides operational support to manage the situation effectively.

This multifaceted collaboration underscores DFES's unwavering commitment to enhancing community safety and resilience in the face of bushfire risks.

Department Biodiversity, Conservation and Attractions

The Department of Biodiversity, Conservation, and Attractions (DBCA) plays a pivotal role in bushfire mitigation through a multifaceted approach. Their actions encompass managing fires in accordance with relevant laws and guidelines, maintaining the capability for prescribed burning and bushfire mitigation, utilising records and mapping systems, preparing and reviewing regional fire plans, conducting prescribed burning and fuel management, integrating fire management with broader conservation efforts, establishing fire breaks and access tracks, fostering collaboration with stakeholders for cooperative fire management, incorporating traditional knowledge when possible, and providing comprehensive fire management training to staff and operators.

The primary objectives of these efforts are to minimise the risk of losing threatened species, critical habitat, and important natural and cultural values from inappropriate fire regimes. During bushfire mitigation and suppression activities, the department prioritises

the protection of human life and property, subsequently focusing on preserving the natural environment and cultural heritage.

Key bushfire mitigation strategies employed by the department include early suppression of bushfires (excluding high-value assets), implementing fire management measures to protect biodiversity assets, ensuring the safety of threatened species, limiting the construction and maintenance of internal fire access tracks, assessing the need for perimeter access tracks, avoiding vegetation modification unless there is a significant risk, and establishing temporary fire control lines when necessary. These strategies collectively contribute to a comprehensive and proactive approach to bushfire mitigation within the department's purview.

Main Roads Western Australia (MRWA)

Main Roads actively fulfills its duty in bushfire risk management and mitigation, demonstrating a strong commitment to minimising potential hazards. The organisation engages in a collaborative effort with Local Governments, actively participating in the development and execution of Bushfire Risk Management Plans. This joint approach ensures that strategic planning incorporates Main Roads' assets and infrastructure into the broader framework of bushfire risk management.

To effectively manage bushfire risks, Main Roads conducts comprehensive assessments to identify potential impacts on its assets, pinpoint vulnerable areas, and evaluate risks to critical infrastructure such as roads, bridges, and facilities. These risk assessments empower Main Roads to implement targeted measures that mitigate and manage potential bushfire impacts on its assets. Strategies may include incorporating design features that enhance fire resistance, adopting maintenance practices with a specific focus on bushfire risk, and collaborating with stakeholders to develop comprehensive emergency response plans.

Main Roads actively discharges its duty of care by contributing to the development of Bushfire Risk Management Plans, conducting rigorous risk assessments, and implementing proactive measures to minimise the impact of bushfires on its operations. This approach ensures the protection of infrastructure, prioritises the safety of road users, and enhances the overall resilience of the wider community.

In its commitment to effective bushfire risk management, Main Roads has identified critical assets within bushfire-prone areas, including 24-hour rest bays, timber and timber hybrid traffic and pedestrian bridges, and regional offices along with operationally crucial facilities in depots. Specific actions in the Great Southern Region involve herbicide spraying and brush cutting on bridge structures, vegetation clearing for Bridge Fire Mitigation, and Fire Hazard Reduction slashing in open areas within the road reserve. Additionally, parking bays under Main Roads' management undergo scheduled grass and weed control activities, reflecting a proactive approach to maintaining a fire-resilient environment.

Public Transport Authority

The Public Transport Authority (PTA) assumes a proactive role in mitigating bushfire risk on PTA Land, collaborating closely with local governments and fire authorities to ensure the safety of passenger and freight rail lines, stations, depots, and associated facilities. Their comprehensive approach involves fuel reduction activities, maintenance of firebreaks, and the implementation of procedures to minimise bushfire risk stemming from

maintenance operations. The PTA also responds to fire protection notices, supports emergency response measures, and maintains open communication with fire authorities and local governments to formulate and execute efficient bushfire mitigation strategies. Active participation in the development of Bushfire Risk Management Plans initiated by local governments and fire authorities underscores the PTA's commitment to effective risk reduction.

Key strategies employed by the PTA include contributing to comprehensive bushfire risk assessments and implementing tailored mitigation measures. The PTA's fuel reduction strategies prioritise conservation, infrastructure, and cultural values. Collaborative efforts with local governments and land managers result in the development of long-term bushfire mitigation plans that incorporate proactive measures for bushfire preparedness, including controlled access, adherence to safe operating procedures, and the establishment of asset protection zones. The PTA further supports bushfire hazard reduction through donations, funding for fuel reduction activities, and active participation in rail safety access initiatives, with a focus on protecting areas of high conservation value and Aboriginal sites.

While overseeing a redundant railway in the north-west corner of the shire, connecting the adjacent shires of Kojonup and Katanning, the PTA envisions future plans for the development of a heritage rail trail from Kojonup townsite to Katanning. Although no mitigation works have been undertaken within the rail reserve at present, the PTA expresses a commitment to collaborate with the shire to reduce bushfire risk within the Katanning community.

St Patrick's School (SPS)

As the St. Patrick's School (SPS) is governed by Catholic Education Western Australia (CEWA), it does not qualify for state government assistance in assessing the bushfire risk of its school grounds, as indicated in "The Principal's Guide to Bushfire." However, CEWA has proactively addressed this limitation by implementing third-party services for all of its schools situated within high bushfire risk environments. These services are designed to conduct comprehensive assessments of the properties and formulate tailored bushfire risk management plans, similar to those provided for state government schools.

"The Principal's Guide to Bushfire," a resource supplied by the Department of Education, serves as a valuable tool for school principals and leaders in managing bushfire risk within their schools and communities. Covering a spectrum of topics related to bushfire management, the guide encompasses understanding bushfire risks, preparation strategies, response protocols, and recovery processes.

This guide imparts knowledge about various types of bushfires, their origins, and the contributing factors to their propagation. It further elucidates how schools can evaluate the bushfire risk in their vicinity and take proactive measures, including the development of a comprehensive bushfire plan, regular drills, and identification of safe evacuation routes.

In the event of a bushfire, the guide offers guidance on critical actions to take, such as activating the bushfire plan, effective communication with staff, students, and parents, and ensuring safe evacuations. Additionally, the guide outlines the recovery process post-bushfire, addressing both the physical and emotional needs of the school community, accessing government support, and facilitating the reconstruction of the

school and its community. CEWA has aligned itself with these principles, incorporating them into its own structure and hierarchy.

The implementation of a Bushfire plan at SPS demonstrates a proactive approach, indicating the school's awareness of its contribution to bushfire risk and its commitment to established mitigation processes.

Western Power

The Western Power Corporation, responsible for managing Western Australia's electricity network, employs a comprehensive strategy to proactively mitigate the risk of bushfires. This strategy encompasses several key elements:

Regular Maintenance and Inspections:

- Prioritising the regular maintenance and inspections of its infrastructure, including power lines, poles, and transformers.
- Conducting annual inspections from March to August to identify potential hazards and promptly address issues by repairing or replacing equipment.

Vegetation Management:

- Actively engaging in vegetation management practices to reduce the risk of vegetation interfering with power lines, a potential trigger for bushfires.
- Implementing measures such as tree trimming, vegetation removal, and the judicious use of herbicides.
- Applying these practices to areas vested in crown land or under the Corporation's control.

Collaboration with Emergency Services:

- Establishing close collaboration with emergency services to ensure coordinated and effective responses to bushfire incidents.
- Providing support for firefighting operations to address and manage bushfire incidents promptly.

Community Education and Awareness:

- Conducting education and awareness campaigns to actively involve and empower the community.
- Encouraging proactive steps within the community to reduce bushfire risks.
- Urging community members to report any observed potential hazards near the electricity network.

Western Power Corporation's multifaceted approach involves proactive infrastructure maintenance, vegetation management, collaborative efforts with emergency services, and community-focused education. This holistic strategy aims to collectively address and mitigate the bushfire risk associated with the operation of its electricity network in Western Australia.

Chapter 5: Asset Identification and Risk Assessment

Assets at risk from bushfire in Shire of Katanning are recorded in the *Asset Risk Register* in the BRMS. Assets are divided into four categories: human settlement, economic, climate, and cultural. Each asset has been assigned a bushfire risk rating between low and extreme based on the risk assessment methodology described in the Guidelines and Handbook.

4.1. Local government asset risk profile

A summary of the risks assessed in Shire of Katanning is shown in Table 3. 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 12 – Local Government Asset Risk Summary

Asset Category	Risk Rating					
		Low	Medium	High	Very High	Extreme
	Human Settlement	1%	8%	18%	34%	21%
	Economic	0%	1%	3%	3%	7%
	Environmental	0%	0%	0%	0%	0%
	Cultural	0%	0%	1%	0%	2%

Chapter 6: Risk Evaluation

6.1. Risk acceptance criteria

The acceptable level of risk for each asset category is shown in Table 4. A risk that is assessed as exceeding these limits will be considered for treatment.

Table 13 – Risk acceptance criteria for bushfire risk in Shire of Katanning.

	Asset category			
	Human settlement	**Economic**	**Environmental**	**Cultural**
Acceptable risk level	**Medium**	**Medium**	**High**	**high**

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

6.2. Treatment priorities

The treatment priority for each asset is automatically assigned by BRMS, based on the asset's risk rating. Table 5 shows how consequence and likelihood combine to give the risk rating and subsequent treatment priority for an asset. The treatment priority assigned in BRMS will help inform decision making for risk acceptability and development of the Treatment Strategy and schedule.

Table 14 – Treatment priorities

Likelihood	**Consequence**				
		Minor	**Moderate**	**Major**	**Catastrophic**
	Almost Certain	3D (High)	2C (Very High)	1C (Extreme)	1A (Extreme)
	Likely	4C (Medium)	3A (High)	2A (Very High)	1B (Extreme)
	Possible	5A (Low)	4A (Medium)	3B (High)	2B (Very High)
	Unlikely	5C (Low)	5B (Low)	4B (Medium)	3C (High)

Chapter 7: 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.

7.1. Treatment Strategy

The Treatment Strategy outlines the comprehensive approach to managing medium to long-term bushfire risk in the Shire of Katanning. Shaped by factors such as risk distribution, community values, stakeholder programs, and treatment constraints, this strategy plays a crucial role in guiding the development of integrated annual treatment schedules.

In the context of bushfire risk management in the shire, the treatment strategy is instrumental in aligning treatment preferences with the vulnerability of elements such as land use patterns, sensitive industries, vegetation types, and resource accessibility. This ensures a targeted and risk-informed approach to treatment selection.

Recognising the diverse ecosystems and landscapes within the district, the treatment strategy emphasises the need for individualised methods tailored to effectively manage and reduce bushfire risk. Different parts of the district require interventions that align with their unique characteristics, emphasising a strategic and adaptive approach to bushfire risk treatments.

Presented below are two distinct hierarchical processes, wherein the initial numbering establishes the priority for implementation, while the delineation of land areas enables customised treatment options. The numerical scale, ranging from one (most critical) to five (least critical), designates the prioritisation of land use areas for treatment execution within the Shire. The development of this structure is primarily influenced by population density considerations within the Shire.

The tables articulate a structured framework with three discernible levels: Primary, Secondary Response, and Last Resort. The preference levels are crafted with thoughtful consideration of the following components:

Land Use Characteristics:
The nature and purpose of land use in a specific area impact factors such as fuel load, accessibility, and vulnerability to bushfires.

Land Transformation and Development:
Changes in land development, such as urbanisation or agricultural expansion, alter the natural state of the landscape, influencing fire behaviour and treatment selection differently.

Vegetation Characteristics and Composition:
Different vegetation characteristics and types contribute variably to managing fuel load, the viability/quality of vegetation, biodiversity, and whether it consists of native or introduced species. Mismanagement of these factors can have potential negative long-term impacts on the environment and fuel load.

Localised Capabilities:

The availability of resources, infrastructure, and personnel within a specific locality influences the feasibility of certain response measures. Understanding local capabilities ensures the formulation of realistic and achievable strategies.

The Primary Response encompasses the initial and preferred methods for managing bushfire risk within the addressed environment, presenting a range of appropriate tasks to mitigate the risk. In instances where primary measures prove insufficient, the Secondary Response can be considered. These methods may entail additional risks (environmental, social, or physical) that render them inappropriate for primary response. However, with justification, they can complement the initial primary response approach.

Reserved for extreme scenarios due to the associated risks and decisive actions required, the Last Resort is positioned as the lowest intervention for treatment response. This hierarchical structure ensures a methodical and adaptable approach, commencing with preventive measures and escalating interventions as necessary. Consequently, it offers a comprehensive and effective strategy for bushfire risk management.

1) Shire managed land within Gazetted Townsites:

Preference	Method type	Description:
Primary response	Vegetation management	Modify or remove excess vegetation to create breaks and reduce fuel density.
	Firebreaks/Access Tracks	Removal of vegetation to create vehicle accessible tracks.
Secondary response	Herbicide	Targeted use of herbicides to control invasive or highly flammable plant species.
Last resort	Controlled Burns	Prescribed burns to reduce accumulated fuel loads and prevent the spread of large, intense fires.

2) Rural Urban Interface:

Preference	Method type	Description:
Primary response	Community Planning	Educating defensible space around homes
		Community education programs around preparedness and household bushfire plan creation.
		Implementing and educating SPP 3.7, AS3959 and other associated resources for new developments
	Building Design and Retrofitting	Educate, construction and retrofitting of structures with fire-resistant materials and features.
	Ember-Resistant Landscaping	Educating, selecting and maintaining vegetation that is less likely to ignite from embers.

	Fire break notice	Compliance to the Shire of Katanning Firebreak notice.
Secondary response	Herbicide	Targeted use of herbicides to control invasive or highly flammable plant species.
	Vegetation management	Modify or remove excess vegetation to create breaks and reduce fuel density.
	Firebreaks/Access Tracks	Removal of vegetation to create vehicle accessible tracks.
Last resort	Controlled Burns	Prescribed burns to reduce accumulated fuel loads and prevent the spread of large, intense fires.

3) Agricultural Environment:

Preference	Method type	Description:
Primary response	Community Planning	Educating defensible space around homes
		Implementing and educating SPP 3.7, AS3959 and other associated resources for new developments
	Building Design and Retrofitting	Educate, construction and retrofitting of structures with fire-resistant materials and features.
	Ember-Resistant Landscaping	Educating, selecting and maintaining vegetation that is less likely to ignite from embers.
	Fire break notice	Compliance to the Shire of Katanning Firebreak notice.
	Vegetation management	Modify or remove excess vegetation to create breaks and reduce fuel density.
	Firebreaks/Access Tracks	Removal of vegetation to create vehicle accessible tracks.
	Herbicide	Targeted use of herbicides to control invasive or highly flammable plant species.
Secondary response	Controlled Burns	Prescribed burns to reduce accumulated fuel loads and prevent the spread of large, intense fires.

4) Road reserves:

Preference	Method type	Description:
Primary response	Herbicide	Targeted use of herbicides to control invasive or highly flammable plant species.
Secondary	Vegetation	Removal of excess vegetation to

response	management	create breaks and reduce fuel density.
Last resort	Controlled Burns	Prescribed burns to reduce accumulated fuel loads and prevent the spread of large, intense fires.

5) Woodland/Reserves Environment:

Preference	Method type	Description:
Primary response	Understory Management	Modifying understory vegetation to break up fuel continuity.
	Firebreaks/Access Tracks	Removal of vegetation to create vehicle accessible tracks.
Secondary response	Selective Thinning	Removal of excess vegetation to create breaks and reduce fuel density.
	Herbicide	Targeted use of herbicides to control invasive or highly flammable plant species.
Last resort	Controlled Burns	Prescribed burns to reduce accumulated fuel loads and prevent the spread of large, intense fires.

An essential aspect to contemplate within this treatment strategy is the implementation of controlled burns. However, executing this practice in a native environment entails intricate planning, substantial knowledge, and selecting appropriate times for its execution, which can pose challenges in terms of resource allocation. One of the primary considerations is the timing of these burns, with the optimal period typically coinciding with seeding or harvest seasons. This temporal alignment is pivotal in minimizing disruptions to agricultural activities and mitigating potential risks associated with poorly timed or inadequately resourced burns. Therefore, controlled burns are designated as a last resort measure, aimed at alleviating additional burdens on emergency services and circumventing the potential for ill-informed or inadequately supported burn operations.

The treatment strategy for bushfire risk in the Shire of Katanning recognises the significance of non-physical mitigation measures, encompassing community engagement, educational programs, and regulatory approaches. Emphasising a comprehensive framework, the strategy acknowledges that effective risk treatment involves a synergy of these strategies, relying on factors like community involvement, continuous monitoring, and adaptability to changing conditions. Successful bushfire risk management necessitates collaboration among land managers, communities, and fire authorities.

The Shire of Katanning's treatment strategy adopts a flexible approach to bushfire risk management. By addressing unacceptable risks, considering various influencing factors, engaging the wider community, and incorporating diverse treatments, the strategy aims to bolster overall resilience and minimise the impact of bushfires on the district.

Under the umbrella of a holistic strategy, the Shire consistently invests in the development of long-term approaches for sustained bushfire risk reduction. This involves initiatives such as land-use planning, community education, and policy changes, all contributing to the creation of a resilient and fire-safe environment.

7.2. Treatment Schedule

The Treatment Schedule is a list of bushfire risk treatments recorded within BRMS. Shire of Katanning will be focusing on developing a program of works that covers activities to be undertaken within the two years after the approval of the BRM Plan. The Treatment Schedule will evolve and develop throughout the life of the BRM Plan.

The Shire of Katanning Treatment Schedule is a live document managed on BRMS. It is designed by the outcome of the risk assessment process and Treatment Strategy. The Treatment Schedule was developed in broad consultation with land owners and other stakeholders.

Land managers are responsible for implementing treatments 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.

Chapter 8: Recommendations

The suggestions outlined in Table 13 offer alternative approaches for mitigating and managing bushfire risks beyond the scope of BRMS and related programs. These alternatives propose proactive measures aimed at minimising the potential impact of bushfires on lives, property, and the environment.

Each recommendation in this section represents a crucial component of the overarching risk management strategy, addressing specific concerns and delineating practical steps to be taken. These recommendations are finely tuned to the distinctive characteristics of the region, encompassing factors such as vegetation types, weather patterns, population density, and existing infrastructure.

They offer guidance on preventive measures, encompassing activities like fuel reduction and modifications to infrastructure, as well as emergency response protocols, community education initiatives, and the facilitation of interagency coordination.

Implementing these recommendations necessitates a collaborative approach, engaging various stakeholders, including government agencies, emergency services, local communities, and landowners. This collective effort ensures a comprehensive and tailored approach to bushfire risk management.

Table 15 – Table of Recommendations for the Shire of Katanning

Subject	Recommendation
Habitable Buildings with build date pre-2015	Considering the generational nature of the town and the existence of buildings predating current bushfire-prone area policies, it is recommended that the Shire continues and strengthens its efforts in providing advice and education to the community. Encourage voluntary upgrades, repairs, or additions to buildings aimed at enhancing protection against potential bushfires. Specifically, the Shire should emphasise practical measures such as installing gutter guards, sealing exterior gaps, inspecting exposed timber beams, upgrading evaporative air-conditioning systems, maintaining solar panels, and using fire-resistant materials for fly screens and non-flammable materials for external facades. This proactive approach aims to create a safer and more resilient community, aligning with the Shire's commitment to comprehensive bushfire risk management. Additionally, promoting awareness through educational resources will play a crucial role in fostering a collective understanding of the importance of these measures in mitigating the impact of bushfires on both property and lives.
Asbestos buildings	To enhance community safety and resilience in the face of bushfire risks associated with potential asbestos-containing materials, a focused education initiative is recommended. This program should enlighten residents about asbestos identification, associated health risks during and after a fire, and proper emergency responses. Key aspects include recognising asbestos in older structures, understanding its behaviour in fires, and the importance of professional assistance for identification and removal. By equipping residents with this knowledge, the Shire can promote informed decision-making, ensuring a safer environment and strengthening community preparedness against bushfire-related challenges.
Identifying fire period/seasons	To address the risk of accidental fires caused by inadequate awareness of prohibited/permit times, a proactive recommendation is to enhance public communication and signage along main roads within the Shire. Implementing visible signage that clearly indicates the necessity of permits or the prohibition of fire-related activities during specific times of the year can significantly mitigate the risk. This strategy aims to improve public awareness, educate road users, and reduce the likelihood of unintentional fire incidents. Collaborating with relevant authorities and stakeholders to design and install informative signage can contribute to a safer environment and minimise the occurrence of accidental fires.
Fire danger ratings	To enhance the effectiveness of the newly introduced "AFDRS" system and improve public understanding during permit seasons, it is recommended to implement clear and updated signage displaying the current fire danger rating. These informative signs should be strategically placed to provide real-time information to the community,

	reducing the risk of accidental fires on days with unfavourable weather conditions.
Fire break notice	Streamline communication and ensure clarity for residents, a proactive recommendation involves conducting yearly reviews of fire break notices. This review process should include an assessment of the terminology used in notices from surrounding shires and cities. By maintaining consistency and updating terminology as needed, this practice can facilitate easy understanding, especially for new or temporary residents, and contribute to a more effective and harmonised approach to fire risk management across regions. Coordination with neighbouring jurisdictions is essential for the success of this initiative.
Fire break notice	In order to address the unique challenges posed by the predominant agricultural land use within the Shire, it is strongly recommended to incorporate a specific provision into the firebreak order. This provision would focus on the management of crop fuel loads during harvest, particularly for crops located on the border of a farm. The proposed addition to the firebreak order suggests a practical measure wherein the crop adjacent to the fence is to be cut lower to 100mm, with a designated width of 15m from the fence. This targeted action aims to minimise the risk of fires escaping properties during the critical periods of harvest and the bushfire season. Implementing such a measure demonstrates a proactive approach to fire risk management, considering the specific characteristics of the Shire's landscape and land use patterns. Coordination with local farmers and stakeholders will be crucial for the successful adoption and implementation of this additional provision.
Suspicious/Deliberate fires	To address the impact of deliberate fire-setting, the Shire should focus on robust public education. Collaborate with DFES for effective advertising and engage the community through regular fire safety sessions at schools. Build community networks to encourage vigilance and reporting, and coordinate patrols with local police in recently burned areas to deter suspicious behaviour. This multi-pronged approach aims to raise awareness, foster community responsibility, and actively discourage deliberate ignition, contributing to effective bushfire risk management.

Chapter 9: Monitoring and Review

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

9.1. Monitoring and review

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

9.2. Reporting

The Shire of Katanning CEO or their delegate will provide to OBRM the outcomes of biennial reviews of the BRM Plan. This is required to maintain OBRM endorsement of the Plan.

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

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 risk register	A component within the Bushfire Risk Management System (BRMS) used to record 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 risk management	A systematic process to coordinate, direct and control activities relating to bushfire risk with the aim of limiting the adverse effects of bushfire on the community.
Bushfire risk	The chance of a bushfire igniting, spreading and causing damage to the community or the assets they value.
Consequence	The outcome or impact of a bushfire event.
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.
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 treatment	A process to select and implement appropriate measures undertaken to modify risk.
Systemic risk	The impacts of bushfire on the interconnected systems and networks that support community function. It is a product of the disruption caused by fire to normal life and its effects may be felt far from the direct impacts of the fire in both time and space.
Treatment objective	The aim to be achieved by the treatment. Treatment objectives should be specific and measurable.
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 general approach that will be taken to managing bushfire risk, in consideration of the local government context and objectives.
Treatment type	The specific treatment activity that will be implemented to modify risk, for example a planned burn.

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
LEMC	Local Emergency Management Committee
OBRM	Office of Bushfire Risk Management (DFES)
SEMC	State Emergency Management Committee
TEC	Threatened Ecological Community
UCL	Unallocated Crown Land
UMR	Unmanaged Reserve
WA	Western Australia

Appendices

Appendix A Local government wide controls

Appendix B Communication Plan

Appendix C Annual review checklist

Appendix A – Local government wide controls

Action or activity Control		description	Lead agency	Other stakeholder(s)	Notes and comments
1	Firebreak Notice (Bush Fires Act 1954)	Annual LG Firebreak Notice	Shire of Katanning	Landowners Land Managers Shire of Katanning Ranger	Published Annually. Inspect local properties. 'Fire Access Track' has the same meaning as 'Fire Break', in the Bush Fires Act 1954.
2	Prohibited, Restricted Burning Times and Total Fire Bans. Bush Fire Control (Bush Fires Act 1954)				
3	Total Fire Ban Declaration	Restriction of activities that may cause or contribute to the spread of a bushfire	DFES	Shire of Katanning Western Power Water Corporation Local Residents	A Total Fire Ban (TFB) is declared because of extreme weather conditions or when current operational commitments have reduced statewide resources / capabilities. A TFB is declared by DFES following consultation with the LG.
4	Harvest and Vehicle Movement Bans	Restricting the movement of vehicles during harvesting in the Bushfire Season.	Shire of Katanning	Shire of Katanning Western Power Local Residents	A Harvest and Vehicle Movement Ban may be imposed for any length of time but is generally imposed for the 'heat of the day' periods and may be extended or revoked by the local government should weather conditions change.
5	Townsite UCL/UMR land management	Preparedness, mitigation work conducted on lands owned by Department of Planning, Lands and Heritage (DPLH) and managed by DFES.	DFES	Bushfire Brigades DPLH	Annual funding is allocated to UCL/UMR land within gazetted boundary with priorities identified in consultation with stakeholders and managed through DFES.
6	Rural UCL/UMR land management	DBCA's indicative burn program, conduct mulching and other mechanical treatments to reduce fuel load or provide	DBCA		Plans can be accessed via the DBCA website.

Action or activity Control		description	Lead agency	Other stakeholder(s)	Notes and comments
		fire access.			
7	Shire land management	Shire program to maintain access tracks, reduce fuel load and remove hazards as required.	Shire of Katanning	Katanning Bushfire Brigades	Fuel reduction program on all SoK reserves. This includes access track installation and maintenance, weed reduction (slashing, spraying), vegetation thinning and removal and prescribed burning.
8	State planning framework and local planning schemes	Implementation and compliance with SPP3.7 and the Bushfire Protection Criteria of the Guidelines for Planning in Bushfire Prone Areas where required	Shire of Katanning DPLH	WAPC Landowners	State planning framework and local planning schemes, implementation of appropriate subdivision and building standards in line with DFES, WAPC and Building Commission policies, guidelines and standards
9	State-wide arson prevention programs	Police infringement and reward schemes to prevent arson. various awareness campaigns and information packages	DFES WAPOL	Shire of Katanning General Public	Participation as required. The Shire participates in campaigns for arson prevention. The LG assists in the promotion of Arson prevention campaigns
10	Public School Bushfire Management	A plan designed to assist staff to prepare for a total fire ban, catastrophic fire danger rating, or a bushfire.	Dept of Education	DFES Shire of Katanning	This plan was developed in accordance with the Emergency and Critical Incident Management Policy

Appendix B – Communication Plan

This Communication Plan supports the development, implementation and review of the Shire of Katanning Bushfire Risk Management (BRM) Plan. It should document the:

- Communication objectives.
- Roles and responsibilities.
- Key stakeholders engaged in the development of the BRM Plan and Treatment Schedule.
- 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.

Communication objectives

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

Roles and responsibilities

Shire of Katanning is responsible for the development, implementation and review of the Communication Plan. Key stakeholders support the local government by participating the Communication Plan as appropriate. An overview of communication roles and responsibilities follows:

- CEO Shire of Katanning is responsible for requesting OBRM endorse the BRM Plan.
- Community Emergency Services Manager for Shire of Katanning is responsible for communication of the BRM Plan to the community.

- *Community Emergency Services Manager for Shire of Katanning is responsible for communication between the Shire and the Department of Fire and Emergency Services.*

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 Katanning (Inc BFB, BFAC & LEMC)	• Asset owner & vested Reserves • Bushfire Risk Management Plan Custodian • Responsible for development, implementation and review of treatments as a proprietor and land manager.	High	Inform, Educate, Collaborate, Empower
Local Governments bordering the Shire of Katanning	• Shared Experience	Low	Inform
Department of Fire and Emergency Services (Inc Brigades, OBRM & BMB)	• Asset Owner & Land Manager • Bushfire Risk Management Plan Governance and Advice • Support role in treatment implementation • Responsible for development, implementation and review of treatments as a Land Manager.	High	Inform, consult, involve, collaborate
Department of Biodiversity, Conservation and Attractions	• Vested Reserves & Land Manager • Bushfire Risk Management Plan Consultation and Advice • Responsible for development, implementation and review of treatments as a Land Manager.	High	Inform, consult, involve, collaborate
Department of Planning, Lands and Heritage	• Vested Reserves • Land Management Governance and Advice	Low	Inform & consult
Department of Water and Environmental Regulations	• Land Management Governance and Advice	Low	Inform & consult

Water Corporation	• Asset Owner, Vested Reserves & Land Manager • Bushfire Risk Management Plan Consultation and Advice	Medium	Inform, consult, involve, collaborate
Main Roads	• Asset Owner, Vested Reserves & Land Manager • Bushfire Risk Management Plan Consultation and Advice • Critical Infrastructure Owner	Medium	Inform, consult, involve, collaborate
Western Power	• Asset Owner, Vested Reserves & Land Manager • Bushfire Risk Management Plan Consultation and Advice • Critical Infrastructure Owner	Medium	Inform, consult, involve, collaborate
Public Transport Authority	• Asset Owner, Vested Reserves & Land Manager	Medium	Inform, consult, involve, collaborate
Catholic Education Western Australia	• Asset Owner, Land Manager	Low	Inform, consult, involve, collaborate, empower
Telstra	• Asset Owner, Land Manager	Medium	Inform & consult
Asset Owners, Business Owners, Private Land Owners & Katanning Community	• Asset Owner, Land Manager	High	Inform, consult, involve, collaborate, empower

Contact Information for Key Stakeholders

In the context of BRM planning, this table provides contact details for key stakeholders who have a significant role in planning, implementation, and review, or who will be greatly affected by the outcomes.

Stakeholder	Point of Contact/Position	Contact Email	Contact Number
CBH	Timothy Roberts Lead - Planning and Approvals	Timothy.Roberts@cbh.com.au	(08) 9216 6061
Department of Biodiversity, Conservation & Attractions	Mitch Davies Regional Operations Manager	mitchell.davies@dbca.wa.gov.au	0427 193 556
Forest Products Commission	Albany Office	info@fpc.wa.gov.au	98 455630
Main Roads	Cameron Linton Vegetation Manager – Great Southern Region	cameron.linton@mainroads.wa.gov.au	0467 784 037
Public Transport Authorities	Mudji Nielsen Land & Property Administrator	mudjijono.nielsen@pta.wa.gov.au	0477 927 461
Telstra	Andy Boutell Emergency Services Liaison Officer	andrew.boutell@team.telstra.com	N/A
Water Corporation	Natalie Nazzari Senior Advisor Customer and Stakeholder - Great Southern Region	Natalie.Nazzari@watercorporation.com.au	0436 933 609
Western Power		No email contact available	13 10 87 or 13 13 51

Communications log

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, recording any significant conversations, community engagement events, emails, meetings, presentations, workshops and other communication initiatives.

Development of the BRM Plan

Timing of Communication	Stakeholders	Purpose	Summary	Communication Method	Lesson Identified	Follow up
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?
Oct 2022 - Current	DFES/OBRM/BRMB	BRMP Development	Development of BRMP	Email/Teams Meetings/Phone call	N/A	Ongoing for support and advice
Oct 2022 - Current	Shire of Katanning (inc BFB/BFAC)	BRMP Development	Development of BRMP	Email/Teams Meetings/In person Meetings/Phone call	N/A	Ongoing for support, feedback and advice
Jan 2023	Mainroads	Identify point of communication	Contribution to BF risk within SoKA	Email	N/A	Yearly follow up
Mar 2023	Dept of Biodiversity, Conservation and Attractions	Identify point of communication	Contribution to BF risk within SoKA	Email Phone call In person Meeting	N/A	Yearly follow up
Dec 2022	Forest Product Commission	Identify point of communication	Contribution to BF risk within SoKA	Email Phone call	N/A	Yearly follow up
Jan 2023	Water Corporation	Identify point of communication	Contribution to BF risk within SoKA	Email	N/A	Yearly follow up
Jan 2023	Western Power	Identify point of communication	Contribution to BF risk within SoKa	Email	N/A	Yearly follow up

March 2026	Shire of Katanning	Review of current BRMP	Changes and Updates to current BRMP	Email	Yes, current Plan is very difficult to update due to the way it was cut and pasted together.	Yearly follow up

Communication Plan

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

Timing of Communication	Stake Holders	Communication Objective	Communication Method	Key Message	Responsibility	Identify Risks	Risk Management	Monitor and Evaluate
Life of the Plan	DFES OBRM/BRMB	All	Emails Teams Meetings Phone call	Inform Consult Progress	CEO or Delegate	• Time constraints. • No clear message. • Incorrect audience. • Conflicting priorities.	• Careful planning. • Time management.	Feedback, question and level of support received.
Life of Plan	Shire of Katanning (BFB and BFAC)	All	Email, In person meetings. Phone call	Inform, Consult, Progress.	CEO or Delegate	• Time constraints. • Availability. • Lack of understanding. • Budget • Resourses • Stakeholder willingness to participate.	• Preparation • Time management. • Clarity and understanding and intension of plan.	Feedback, question and level of support received.
Life of Plan	Other significant stakeholders		Email In person meeting. Phone call. Community Engagement.	Inform, Consult, Progress	CEO or Delegate	• Time constraints • Availability • Lack of understanding • Resourses • Stakeholder willingness to participate	• Preparation • Time management • Clarity misunderstanding and intensions of plan	Feedback, questions and level of support received.

Appendix C – Annual review checklist

Correspondence

☐	Cover letter from local government Chief Executive Officer or delegate to Director OBRM with this form completed and attached.

Bushfire Risk Management Plan

Chapter 1	☐	BRM Plan objectives are still relevant.
Chapter 3	☐	Content of 'Local government and community context' reflects current bushfire risk to community and local economy.
	☐	Content of 'Environmental and bushfire context' reflects current factors of bushfire hazard and describes environmental values within local government area.
Chapter 4-7	☐	Figures and tables have been updated to reflect current data in Bushfire Risk Management System (BRMS).
Chapter 6	☐	Treatment Strategy informed by community values and local strategic priorities.
Appendix A	☐	Local government wide controls includes current non-asset specific treatment programs in local government area.
Appendix B	☐	Communication Plan has been updated to include planned stakeholder engagement and communication activities for the next planning period.

Bushfire Risk Management System

☐	Significant assets are accurately mapped in BRMS.
☐	Risk assessment data is current and accurate.
☐	Post treatment risk assessments have been completed.
☐	The Treatment Schedule includes planned treatments for at least the next 12 months.