



Shire of Cranbrook

BUSHFIRE RISK MANAGEMENT PLAN

2021-2026

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Document Control

Document name	Shire of Cranbrook Bushfire Risk Management Plan	Current version	1.2
Document owner	CEO Shire of Cranbrook	Issue date	DD/MM/YYYY
Document location	Shire Office	Next review date	DD/MM/YYYY

Document Endorsements

The Shire of Cranbrook Council endorses that the Bushfire Risk Management Plan (BRM Plan) has been reviewed and assessed by the Office of Bushfire Risk Management as consistent with the standard for bushfire risk management planning in Western Australia, the Guidelines for Preparing a Bushfire Risk Management Plan. The Shire of Cranbrook is the owner of this document and has responsibility, as far as is reasonable, to manage the implementation of the BRM Plan and facilitate the implementation of bushfire risk management treatments by risk owners. The approval of the BRM Plan by Shire of Cranbrook Council satisfies their endorsement obligations under State Hazard Plan Fire.

Local Government	Representative	Signature	Date
Shire of Cranbrook	Garry Adams – A/CEO		

Version	Date	Author	Section
1.1	March 2021	Ben Anderson	Draft BRMP
1.2	June 2021	Ben Anderson	Draft Plan after review from DFES

Publication Information

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In approving this BRM Plan, the Shire of Cranbrook is acknowledging the assets that have been identified and the risk ratings and treatment priorities assigned. Endorsement of the plan is a commitment by the Shire to work with landowners and managers to address unacceptable risk within the community. Endorsement of this plan is not committing the Shire to a program of treatment works to be implemented by others, or an acceptance of responsibility for risk occurring on land that is not owned or managed by the Shire. ¹

¹ Guidelines for Preparing a Bushfire Risk Management Plan, November 2015, Page 79

1. Introduction

1.1. Background

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

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

1.2. Aim and Objectives

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

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

1.3. Legislation, Policy and Standards

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

1.3.1 Legislation and Policy

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

1.3.2 Other Related Documents

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

1.3.3 Shire of Cranbrook References

- Shire of Cranbrook - Corporate Business Plan 2021-2025
- Shire of Cranbrook – Local Planning Strategy 2016-2023
- Shire of Cranbrook - Strategic Community Plan 2021-2031
- Shire of Cranbrook – Bushfire Brigades Local Law
- Shire of Cranbrook – Local Emergency Management Arrangements 2016-2021
- Western Australia Government Heritage Listed sites – Heritage Council

2. The Risk Management Process

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

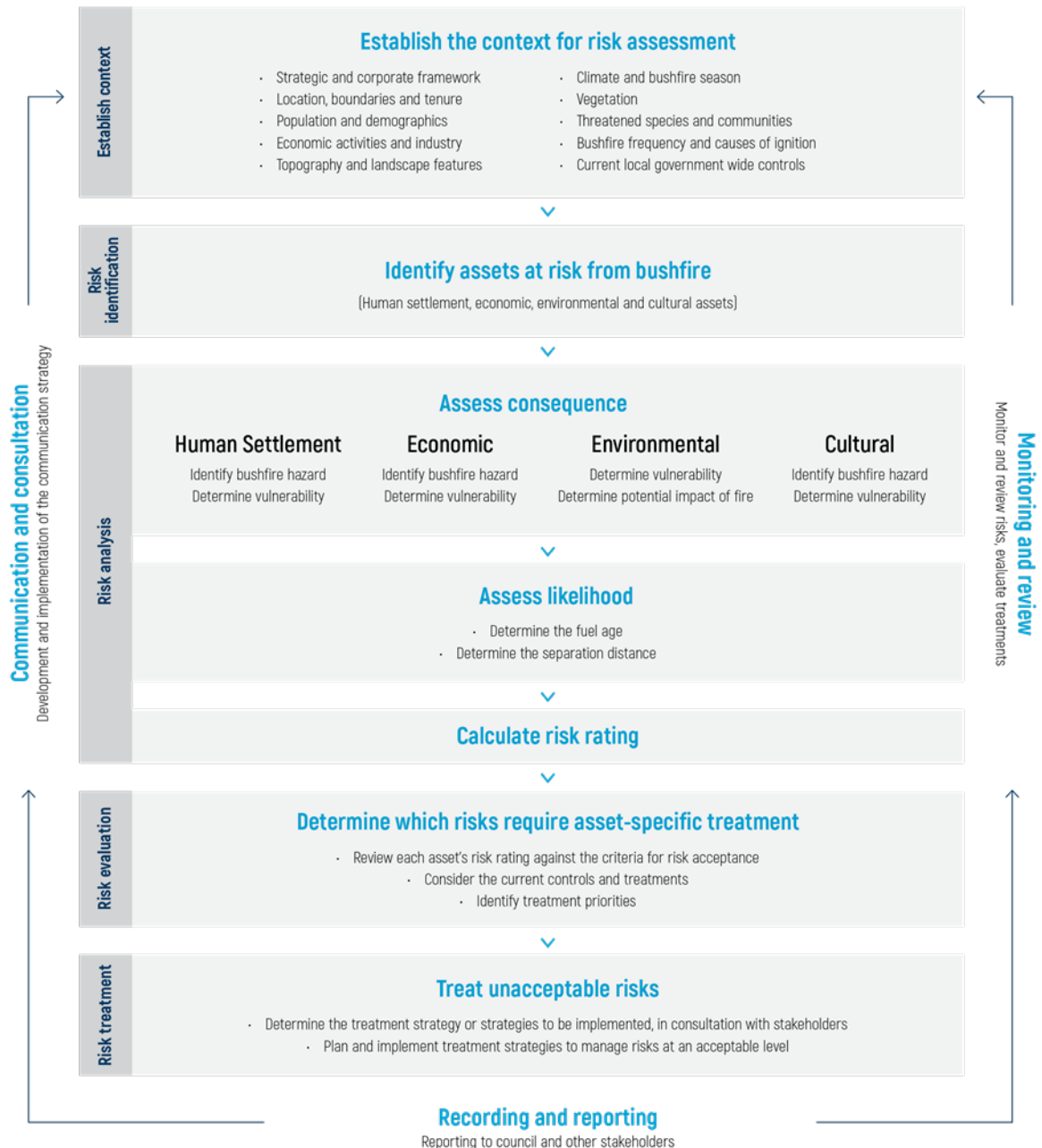


Figure 1 – An overview of the risk management process ²

² Adapted from: *AS/NZS IOS 31000:2009*, with permission from SAI Global under licence number 1510-c081.

2.1. Roles and Responsibilities

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

Table 1 – Roles and Responsibilities

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

Stakeholder Name*	Roles and Responsibilities
Department of Biodiversity, Conservation and Attractions	<ul style="list-style-type: none"> • Participate in and contribute to the development and implementation of BRM Plans. • Provide advice for the identification of environmental assets that are vulnerable to fire and planning appropriate treatment strategies for their protection. • Undertake treatments on department managed land, and Unmanaged Reserves and Unallocated Crown Land outside gazetted town site boundaries and land in which they have an agreement for.
Forest Products Commission	<ul style="list-style-type: none"> • Participate in and contribute to the development and implementation of BRM Plans. • Provide information about their assets and current risk treatment programs. • Undertake treatments on lands owned or managed by them.
Department of Planning, Lands and Heritage	<ul style="list-style-type: none"> • Provide advice for the identification of their assets and infrastructure, specifically Aboriginal and European heritage.
Other State and Federal Government Agencies and Public Utilities	<ul style="list-style-type: none"> • Provide information about their assets and current risk treatment programs. • Participate in and contribute to the development and implementation of BRM Plans. • Undertake treatments on lands they manage.
Corporations and Private Land Owners	<ul style="list-style-type: none"> • Provide information about their assets and current risk treatment programs.

2.2. Communication and Consultation

Communication and consultation throughout the risk management process is fundamental to the development, implementation and review of the BRM Plan. To ensure appropriate and effective communication occurred with relevant stakeholders at each stage of the BRM planning process, a *Communication Strategy* was prepared (Appendix 1).

3. Establishing the Context

3.1. Description of the Local Government and Community Context

3.1.1 Strategic and Corporate Framework

The Shire of Cranbrook Corporate Business Plan (2021-2025) outlines the Shire's commitment to community safety, risk management and effective management of the environment and natural resources. This is reflected in the Shire's values and mission:

Our Vision: "Our region is a Proactive, Sustainable, Safe, Friendly and Prosperous place to be" ³

This BRM Plan aims to strengthen the Shire's capacity to achieve its overall corporate vision and goals, by encouraging community organisations, businesses and local communities down to the individual level to work together to reduce bushfire risk. It aims to provide guidance on prioritising treatment strategies for mitigation of bushfire-related risks. This approach allows the responsible land holders to allocate limited resources most effectively, in order to lower the inherent risk, to a more acceptable level.

On review of the Strategic Community Plan, the following key result areas, activities and objectives are identified as having relevance to the objectives of this BRM Plan:

1. Live ⁴

Outcome 1: Community: *A safe and friendly community that is well known for support;*

Outcome 2: Utilities: *A strong base for modern living with adequate amenities such as water, energy, roads and digital.*

In the context of the BRM Plan, the Shire recognises and values the efforts and dedication of the members of the local volunteer emergency services brigades and is committed to providing the necessary support and resources to enable them to respond to bushfires.

³ Source: Shire of Cranbrook Corporate Business Plan 2021-2025

⁴ Source: Shire of Cranbrook Strategic Community Plan 2021-2031, Page 16

2. Visit⁵

Outcome 9 Experiences: *A well-defined and celebrated community activity program for locals and visitors*

Outcome 10 Tourism: *A strong positioning as a destination for external visitors.*

3. Work⁶

Outcome 7: *A business system is well-functioning through partnerships and alliances.*

Outcome 8: *Attracted new business and industry to our region.*

4. Connect⁷

Outcome 14: Environment: *A connected community driving a united contribution to the environment both locally and globally.*

Outcome 16: High-performing local shire: *An accountable and respected Local Shire, investing in its people and structures.*

In the context of this BRM Plan, the Shire of Cranbrook is committed to addressing bushfire risks and working with stakeholders to reduce this risk and will do so in a way to minimise negative impacts upon the environment.

In the context of this BRM Plan, the Shire of Cranbrook is committed to engaging with the community and stakeholders on matters related to bushfire risk management and maintaining compliance with bushfire related legislation including the responsible expenditure of any mitigation grant funding.

Together with the Shires of Kojonup and Gnowangerup, the Shire of Cranbrook has access to the services of a Community Emergency Service Manager (CESM). A significant role of the CESM is to ensure the Shire's volunteer Bush Fire Brigades and emergency services volunteers are supported, trained, equipped and capable of providing appropriate emergency services to the community. The CESM position will take a key role throughout the implementation, monitoring and review of the BRM Plan once the plan is endorsed. The following table (*table 2*), reflects the functions and positions within the Shire of Cranbrook critical to the successful achievement of the objectives of this BRM Plan.

⁵ Source: Shire of Cranbrook Strategic Community Plan 2021-2031, Page 20

⁶ Source: Shire of Cranbrook Strategic Community Plan 2021-2031, Page 18

⁷ Source: Shire of Cranbrook Strategic Community Plan 2021-2031, Page 22

Table 2 – Functions/positions within Shire of Cranbrook critical to the Bushfire Risk Management Plan

Function	Roles
Shire of Cranbrook Executive Management Team	<ul style="list-style-type: none"> • Oversight of the implementation, monitoring and review of the Bushfire Risk Management Plan • Sourcing and approving funding and expenditure • Monitoring the implementation of agreed treatments • Liaison with key stakeholders • Participation on Local Emergency Management Committee (LEMC) • Management of the release of BRMS Plan and BRMS data
Community Emergency Service Manager (CESM)	<ul style="list-style-type: none"> ▪ Performs work on Shire managed or owned land or as directed by the Shire ▪ Develops practices for fire management on Shire land ▪ In consultation, plans the Shire’s annual schedule of works ▪ Builds knowledge and understanding of fire management practices within the community ▪ Supports bushfire meetings and committees, including the Bushfire Advisory Committee (BFAC) ▪ Oversee the Shire’s burning programs and coordinates support from local brigades ▪ Negotiates with stakeholders ▪ Applies for Mitigation Activity Funding (MAF) ▪ Coordinates and manages MAF
Works Department	<ul style="list-style-type: none"> ▪ Contributes to treatment planning ▪ Undertake planned works
Town Planning	<ul style="list-style-type: none"> ▪ Ensure adherence to building codes and planning scheme, including application of SPP 3.7 ▪ Reviews the Shire’s Bushfire Prone Area mapping
Finance	<ul style="list-style-type: none"> ▪ Providing advice, supporting administration of funding

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

The BRM Plan will assist by improving the community’s awareness of bushfire risk and treatment activities planned in their area. Identification of treatment priorities will support the Shire’s forward planning and budgeting for treatment activities within the BRM Plan area.

The Shire has a scheduled annual works program and proactively addresses risks identified on Shire managed land, within their budgetary constraints. The Shire has identified a number of priority areas that need to be considered in BRM planning, both in the context of this BRM Plan and beyond. These include:

- Limitations of water access for bushfire response and mitigation activities.
- Bridges – these have been identified as a significant risk due to the replacement cost and the potential economic impact if transport routes are interrupted for extended periods. The bridges in the Shire are predominantly timber construction.
- Management of reserves around the town boundary
- Management of Unallocated Crown Land (UCL) and Unmanaged Reserves (UMR) both within and outside town boundaries in conjunction with DFES and DBCA.
- Vegetation in and around critical infrastructure, such as communications towers, power network infrastructure, water pipelines, water and waste water pumping stations and the railway.

These priority areas have been identified from matters raised through corporate governance processes such as Council, the Local Emergency Management Committee, the Bushfire Advisory Committee and via local knowledge.

3.1.2 Location, Boundaries and Tenure

The Shire of Cranbrook covers an area of 3,392 km² located in the Great Southern region of Western Australia as depicted in figures 2 and 3. The administration centre of the Shire is the town of Cranbrook, 323 km from Perth and 96 km north of the regional centre at Albany.

Other established townsites in the Shire are Frankland River and Tenterden. Frankland River is at the centre of major viticulture, plantation forestry, and horticulture industries. Cranbrook, Frankland River and Tenterden all support extensive broad acre and increasing intensive agriculture across the Shire.⁸

⁸ Source: *Shire of Cranbrook Local Planning Strategy, July 2019, Page 13*

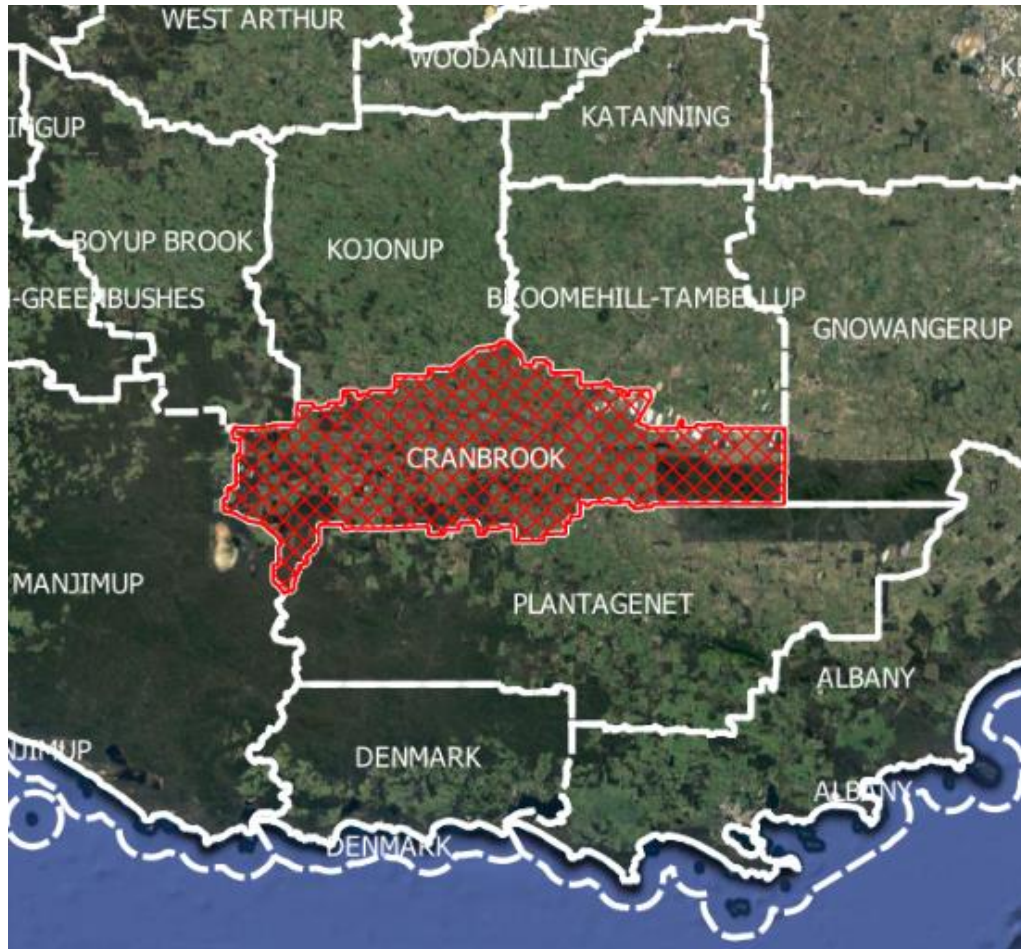


Figure 3: Map reflecting the Shires adjoining the Shire of Cranbrook ¹⁰

An overview of the Shire’s land tenure and management are shown in Table 3. The Shire is made up of a mosaic of land tenures. Table 3 reflects 76.11% of land tenure is private ownership with the majority of this used for agricultural purposes, predominantly broad acre farming. The private land holdings are predominantly owned by local families with fewer landowners owning larger parcels of land. Fires may impact on multiple tenures and move through multiple properties; some of the related challenges include:

- If one landholder does not act in accordance with the Shire’s local laws this can increase the risk to other landowners, particularly those on adjoining properties.
- The loss of one farm can have significant economic and social implications for the Shire.
- There needs to be consideration given to balancing the impacts of mitigation and risk reduction in the context of productivity and associated costs.

¹⁰ Source: Map data QGis, Google image 2019

Table 3 – Overview of Land Tenure and Management within the Shire of Cranbrook ¹¹

Land Manager/Agency	Percent of Local Government Area
Private	76.11%
Department of Biodiversity, Conservation and Attractions	15.82%
Department of Planning, Lands and Heritage (Leased to Private)	3.80%
Department of Water and Environmental Regulation	1.72%
Local Government (Road Reserves)	1.59%
Local Government (Vested)	0.69%
Other Government Departments	0.15%
Department of Fire and Emergency Services (UCL/UMR)	0.12%
Total	100%

3.1.3 Population and Demographics

From 2016 census data the Shire of Cranbrook has a population of 1,107¹² with agriculture (predominately cropping) being the primary land use.

When comparing the Shire’s demographic to Western Australia, (reflected by the dotted green and yellow lines in figure 4) there is lower proportion of younger residents in the 15 – 34 year old age, with many in this group leaving for schooling and early career opportunities. Making up 20.4% of the resident population, children under 14 are the largest single demographic, indicating a need for childhood related services. With the number of residents aged between 25 and 59 making up 43.8%¹³ of the resident population.

The low population numbers overall mean that there is a limited availability of bushfire brigade volunteers, with pressure further increased when considering the broad competing priorities associated with smaller rural communities. This is a key consideration for the Shire, particularly given that the Shire’s annual burning programs rely heavily on the support provided by volunteers. As seen in many wheatbelt and farming communities, the Shire has a strong turnout of farmer firefighting units during fire events, with many local residents stepping forward to support their community. There is large scope for the growth, development and leadership of this community and there may be an opportunity, through the CESM position, to engage with this sector to potentially:

- *Improve the management of, and support provided to Bush Fire Brigade volunteers;*
- *deliver training or education programs;*
- *identify volunteer organisations that spontaneous volunteers could be referred to during an emergency.*

¹¹ Source: Department of Fire and Emergency Services Geographical Information Systems Section using SLIP data

¹² Source: ABS Census 2016

¹³ Source: ABS Census 2016, <https://quickstats.censusdata.abs.gov.au/>

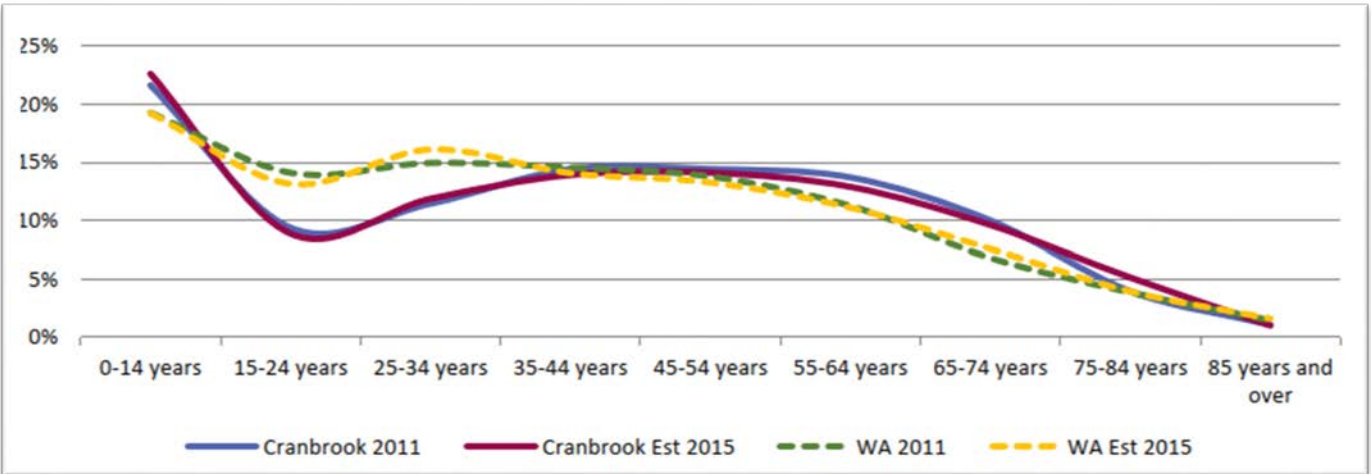


Figure 4: Shire of Cranbrook Resident Population by Age Group ¹⁴

The continued trend of an aging population is likely to impact the capability and availability of volunteers to respond to bushfires. The Shire will need to review current methods for the attraction and retention of volunteers, with a particular focus on encouraging younger members of the community to volunteer with brigades, as well as ways to retain aging volunteers through the promotion of other roles or volunteer organisations that suit their skills and capabilities.

The statistics show a lower number of residents (5.8%) than the State average (12.6%) in the 15 – 24 age bracket, which is most likely the result of teenagers and young adults leaving town for further education and/or employment. These residents often return to the community, or similar communities, when they have young families of their own, seeking a similar early life experience to what they enjoyed.

The demographics of the Shire of Cranbrook present a range of challenges for bushfire management. 42.4% of the population are in vulnerable groups (under 14 or over 65) which require special consideration in the context of emergency management planning.

The number of residents within the 0 – 14 age group (20.4%) indicates that delivery of a school-based program may be of benefit for early engagement and increasing understanding of home bushfire awareness. Children can influence behaviour changes within families and increasing awareness within the school environment via DFES’ current school-aged education programs could result in increased awareness throughout the community. There are many other established community networks and groups that could be identified and engaged in targeted bushfire risk and preparedness education using DFES’ bushfire programs and resources.

¹⁴ Source: Cranbrook Strategic Resource Plan 2017 – 2032, July 2017, Page 7

The over 65 age group accounts for 22% of the population. Elderly people are considered a vulnerable demographic in bushfire management, as they may have less capacity to prepare and defend property or protect themselves during a fire event and may have additional or special needs during evacuation and relocation. Because of this, there is need for increased planning for this group to ensure that they are adequately considered in bushfire management planning, communications during fire events, community education program delivery and consultation when planning mitigation works. There is a need to ensure that there is tailored advice provided to this group during pre-fire season preparation, as well as during bushfire events.

Table 4: Population within the Shire of Cranbrook¹⁵

Age	Cranbrook (WA)	%	Western Australia	%	Australia	%
Median age	46	--	36	--	38	--
0-4 years	33	6.6	161,727	6.5	1,464,779	6.3
5-9 years	40	8	164,153	6.6	1,502,646	6.4
10-14 years	29	5.8	150,806	6.1	1,397,183	6
15-19 years	18	3.6	149,997	6.1	1,421,595	6.1
20-24 years	11	2.2	160,332	6.5	1,566,793	6.7
25-29 years	26	5.2	184,908	7.5	1,664,602	7.1
30-34 years	28	5.6	194,267	7.9	1,703,847	7.3
35-39 years	28	5.6	173,041	7	1,561,679	6.7
40-44 years	24	4.8	171,996	7	1,583,257	6.8
45-49 years	38	7.6	172,520	7	1,581,455	6.8
50-54 years	26	5.2	162,438	6.6	1,523,551	6.5
55-59 years	49	9.8	149,899	6.1	1,454,332	6.2
60-64 years	40	8	132,145	5.3	1,299,397	5.6
65-69 years	38	7.6	116,755	4.7	1,188,999	5.1
70-74 years	30	6	82,911	3.4	887,716	3.8
75-79 years	24	4.8	61,509	2.5	652,657	2.8
80-84 years	8	1.6	42,590	1.7	460,549	2
85 years and over	10	2	42,420	1.7	486,842	2.1

¹⁵ Source: ABS Census 2016, <https://quickstats.censusdata.abs.gov.au>

3.1.4 Economic Activities and Industry

The main economic activity of the region is agriculture. The focus is mainly on wheat, barley, oats, canola and lupins, sheep (wool and meat), pigs and beef cattle, vineyards and wine, timber and olives. The main employment industry for the Shire is agriculture, forestry and farming, with 55.1% of the workforce employed in this sector. Other significant employment sectors include Manufacturing (10.3%), Public Administration and Safety (6.6%), Education and Training industry (5.2%) and Transport, Postal and Warehousing (3.5%).

Table 5: Industry of employment within the Shire of Cranbrook ¹⁶

Industry of Employment	Total	%
Agriculture, Forestry and Fishing	284	55.1
Manufacturing	53	10.3
Public Administration and Safety	34	6.6
Education and Training	27	5.2
Transport, Postal and Warehousing	18	3.5
Construction	15	2.9
Accommodation and Food Services	13	2.5
Health Care and Social Assistance	13	2.5
Wholesale Trade	10	1.9
Retail Trade	7	1.4
Other Services	5	1.0
Professional, Scientific and Technical Services	4	0.8
Financial and Insurance Services	3	0.6
Arts and Recreation Services	3	0.6
<i>Inadequately described/Not stated</i>	26	5.0
Total	515	100

¹⁶ Source: ABS Census 2016, <https://quickstats.censusdata.abs.gov.au>

There has been a move to explore alternative crops throughout the broader Wheatbelt and Great Southern regions. Some crops (i.e. canola or rapeseed) burn at a higher temperature, which can be harder to extinguish than native pastures.¹⁷ The fire in Katanning (February 2020) highlighted the potential for a similar event to occur in Cranbrook due to the close proximity of agricultural land and vegetated reserves to the townsite boundary. Fires occurring on productive agricultural land can result in impacts such as the loss of top soil, which can reduce the soil condition and may take years for the soil quality to return to the pre-fire condition. This in turn can impact the quality of future crops and lead to increased operational costs.

Potentially, even the loss of an individual farm may have a long term economic and social cost to the Shire. In addition to the direct economic loss, the flow on impacts are great, for example families may leave the Shire, which in turn can impact local businesses through loss of their customer base, as well as reduce the number of people available to undertake or participate in volunteering.

Key transport links within the Shire of Cranbrook include the tier 2 railway line which runs north east from the Shire of Broomehill-Tambellup to the south into the Shire of Plantagenet and onto the port of Albany. The Albany Highway runs north-south through the middle of the Shire with the Great Southern Highway also running north-south through the eastern side of the Shire linking on to Albany highway at the town of Cranbrook.

A Strategic Grain Receival Bin is located in the town and has experienced significant growth in the past 10 years, resulting in it being one of the largest strategic grain receival points in the southern hemisphere. There is significant opportunity to value add to the grain product in Cranbrook, cleaning, drying and containerizing on site, reducing handling and increasing value, by shipping direct to Albany Port in containers.¹⁸

Any major road closure or infrastructure damage from a bushfire event can cause major disruption to industry and residents commuting between townships. The BRM plan identifies critical infrastructure vital to these transport corridors, with treatments to improve their protection to be included in the subsequent treatment schedule.

¹⁷ Department of Primary Industries and Regional Development www.agric.wa.gov.au

¹⁸ Source: Southern Link Transport Hub Strategic Vision, 2010, Page 5

3.2. Description of the Environment and Bushfire Context

3.2.1 Landscape Features and Topography

The agricultural areas of Western Australia are very diverse, with a wide range of soils and landscape features. The Shire of Cranbrook's landscape features are detailed in the Department of Agriculture and Food (WA) series '*Landscape and soils of the Narrogin District (2010)*'.

The geology of southern Western Australia, including the Shire of Cranbrook, is dominated by the Yilgarn Craton, which is a huge section of granitic bedrock underlying most of the wheatbelt. The Yilgarn Craton forms the Darling Plateau, which starts about 12 km north of the Cranbrook – Toolbrunup catchment study area. To the south, there is a gradual transition to the continental shelf, called the Ravensthorpe Ramp. The northern precincts of the Ravensthorpe Ramp form the southern margins of the Yilgarn Craton ¹⁹.

The ancient plateau composed mainly of granite, with intrusions of dolerite and capped with laterite. The north-west alignment of major rock bands of the Yilgarn Craton reflects its formation over many hundreds of million years as 'rafts' of land on tectonic plates collided to form bands of gneiss that were intruded by granites. Gneiss is a metamorphic rock with a banded or foliated structure, typically coarse-grained and consisting mainly of feldspar, quartz, and mica. Extensive faulting and uplifts on the south and west of the Yilgarn craton caused marked changes to slope and drainage patterns. Stresses associated with these events caused cracking and intrusion of the dolerite dykes that occur throughout the craton. These dykes can be locally significant as soil materials are frequently associated with mafic lateritic ridges. Outcrops are relatively common in dissected (rejuvenated) areas. ²⁰

A distinctive landscape feature in the south eastern corner of the Shire is the national heritage listed Stirling Range National Park. The total area of the national park is 115,920 hectares with approximately one quarter of the national park located within the Shire of Cranbrook. The elevational range of the national park peaks at 1,095m AHD at Bluff Knoll, down to 240m AHD at Salt Lake Nature Reserve on the northern side of the national park, dropping to about 160m AHD on the southern side as it blends into the agricultural land. Approximately 3 km east of Cranbrook town center is Sukey Hill lookout, the elevational range from the surrounding farmland at 290m AHD to a peak of 375m AHD at the lookout makes this a distinctive feature close to town. The lookout has spectacular views of the Stirling Ranges to the south east.

Outside of the Stirling Range National park the rest of the Shire topography is influenced by the Darling Plateau and the Ravensthorpe Ramp. The Ravensthorpe Ramp has a gradual southerly slope from about 350 m elevation near the southern edge of the Darling Plateau to sea level. The rivers draining to the South Coast are relatively short and are incised into the tilted surface of this ramp.

¹⁹ Source: Tim Overheu, *Cranbrook-Toolbrunup Catchment Appraisal Report, 2001, Dept of Agriculture and Food WA*

²⁰ Source: Sawkins, DN. (2010) *Landscape and soils of the Narrogin District, Dept of Agriculture and Food WA, 2010, Bulletin 4807*



Figure 5: View of the Stirling Ranges from Sukey Hill lookout

Topography can significantly influence bushfire behaviour, impeding access for suppression resources and limiting suitable options for mitigation, which makes it a significant factor in bushfire risk and management. The impact of topography is greater in the south east corner of the Shire, due to the Stirling Range which can restrict and, in some cases, prevent access by fire appliances. In areas where the rocky formations prevent ground based firefighting, direct attack of a fire is limited to aerial response or waiting until the fire reaches an area of suitable topography for ground crews to access. This may greatly increase the time taken for fire to be suppressed, which can allow fires to grow, resulting in larger, more destructive fires often with higher intensities and rates of spread. While these land formations can present challenges when installing firebreaks, the issue highlights the need for fuels to be broken up across the landscape using a range of suitable and sustainable strategies that provide low fuel buffers and firebreaks for use in fire suppression and mitigation.

A challenge for firefighting response is access and crossing landscape features during fire events, water ways and rail network all pose challenges to fire fighting vehicles moving through areas of the landscape. These features can often restrict movement with limited crossovers accessible. This is a significant consideration and limitation when responding to fires, but also when planning bushfire mitigation activities.

The waterways in the Shire are often corridors of riparian vegetation that create avenues for fires to travel and present challenges for access and crossing. Waterways including the Kent River, Gordon River and the Frankland River are areas where firefighters cannot easily cross and may have to travel some distance to be able to get to the other side. This can often result in a significant delay in firefighting response allowing fires to grow quickly with limited suppression under the influence of significant slopes. Valleys and slopes may also influence local weather patterns, such as rainfall, and create wind effects that can make fires hard to predict and control.

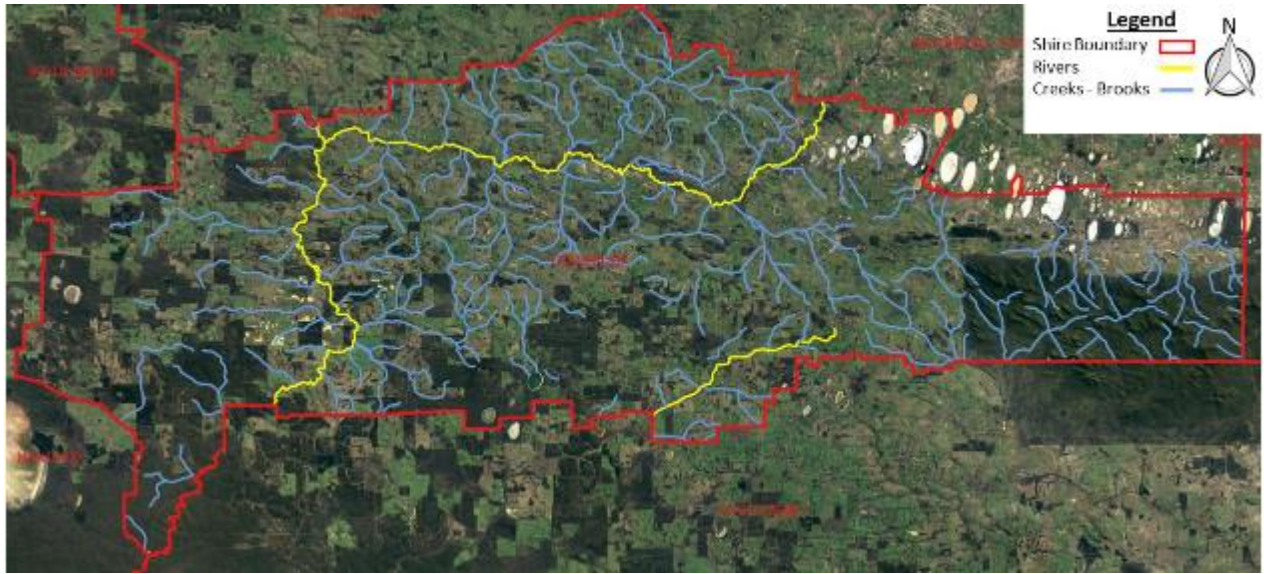


Figure 6: Map reflecting the river and creek systems within the Shire of Cranbrook ²¹

Given the prevalence of waterways, it is not surprising that there are 15 bridges throughout the Shire. These are critical features in the landscape, particularly for bushfire risk management. They form important transport routes for local traffic and tourism, as well as the movement of agricultural produce. Therefore, the local and regional economy can be adversely affected if bridges are damaged/destroyed by fire. In the context of emergency management, they are vital for the evacuation of communities and the movement of firefighting response vehicles as well. The BRM plan has identified the bridges, particularly timber bridges, as a significant risk for the Shire and they will be a priority for risk treatment.

Source: Map data QGis, Landgate Waterways, Google image 2019

3.2.2 Climate and Bushfire Season

The Shire of Cranbrook experiences a strong seasonal Mediterranean climate with cool, wet winters and dry hot summers. Most rainfall occurs in winter, when eastward moving low-pressure systems to the south of the continent generate cold fronts bringing fairly reliable winter rainfall. Rainfall is higher at the coast and decreases with distance inland, although the Stirling Ranges have a strong effect on local distribution. In summer there is sporadic rainfall from thunderstorms. Seasonal changes in temperature, rainfall and wind direction are marked and more extreme than coastal areas of the south-west.

Table 6 below shows the 5-year weather statistics for the Department of Agriculture Kendenup West (MB002) weather station, approximately 24 km south west of the Cranbrook town site.

Table 6: Yearly Climatic Conditions for Kendenup West within the Shire of Cranbrook ²²

Year	Min avg temp °C	Max avg temp °C	Avg temp °C	Rain mm	Rain days	Wind Avg Speed @3m	Wind Max Speed @3m	Wind Max Compass Point @3m	High wind days
2020	9.1	22.1	14.8	517	156	10	115	NNW	173
2019	8.5	22.5	14.6	433	139	10	114	NE	137
2018	9.0	21.7	14.5	481.8	161	10	127	NNE	81
2017	9.0	21.7	14.4	514.2	169	9	64	WNW	93
2016	7.0	18.2	11.9	474.6	154	9	61	WNW	74

Bushfire threat is typically associated with very hot (above average temperatures), dry (less than 20% humidity) and windy (above 12 – 15 Km per hour) conditions. Table 7 shows that on average the wettest months are May through September, when about 65% of the annual rainfall occurs ranging between 269 and 379 mm. The months highlighted show climatic variables for the region’s fire season (November to April). This shows the higher daily ambient temperature and lower rainfall, plus a higher evaporation range of 350mm to 1,699 mm during this period. Weather is the primary influence affecting fire behaviour and therefore needs to be a significant consideration when planning both mitigation and response activities.

²² Source: <https://weather.agric.wa.gov.au/station/MB002/>

Table 7: Monthly Climatic Conditions for Kendenup West weather station. ²³

Climate data for Shire of Cranbrook, Western Australia													
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Daily °C highest	42.1	39.2	35.7	34.9	29.1	22.7	21.2	23.8	27.3	32.9	38.2	39.4	42.1
Rain mm Avg	13.6	24.1	31.9	22.2	42.5	52.0	71.6	103.3	53.8	27.9	25.2	29.8	41.5
Rainy Days Avg	6.0	6.3	11.3	10.8	16.8	17.4	23.6	22.6	17.8	12.0	9.0	7.0	13.4
Wind @ 3m height Km/h Avg	11.3	12.0	10.8	9.0	8.6	9.0	9.2	8.6	8.2	9.0	9.6	11.0	9.7
Max Wind @ 3m height Km/h Direction highest	74 NNW	48.0 S	61.0 WNW	63.0 WNW	127.0 NNE	75.0 N	114.0 NE	78.0 N	61.0 WNW	115.0 NNW	58.0 SW	56.0 WNW	127.0 NNE

Wind Direction and Speed

Figures 7 and 8 reflects a series of wind roses covering the years 2017 – 2020 individually. All diagrams show prevailing winds predominantly from the South (S), South-South-West (SSW) and West-North-West (WNW) which is consistent with the movement of winter cold fronts and summer troughs.

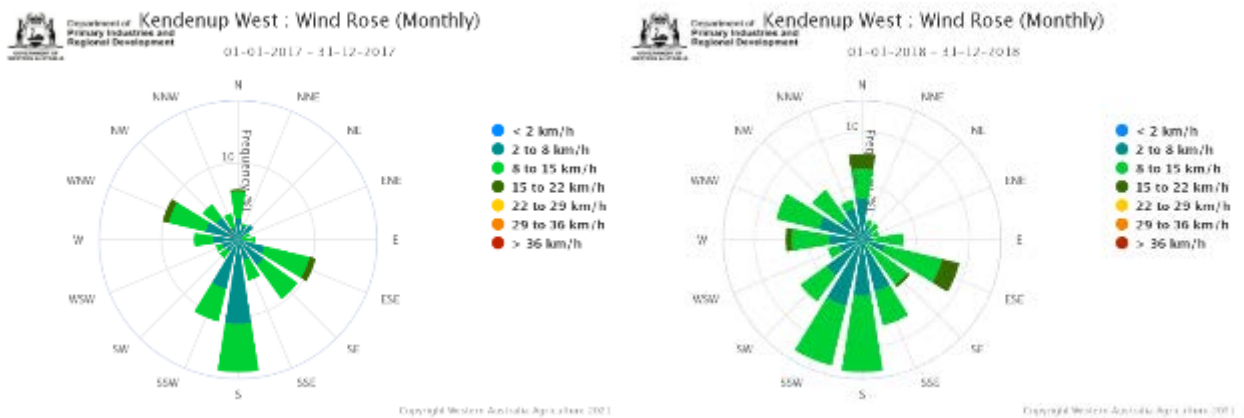


Figure 7: Wind roses reflecting the annual predominant winds and wind speeds for the years 2017 to Nov 2018. ²⁴

²³ Source: <https://weather.agric.wa.gov.au/station/MB002/monthly>

²⁴ Source: <https://weather.agric.wa.gov.au/station/MB002/daily>

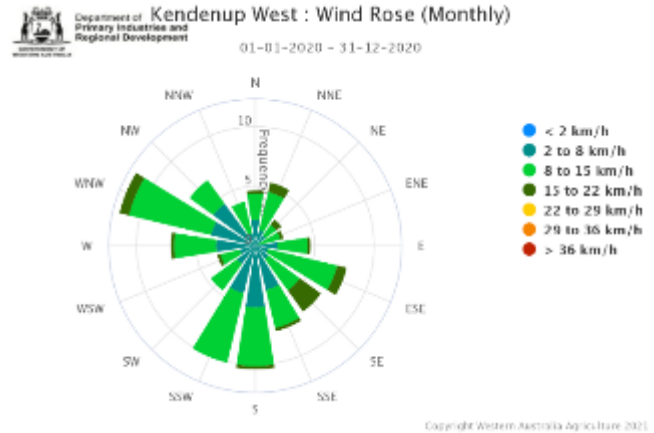
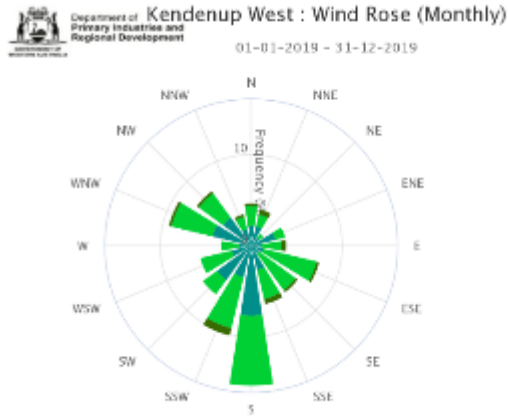
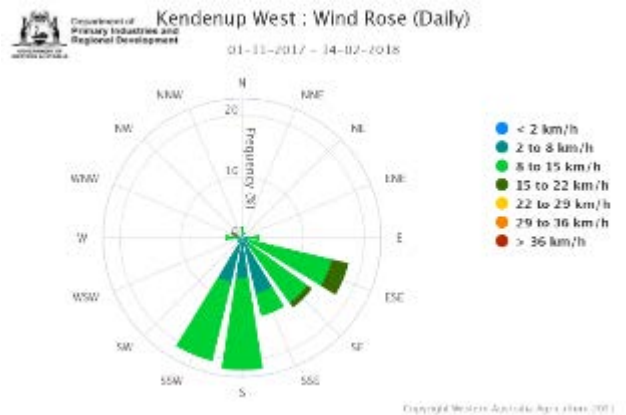
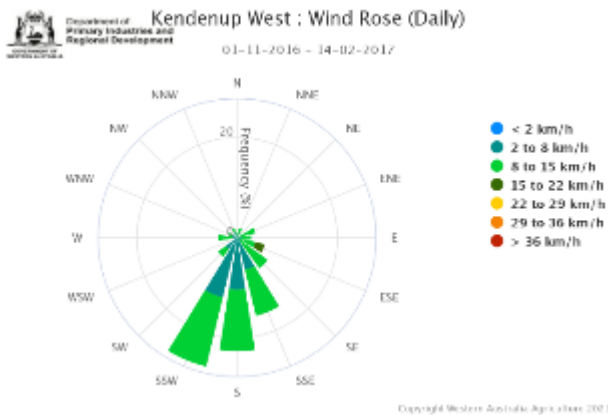


Figure 8: Wind roses reflecting the annual predominant winds and wind speeds for the years 2019 to Nov 2020.
25

The following diagrams look at prevailing winds in the context of the hotter months corresponding with the peak of the fire season – December through February. These wind roses also indicate winds predominantly from a southerly direction. The prevailing winds within the Shire of Cranbrook comes from the South-South-West in the mid-afternoon. This is well known by the fire response personnel and subsequently mitigation strategies are developed with this in mind.

While the mid-afternoon southerly influence is a common pattern, it's often the northerly winds and unstable patterns associate with summer troughs (or even a decaying northern cyclone) that cause the most erratic fire behaviour. Many of the bigger fires that have occurred in the area in the past, have had strong southward run under the influence of northern winds.



²⁵ Source: <https://weather.agric.wa.gov.au/station/MB002/daily>

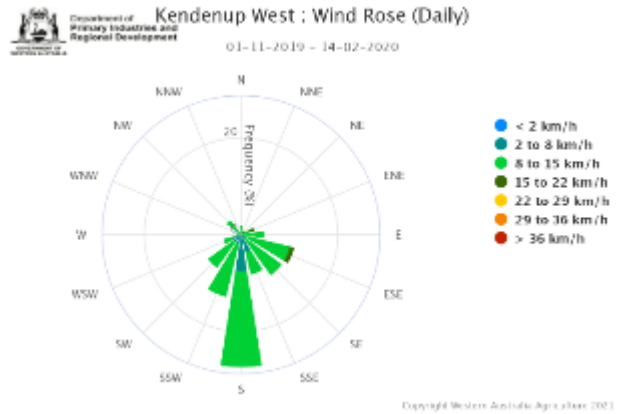
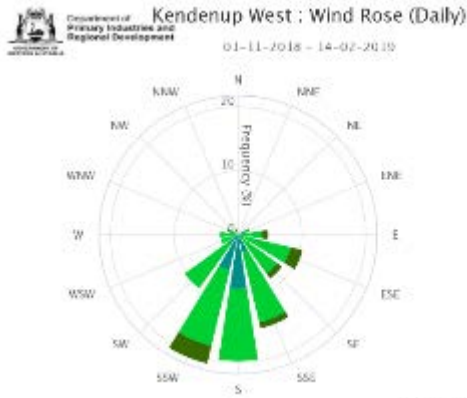


Figure 9: Wind roses reflecting the annual predominant winds and wind speeds for the years 2016 to 2020. ²⁶ (Prohibited Burning period 1 Nov to 14 Feb)

The Fire Danger Index (FDI) is based on a combination of different weather conditions acknowledged to influence the risk of dangerous bushfire conditions in Australia, including temperature, rainfall, humidity and wind speed. In addition to the weather, bushfire events are also influenced by factors such as vegetation conditions and terrain. When the FDI reaches 50 the Fire Danger Rating (FDR) is severe; when conditions reach 75 the FDR is considered extreme. The FDI is intended for use in examining broad-scale features in fire weather conditions for regions throughout Australia. FDRs provide a straightforward rating system to assist the community to understand the likely behavior of fires starting under the forecast conditions and make better decisions regarding their own prevention and preparedness activities.

²⁶ Source: <https://weather.agric.wa.gov.au/station/MB002/daily>

The Fire Danger Ratings are explained below:

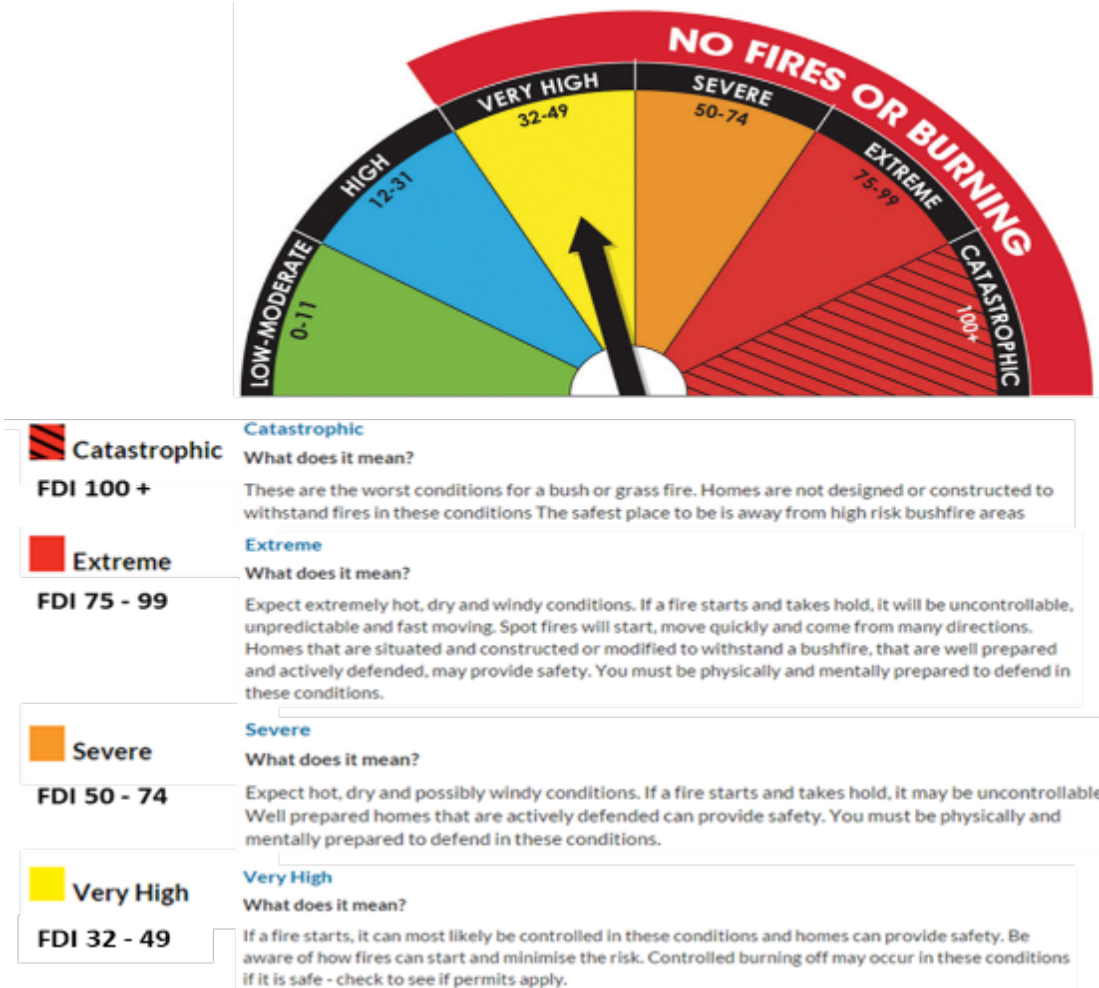


Figure 11: Fire Danger Ratings ²⁷

²⁷ Source: Department of Fire and Emergency Services www.dfes.wa.gov.au

3.2.3 Vegetation

The south-west of Western Australia is recognised internationally as a biodiversity hotspot, largely thanks to the species and communities found within the Stirling Range. At least 87 of those species are found nowhere else in the world including rare mainland quokkas. The Stirling Range National Park is known for its staggering range of wildflowers, more than 1,500 different species, some of which are found nowhere else. Wildflower species include Banksia, Dryandras, Queen Sheba Orchids and Mountain Bells.

Large portions of the Shire are dominated by agricultural land use and the natural vegetation has been extensively cleared. Most of the native vegetation is found in areas that are unsuitable for agriculture: the granite outcrops, breakaway country and saline areas.

The vegetation in the Shire of Cranbrook includes some Jarrah – Marri forest on the western boundaries with a range of cleared farming land and a mixture of woodland/forest vegetation, including Wandoo (*Eucalyptus Wandoo*), Drummond Mallee (*Eucalyptus Drummond*) and Marri (*Corymbia Calophylla*) towards the east. Soils in the western half are dominated by two main soil types. Yellow Podzolic soils consisting of shallow bleached sand over mottled olive to brown clays occur on the lower to medium slopes. These are typified by Marri (*Corymbia calophylla*), Jarrah (*Eucalyptus marginata*) and Jam (*Acacia acuminata*). On the upper slopes are Lateritic Podzolic soils dominated by gravely sandy loam over clays that occupy or are influenced by laterite remnants. Powder bark (*Eucalyptus accedens*), Marri (*Corymbia calophylla*) and Jarrah (*Eucalyptus marginata*) are the major tree forms. Towards the east, the slow flowing valley floors are occupied by saline shallow sand over clay duplex with York Gum (*Eucalyptus loxophleba*) being most common.²⁸



Figure 12: Jarrah – Mari Forest

²⁸ Source: Shire of Cranbrook Local Planning Strategy, July 2016, Page 37

Vegetation is one of the most significant influencers on fire risk and subsequently vegetation management is a key mitigation strategy.

Jarrah – Marri forests and Jarrah – Marri woodland generally have a prominent canopy and denser mid-story structure, thus having a lesser influence from wind at ground level. This generally would cause a bushfire to run at moderate rate of spread and a moderate spotting distance. Depending on the conditions, these fires will reach the canopy and become a crown fire.



Figure 13: Eucalypt woodland

Eucalypt woodland generally has more open structure, wind will have a greater influence on a bushfire at ground level. Thus, causing a bushfire to run at higher rate of spread and higher spotting distance compared to that of Jarrah – Marri forest. However, fuels will accumulate at a slower rate than denser types of forest vegetation

While agricultural holdings (grassland) may appear to be a low bushfire risk, this vegetation presents a significant bushfire hazard, especially during harvest season (November to January) when harvesting activities have the potential to ignite a fire in fully cured crops. The impact of wind on open terrain regardless of whether it is under crop, should not be underestimated. Fortunately, the landscape in much of the agricultural tenure is gently undulating with broad fields and only scattered remnant vegetation, making access for firefighting appliances easier.

Three aspects of vegetation within the Shire of Cranbrook that require specific attention, particularly in the context of selecting appropriate risk treatment options are:

1. The ability for Sheoak – e.g. *Allocasuarina Huegeliana* to invade areas of other native vegetation, significantly changing the vegetation and fuel structure. This is a common concern across the region with areas being significantly affected over time and, in the shorter term, from post fire regeneration.
2. The importance of managing annual weeds in remnant vegetation and the opportunity for these weeds to become established post mitigation works. Inappropriate fire regimes when burning small remnants can potentially result in higher fuel loads.
3. Waterways, particularly those in and around assets, offer riparian vegetation corridors that can produce a wick-like effect and are often associated with fire runs with marked changes in fire behaviour expected in this vegetation.

3.2.4 Threatened Ecological Communities

Native flora and fauna species together with ecological communities are significant values that require consideration in respect to bushfire risk management. Further, it is important that risk treatment activities do not have a detrimental impact to threatened species and ecological communities. For example, the breeding cycle of some threatened fauna, such as Numbats, may restrict the period in which prescribed burns can be undertaken due to the need to ensure nests are not disturbed during the breeding season. The map below (*Figure 14*) shows the indicative location of endangered Threatened Ecological Communities (TEC) in the Shire.

Risk treatments need to consider the requirements of the flora, fauna and communities on site. In the event of a bushfire, response strategies should be environmentally sensitive within the constraints of the incident. The Shire will take every opportunity to remind landowners/managers of their obligation to obtain appropriate clearances and approvals prior to commencing vegetation-based treatments.

A further consideration in relation to both bushfire prevention and response strategies is the potential spread of weeds or diseases such as *Phytophthora Cinnamomi* (dieback). Dieback is easily spread through moist soil movement from vehicles, animals, water and feet. Other fungal-borne diseases can also be spread through these pathways. These issues must be considered when planning treatment activities so the risk minimised wherever possible.

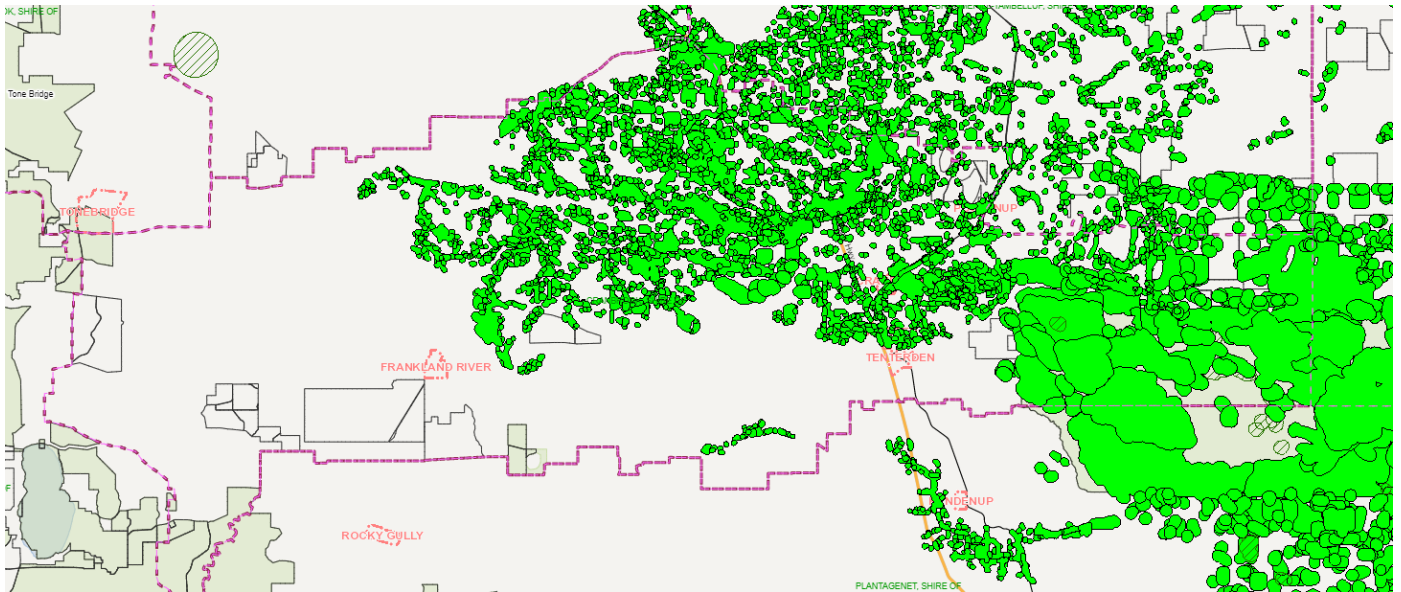


Figure 14: Map reflecting the location of Threatened Ecological Communities²⁹

The Shire of Cranbrook is within an area where the Eucalypt Woodlands of the Western Australian Wheatbelt TEC occurs (Figure 15). The Eucalypt Woodlands of the WA Wheatbelt has been registered as a federally listed TEC and is a registered Matter of National Environmental Significance (MNES) which provides national environmental protection.

The *Approved Conservation Advice (including listing advice) for the Eucalypt Woodlands of the Western Australian Wheatbelt* notes that altered fire regimes, notably changed fire frequency, but also changes to fire intensity and season, (such as occurs during prescribed burning) is a key threat to the ecological community. This indicates that there is a risk that a prescribed burn may have a significant impact on the threatened community. However, the Conservation Advice also notes that the response of the TEC to fire is site specific, that the TEC can benefit from an appropriate fire regime and that many responses to fire disturbance can be relatively temporary and/or minor. When planning treatments on tenure where the TEC occurs, particularly prescribed burns, the following should be considered:

- the extent to which the proposed clearing or controlled burn will remove or substantially damage tall Eucalypt trees which are a key component of the Eucalypt Woodlands TEC
- the extent to which the understory is likely to be impacted and/or recover after the fire event
- whether there is a risk that the controlled burn or clearing will facilitate the invasion and/or spread of fast colonising weed species benefiting from the temporary reduction in vegetative competition

²⁹ Source: DFES Bushfire Risk Management System

- control measures to implement to prevent the fire from intensifying or spreading; noting that a ‘hot’ burn is likely to substantially alter the vegetative structure or change the nature of the understory of the TEC (e.g. high intensity fires can scar trees allowing entry of wood decaying fungi)



Figure 15: Eucalypt Woodlands of the WA Wheatbelt ³⁰

³⁰ Source: *Eucalypt Woodlands of the Western Australian Wheatbelt*, Department of the Environment and Energy (August 2016)

3.2.5 Threatened and Priority Flora - Roadside Remnant Vegetation

Threatened flora species are of great conservation significance and should therefore be treated with special care when road and utility service, construction or maintenance is being undertaken. As of March 2015, there are seventeen species of threatened flora and forty-eight species of priority flora throughout the Shire of Cranbrook. Three species of threatened flora are found on four Shire managed roadside locations being, False plumed banksia (*Banksia pseudoplumosa*), Tall donkey orchid (*Diuris drummondii*) and Cranbrook pea (*Gastrolobium lehmannii*).³¹



Figure 16: False plumed banksia (*Banksia pseudoplumosa*) and Cranbrook pea (*Gastrolobium lehmannii*)³²

Eight species of priority flora are found on eleven Shire-managed roadside locations. There was also a new location of Priority 4 species spreading dryandra (*Banksia porrecta*) found during the surveys and a number of new locations of Duranillin tetraheca (*Tetraheca exasperata*) on Shire roadsides.



Figure 17: Duranillin Tetraheca (*Tetraheca exasperata*)³³

³¹ Source: *Roadside Vegetation and Conservation Values in the Shire of Cranbrook, May 2015, Page 15*

³² Source: <https://florabase.dpaw.wa.gov.au/browse/profile/32141> & 3908

³³ Source: <https://florabase.dpaw.wa.gov.au/browse/profile/31761>

3.2.6 Bushfire Frequency and Causes of Ignition

DFES' records show that from 1/07/2010 – 30/06/2020, a total of 51 landscape fire incidents were reported in the Shire of Cranbrook, reflecting on average 5 per year. Anecdotal evidence would suggest that this figure may not accurately reflect the true rate of occurrence, as there is a local belief that there have been other non-reported fires. Ongoing education is planned through pre-fire season briefings to local fire management personnel to improve the accuracy of incident reporting.

One of the most significant bushfires to have occurred in the Cranbrook district was the Tenterden Fire on the 27th December 2003. Tragically, two people lost their lives while trying to escape the fire, which caused over \$12 million damage in the Shires of Cranbrook and Plantagenet. Losses included over 15,000 head of livestock, 20 buildings (including two homes), 15 vehicles, 500km of fencing and 1,000 hectares of crops.³⁴

Table 8– Reported landscape fires in the Shire of Cranbrook 2010 – 2020 ³⁵

	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	TOTAL
All Bushfires	2	10	7	6	6	6	4	4	2	4	51
Unreported	2	5	5	4	4	4	3	0	1	1	29
Weather Conditions - Lightning	0	3	0	1	2	1	0	0	0	2	9
Vehicles (incl. Farming Equipment/Activities)	0	0	2	0	0	0	0	0	1	0	3
Equipment - Mechanical or electrical fault	0	1	0	0	0	0	0	0	0	0	1
Burn off fires	0	0	0	1	0	1	1	4	0	1	8
Undetermined	0	1	0	0	0	0	0	0	0	0	1

On review of the above ignition data, it is indicated that for the majority of landscape fires the cause is 'Unreported' by the attending fire personnel. From those incidents with a reported cause of ignition, lightning is the most frequent ignition source, followed closely by burn off fires. Local fire personnel make use of new technology such as phone apps (Lightning Tracker) to monitor lightning strikes within the Shire and surrounding areas. Bureau of Meteorology Weather Warnings are also widely circulated to fire personnel. Note: 'Unreported' - a known fire for which the ignition source was not provided to the incident reporting system. 'Undetermined' - the cause of the fire cannot be confirmed by responders.

³⁴ Source: FESA Annual Report 2003-04, 23rd August 2004

³⁵ Source: Department of Fire and Emergency Services, Risk - Capability and Analysis Department

3.2.7 Current Bushfire Risk Management Activities

Local Government Wide Controls are activities that reduce the overall bushfire risk within the Shire of Cranbrook. These types of activities are not linked to specific assets and are applied across all or part of the local government as part of normal business or due to legislative requirements. Some notable controls currently in place in the Shire of Cranbrook are outlined in the sections below.

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

Map of Bushfire Prone Areas

The intent of the WA Government’s Bushfire Prone Planning Policy is to implement effective risk based land use planning and development to preserve life and reduce the impact of bushfire on property and infrastructure. The *State Planning Policy 3.7 (December 2015) – Planning for Bushfire Prone Areas* ensures bushfire risk is given due consideration in all future planning and development decisions. This Policy does not apply retrospectively, however the BRM Plan can help address this risk for existing development by establishing an effective treatment plan to manage unacceptable community risks within the broader landscape. The Shire of Cranbrook’s Bushfire Prone Area is shown in Figure 18.

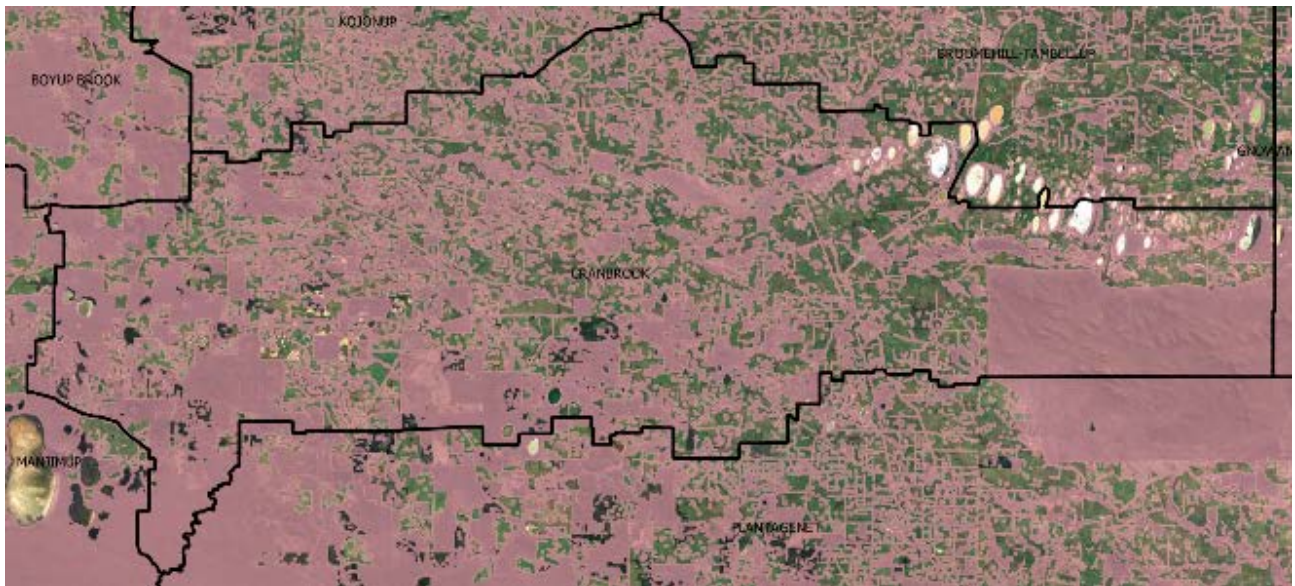


Figure 18: Map of Bushfire Prone Areas ³⁶ (Bushfire prone areas are shaded pink)

³⁶ Source: *Bushfire Risk Management System*

Volunteer Fire Brigades

The Shire has twelve Bush Fire Brigades and six fire appliances, as shown in Table 9 below.

Table 9– Bushfire Brigades and type of appliances

Brigade	Appliance Type
Bokerup/Unicup	2.4 broad acre & 4.4 broad acre
Cranbrook Central	Farmer Response
East Cranbrook	Farmer Response
Cranbrook Town	4.4 broad acre
Frankland Town	4.4 broad acre
Frankland River	Farmer Response
Gorden	Farmer Response
Kybellup	Farmer Response
Nunijup	Farmer Response
Tenterden	4.4 broad acre
Tunney	2.4 broad acre
Woolonaga	Farmer Response

The Shire of Cranbrook’s mobile plant is made available when required during periods of high fire danger. Where the response to a fire exceeds the capacity of local resources, additional support is provided from neighboring shires and regions.

Burning Restrictions

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

The Shire of Cranbrook’s Restricted and Prohibited Burning Times are as follows:

- 1st October to 31st October (inclusive): Restricted (permits required)
- 1st November to 14th February (inclusive): Prohibited
- 15th February to 30th April (inclusive): Restricted (permits required) ³⁷

The Shire has the ability to vary these times depending on seasonal conditions. Harvest and Vehicle Movement Bans are also in place on Christmas Day each year³⁸. The Shire maintains a Harvest Vehicle Movement Ban dedicated phone number which enables residents to be informed, via a phone call, when Harvest Bans have been applied and removed.

³⁷ Source: Shire of Cranbrook FIREBREAK NOTICE 2020/2021, Page 1.

³⁸ Source: Shire of Cranbrook FIREBREAK NOTICE 2020/2021, Page 4

Bush Fires Act 1954 Section 33 Fire Management Notices

The Shire issues an annual firebreak notice in accordance with Section 33 of the *Bush Fires Act 1954*. Also included in the notice is information about burning permits, Restricted and Prohibited Burning Times and contact details for local Fire Control Officers and Radio Operators. Ranger Services carry out an inspection of town site properties prior to the commencement of the time period nominated in the Notice and those property owners found not to comply are issued with a reminder notice. Properties that aren't compliant as of 15th November are issued with a notice and infringement, with further time to be deemed compliant. If compliance still isn't attained, then work will be carried out by the Shire and costs recovered from the property owner.

Community Engagement Activities

While compliance, in line with landowner responsibilities detailed in the Shire's annual firebreak notice, is generally good, when it comes to preparatory efforts (i.e. in line with general prevention and preparedness around individual properties) community engagement is more challenging, mainly due to barriers such as time constraints and conflicting priorities. A level of complacency (it won't happen to me) is apparent within the community. The Shire promotes community awareness and resilience through local media in the lead up to fire season.

4. Asset Identification and Risk Assessment

4.1. Asset Identification

Asset identification and risk assessment has been conducted at the local level using the methodology described in the Guidelines and recorded in BRMS. Identified assets are categorised into the categories and subcategories provided in Table 10.

Table 10 – Asset Categories and Subcategories

Asset Category	Asset Subcategories
<p>Human Settlement</p>	<p>Residential areas Residential areas, including dwellings in rural areas and the rural-urban interface.</p> <p>Places of temporary occupation Commercial and industrial areas, mining sites or camps and other locations where people may work or gather.</p> <p>Special risk and critical facilities Locations and facilities where occupants may be especially vulnerable to bushfire for one or more of the following reasons:</p> <ul style="list-style-type: none"> • Occupants may have limited knowledge about the impact of bushfires; • Occupants may have a reduced capacity to evaluate risk and respond adequately to bushfire event; • Occupants may be more vulnerable to stress and anxiety arising from a bushfire event or the effects of smoke; • There may be significant communication barriers with occupants; • Relocation and/or management of occupants may present unique challenges or difficulties, such as transportation, or providing alternative accommodation, healthcare or food supplies; or • Facilities that are critical to the community during a bushfire emergency.
<p>Economic</p>	<p>Agricultural Areas under production, such as pasture, livestock, crops, viticulture, horticulture and associated infrastructure.</p> <p>Commercial and industrial Major industry, waste treatment plants, mines (economic interest), mills, processing and manufacturing facilities and cottage industry.</p> <p>Critical infrastructure Power lines and substations, water pumping stations, tanks/bores and pipelines, gas pipelines, telecommunications infrastructure, railways, bridges, port facilities and waste water treatments plants.</p>

Asset Category	Asset Subcategories
<p>Economic</p>	<p>Tourist and recreational Tourist attractions, day-use areas and recreational sites that generate significant tourism and/or employment within the local area. These assets are different to tourist accommodation described as a Human Settlement Asset (see above).</p> <p>Commercial forests and plantations Plantations and production native forests.</p> <p>Drinking water catchments Land and infrastructure associated with drinking water catchments.</p>
<p>Environmental</p>	<p>Protected Flora, fauna and ecological communities that are listed as a: Critically Endangered, Endangered or Vulnerable species under the Environmental Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act 1999) (including associated critical habitat); Critically Endangered, Endangered or Vulnerable species under the Biodiversity Conservation Act 2016; Critically Endangered, Endangered or Vulnerable ecological community under the EPBC Act 1999 (Cth); Critically Endangered, Endangered or Vulnerable Threatened Ecological Community (TEC) endorsed by the Minister for Environment (WA); Fauna protected under international conventions; and Ramsar wetlands of international importance.</p> <p>Priority Flora, fauna and ecological communities that are a: Priority species listed on the Priority Flora or Priority Fauna Lists held by DBCA (Priority 1-5). Priority Ecological Community (PEC) (Priority 1-5); and Wetlands of national or state importance.</p> <p>Locally important Species, populations, ecological communities or habitats that the local community or independent scientific experts consider important for the area and for which there is some scientific evidence that protection would be beneficial. Wetlands of local importance. Sites being used for scientific research.</p>

Asset Category	Asset Subcategories
<p>Cultural</p>	<p>Aboriginal heritage Places of indigenous significance identified by the DPLH or the local community.</p> <p>European heritage Non-Indigenous heritage assets afforded legislative protection through identification by the National Trust, State Heritage List or Local Planning Scheme Heritage List.</p> <p>Local heritage Assets identified in a Municipal Heritage Inventory or by the local community as being significant to local heritage.</p> <p>Other Other assets of cultural value to the local community, for example community halls, churches, clubs and recreation facilities.</p>

4.2. Assessment of Bushfire Risk

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

Asset and risk assessment information is maintained in BRMS and will be made available to key stakeholders via reports (e.g. Asset Risk Register).

The percentage of assets within the local government in each asset category at the time of BRM Plan endorsement is shown in Table 11.

Table 11 – Asset Category Proportions

Asset category	Proportion of identified assets
Human Settlement	56.1%
Economic	23.4%
Environmental	15.2%
Cultural	5.2%

4.3.1 Consequence Assessment

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

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

- **Consequence Rating – Human Settlement, Economic and Cultural Assets**
The outcome or impact of a bushfire event on the asset, or a group of assets, measured by the hazard posed by the classified vegetation and the vulnerability of the asset.
- **Consequence Rating – Environmental Assets**
The outcome or impact of a bushfire event on the asset, or a group of assets, measured by the vulnerability of the asset and the potential impact of a bushfire or fire regime.

4.3.2 Likelihood Assessment

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

4.3.3 Assessment of Environmental Assets

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

4.3.4 Local Government Asset Risk Summary

A risk profile for the local government is provided in Table 12. This table shows the proportion of assets at risk from bushfire in each risk category at the time the BRM Plan was endorsed.

Table 12 – Local Government Asset Risk Summary

Asset Category	Risk Rating				
	Low	Medium	High	Very High	Extreme
Human Settlement	16.0%	7.8%	14.1%	3.3%	14.9%
Economic	3.7%	4.1%	4.5%	4.5%	6.7%
Environmental	0.0%	2.2%	1.5%	8.6%	3.0%
Cultural	2.6%	0.0%	0.4%	0.7%	1.5%

5. Risk Evaluation

5.1. Evaluating Bushfire Risk

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

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

5.2. Risk Acceptability

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

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

Table 13 – Criteria for Acceptance of Risk and Course of Action

Risk Rating	Criteria for Acceptance of Risk	Course of Action
Extreme	<p>Requires asset specific treatment strategies to be applied.</p> <p>Local Government Wide Controls are not enough to adequately manage the risk.</p> <p>Specific treatment action is required within 2 years of the BRM Plan being endorsed.</p>	<p>Specific action(s) required in the first 2 years of the BRM Plan. Priorities will include:</p> <ul style="list-style-type: none"> • Treatments that will have maximum benefit to multiple assets and critical infrastructure. • Treatments that benefit vulnerable communities will be given priority. • Identification of partnerships with other agencies for strategic mitigation. • Assets within the gazetted townsites to be included on firebreak inspection list. • Communication with asset owners as per Communication Plan. • Annual report of treatments to the Shire CEO • Annual report to the CEO of updated risk ratings across the Shire after treatments have been conducted

Risk Rating	Criteria for Acceptance of Risk	Course of Action
<p>Very High</p>	<p>Requires asset specific treatment strategies to be applied.</p> <p>Local Government Wide Controls are not enough the adequately manage the risk.</p> <p>Specific treatment action is required within 3 years of the BRM Plan being endorsed.</p>	<p>Specific action(s) required in the first 3 years of the BRM Plan. Priorities will include:</p> <ul style="list-style-type: none"> • Treatments that will have maximum benefit to multiple assets and critical infrastructure. • Treatments that benefit vulnerable communities will be given priority. • Identification of partnerships with other agencies for strategic mitigation. • Assets within the gazetted townsites to be included on firebreak inspection list. • Communication with asset owners as per Communication Plan. • Annual report of treatments to the Shire CEO • Annual report to the CEO of updated risk ratings across the Shire after treatments have been conducted
<p>High</p>	<p>Asset specific treatment strategies will likely be required.</p> <p>It is unlikely that Local Government Wide Controls would be enough to adequately manage the risk. Only acceptable with excellent controls.</p>	<p>Specific action(s) may be required within the life of the BRM Plan. Priorities will include:</p> <ul style="list-style-type: none"> • Priorities will be made for treatments that will have maximum benefit to multiple assets and critical infrastructure. • Assets that fall adjacent to Extreme or Very High-risk assets. • Treatments that benefit vulnerable communities will be given priority. • Identification of partnerships with other agencies for strategic mitigation. • Communication with asset owners as per Communication Plan. • Annual report of treatments to the Shire CEO • Annual report to the CEO of updated risk ratings across the Shire after treatments have been conducted

Risk Rating	Criteria for Acceptance of Risk	Course of Action
Medium	<p>Asset specific treatments are not required, but risk should be monitored.</p> <p>Local government wide controls should be sufficient to manage the risk.</p> <p>If there is a change in the landscape / environment these assets may need to be reassessed more frequently.</p>	<p>Specific actions are not required.</p> <p>Risk may be managed with routine controls and monitored periodically throughout the life of the BRM Plan.</p>
Low	<p>Asset specific treatments are not required, but risk should be monitored.</p> <p>Local government wide controls should be sufficient to manage the risk.</p> <p>If there is a change in the landscape / environment these assets may need to be reassessed more frequently.</p>	<p>Specific actions are not required.</p> <p>Risk will be managed with routine controls and monitored as required.</p>

5.3. Treatment Priorities

The treatment priority for each asset has been automatically assigned by BRMS and recorded in the *Treatment Schedule*, based on the asset’s risk rating. Table 14 shows how consequence and likelihood combine to give the risk rating and subsequent treatment priority for an asset.

Table 14 – Treatment Priorities

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

6. Risk Treatment

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

6.1. Local Government Wide Controls

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

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

6.2. Asset Specific Treatment Strategies

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

- **Fuel management**

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

- **Ignition management**

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

- **Preparedness**

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

- **Planning**

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

- **Community Engagement**

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

6.3. Development of the Treatment Schedule

The *Treatment Schedule* is a list of bushfire risk treatments recorded within BRMS that will be implemented to manage unacceptable bushfire risks.

The Shire of Cranbrook will be focusing on developing a program of works that covers activities to be undertaken within the first year after the approval of the BRM Plan. The *Treatment Schedule* will evolve and develop throughout the life of the BRM Plan.

The *Treatment Schedule* will be developed in broad consultation with land owners and other stakeholders including DFES and DBCA. The *Communications Strategy* provides further information on the stakeholders involved and the activities planned for their engagement.

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

7. Monitoring and Review

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

7.1. Review

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

- Changes to organisational responsibilities or legislation;
- Changes to the bushfire risk profile of the local government; or
- Following a major fire event.

7.2. Monitoring

BRMS will be used to monitor the risk ratings for each asset identified in the BRM Plan and record the treatments planned and implemented. Risk ratings are reviewed on a regular basis as described in Table 13. New assets will be added to the Asset Risk Register by entering them in BRMS when they are identified.

7.3. Reporting

On request, the Shire of Cranbrook may contribute relevant information to be included in the *Fuel Management Activity Report* produced annually by OBRM.

The reporting requirements will be managed by the Community Emergency Services Manager or a member of the Shire's Administration Team, as designated by the Chief Executive Officer.

7.3.1 Privacy Issues and Release of Information

Information captured through BRMS includes data considered 'personal' in nature including the names and addresses of landholders. There is therefore the potential for the data collected through the BRMS to be used for purposes other than bushfire risk mitigation (i.e. Insurance companies using this information to set insurance premiums).

The Chief Executive Officer is to be consulted prior to any BRMS data being released into the public domain.

In order to actively encourage and support the implementation, monitoring and review of agreed actions the Shire of Cranbrook, as a matter of course or upon request, will provide reports to key stakeholders that detail the assets and treatments that the stakeholders (land owners) have a responsibility to manage.

8. Glossary

Asset	A term used to describe anything of value that may be adversely impacted by bushfire. This may include residential houses, infrastructure, commercial, agriculture, industry, environmental, cultural and heritage sites.
Asset Category	There are four categories that classify the type of asset – Human Settlement, Economic, Environmental and Cultural.
Asset Owner	The owner, occupier or custodian of the asset itself. Note: this may differ from the owner of the land the asset is located on, for example a communication tower located on leased land or private property.
Asset Register	A component within the Bushfire Risk Management System (BRMS) used to record the details of assets identified in the Bushfire Risk Management Plan (BRM Plan).
Asset Risk Register	A report produced within the BRMS that details the consequence, likelihood, risk rating and treatment priority for each asset identified in the BRM Plan.
Bushfire	Unplanned vegetation fire. A generic term which includes grass fires, forest fires and scrub fires both with and without a suppression objective.
Bushfire Hazard	The hazard posed by the classified vegetation, based on the vegetation category, slope and separation distance.
Bushfire Risk Management Plan	A development related document that sets out short, medium and long term bushfire risk management strategies for the life of a development.
Bushfire Risk	The chance of a bushfire igniting, spreading and causing damage to the community or the assets they value.
Bushfire 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.

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

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

9. Common Abbreviations

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

10. Appendices

Appendix A	Communication Strategy
Appendix B	Local Government Wide Controls Table

Appendix A



Shire of Cranbrook

Bushfire Risk Management Planning

COMMUNICATION STRATEGY

Document Control

Document Name	Bushfire Risk Management Plan Communications Strategy		
Document Owner	Shire of Cranbrook	Chief Executive Officer	
Document Location	Shire of Cranbrook Administration Office		
Current Version	1.0		
Issue Date	DD/MM/YYYY		
Next Review Date	DD/MM/YYYY		

Related Documents

Title	Version	Date
Shire of Cranbrook Bushfire Risk Management Plan	1.2	June 2021

Amendment List

Version	Date	Author	Section

1. Introduction

A Bushfire Risk Management (BRM) Plan is a strategic document that outlines the approach to the identification, assessment and treatment of assets exposed to bushfire risk within the Shire of Cranbrook.

This Communication Strategy accompanies the BRM Plan for the Shire of Cranbrook. It documents the:

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

2. Communications Overview

2.1 Communication Objectives

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

2.2 Communication Roles and Responsibilities

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

- CEO, Shire of Cranbrook, is responsible for endorsement of the BRM Plan Communications Strategy.
- CEO, Shire of Cranbrook, is responsible for external communication with the key stakeholders and the community.
- The Community Emergency Service Manager (CESM) for the Shire of Cranbrook, is responsible for operational-level communication between the Shire and the Department of Fire and Emergency Services.

2.3 Key Stakeholders for Communication

The following table identifies key stakeholders in the BRM plan’s development, 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 or outcomes	Level of engagement
Shire of Cranbrook	Significant role in plan and treatment development, implementation and review. Responsible for treatments as a land owner/manager.	High	Inform, consult, involve, collaborate and empower
Department of Fire and Emergency Services	Significant role in plan and treatment development, implementation and review. Responsible for treatments in UCL/UMR (within town sites) as a land manager. Support role in treatment implementation (Mitigation Activity Fund administration).	High	Inform, consult, involve and collaborate
Department of Biodiversity, Conservation and Attractions	Significant role in plan and treatment development, implementation and review. Responsible for treatments as a land owner/manager.	High	Inform, consult, involve, collaborate and empower
Main Roads WA	Role in plan and treatment development, implementation and review. Responsible for treatments as a land owner/manager. Critical infrastructure interest.	Medium	Inform, consult, involve and collaborate
Telecommunication providers	Role in plan and treatment development, implementation and review. Responsible for treatments as a land owner/manager. Critical infrastructure interest.	Medium	Inform, consult, involve and collaborate
Department of Planning, Lands and Heritage, LandCorp & Landgate	Role in plan and treatment development, implementation and review	Medium	Inform, consult, involve and collaborate
Water Corporation & Department of Water	Role in plan and treatment development, implementation and review. Responsible for treatments as a land owner/manager. Critical infrastructure interest.	Medium	Inform, consult, involve and collaborate
Private Land Owners	Role in plan and treatment development, implementation and review. May have responsibilities for treatments as land owners/managers	High	Inform, consult, involve, collaborate and empower

Stakeholder	Role or Interest	Level of impact or outcomes	Level of engagement
Western Power	Role in plan and treatment development, implementation and review. Responsible for treatments as a land owner/manager. Critical infrastructure interest.	Medium	Inform, consult, involve, collaborate
Chief Bushfire Control Officer	Significant role in plan and treatment development, implementation and review. Actively assist in risk identification and treatment works. Empower to actively engage with community and identify/treat risks	High	Inform, consult, involve, collaborate and empower
Bushfire Brigades and other Emergency Services Volunteers	Significant role in plan and treatment development, implementation and review. Assist in risk identification and treatment works.	High	Inform, consult, involve, collaborate
Shire of Cranbrook Bushfire Advisory Committee	Role in plan development, implementation and review. Actively assist in risk identification and treatment works. Empower to actively engage with community and identify/treat risks	High	Inform, consult, involve, collaborate
Regional Operations Advisory Committee	Role in plan development, implementation and review	Medium	Inform, consult, involve, collaborate
Local Emergency Management Committee	Role in plan development, implementation and review	Medium	Inform, involve and consult
Traditional Owners, Gnaala Karla Boodja Regional Corporation, South West Aboriginal Land and Sea Council & Department of Aboriginal Affairs	Role in plan and treatment development, implementation and review. May have responsibilities for treatments as land owners/managers	Medium	Inform, involve and consult
Shire of Cranbrook Communities	Role in plan implementation and review	Medium	Inform, involve and consult
Australian Rail Commission (ARC)	Role in plan and treatment development, implementation and review	Medium	Inform, involve and consult
WA Country Health	Role in plan and treatment development, implementation and review	Medium	Inform, involve and consult
Department of Education	Role in plan and treatment development, implementation and review	Medium	Inform, involve and consult

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

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

Timing of communication	Stakeholders	Purpose	Summary	Communication Method	Lesson Identified	Follow up
Development of the BRM Plan						
When did this communication occur?	Who was the stakeholder or target audience?	What was the purpose of the communication?	What topics were discussed?	What communication method did you use?	Were there any issues or lessons identified?	Was there any follow up required?
July 2020	Shire of Cranbrook CEO, Executive Management Team and Council	1 – 3 & 5	Inform and consult Confirm accountability and responsibilities Input into plan and treatments Confirm project objectives Project updates	Email Face to face meetings Presentation	Resource constraints could limit their ability to participate Lack of understanding	Project updates
April/May 2021 (Meeting restrictions in 2020 due to the Covid-19 pandemic)	Bushfire Advisory Committee (BFAC) and Regional Operations Advisory Committee (ROAC)	1 – 3 & 5	Inform and consult Confirm project objectives Input into plan and treatments Project updates	Email Face to face meetings Presentation	Stakeholders willingness to participate Lack of understanding	Project updates
April 2021 (Meeting restrictions in 2020 due to the Covid-19 pandemic)	Local Emergency Management Committee (LEMC)	1 – 3 & 5	Confirm project objectives Project updates	Email Face to face meetings Presentation	Stakeholders willingness to participate	Project updates

Timing of communication	Stakeholders	Purpose	Summary	Communication Method	Lesson Identified	Follow up
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Development of the BRM Plan

When did this communication occur?	Who was the stakeholder or target audience?	What was the purpose of the communication?	What topics were discussed?	What communication method did you use?	Were there any issues or lessons identified?	Was there any follow up required?
April 2021	Chief Bushfire Control Officer (CBFCO), Bushfire Brigades, Brigade Captains	1 – 3 & 5	Inform and consult Confirm project objectives Input into plan and treatments Project updates Identify Risk and share information	Face to face meetings	Time constraints Lack of understanding	Project updates
July 2020 Ongoing monthly briefs with Bushfire Risk Management Officer	Dept of Fire and Emergency Services (DFES) – District/Regional Office	1 – 3 & 5	Compliance and governance Plan endorsement Sharing information	Email Face to face meetings Telephone	Time constraints Response obligations	Project updates
June 2021	Office of Bushfire Risk Management	1 & 2	Compliance and governance Plan endorsement	Email Telephone	Government funding	Project updates

Timing of communication	Stakeholders	Purpose	Summary	Communication Method	Lesson Identified	Follow up
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Development of the Treatment Schedule

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?
Life of the Plan	Shire of Cranbrook CEO, Executive Management Team and Council	1 – 3 & 5	Reduction of fuel loads on shire managed lands Risks to community Action Plan Upgrade Strategic fire breaks Planned works identified	Email Face to face meeting Telephone Presentations	Government funding Time constraints LG budgeting constraints	Stay up to date with process improvements
Life of the Plan	Chief Bushfire Control Officer (CBFCO), Bushfire Brigades, Brigade Captains	1 – 3 & 5	Confirm project and objectives Seek input into treatment plans and providing project updates Identify Risk and share information Availability of volunteers Planned works identified	Email Face to face meeting Telephone Presentations Community Engagement activities	Clarify misunderstandings and intentions of plan Confirm benefits-Preparation Ensure current information on the BRM Plan Project is available	Stay up to date with process improvements Availability of Volunteers

Timing of communication	Stakeholders	Purpose	Summary	Communication Method	Lesson Identified	Follow up
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Development of the Treatment Schedule

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?
Biannually or As Required	Bushfire Advisory Committee (BFAC) and Regional Operations Advisory Committee (ROAC)	1 – 3 & 5	Confirm project and objectives Seek input into treatment plans and providing project updates Identify Risk and share information	Email Face to face meeting Telephone Presentations	Clarify misunderstandings and intentions of plan Confirm benefits-Preparation Ensure current information on the BRM Plan Project is available	Stay up to date with process improvements
As Required	Stakeholders – Landowners / Land Managers	1 – 3 & 5	Confirm project and objectives Seek input into treatment plans and providing project updates Identify Risk and share information	Email Face to face meeting Telephone Presentations Community Engagement activities	Level of interests and engagement in process Time constraints	Feedback Highly engaged Treatments being completed Commitment to agreed controls

Timing of communication	Stakeholders	Purpose	Summary	Communication Method	Lesson Identified	Follow up
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Development of the Treatment Schedule

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?
Annually or As Required	Dept of Fire and Emergency Services (DFES) – Regional Office	1 – 3 & 5	UCL/UMR Management Status and progress of plan Treatment status, gaps and issues to be addressed Continuous improvement Information sharing Identification of other planned works Identification of funding opportunities	Email Face to face meeting Telephone	Time constraints Response obligations	Compliance requirements
As Required	Office of Bushfire Risk Management	1 – 3 & 5	Bushfire Risk Management System up to date with 1 st year treatment program	Email BRMS	Availability of funding	Compliance requirements

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

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

Timing of communication	Stakeholders	Communication Objective(s)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring and Evaluation Method
Implementation of the BRM Plan								
Life of Plan	Shire of Cranbrook CEO, Executive Management Team and Council	All (1 – 5)	Email Face to face meetings	Inform and consult Confirm accountabilities and responsibilities. Progress update Issues identification and action planning	CEO or Delegate	Time constraints Availability Lack of understanding Budget (for LG mitigation)	Planning and time management Clear purpose Targeted communication Regular updates	Feedback, Questions raised Level of support received
Life of Plan	Shire of Cranbrook Building and Works	1 – 3 & 5	Email Face to face meetings	Reduction of fuel loads on LG managed land Upgrades to strategic firebreaks	CEO or Delegate	Poor organisation, Limited time, Not preparing Poor communication from stakeholders and LG on completion of works	Clarify misunderstandings and intentions of plan Plan communications Regular updates	Treatments applied Positive feedback received on treatment supplied Risk ratings reduced
Biannually or As Required	LEMC, BFAC, ROAC, CBFCO, CAPTS	All (1 – 5)	Email Face to face meetings	Report on progress to plan Report issues/constraints	CEO or Delegate	Availability of volunteers Time 'Buy in' Lack of understanding	Collate data and report on success to plan Compliance to plan Keep informed	Feedback received Level of engagement Issues identified and addressed

Timing of communication	Stakeholders	Communication Objective(s)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring and Evaluation Method
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Implementation of the BRM Plan

All (1 – 5)	Dept of Biodiversity, Conservation and Attractions	1 – 3 & 5	Email Face to face meetings Telephone	Confirmation of environmental assets Development of treatment options	CEO or Delegate	Resource constraints could limit their ability to participate Willingness to release 'confidential' data re environmental assets	Clarify misunderstandings and intentions of plan Provide undertakings re the release of confidential data Restrict release of information and document in plan	Level of engagement Environment-al assets in BRMS
As Required	Stakeholders – Landowners / Land Managers	1 – 3 & 5	Face to face Presentations Community Engagement	Inform and consult Confirm accountability and responsibility Status and progress of plan Treatment status Gaps and issues to be addressed	CEO or Delegate	Availability Time Loss of commitment Access to treatment resources Funding	Planned sharing of information Negotiations conducted Communicate funding opportunities when available	Feedback Commitment to implement agreed controls Highly engaged Treatments being completed
As Required	Stakeholders – Others	1 – 3 & 5	Face to face Presentations Community Engagement Telephone Email	Inform and consult Confirm accountability and responsibility Status and progress of plan Treatment status Gaps and issues to be addressed	CEO or Delegate	Availability Time Loss of commitment	Planned sharing of information Negotiations conducted Communicate funding opportunities when available	Feedback Commitment to implement agreed controls Highly engaged Treatments being completed

Timing of communication	Stakeholders	Communication Objective(s)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring and Evaluation Method
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Implementation of the BRM Plan

Annually or As Required	DFES Regional Office	1-3	Face to face meetings Email Telephone	UCL/UMR Management Status and progress of plan Treatment status, gaps and issues to be addressed, Continuous improvement, Information sharing, Identification of other planned works, Identification of funding opportunities	CEO or Delegate	Time Conflicting priorities	Schedule communication opportunities	Planned works identified Improvements identified and implemented Issues addressed
Annually (Ideally prior to fire season)	Community	5	Newsletter Website Facebook	Continuous improvement	CEO or Delegate	Time Conflicting priorities	Plan communication	Feedback received

Timing of communication	Stakeholders	Communication Objective(s)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring and Evaluation Method
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Review of the BRM Plan

Annually	Shire of Cranbrook CEO, Executive Management Team and Council	4, 5	Face to face meetings Email Telephone	Governance and compliance Review, monitoring and reporting to Council Status update Continuous improvement	CEO or Delegate	Poor reporting and recording of information	BRPC & BRMO to record data and information appropriately	Feedback received Planned works completed Reporting & Statistics Risk ratings reduced
5 Yearly (Shire, DFES and OBRM)	OBRM & LG Council	4, 5	Face to face meetings Email Telephone Written report	Governance and compliance Review, monitoring and reporting Future planning	CEO or Delegate	Poor reporting and recording of information Review not completed by OBRM	BRPC & BRMO to record data and information appropriately Endorsed by OBRM	Feedback received Planned works completed Reporting & Statistics Risk ratings reduced
Quarterly or As Required	Shire of Cranbrook – Building and Works	4, 5	Face to face meetings Email Telephone	Report on actions and status of BRM Plan Continuous improvement	CEO or Delegate	Time LG capacity Conflicting priorities	Plan communications Discuss with Shire Leadership Team	Feedback on work completed Risk ratings reduced Improvements identified and implemented
Biannually or As Required	DFES Regional Office	4, 5	Face to face meetings	Report on actions and status of BRM Plan Continuous improvement UCL/UMR program	CEO or Delegate	LG capacity Time Conflicting priorities	Plan communications	Feedback on work completed Risk ratings reduced Improvements identified and implemented

Timing of communication	Stakeholders	Communication Objective(s)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring and Evaluation Method
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Review of the BRM Plan

Annually	BFAC, ROAC, LEMC, CBFCO, Captains	4, 5	Face to face meetings Email Telephone Presentations	Report on actions and status of BRM Plan Continuous improvement	CEO or Delegate	LG capacity Time Conflicting priorities Buy in	Keep informed Share the wins	Feedback on work completed Risk ratings reduced Improvements identified and implemented
Every 2 years or As Required	Stakeholders – Land Owners / Land Managers	4, 5	Face to face meetings Telephone Presentation Community Engagement Survey	Status of treatments Success of treatments Continuous improvement	CEO or Delegate	LG capacity Time Conflicting priorities Buy in Access to resources	Plan communication Target communication Planned and prepared	Feedback on work completed Risk ratings reduced Improvements identified and implemented
Every 2 years or As Required	Stakeholders – Other	4, 5	Face to face meetings Telephone Presentation Community Engagement Survey	Status of treatments Success of treatments Continuous improvement	CEO or Delegate	LG capacity Time Conflicting priorities Buy in Access to resources	Plan communication Target communication Planned and prepared	Feedback on work completed Risk ratings reduced Improvements identified and implemented

Appendix B

1. Bushfire Risk Management Planning – Local Government Wide Controls

	Control	Action or Activity Description	Lead Agency	Other Stakeholder(s)	Notes and Comments
1.	BRM Planning Risk Analysis	<ul style="list-style-type: none"> Maintain and refine BRM Plan 	Shire of Cranbrook	Landowners DFES	Treatment identification and planning for all high, very high and extreme risk assets within the Shire.
2.	Strategic Community Plan 2017 – 2027 & Corporate Plan 2017 - 2021	<ul style="list-style-type: none"> 1.Social: <ul style="list-style-type: none"> <u>Outcome 1.2: A safe place to live</u> Advocate and actively support emergency management and services 2.Economic: <ul style="list-style-type: none"> <u>Outcome 2.1: A diverse, prosperous economy</u> Maintain strong relationships with government agencies and regional service providers. 	Shire of Cranbrook	Community	As per section 3.1.1 of the Bushfire Risk Management Plan.
3.	Shire of Cranbrook Annual Fire Break Notice and (<i>Bush Fires Act 1954</i>)	<ul style="list-style-type: none"> Review annual notice Publish annual notice Inspections in accordance with annual notice 	Shire of Cranbrook	CBFCO, FCO, Captains and the public	Published Annually. Inspect local properties. 'Fire Access Track' has the same meaning as 'Fire Break', in the <i>Bush Fires Act 1954</i> .
4.	Shire Prohibited and Restricted Burning times and issuing of permits. (<i>Bush Fires Act 1954</i>)	<ul style="list-style-type: none"> Restricted and Prohibited Burning Times set the requirement that 'a permit to set fire to the bush' must be obtained. 	Shire of Cranbrook	CBFCO, FCOs	Published Annually.
5.	Harvest and Vehicle Movement Bans	<ul style="list-style-type: none"> Bans imposed when the CBFCO and FCOs are of the opinion that the use of engines, vehicles, plant or machinery is likely to cause/contribute to the spread of a bushfire. 	Shire of Cranbrook	CBFCO, FCOs and Fire Weather Advisory Group	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

	Control	Action or Activity Description	Lead Agency	Other Stakeholder(s)	Notes and Comments
					revoked by the local government should weather conditions change.
6.	Local Emergency Management Arrangements	<ul style="list-style-type: none"> Emergency Management Plan 	Shire of Cranbrook	SJA, WAPOL, DFES, Dept of Communities Child Protection and Family Support, Dept of Education, CBFCO.	Annual review of emergency plans and arrangements.
7.	Local Planning Scheme No 2 State Planning Policy 3.7	<ul style="list-style-type: none"> Requirement for new developments to complete a Fire Management Plan endorsed through the Dept of Fire and Emergency Services (if in a Bushfire Prone Area) Planning in Bushfire Prone Areas 	Shire of Cranbrook Department of Planning, Lands and Heritage	DFES WA Planning Commission Shire of Cranbrook	<p>Where a Fire Management Plan has been endorsed by DFES and the Shire, the affected land owners will be responsible for the ongoing implementation of the “land owners’ responsibilities” as specified in that Fire Management Plan.</p> <p>Land developers are required to implement a Fire Management Plan to ensure risk is managed and other controls implemented and monitored</p>
8.	Total Fire Bans	<ul style="list-style-type: none"> Restriction of activities that may cause or contribute to the spread of a bushfire 	Department of Fire and Emergency Services	Shire of Cranbrook	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.

2. Bushfire Risk Management Planning – Multi-Agency Risk Management and Mitigation Programs

	Control	Action or Activity Description	Lead Agency	Other Stakeholder(s)	Notes and Comments
1.	UCL / UMR Land Management	<ul style="list-style-type: none"> Mitigation programs conducted on lands owned by DPLH and managed by DFES and DBCA under respective MOUs. 	DFES DBCA	DPLH	Annual funding is allocated to UCL/UMR land within gazetted boundary with priorities identified in consultation with stakeholders and managed through DFES Albany Regional office. DBCA manage UCL/UMR outside of gazetted town site boundaries under a similar arrangement.
2.	Water Corporation Bushfire Risk Management Plan	<ul style="list-style-type: none"> Great Southern Region Annual Works Plan. Water Corp assets are managed / maintained at the regional level. Each asset has a management plan referred to as a System Application and Product (SAP). * Watercorp has an agreement with DBCA for undertaking mitigation and land management activities on their estate. Works include fuel load management on water reserves 	Water Corporation	Shire of Cranbrook DBCA	<p>A plan is currently being developed. High risk areas are identified and treatments planned then completed. Treatments and risk assessments are available through Water Corp BRM department. Some high risk areas have been identified in the Shire to date. The Water Corp Plan will be aligned to this BRM Plan's risk treatment schedule.</p> <p>The SAPs only address very basic maintenance (inc. firebreaks as per Firebreak notice but not fuel load management etc., however any treatments from BRMS would be put through the SAP in order to raise a works order.</p>

	Control	Action or Activity Description	Lead Agency	Other Stakeholder(s)	Notes and Comments
3.	Western Power annual asset inspection and vegetation management program	<ul style="list-style-type: none"> Western Power Bushfire Plan – inspection of network infrastructure and management of vegetation within infrastructure corridors. 	Western Power		Annual vegetation management and asset inspections are completed to ensure risk is managed. Full asset inspections are completed every 4 years.
4.	Department of Biodiversity, Conservation and Attractions Master Burn Plan	<ul style="list-style-type: none"> DBCA have a 6-season burning program that is published on their website. Yearly plans are available 	DBCA	Shire of Cranbrook	The plans can be accessed via their website, by sharing shape files (GIS) and are communicated at Local BFAC, ROAC and other various meetings.
5.	Dept of Education – DFES Memorandum of Understanding	<ul style="list-style-type: none"> Coordination of bushfire risk management activities 	Department of Education DFES	Cranbrook Primary School Frankland Primary School	<p>Cranbrook Primary School and Frankland Primary School are listed on the State Bushfire Zone Register and has been assessed as Very High risk. An inspection of the school, in accordance with the Department of Education Bushfire Risk Strategy, is scheduled for 2021.</p> <p>If hazards are identified prior to the inspection dates these can be raised with the Department of Education Bushfire Risk Management Team for early attention.</p>
6.	Dept of Education – Bushfire Plan Cranbrook Primary School Frankland Primary School	<ul style="list-style-type: none"> A plan designed to assist staff to prepare for a Total Fire Ban, catastrophic fire danger rating, or a bushfire 	Department of Education	DFES Shire of Cranbrook	This plan was developed in accordance with the Emergency and Critical Incident Management Policy and the Principal's Guide to Bushfire with input from local emergency management agencies.

Control	Action or Activity Description	Lead Agency	Other Stakeholder(s)	Notes and Comments
7. Main Roads WA Bridge assessment & maintenance works plan	<ul style="list-style-type: none"> As per MRWA Structures Inspection and Information Management Policy (2013). Ensure that all bridges, gantries, culverts and walls on the road network are kept in a safe condition with the most efficient use of resources. 	Main Roads	Shire of Cranbrook	Bridges and culverts are critical assets in the road network, and represent a major investment of community resources. Because of their strategic function, any failure or load capacity reduction may limit or severely restrict traffic over a large part of the road network, with consequent inconvenience and economic loss. Walls and gantries are minor structures that too can have an impact on the road network. It is therefore imperative that these assets are properly managed to ensure they are maintained in a safe and serviceable condition. MRWA bushfire risk assessment activities focus on timber and timber-hybrid bridges, and 24hr rest stops.
8. Code of Practice for Timber Plantations in Western Australia	<ul style="list-style-type: none"> A fire management plan should be available for each plantation. The size of plantation compartments and firebreak specifications should comply with the Bush Fires Act 1954, DFES' Guidelines for Plantation Fire Protection and the Shire's firebreak notice 	Forest Products Commission	DBCA	The purpose of this Code is to provide goals and guidelines to plantation managers so that plantation operations in Western Australia are conducted in a manner that is in accordance with accepted principles for good plantation management.
9. Australian Rail Commission (ARC)	<ul style="list-style-type: none"> Bushfire Mitigation Plans 	ARC	Shire of Cranbrook Community	Mitigation plans are developed for areas of ARC infrastructure that is deemed of High or above Risk ARC collaborate with the local government to achieve planned mitigation outcomes

	Control	Action or Activity Description	Lead Agency	Other Stakeholder(s)	Notes and Comments
10.	Pine Plantation Fire Management Plans	<ul style="list-style-type: none"> The Forest Product Commission (FPC) has implemented fire management plans for their plantations 	FPC	DBCA DFES Shire of Cranbrook	Minimum requirements and controls have been committed to within the Plan. These are communicated to/with LG and firebreak orders are complied with, for minimum standards of plantation design.