

Strathbogie Shire Council

Municipal Fire Management Plan

A complementary plan to the Municipal
Emergency Management Plan

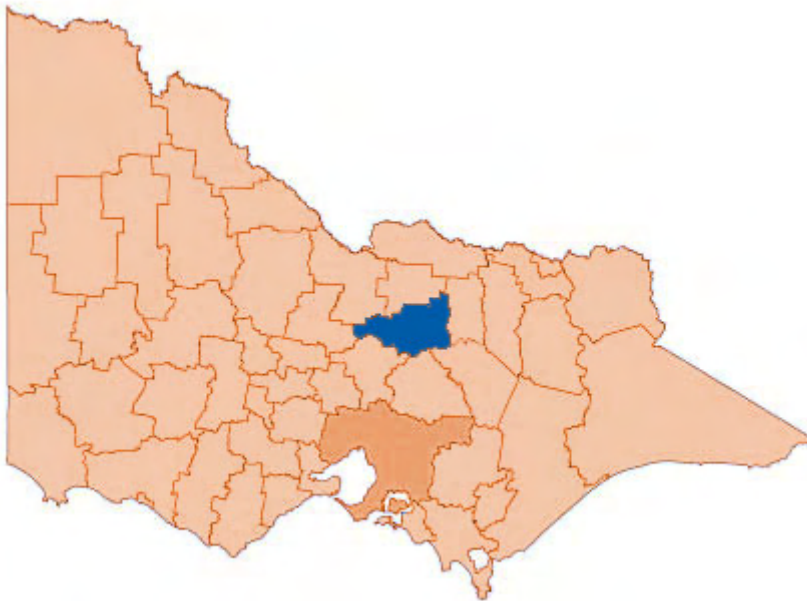
Version 8 - June 2020



Strathbogie
SHIRE COUNCIL

Preface

The Strathbogie Municipal Fire Management Plan Committee (MFMPC) is responsible for providing a strategic and integrated approach to fire management in Strathbogie Shire. The MFMPC undertakes their responsibilities as part of a broader state and regional framework established under the Emergency Management Act (1986) and is supported by the State Fire Management Planning Committee and the Hume Regional Strategic Fire Management Planning Committee (HRSFMPC). A key responsibility of the Strathbogie MFMPC is the development of a Municipal Fire Management Plan (MFMP) to be considered for endorsement by Strathbogie Shire Council and the Municipal Emergency Management Planning (MEMP) Committee. This plan describes how regional authorities, local government, fire agencies and other relevant organisations can work together to effectively anticipate, respond to and recover from bushfire events affecting Strathbogie Shire. This plan also aligns with the Hume Regional Strategic Fire Management Plan 2011-2021. This Municipal Fire Management Plan focuses on bushfire in the first instance and will be employed for a period of three years. The Committee envisages that future updates of this plan will include planning for other fire scenarios. It is important to note that this plan recognises, but does not duplicate, the extensive work already being undertaken in fire management across the municipality. This document is essentially a plan for improving integration of this existing work and developing improved cohesion and cooperation with all fire management entities within the Shire. On behalf of the members of the Strathbogie MFMPC, we are confident in commending this document to you. The Committee sees the development and implementation of this plan as an important step in securing a safer, more resilient community, a healthier environment and a prosperous economy for this municipality.



Version Control Table

Version number	Date of issue	Author(s)	Brief description of change
Version 1.0	21/6/12	C. Hajek C. Price	Draft MFMP for Comment
Version 2.0	27/6/12	C. Price	New edits (page numbers fixed, editing fixed)
Version 3.0	9/6/12	C. Price	Edits from MFMP Meeting 4.2 on 28/6/12
Version 4.0 Including "Public comments"		G.Washusen	Inclusion of "Public comments": <ol style="list-style-type: none"> 1. Saferlinks Fig 18 2. CFA Bushfire Management Plan, Attach. 7 3. Strathbogie Shire Bushfire History, Map 1 4. Strathbogie Shire Fire Origins, Map 2 5. Community Information Guide instead of Township Protection Plan 6. Risk Assessment Matrix consequence labels re- aligned. 7. CFA and DELWP edits from HRSFMPC Meeting 21/9/12 8. RSFMPC Edits 22/10/12
Version 5.0	12/12/12 18/12/12	C. Price	Final version (HRSFMP comments from MFMP Meeting 12/12/12) Council adopted the plan at its meeting on 18/12/12
Version 6.0	23/4/14	G.Washusen	Inclusion of:- VicRoads 2013 Works Plan – Fig. 18, Action Plan ID 9 Update of NSPs - Attachment 4
Version 7.0	May 14	G.Washusen	Triennial review
Version 8.0	June 20	M. Leitinger	Review incorporating structural fire and hazardous material incident risks

Authorisation

The Municipal Fire Management Plan was adopted by the Council on the 18th December 2012.

Minor amendments to the MFMP have been undertaken over time with the endorsement of MFMPC and MEMPC.

This MFMP (Version 8) was adopted by the Strathbogie MFMPC on the 24th June 2020.

Signed:  Date: 06/07/2020

David Roff


Director Corporate Operations

Strathbogie Shire Council

Chairperson

Strathbogie Shire Municipal Fire Management Planning Committee (MFMPC)

This MFMP (Version 8) was endorsed as a sub plan to the Strathbogie Shire Municipal Emergency Management Plan through a formal motion by the Strathbogie Shire Municipal Emergency Management Planning Committee (MEMPC) at their meeting on 24th June 2020.

Signed:  Date: 06/07/2020

David Roff

Director Corporate Operations

Strathbogie Shire Council

Chairperson

Strathbogie Shire Municipal Emergency Management Planning Committee (MEMPC)

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1 Introduction

1.1 Context and Background

Victoria has a long history of community, government and organisations working cooperatively to combat the threat of bushfire. However recent challenges such as the decade of dry conditions, an increase in people living in high risk areas and the occurrence of a number of major fires, prompted the need for increased coordination and cooperation to secure fire safety across the state.

In response to these challenges the Victorian Government established an Integrated Fire Management Project (IFMP) Framework for Victoria in 2008.

IFMP provides a framework for consistent and effective fire management planning (see figure 1) across the fire management spectrum, by providing a multi-agency approach, bringing together fire management planners and other stakeholders, including emergency service agencies, government departments, private organisations and the community. Working together they build relationships and share information to plan across public and private land tenures for all types of fire. IFMP is based on analysis and management of risk, uses best practices and builds on existing information.

IFMP aims to achieve a consistent and effective means for fire management planning within Victoria through a commitment to cooperation, including information sharing and the building of collective knowledge.

— The Integrated Fire Management Planning Framework, State Fire Management Planning Committee

Figure 1: Fire Management Planning

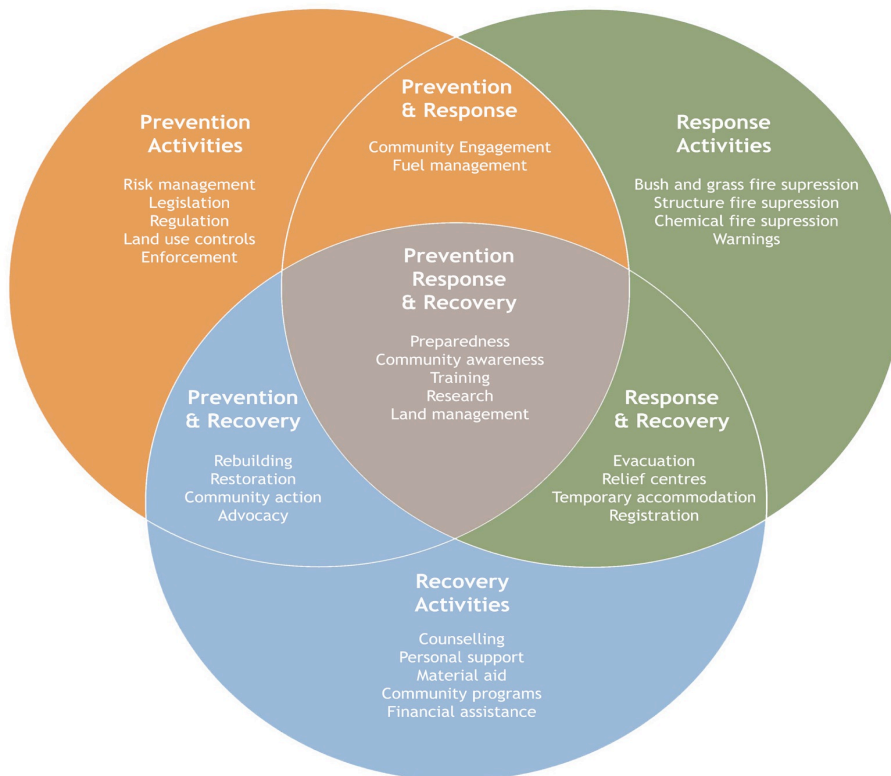
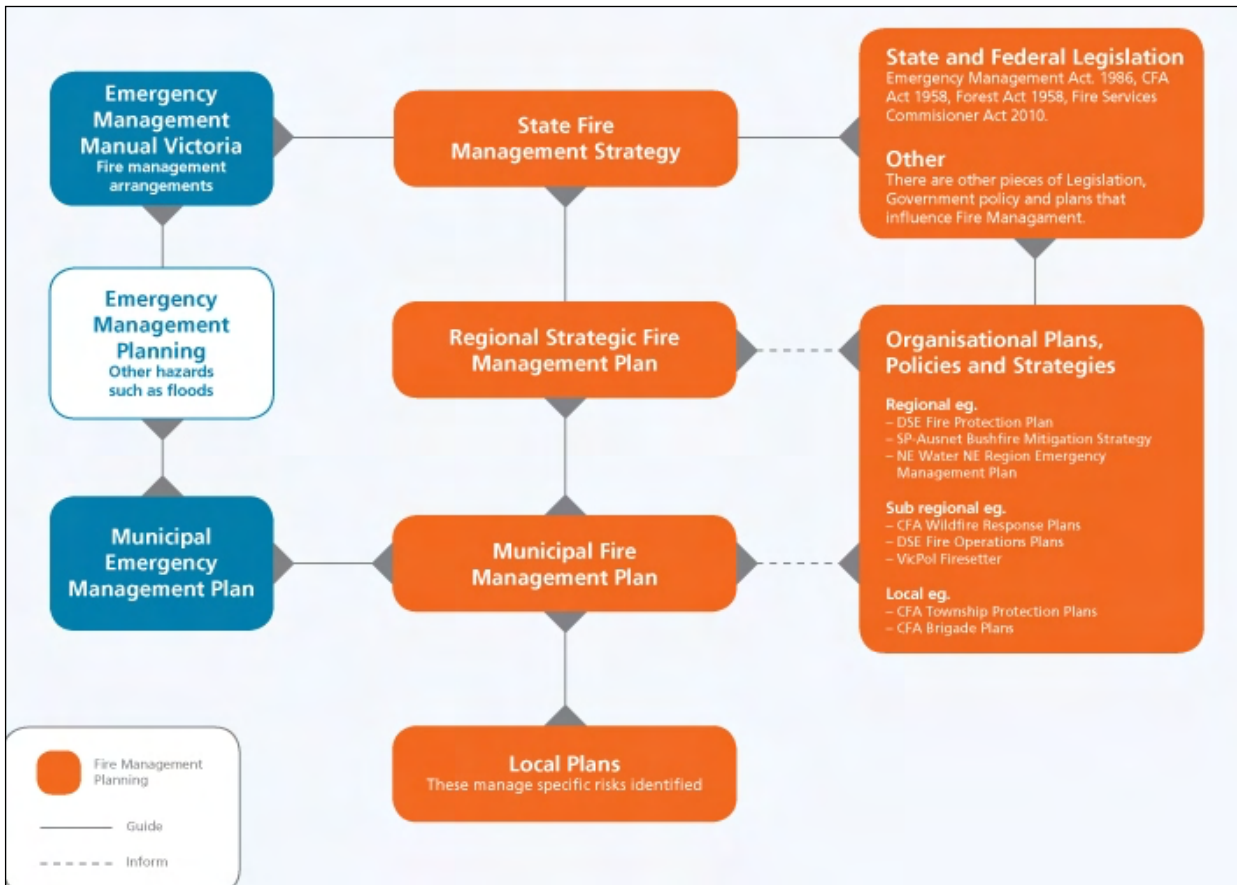


Figure 2: Victorian Management Plans and Policies



The framework provides structures, policies and procedures to help build on the existing spirit of cooperation and networks that already exist in fire management. It establishes a tiered system of state, regional and municipal plans that provide strategic direction to fire management in Victoria, as illustrated in figure 2.

The purpose of Municipal Fire Management Committees is to provide a municipal level forum for building and sustaining organisational partnerships with regards to fire management; and to ensure that plans of individual agencies are linked effectively so as to complement each other. This is facilitated by MFMPs having a membership consisting of representatives from key stakeholder organisations with respect to fire management within the municipality.

MFMPs also act as a sub-committee of their respective Municipal Emergency Management Planning Committee. *The Terms of Reference for the MFMP are contained in Part 7 of Council's MEMP.*

Strathbogie MFMP membership includes:

1. Strathbogie Shire Council
2. Country Fire Authority
3. Department of Environment Land Water & Planning/FFMV
4. Victoria Police

The formation of an MFMP and the development of a MFMP signify an important first step in the transition from Municipal Fire Prevention Plans developed under the guidance and direction of

Municipal Fire Prevention Committees, to a MFMP developed under the guidance and leadership of a MFMPC.

1.2 Period and Purpose

Organisations and agencies involved in fire management already have a range of activities, plans, policies and procedures that are directly involved with, or that impact on fire management. This MFMP builds on this existing work, so as to chart and coordinate the implementation of measures in use across the municipality designed to minimise the occurrence and mitigate the effects of fire. It also seeks to identify the need for adopting or developing new activities, processes and policies, and communicating this need to the relevant responsible authority.

In doing so it takes into consideration all aspects of fire management:

1. **Prevention** – Regulatory and physical measures to ensure that emergencies are prevented, or their effects mitigated
2. **Preparedness** – Arrangements to ensure that in the event of an emergency occurring all those resources and services that area needed to cope with the effects can be efficiently mobilised and deployed
3. **Response** – Actions taken in anticipation of, during and immediately after an emergency, to ensure its effects are minimised and that people affected are given immediate relief and support
4. **Recovery** –The coordinated process of supporting emergency affected communities in the reconstruction of the physical infrastructure and restoration of emotional, social, economic and physical wellbeing.

MFMPs have a three year planning cycle and this plan has a three year duration commencing from the date of Council endorsement. However it will be subject to annual review and modification as appropriate.

1.3 Preparation Process

This MFMP has been developed in accordance with Part 6A of the Emergency Management Manual of Victoria and using the IFMP planning process as described in the IFMP Guide. This process follows a seven stage planning cycle as illustrated in figure 3.

Stage 1: Environmental Scanning – establish a municipal base line from which fire management planning and decision making can be made and measured, including development of fire management objectives.

Stage 2: Risk Assessment – identification, analysis and evaluation of the fire risks that potentially impact on the municipality.

Stage 3: Analysis – analysis of treatment options for achieving the fire management objectives.

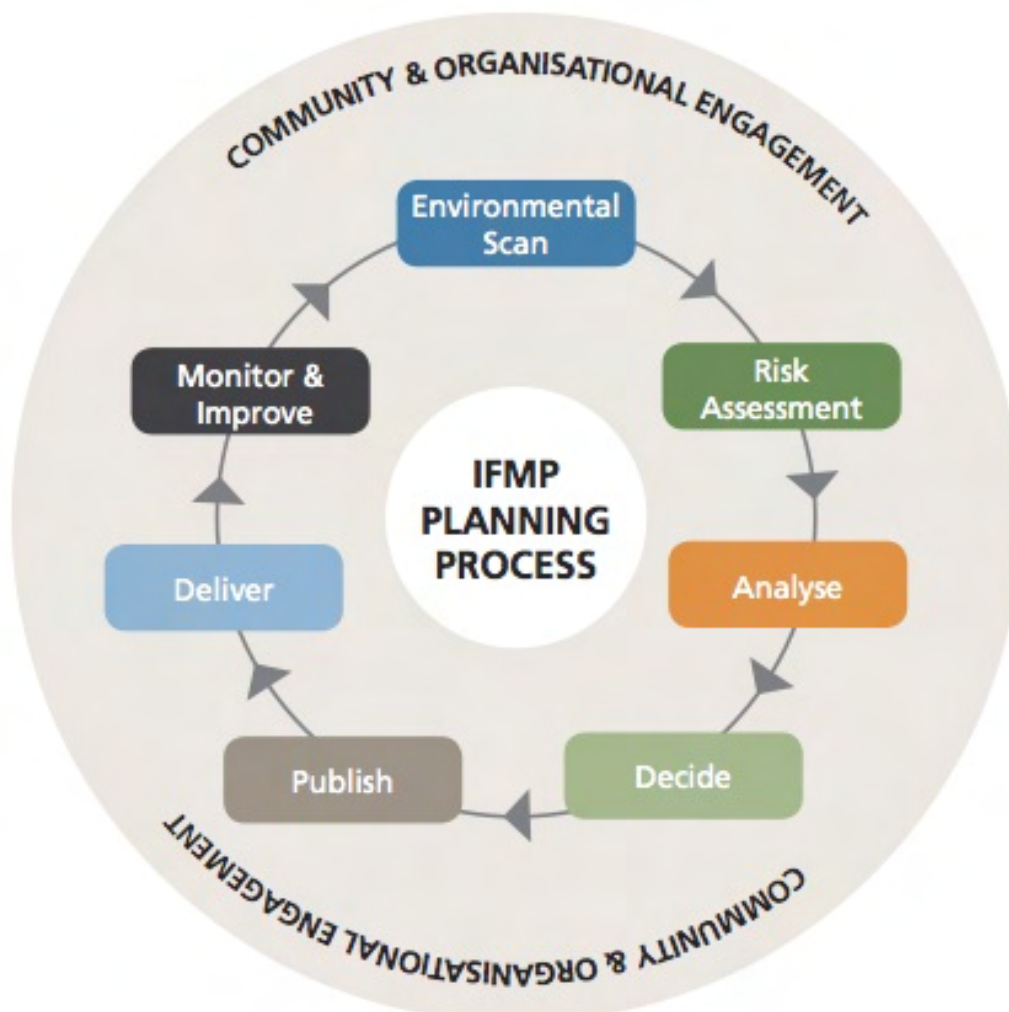
Stage 4: Decide – select the most appropriate risk treatment options to achieve the fire management objectives.

Stage 5: Publish –once the community and stakeholders have validated the draft MFMP, the relevant authorities endorse, publish and distribute it.

Stage 6: Deliver - relevant organisations implement the agreed risk treatments in the MFMP.

Stage 7: Monitor and Improve – track delivery and effectiveness of risk treatments so as to continually improve the MFMP’s contribution to realising the fire management objectives.

Figure 3: Integrated Fire Management Planning Process



This planning process is risk based and aligns with the Australian Standard AS/NZS ISO 31000:2009 Risk Management – Principles and Guidelines, table 1 describes how this is achieved.

All concerns identified were considered and defined as risk statements with the cause and impact clearly described. Each of these risk statements were then assessed using the State Bushfire Consequence Table, Likelihood table and Risk Assessment matrix (See Attachment 1) as endorsed by the State Fire Management Planning Committee.

Stage of the IFMP planning cycle	Relevant aspect of the AS/NZS ISO 31000:2009 Risk Management – Principles and Guidelines
Engagement Plan	Communicate and consult
Environmental Scan	Establish the context
Risk Assessment > Analyse	Identify the risk > Analyse the risk > Evaluate the risk
Decide > Publish	Determine and document treatment options
Deliver	Treat the risk
Monitor and Improve	Monitor and review

Table 1: IFMP Alignment with AS/NZS ISO 31000:2009

2 Engagement and Communications

Stakeholder engagement and participation is an essential element of fire management planning. Stakeholders are required to participate for a range of reasons, including (but not limited to):

1. Legislative responsibilities in relation to fire management.
2. Leadership
3. Provision of hazard expertise and technical advice
4. Subject to hazard impact – directly and/or indirectly
5. Land tenure and management arrangements
6. Expressed expectation
7. Influenced and/or support mitigation.

Stakeholder engagement is required during all seven stages in the IFMP planning cycle, the aim being for them to participate together in the collaborative development, delivery and monitoring of the MFMP.

Engaging with stakeholders in the development and implementation of the MFMP is an essential tool for drawing on existing knowledge and experience and to build support for and involvement in this plan.

These communication and engagement tasks have been built around the model of public engagement developed by the International Association of Public Participation (IAP2). This model is called the Public Participation Spectrum and is detailed in table 2 below. This spectrum provides a framework for planning effective stakeholder engagement about any issue or plan. It is used as the basis for communication and engagement planning during the development and subsequent implementation phases

Table 2: IAP2 Public Participation Spectrum

Inform	Consult	Involve	Collaborate	Empower
Provide balanced information to stakeholders	Obtain feedback on analysis and decisions	Work directly together to ensure issues are understood	Partner in each aspect of decision making	Place final decision making in the hands primary stakeholders

2.1 Community and Organisational Engagement Plan

In accordance with the IFMP planning guide the Strathbogrie MFMP undertook a stakeholder analysis and used this as a basis for the development of a Communication and Engagement Plan concerning the MFMP.

The stakeholder analysis consisted of a two part process; first identifying the key stakeholders who needed to be engaged in the MFMP's development and secondly determining the nature and level of their interest in fire management planning. This second step involved considering each stakeholder in relation to eight different fire management roles which are described in table 3 and four different stakeholder types as outlined in table 4.

Table 3: Fire Management Roles

Role	Description
Fire Coordination	Bringing together of fire management agencies and elements to ensure effective response to an incident or emergency. CFA has legislated responsibility under the <i>CFA Act 1958</i> for the prevention and suppression of fires and for the protection of life and property in the Country Area of Victoria. In accordance with provisions in the <i>CFA Act 1958</i> and the <i>Forest Act 1958</i> , DELWP has fire management and fire suppression responsibilities for state forests and national, state and regional parks.
Land Owner/Manager Responsibilities	Landholder/managers are heavily involved in fire prevention and fire suppression on land under their control. They have legislated responsibilities to extinguish a fire burning on their land and to prevent fires from starting from the use of equipment and vehicles (<i>CFA Act 1958, Crimes Act 1958</i>). They are also required to comply with relevant local government laws, relevant planning or building permit conditions and conditions associated with permits to burn.
Response	Actions taken in anticipation of, during and immediately after a fire incident to minimise the impact of the fire.
Recovery	A coordinated process of supporting emergency affected communities in the reconstruction of physical infrastructure and restoration of emotional, social, economic and physical well being.
Community Education	Community education is learning and social development, working with individuals and groups in their communities using a range of formal and informal methods
Community Care	Community care is about identifying and catering for groups or individuals with specific needs, before during and after fire.
Asset Protection	Asset protection involves protecting key community infrastructure such as power, water supplies, roads, gas pipes and protecting community assets such as parks and the environment. Asset protection can also involve the protection of private assets such as housing, plantations, crops and fences.
Regulatory	The issuing of permits for lighting fires. The development of and compliance with planning controls and permits for developments and building that take into account fire risk/management. The regulation and issuing of permits involving vegetation removal or fuel reduction activities for fire management purposes.

Once a stakeholder had been categorised, the appropriate level of participation in the process and the different types of engagement activities required were determined. The results of this stakeholder analyses and the resulting Communication and Engagement Plan can be found in Attachment 2.

Table 4: Stakeholder Type and Engagement Level

Stakeholder Type	Description	Participation Level
Internal	Formal responsibilities for IFMP process and outcomes	Collaborate and empower
Primary	MFMP membership, responsibility for development of the plan, communication and engagement across and within organisations rest with these organisations	Collaborate and empower
Secondary	RSFMPC membership or fire management role within municipality, may be requested to provide specific inputs, dependent upon outputs, or requested to be involved in specific tasks,	Involve and consult
Tertiary	Strong interest in outcomes and may have valuable information/viewpoints to share	Inform and consult

2.2 Community Engagement

During the development phase of the MFMP the Strathbogie MFMP’s communication and engagement efforts were focused primarily upon the key stakeholders. However a number of community groups were identified as Tertiary stakeholders and engaging with them and the broader community is seen as a critical component to the long term success of MFMP.

This community engagement process is very much seen as an ongoing responsibility of the Strathbogie MFMP. Consequently the Communication and Engagement Plan should be viewed as a live and evolving document that will be shaped according to the MFMP’s needs over time

It is also anticipated that in addition to the activities attributed to the MFMP, individual key stakeholders will be utilising their existing processes and undertaking their own community engagement activities in support of IFMP and the MFMP.

3 Environmental Scan

Environmental scanning involves identifying key themes, issues, trends and gaps that may affect or influence fire management. It establishes the base level of knowledge and understanding required for supporting risk identification, risk assessment and risk treatment within a fire management context.

It involves gathering and interpreting data and information relevant to fire management, so as to make predictions, assumptions and conclusions concerning fire risk for the municipality over the period of the plan. It also provides the basis for identifying fire management objectives and decision making with regard to selecting strategies to achieve these objectives.

3.1 Municipal Profile

3.1.1 Location and Tenure

Strathbogie Shire, located at the foothills of the eastern ranges of North East Victoria, and encompasses an area of approximately 3300 square kilometres. The Shire is approximately 150 kilometres north east from Melbourne. To the East it is bordered by the Strathbogie Ranges and on the west by the Nagambie Lakes district. The southern boundary is formed by the Goulburn River and the Hume Freeway dissects the middle of the municipality. Surrounding municipalities include Benalla Rural City, City of Greater Bendigo, City of Greater Shepparton and the Shires of Murrindindi, Mitchell, and Campaspe.

The Strathbogie Shire was created on 18 November 1994 from the amalgamation of parts of the Shire of Euroa, Shire of Goulburn, Shire of Violet Town, Shire of Mclvor and Rural City of Seymour.

The district is predominantly flat, open farmland north of the Hume Freeway and ranging from rolling foothills to steep terrain south of the Hume Freeway.

The Strathbogie ranges create difficulty for firefighting capabilities. The steep terrain restricts the use of firefighting appliances and as such alternative methods may need to be considered.

Known as the 'Horse Capital' of Victoria, Strathbogie Shire is home to a number of horse studs, wineries and sheep production. The Shire relies largely on a rural economic base of wool, grain and cattle production.

Major land managers in Strathbogie include the Department of Environment Land Water & Planning, Hancocks Victorian Plantations and Strathbogie Shire Council.

Population and Demographics

3.1.2 Population and Demographics

Strathbogie Shire has an estimated population of 10,012 and 60% of the population in the Shire live in or around the main urban areas with the remaining 40% living in the surrounding rural areas.

Spread throughout Strathbogie Shire is four main urban areas consisting of: Avenel (population 550), Euroa (population 2800), Nagambie (population 1335) and Violet Town (population 580). Several smaller settlements include Kelly's Estate, Kirwan's Bridge, Longwood, Locksley, Mangalore, Ruffy, Strathbogie and Tabilk.

Like most areas in the Hume Region, Strathbogie Shire has an ageing population with 29% of the shire over the age of 65. This trend is forecast to continue and by 2026 it is estimated that 35.3% of the population will be over 65. These forecasts show that Strathbogie Shire will have the second highest population of people over 60 years of age in Victoria.

Strathbogie is less culturally diverse than the majority of rural Victoria with 91.7% of the population born in Australia, compared to an average 84.4% across the Hume Region. 2.5% of people speak a language other than English at Home.

The Shire also consists of a high proportion of non-resident rate payers (absentee land holders). The population also includes a high transition rate based on events and seasonal activities. A large volume of tourists visit the shire during summer months especially around the river and Lake Nagambie areas.

Municipality Map - Strathbogie Shire

Date: 22/07/2012

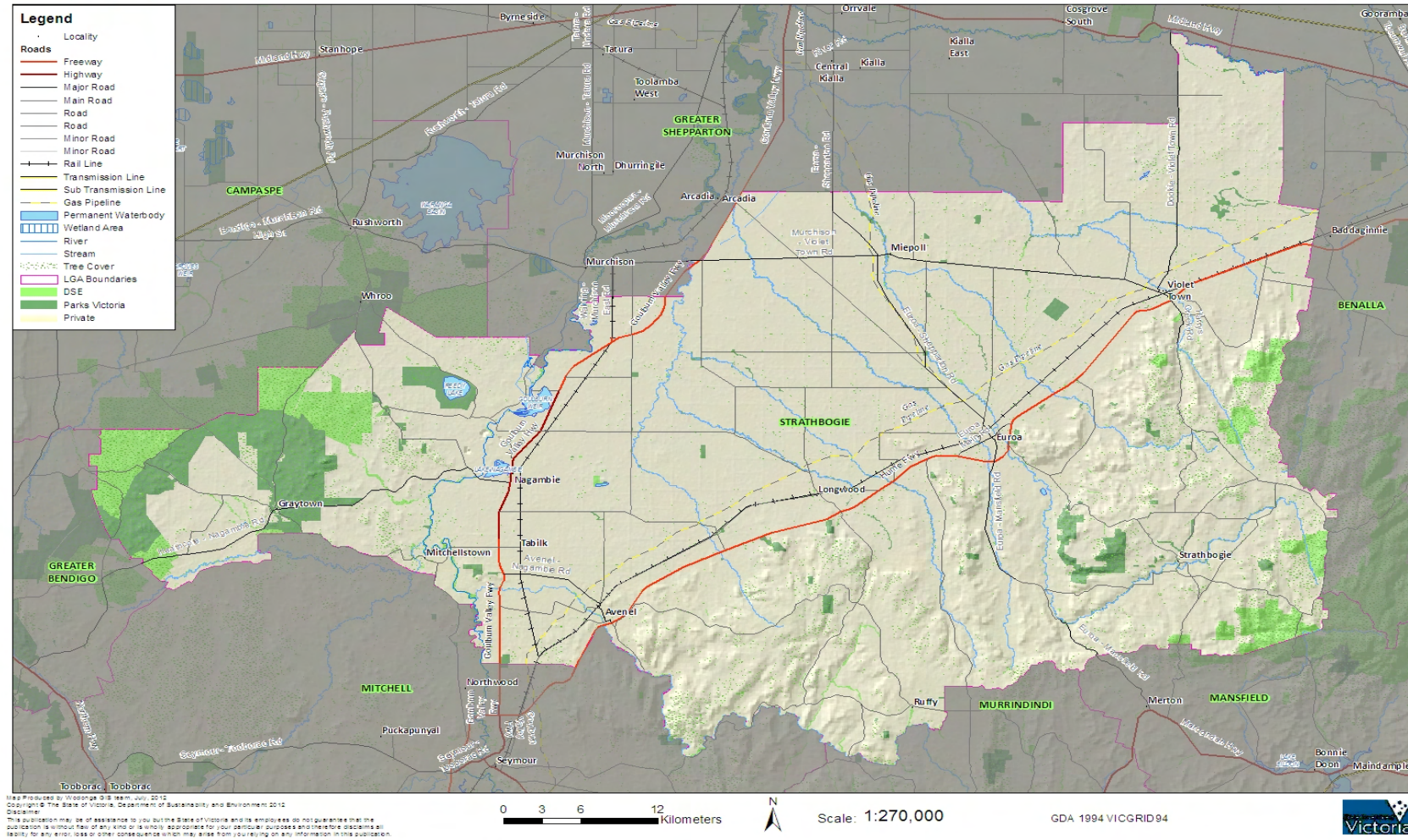


Figure 4: Strathbogie Shire Map

3.1.3 Natural Environment

Strathbogie is part of the Goulburn-Broken Catchment Area and has a number of natural features including Heathcote-Graytown National Park, the Strathbogie State Forest in the Strathbogie Ranges, the Goulburn River, Goulburn Weir and Lake Nagambie. The area is characterised by mountainous and hilly areas to the east in the Strathbogie Ranges, to flatter alluvial soil plains in the west.

Despite landscape wide changes including softwood plantations, grazing and cropping, Strathbogie Shire still has a large level of biodiversity due largely to State Forests and remnants on freehold land. Approximately 9% of the Shire has tree cover.

Over 215 species of native fauna have been described in the Strathbogie Shire, 38 of which are threatened including the endangered Barking Owl (*Ninox connivens connivens*) and Bush Stone Curlew (*Burhinus grallarius*). Of particular note is the endangered Grey-crowned Babbler (*Pomatostomus temporalis*) which has limited distribution in Australia. It is estimated that approximately 30% of the remaining population occur in the Strathbogie Shire in its parks, reserves, private land and on roadsides.

Roadsides in the municipality contain remnant vegetation of varying quality. It is important both as habitat for native flora and fauna and also as wildlife corridors between larger patches of remnant vegetation. A number of significant vegetation communities and Vulnerable, Rare or Threatened native species occur in these roadside areas, particularly north of the Hume Freeway

Of the 150 recorded native plant species, 14 are threatened and include the endangered Mountain Swainson-pea (*Swainsona recta*) and the vulnerable Euroa Guinea-flower (*Hibbertia humifusa* ssp. *Erigena*), Leafy Greenhood (*Pterostylis cucullata*) and Lima Stringybark (*Eucalyptus alligatrix* ssp. *limaensis*)

The main threats to biodiversity in the Strathbogie Shire include gully and sheet erosion on northern montane slopes and foothills and dryland salinity. Dryland salinity is generally found on freehold land adjacent to colluvial slopes of the Strathbogie plateau. Clearing and fragmentation of remaining native vegetation is also a threat to flora and fauna species in the municipality.

The Strathbogie Shire is traversed by a number of creeks and rivers including the Goulburn River and Broken River although a number of these are degraded and eroding where they pass through cleared farmland. The Strathbogie Ranges generally drain into the Seven Creeks System.

The main remnant areas in the Strathbogie Shire are covered by the Highlands-Northern Fall bioregion that covers the entire Strathbogie Ranges. Much of the ranges are cleared but the steeper escarpments and higher plateaus are forested.

3.1.4 Land use, Economy and Employment

Land use in Strathbogie Shire is predominantly agricultural with 231,000 hectares of land used for this purpose, 4,000 hectares of which is irrigated along the Goulburn and Broken Rivers. 7.4% of agricultural land is used for cereal production, 2% for fruit production and 7.6% of land is used for non-cereal broad acre crops. Stock also form a major part of the Agricultural industry consisting of:

1. 530,000 sheep and lambs for meat and wool
2. 63,000 beef cattle
3. 18,000 pigs
4. 625 dairy cattle

Agriculture contributes \$79.7 million gross to the economy of the region annually consisting of \$20 million of crops, \$46.2 million in livestock slaughtering and \$13.5 million in livestock products.

Grazing occurs on the flatter plains in the central and north of the Shire with mixed farming occurring in the hills to the east and west. Vineyards are concentrated in the south. Key industries include wineries, poultry and pig production, the Mushroom Exchange, Mangalore Airport, timber production and the Thales Group (ammunition manufacturing).

Although large properties have traditionally been the norm in Strathbogie Shire, in more recent years smaller holdings have become more popular. These smaller farms often specialise in more unusual stock such as goats, fine wool, sheep, deer and fish or crops including herbs, blueberries, grapes, nuts and cherries. There are pine plantations in Strathbogie Shire, particularly in the east of the Strathbogie Ranges. The larger sized plantations are managed by HVP Plantations but there are also a number that are privately owned.

The three biggest employers in the Strathbogie Shire are Agriculture, Forestry and Fishing (21.7%), Manufacturing (12.4%) and Retail Trade (10.2%).

Recreational activities in the Shire include motorcycling, horse riding and four wheel driving in the Strathbogie Ranges, canoeing on the Nagambie Lakes and rivers, bushwalking, fishing, bird watching, golf, cycling, wine tasting and a variety of other sporting activities.

The horse industry is substantial in the Strathbogie Shire and is known as Victoria's Thoroughbred Homeland with approximately eighteen of Australia's premier thoroughbred properties spread throughout the municipality.

Strathbogie is serviced by a number of roads of varying qualities and is traversed by major highways including the Goulburn Valley Highway and Hume Freeway. The Hume Freeway carries an average of 11,000 vehicles per day, 36% of which are commercial vehicles. The Euroa Main Road (old Hume

Highway) provides a thoroughfare for approximately 850 northbound vehicles per day, and 720 southbound vehicles per day, 10% of which are commercial vehicles. There are approximately 2,300kms of roads throughout the Shire 95% of which run through rural areas. In the Strathbogie Ranges in particular, some of the roads are steep, narrow have restricted access and are of low quality.

The main Melbourne-Sydney rail link, consisting of two tracks, passes through the district running parallel to the Hume Freeway.

The district is also traversed by the Melbourne-Sydney Natural Gas Pipeline and is under the direct air route from Melbourne to Sydney (a directional radio beacon is situated at Strathbogie township).

3.1.5 Climate

Strathbogie generally enjoys a temperate climate with an average summer maximum temperature ranging from approximately 29° C in the lower lying areas to 26° C on the slopes of the Strathbogie Ranges. Winter temperatures are cool with winter highs averaging 13° C in lower lying areas and 11° C in the areas of higher altitude. Winter minimums average 4.6° C in Euroa and 2° C in Strathbogie however sub-zero temperatures are common across the shire during the colder months.

Rainfall naturally varies in the Shire between the lower lying areas to the west and steeper country in the Strathbogie Ranges to the east. Euroa has an average rainfall of 650.7mm whilst Strathbogie in the foothills of the Ranges the average is considerably higher at 968.9mm. Like many areas in Victoria, rainfall is extremely variable in Strathbogie averaging 774mm Shire-wide. In 2006 Euroa recorded a record low of 268.2mm as did Strathbogie with 410.8mm. Euroa’s highest recorded rainfall was 1119.9mm in 1973 and Strathbogie’s 1732.6mm in 1956.

The Strathbogie Shire Council commissioned a report by Marsden Jacob Associates (2011)¹ on the potential impacts of climate change on the Strathbogie Shire area. The report draws on Commonwealth Scientific and Industrial Research Organisation (CSIRO) and South East Australia Climate Initiative (SEACI) data and assumes a high global emissions scenario. Utilising this data it predicts that the future climate in the municipality is likely to be warmer with rainfall becoming less reliable and more extreme. The following table 5 summarises the potential environmental changes.

Table 5: Strathbogie Shire Indicative Climate Changes

Climate Variable	Current	Indicative Changes		Comments
		2030	2070	
Average Rainfall				Average annual rainfall could decrease by up to 25% by 2070 in the worst case
Annual	774 mm	-3%	-10%	
Spring	200 mm	-7%	-20%	
Summer	135 mm	-1%	-4%	

¹ Jacob Marsden Associates 2011. *Strengthening Strathbogie in a Changing Climate: Risk Assessment and Adaptation Strategy*, by Dr Peter Kinrade, Nadja Arold, Melbourne, December

Table 5: Strathbogie Shire Indicative Climate Changes

Climate Variable	Current	Indicative Changes		Comments
Winter	188 mm	-2%	-5%	In the decade to 2007, the regions annual rainfall was 12% below the 1961 to 1990 average
Autumn	251 mm	-4%	-12%	
Runoff		2030	2070	Reductions in runoff are linked to a number of variables including reduced rainfall, higher evaporation and lower soil moisture
Annual		-12% to -35%	> 50%	
Rainfall Intensity		2030	2070	Rainfall in the region is predicted to become more variable, with fewer rainy days but rain falling in more intense bursts
24 hour rainfall intensity		0% to plus 10%	+10% to +50%	
Probable maximum flood levels		+	+	
Flood return intervals		+	+	
Number of Rainy Days	130	-5%	-16%	
Fire Weather		2030	2070	The length of the fire season is projected to increase also
Number of high and extreme forest fire danger days	18	+4	+12	
Other		2030	2070	Average annual temperature could increase by up to 3 °C by 2070. Average annual temperatures in the last decade have warmed by 0.5 °C, reflecting increases in both daily maximum and minimum temperatures
Average Annual Temperature	13.9 °C	+1 °C	+3 °C	
Potential Evaporation		+3%	+8%	
Solar Radiation		+0.8%	+2.5%	

The future climate across right across the broader Goulburn-Broken region is expected to follow a similar pattern and become hotter and drier than it is today². It is also expected that there will be a larger proportion of hotter days, fewer frosts and a greater incidence of drought³. Higher intensity, but lower predictability, of rain events is also likely to occur with less rain available for irrigation. These climatic changes will influence and possibly increase the likelihood of fire in the municipality.

By 2030 it is predicted that the average temperatures across the region will increase by 0.8°C and by 2070, depending on emissions, temperatures will increase on average by 1.4°C to 2.7°C. The

² DELWP 2008. *Climate change in Goulburn Broken*, Department of Environment Land Water & Planning, Victoria, Melbourne

³ CSIRO and BOM 2012. *State of the Climate 2012*, Commonwealth Scientific and Industrial Research Organisation, Bureau of Meteorology.

climate is likely to become increasingly erratic with higher occurrences of heat waves and storms. These climatic changes will also make fire behaviour harder to predict.

3.1.6 Fire History

Although there is a fire season every year there has been only four major outbreaks in the municipality during the last 50 years; the Longwood Fire of 1965, the Strathbogie fire in 1990, Boho in 2013 and Creightons Creek in 2014.

Tragically during the Longwood Fire of 1965 seven members of the same family were killed and a large number of stock, homes and other buildings were destroyed.

The Strathbogie Fire burnt for 14 days and was estimated to have cost the shire approximately 12 million dollars. It destroyed 13,500 stock, 16 homes and 150 other buildings. One person lost their life in this fire and a further 5 people were injured.

In January 2013, a fire started by a camper, burnt 1285 hectares of very steep, rocky grazing land in Boho. At one stage there was concern for the safety of Violet Town but weather conditions and firefighter effort kept the fire at least 1km from the town. No loss of life or buildings but considerable stock and fencing loss occurred.

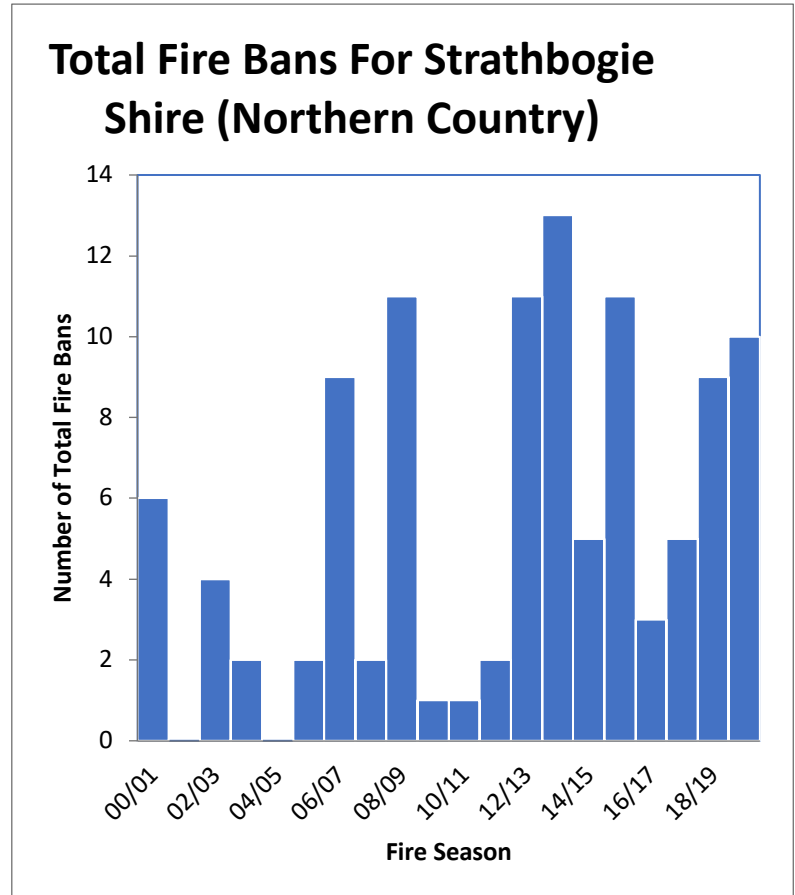
December 2014 saw a fire south of Longwood after electrical storms across Victoria sparked 350 fires. This fire burnt 6,500 hectares in the Creightons Creek area claiming 3 houses, several hundred head of stock with no loss of human life. A CFA observation was that landowners were appropriately prepared and probably contributed to preservation of property and life.

An insight to the fire risk within the shire can be gained by examining the number and type of Fire Danger Indexes (FDI) and Total Fire Bans (TFBs) for the municipality. FDIs are determined based on a range of meteorological factors including historical data (days since last rain, drought index) and current data (temperature, humidity, wind speed). Fire Danger Ratings (FDR) describe ranges of FDIs, and can be based on either historical data (actual FDR) or a combination of historical or forecasted weather parameters when predicting future FDRs. FDR is therefore a function of climate, however due to the significant difference between forest fire and grass fire conditions, two different FDI meters have been developed. FDI is also a factor used in the decision making process concerning the declaration of Total Fire Ban (TFB) days.

Figure 5 is a record of the number of TFBs declared within the Municipality (State-wide & Regional) over the last 20 years. What these statistics indicate is that the Municipality has a highly variable fire season, but it can expect to experience some "Moderate" to "High" FDR level days every year, with more severe conditions occurring on a regular if not annual basis.

Figure 5: Historical Total Fire Ban Day Declarations for Strathbogie Shire

Fire Season	Number of TFB's
00/01	6
01/02	0
02/03	4
03/04	2
04/05	0
05/06	2
06/07	9
07/08	2
08/09	11
09/10	1
10/11	1
11/12	2
12/13	11
13/14	13
14/15	5
15/16	11
16/17	3
17/18	5
18/19	9
19/20	10



3.1.7 Strategic Implications of Bushfires

Bushfire can occur in any type of vegetation, such as grassland, trees, crops or scrub. This section describes the municipality of Strathbogie and factors that increase the likelihood of a fire starting and spreading across this area. Ensuring the municipality is a safe and healthy place to live and work, involves protecting the social, environmental and economic fabric of the municipality.

Strathbogie Shire has a range of assets and features which make it a vibrant place to work live or visit. These include large townships, small communities, rural areas, industries such as agriculture, agribusinesses and tourism and important infrastructure for essential services such as transport, power, and communications. In addition to the built environment the municipality boasts a range of natural assets such as high quality water resources and extensive native forests which are valued for their environmental, commercial and visual appeal.

The vegetation and topography of the Municipality create a number of challenges for fire management.

The topography in the Shire varies from flatter, sparsely vegetated flood-plains in the north and west, to heavily vegetated hilly country of the Strathbogie Ranges to the south and east. Response times in steeper and more heavily vegetated land can be delayed as locating and accessing fires with emergency equipment can be difficult.

3.1.8 Vegetation and topography

The woodlands and grasslands of Strathbogie Shire present a number of fire safety challenges particularly throughout the summer period. Much of the vegetation in the shire is confined to the Strathbogie Ranges, which have a number of steep escarpments and highly varying topography. They are heavily vegetated and have restricted access or egress and have a number of water courses flowing through them. All of these factors combine to make fire control and response in these areas difficult.

A large percentage of remnant vegetation in the Shire is confined to roadside verges and river corridors. This presents a number of challenges to emergency services including access to sites and dense fuel loads adjacent to vehicular and pedestrian traffic. Fire management in and about these areas is an annual task.

The western area of the shire is traversed by the Goulburn River running north-south and the northern section by its tributaries which generally drain to the north-west. Although providing a reliable water resource and a natural fire break, access across the Goulburn River and its larger tributaries is generally restricted to bridges and crossing points which may delay emergency response times.

Bushfire threat is not confined to forested environments and the threat of grass fires is a significant one throughout the shire. While grassfires may have lower intensities and flame heights than forest fires, the combination of open ground and fine fuels can produce very fast moving destructive fires.

3.2 Structural Fire and Hazardous Material Incident Risk

Structural fire is a fire that may impact the structural components of various types of residential, commercial or industrial buildings. It is a separate category of fire to bushfire although structures may be lost during bushfires and it may require the use of entirely different techniques to extinguish when compared to bushfire. Structural fire in Murrindindi Shire is generally confined to one or a few buildings and as a result, generally has lower personal and property impacts than a large bushfire event.

Hazardous materials are defined as:

“anything that when produced, stored moved, used or otherwise dealt with without adequate safeguards to prevent it from escaping, may cause serious injury or death or damage to life, property or the environment”¹³. Hazardous Material Incidents occur when a hazardous material is exposed to people or the environment through an accident, production, storage and removal and a lack of adequate safeguards.

3.2.1 History and Strategic Implications of Structural Fire and Hazardous Material Incidents

Structural fire is confined predominantly to the more settled, urban and industrial areas of Strathbogie Shire although agricultural fires, such as haystack fires and machinery fires, may also have an impact on structures in the farming areas. Generally structural fires are not deliberately lit but cases of arson have been recorded. Hazardous material incidents in Strathbogie Shire are generally confined to the major highways (traffic incidents), industrial areas and farms.

For the Strathbogie CFA catchment area;

1. A total of 40 Structure Fires were reported in the last 5 years. These are fires that have been reported as “Building fire: building only or building and contents”.
2. Hazardous Condition calls are broken down into a couple of categories.
 1. Other Hazardous Materials (chemical spills/leaks) - there are no reports of these in the past 5 years.
 2. Combustible/Flammable Spills & Leaks - these are the petrol, diesel, natural/LP gas and oils etc. leaks & spills - A total of 45 incidents have been reported in the past 5 years.

4 Municipal Fire Management Objective

The Municipal Fire Management Objective provides a framework for considering, selecting and evaluating fire management activities. This objective was developed using the information examined during the environmental scanning process, as well as being informed by the Hume Regional Fire Management Plan and relevant issues and priorities from regional stakeholders and adjoining municipalities.

4.1 Municipal Objective

The fire management objective of STRATHBOGIE MFMPC is;

To evaluate and work to reduce the risk of fire to the community, environment and economy in the Strathbogie Shire by participating agencies working together with Council to plan for, respond to and recover from a fire event.

4.2 Strategic Direction

In developing strategic directions for the MFMP the MFMPC was mindful of the planning context within which they were undertaking this task. As illustrated in figure 2 the MFMP forms a critical third tier in the State of Victoria's Fire Management Planning hierarchy and therefore must not be developed in isolation from State and Regional level fire management plans. The MFMPC are keen to ensure any actions within the MFMP support and compliment any relevant State objectives and strategies with regard to fire management. Consequently the MFMPC have adopted the following broad strategic fire management deliverables from the State Fire Management Strategy 2009;

1. Active participation of key stakeholders the community, the fire agencies, and other government agencies, working together in fire management planning to reduce the destructive impact of fire on communities and the environment.
2. Communities that are resilient to fire.
3. Greater understanding of the fire sector within the community.
4. Healthy natural, social and economic environments.

4.3 Alignment of Regional & Municipal Objective

The Strathbogie MFMP fire management objective aligns closely with the Hume RSFMP objectives and vision for fire management. The development and implementation of this plan will therefore contribute to the realisation of the Hume RSFMP's vision.

Furthermore the formation of the MFMPC and the development of a MFMP using the designated IFMP guide have strongly supported several of the RSFMP's key objectives. Evidence of this is described in Table 6.

Hume Regional Fire Management Vision:

"The Hume Region working together to effectively anticipate, respond to and recover from major bushfire – to secure a safer region, more resilient community, health, environment and economy"

Table 6: Alignment of MFMP & RSFMP objectives

RSFMP element	RSFMP objective	MFMP contribution
Planning together	Develop state, regional, municipal and local fire management plans and planning with a clear purpose and a consistent assessment of risk.	The MFMP provides the third tier in the IFMP process and utilises the same risk base approach as used with State and Regional plans
Collaborative implementation	Develop and implement fire management programs and activities in a collaborative manner.	The MFMP consists of multiagency representation and has incorporated community engagement strongly into the development of the MFMP.
Building knowledge & capacity:	Build and share knowledge in the fire management sector and across the community. Improve the capability of communities, the fire management sector and the government to deal with fires.	The aspirations of the MFMP converge with the regions in seeking to build both its members and the communities' knowledge and understanding of fire management.
Implementation support	Support the implementation of the IFMP framework in the Hume region	The development of this MFMP clearly demonstrates support for IFMP at a municipal level.

5 Fire Management Risk Strategies

Integrated fire management planning is the risk management process to establish priority setting for fire management activities and is consistent with the international standard for Risk Management ISO 31000. Risk is described within the standard as;

Risk Analysis = Consequence x Likelihood

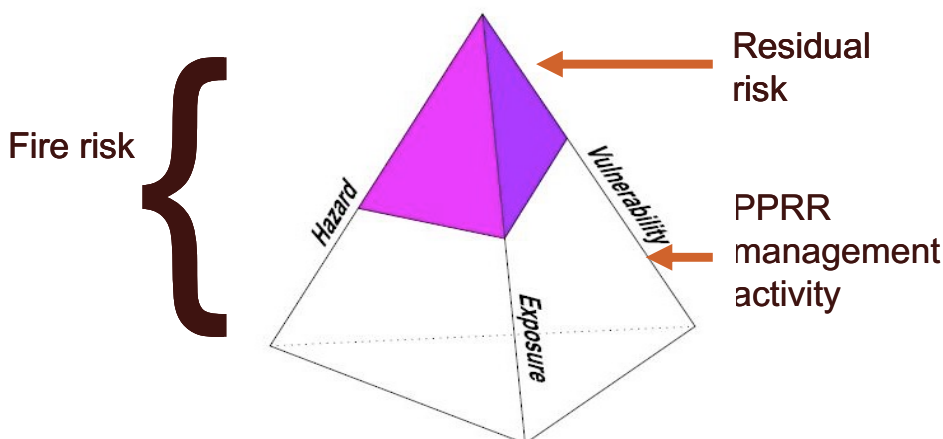
And the standard emphasises the need to establish and manage the risk to the objectives that have been set during the plan development process.

5.1 Risk Identification Process

These objectives and risks were identified through the environmental scanning process and primary to this process is Chrighton's Risk Pyramid. Chrighton's Risk Pyramid provides a framework for sorting, analysing and assessing information with respect to fire risk. It helps identify the amount of risk generated by the hazard x exposure x vulnerability relationship within the context (people, property, infrastructure, social, economic, biodiversity, the economy and heritage values) of a location or situation. Where;

1. **Hazard** - is a specific event characterised by a certain magnitude and likelihood of occurrence
2. **Exposure** - refers to the factors, such as people, buildings, the environment and economy that are subject to the impact of a specific hazard
3. **Vulnerability** - refers to the characteristics of an element exposed to a hazard - road, building, person, and economy – that contributes to the capacity of that element to resist, cope with and recover from the impact of a natural hazard.

Figure 6: Chrighton's Risk Pyramid



By this means, the MFMP was able to generate a list of bushfire risks for the municipality. As IFMP encompasses planning across all fire hazard environments, hazards need to be considered within a range of categories, so as to better understand the likely consequences and recovery risks involved. A copy of these categories can be found in Table 7 below.

5.2 Risk Assessment Process

Risk is assessed by determining consequences and the likelihood of the consequence occurring, and the elements at risk. An event or set of circumstances may have multiple consequences and may affect multiple objectives. Existing risk treatments and their effectiveness should be taken into account when rating the level of risk.

As a first step in the assessment process each of the identified risks were refined into succinct risk statements and entered into the Risk Register. Risk statements are a description of the risk and simply describe the risk in terms of the source through to the impact. Each risk statement should outline:

1. the hazard (source of risk)
2. the element at risk
3. the consequence of the interaction as a result of an event.

Each of these statements was then qualitatively assessed for their impact using the State Fire Management Planning Committee's State Bushfire Consequence Table (Attachment 1). Each consequence was considered in terms of both damage and disruption (loss of service or function) and in some cases, the consequence of an event was not realised at the local level but was of a significant impact at regional and/or state level. In addition the committee took into account existing treatments and their impact on the risk level. Consequence ratings were then entered into the risk register.

It is understood that a single fire incident that impacts an individual or group can be seen as a catastrophic event locally. In the preparation of the MFMP however, the MFMPC utilised State derived consequence tables to inform planning. These State consequence tables were utilised by all MFMPCs throughout Victoria so that individual risks and their consequences can be compared between municipalities, regions and the State. If a risk on Table 8 below has a lower risk rating, this relates directly to the State derived consequences and has no bearing on how consequences should be viewed by a local community, group or individual.

The likelihood of each event being realised was assessed using the data derived from the environmental scan and the *Likelihood Table* (Attachment 1). Where the committee did not believe it held the necessary technical expertise to make an assessment, advice was sought from relevant authorities outside the committee. Once agreement as to *Consequence* and *Likelihood* was reached the *Risk Assessment Matrix* (Attachment 1) was used to assign a risk level to each risk statement.

Once assessed, risks were also given categories using the Risk Categories Table (figure 15). This was done to group 'like' risks together. Primacy of life is the most essential element of the MFMP and is represented by the Risk Group – Social, and by the Risk Category- People and Social Setting. Other risk groups include economic risks, environmental risks and planning risks. The use of these categories and groups is utilised in both the risk assessment (Risk Register figure 16) and the Risk Management Strategy (figure 17).

Table 7: Risk Categories

Risk Group	Risk Category	Risk Element
SOCIAL	People & Social Setting	<i>Life & injury:</i> Public Safety <i>Social services:</i> Functional continuity <i>Health & wellbeing:</i> Social networks <i>Displacement of people:</i> Employment/income
	Infrastructure	<i>Residential:</i> House, flat, caravan, apartments <i>Public accommodation</i> Boarding house, hotel, hostel, correctional facilities <i>Public assembly:</i> Education, hall, theatre, stadium, cafe, restaurant <i>Health care:</i> Special accommodation homes, nursing homes and hospitals
	Cultural, Heritage	<i>Heritage sites and buildings</i> <i>Indigenous sites</i> <i>Iconic sites and features:</i> e.g. Puffing Billy
ECONOMIC	Infrastructure	<i>Commercial:</i> Shopping complex, office <i>Industrial:</i> Factory (heavy, light, special), warehouse, silo, chemical, petrol <i>Essential Infrastructure:</i> Pipelines, Power, public transport systems, Water Catchments, Power Water & Sewerage, Gas, Communications <i>Transport:</i> Road, rail, bridge, tunnel, port, marine, airport
	Production	<i>Agriculture and Farming:</i> Plantation, crop, pasture, poultry, feedlot, sawmill <i>Business/Industrial Capacity</i> <i>Tourism</i>
ENVIRONMENT	Biodiversity	<i>Assets that provide biological based ecosystem functions and/or services considered of value.</i>
	Water	<i>Assets that provide of atmospheric/climatic ecosystem functions and/or services considered of value</i>
	Air	<i>Assets that provide water-based ecosystems functions and/or services considered of value.</i>
PLANNING	Governance & Regulation	<i>Corporate Governance Issues, including organisation structures; Boundary issues, Inter-Agency Agreements; Environmental scans; Population projections; urban development projections/planning; Volume projections; Long term/short term solutions; Infrastructure requirements to meet projected community needs</i>
	Planning & Communication	<i>Internal, external, multi-municipal, communications strategies</i>
	Stakeholder Management	<i>Community Expectations; Government expectations; Business and Industry Issues, including risks associated with developing and implementing programs to minimise the impact of fire on business and industry;</i>
	Operational	<i>Encompasses the planning, daily operational activities, resources (including people) and support required within the 'area of interest', that results in the successful development and delivery of products/ services.</i>
	Financial	<i>Ability to allocate limited financial resources to maximum effect; Ability to fund adequate resources to meet community needs; Skills & technical expertise; Management skills; Equipment maintenance, upgrades, and replacement funding; Geographical remoteness location needs; Government's ability to fund requirements to meet population growth needs</i>

5.2.1 Bushfire Risk Assessment

Table 8 is a summary of the bushfire risk assessment process, detailing the highest priority bushfire risks in the Strathbogie Shire. The priority risks were determined by the MFMPC which utilised the fire experience of committee members, and the VFRR risk register.

Table 8: Risk Register - Bushfire

ID #	RISK DESCRIPTION (Defined)	RISK GROUP	RISK CATEGORY	CAUSE	IMPACT	COMMENT	LIKELIHOOD	RISK RATING
1	Risk to communities (people, residences and infrastructure) along Wiebye Track and Gap Road from fire on high and above FDR days	Social	People & Social Setting	Lightning and human factors	Loss of life, residences and infrastructure. Time and cost of recovery	Access/egress is limited, high fuel loads, limited acceptance of risk	Possible	Moderate
2	Risk to people, residences and infrastructure in remote areas and those living in fire prone areas along hillsides and mountains from fire on high and above FDR days	Social	People & Social Setting	Lightning and human factors	Loss of life, residences and infrastructure. Time and cost of recovery	Access/egress is limited, high fuel loads, limited acceptance of risk	Possible	Low
3	Risk to vulnerable people living in isolated areas and in aged care facilities in Strathbogie Shire from fire on severe and above FDR days	Social	People & Social Setting	Lightning and human factors	Loss of life	Relocation can cause loss of life	Unlikely	Low

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Table 8: Risk Register - Bushfire

ID #	RISK DESCRIPTION (Defined)	RISK GROUP	RISK CATEGORY	CAUSE	IMPACT	COMMENT	LIKELIHOOD	RISK RATING
4	Risk to people, residences and infrastructure along undulating grass lands such as Tabilk and Locksley from fire on severe and above FDR days	Social	People & Social Setting	Agricultural and human factors	Loss of life, residences and infrastructure. Time and cost of recovery. Loss of agricultural production	Substantial poultry industry in Euroa and Nagambie	Possible	Low
5	Risk that high roadside fuels on secondary roads will contribute to increased fire danger, and may also act as fire 'wicks' throughout the Strathbogie Shire from high and above FDR days	Social	People & Social Setting	Agricultural and human factors, lightning	Loss of life, residences and infrastructure. Time and cost of recovery. Loss of agricultural production	Many secondary roads are in mountainous areas, high road side fuels, only access and egress for isolated communities, access/egress for emergency services may be problematic	Possible	Low
6	Risk to reticulated water from fire in Euroa, Violet Town and Nagambie at any time of the year	Social	People & Social Setting	Structural fires or disruption to power grid	Loss of life, infrastructure and assets. Cost of recovery.	Electric pumps feed street mains and will not run without power (no backup)	Likely	Moderate
7	Risk to schools (including school bus access / egress)	Social	People & Social Setting	Lightning and human factors	Loss of life	Procedures in place for code red days	Rare	Moderate

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Table 8: Risk Register - Bushfire

ID #	RISK DESCRIPTION (Defined)	RISK GROUP	RISK CATEGORY	CAUSE	IMPACT	COMMENT	LIKELIHOOD	RISK RATING
	from fire on extreme and code red days							
8	Risk to and from people participating in recreation activities as an ignition source of fire on high and above FDR days	Social	People & Social Setting	Lightning and human factors	Loss of life, loss of tourism	Including Warring gliding club, School camps, Horse riders, Motorcycle, 4WDs, Caravan Parks, Camps, Lack of awareness from transient people	Possible	Low
9	Risk to and from people travelling on the Goulburn Valley Highway and Hume Freeway from fire on high and above FDR Days	Social	People & Social Setting	Human factors (accidental and malicious), mechanical failure, natural	Loss of life, Interruption to transport, diverting traffic onto smaller roads	Smoke impact, in many cases traffic diversions are not possible or they are problematic	Possible	Moderate

5.2.1 Bushfire Risk Assessment

Table 8 is a summary of the bushfire risk assessment process, detailing the highest priority bushfire risks in the Strathbogie Shire. The priority risks were determined by the MFMPC which utilised the fire experience of committee members, and the VFRR risk register.

Table 8: Risk Register - Bushfire

ID #	RISK DESCRIPTION (Defined)	RISK GROUP	RISK CATEGORY	CAUSE	IMPACT	COMMENT	LIKELIHOOD	RISK RATING
10	Risk to and from agriculture of fires impacting upon communities and infrastructure in the broader area on high and above FDR days	Social	People & Social Setting	Lightning and human factors	Loss of life, assets and infrastructure, employment and economic loss to agricultural industry, time and cost of recovery	Includes machinery and haystack fires, haystack fires can occur at any time of year	Likely	Low
11	Risk from public land along waterways or topography impacting fire behaviour in a rural area potentially impacting residences, assets and infrastructure on severe and above FDR days	Social	People & Social Setting	Lightning and human factors	Loss of life, assets and infrastructure, employment and economic loss to industry, time and cost of recovery	Includes: Seven Creeks (Euroa and Strathbogie), Honey Suckle Creek, Hughes Creek, Goulburn River. Has a greater potential to impact residences, life and infrastructure in urban areas.	Possible	Low
12	Risk of distribution lines to Euroa being impacted/damaged by bushfire on an extreme and above FDR day leading to a loss of service	Social	People & Social Setting	Direct fire impact on poles/wires/structures, falling debris or vehicles accidents.	Loss of power to Euroa (location of effect dependant on location of impact)	Long length of exposed line, no alternative supply routes to these communities	Possible	Moderate

5.2.1 Bushfire Risk Assessment

Table 8 is a summary of the bushfire risk assessment process, detailing the highest priority bushfire risks in the Strathbogie Shire. The priority risks were determined by the MFMPC which utilised the fire experience of committee members, and the VFRR risk register.

Table 8: Risk Register - Bushfire

ID #	RISK DESCRIPTION (Defined)	RISK GROUP	RISK CATEGORY	CAUSE	IMPACT	COMMENT	LIKELIHOOD	RISK RATING
13	Risk of distribution lines & sub stations being impacted/damaged by bushfire on an extreme and above FDR day leading to a loss of service	Social	People & Social Setting	Direct fire impact on poles/wires/structures, falling debris or vehicles accidents.	Loss of power to local community (location of effect dependant on location of impact)	May take up to a week to restore power to towns	Possible	Low
14	Risk of fire fighters being injured or killed while responding to incidents	Social	People & Social Setting	Uncontrolled bushfire impacting on responding emergency services crews	Injury, loss of life	Consequence can have a significant impact on the broader community	Possible	Moderate
15	Risk to water catchments (local) and reduced water quality from fire after a fire event	Social	Infrastructure	Fire in the catchment	Reduced water quality, increased treatment costs due to increased turbidity, Impact on biodiversity	A number of nationally threatened aquatic species occur in the shire, A large percentage of the shire is a "Special Water Supply Catchment" and consequences could be widespread	Possible	Low

5.2.1 Bushfire Risk Assessment

Table 8 is a summary of the bushfire risk assessment process, detailing the highest priority bushfire risks in the Strathbogie Shire. The priority risks were determined by the MFMPC which utilised the fire experience of committee members, and the VFRR risk register.

Table 8: Risk Register - Bushfire

ID #	RISK DESCRIPTION (Defined)	RISK GROUP	RISK CATEGORY	CAUSE	IMPACT	COMMENT	LIKELIHOOD	RISK RATING
16	Residential fires in all human settlement areas	Social	Infrastructure	Human or other	Potential loss of life or infrastructure	Programs include Advance Program, Fire Safe Kids, CFA Mobile Education Unit, Residential Fire Safety Campaign	Almost Certain	Moderate
17	Risk of fire impacting cultural heritage and biodiversity (including threatened species) on extreme and above FDR days	Environment	Biodiversity	Lightning and human factors	Loss of biodiversity, loss of threatened species, loss of critical habitat, loss of cultural heritage	Access to AAV/DELWP databases needed, smaller fires without IMT could be a problem as cultural site location would be unknown	Unlikely	Low
18	Risk to Mt Wombat infrastructure (communication, telecommunication and flight infrastructure hub for municipality) from fire on severe and above FDR	Economic	Infrastructure	Lightning and human factors	Loss of infrastructure and assets. Time and cost of recovery. Interruption to function of emergency services	This may potentially impact flights including: Melbourne / Sydney flights: Mt Wombat beacon and Strathbogie beacon - National flight path. Local Flights: Wilsons Hill beacon, Lone Pine beacon, Creighton Hill beacon	Unlikely	Low

5.2.1 Bushfire Risk Assessment

Table 8 is a summary of the bushfire risk assessment process, detailing the highest priority bushfire risks in the Strathbogie Shire. The priority risks were determined by the MFMPC which utilised the fire experience of committee members, and the VFRR risk register.

Table 8: Risk Register - Bushfire

ID #	RISK DESCRIPTION (Defined)	RISK GROUP	RISK CATEGORY	CAUSE	IMPACT	COMMENT	LIKELIHOOD	RISK RATING
19	Risk to gas infrastructure (including the main Melbourne to Sydney line) from fire on severe and above FDR days	Economic	Infrastructure	Lightning and human factors	Potential impact state wide (on gas delivery)	Main Melbourne-Sydney gas feed runs through shire	Unlikely	Moderate
20	Risk to rail industry from fire and risk from fire starting on rail reserves and impacting on communities and infrastructure on severe and above FDR days	Economic	Infrastructure	Lightning and human factors	Loss of life, assets and services, time and cost of recovery	Some timber bridges present	Unlikely	Moderate
21	Risk of mobile service being interrupted due to towers being impacted by bushfire on very high and above FDR days	Economic	Infrastructure	Indirect impacts eg Loss of power to tower (most likely cause), direct impact to structure (unlikely)	Temporary loss of mobile telephone service for a small area	Towers themselves fairly fire resistant, other communications devices still operating, access to Mount Wombat may be limited during a fire event	Unlikely	Low

5.2.1 Bushfire Risk Assessment

Table 8 is a summary of the bushfire risk assessment process, detailing the highest priority bushfire risks in the Strathbogie Shire. The priority risks were determined by the MFMPC which utilised the fire experience of committee members, and the VFRR risk register.

Table 8: Risk Register - Bushfire

ID #	RISK DESCRIPTION (Defined)	RISK GROUP	RISK CATEGORY	CAUSE	IMPACT	COMMENT	LIKELIHOOD	RISK RATING
22	Risk of telephone communications being interrupted due to damage to cables during a bushfire on very high and above FDR days	Economic	Infrastructure	Dozer cutting lines during fire response or burning tree root near cable (rare)	Loss of all public communications services for a small area	Unusual but has been known to happen	Unlikely	Low
23	Risk to private and commercial tree plantations from fire on high and above FDR days	Economic	Production	Lightning and human factors	Loss of asset, cost and time of recovery	Commercial forestry have plans and firefighting infrastructure	Possible	Low
24	Risk to viticulture/wine industry from fire and smoke taint and risk from viticulture (fires entering and being difficult to contain) on high and above FDR days	Economic	Production	Lightning and human factors	Loss of production, time and cost of recovery	Smoke taint depends on time and amount of exposure	Possible	Low

5.2.1 Bushfire Risk Assessment

Table 8 is a summary of the bushfire risk assessment process, detailing the highest priority bushfire risks in the Strathbogie Shire. The priority risks were determined by the MF MPC which utilised the fire experience of committee members, and the VFRR risk register.

Table 8: Risk Register - Bushfire

ID #	RISK DESCRIPTION (Defined)	RISK GROUP	RISK CATEGORY	CAUSE	IMPACT	COMMENT	LIKELIHOOD	RISK RATING
25	Risk to infrastructure, employment, stock and people in the Equine industry from fire on severe and above FDR days	Economic	Production	Lightning and human factors	Loss of life, assets and infrastructure, employment and economic loss to equine industry, time and cost of recovery	Including: Creightons Creek Rd / Bartons Lane area in Creightons Creek (Lindsay Park stud), Longwood Gobur Rd in Longwood east (Several Studs), Northwood area, just Southwest of Seymour, probably falls in Mitchell Shire (Darley Stud, Sweetenham Stud). Risks to assets minimised over summer period as grass levels are usually low.	Unlikely	Low

5.2.2 Structural Fire and Hazardous Material Incident Assessment

The majority of the population of the Municipality resides within the towns of Avenel, Euroa, Longwood, Nagambie and Violet Town and the rural districts of Creightons Creek, Graytown, Kelvin View, Kelly’s Estate, Kirwans Bridge, Locksley, Mangalore, Mitchellstown, Strathbogie and Tabilk. There is a significant fire risk to life within the residential and domestic areas of the Municipality, compounded by the diversification of life styles within the general population.

Table 9 below is the risk register for structural fire and hazardous material incident risks in Strathbogie Shire. The priority risks were determined by the MFMPC, which utilised the response experience of committee members.

Table 9: Risk Register – Structural Fires and Hazardous Chemical Incidents

ID#	RISK DESCRIPTION	RISK GROUP	RISK CATEGORY	CAUSE	IMPACT	COMMENT	LIKELIHOOD	RISK RATING
1	Risk to residential properties across Strathbogie Shire from structural fire	Social	People & Social Setting	Multiple Causes (wood fires, smoking in bed, etc)	Loss of property, House potentially inhabitable, potential loss of life	The residential population of the Municipality is spread with widely varying density throughout its length and breadth. The majority of the population of the Municipality resides within the towns of Euroa, Nagambie, Avenel, Longwood and Violet Town	Possible	Moderate

Table 9: Risk Register – Structural Fires and Hazardous Chemical Incidents

ID#	RISK DESCRIPTION	RISK GROUP	RISK CATEGORY	CAUSE	IMPACT	COMMENT	LIKELIHOOD	RISK RATING
2	Risk to land and outbuildings and non-residential buildings from structural fire	Social	People & Social Setting	Multiple Causes, wiring shorts, haystacks, open fires, incinerators, escaped backyard fire etc	Loss of outbuildings and other property	Structural fires as a potential wildfire source, unauthorized occupation of outbuildings	Almost Certain	Moderate
3	Risk to public event from structural fire	Social	People & Social Setting	Multiple causes, site dependent	Loss of income, loss of tourists to events	Special Public Events and Festivals, Occasional/annual public entertainment, Agricultural Shows, music festivals, markets, football/netball games	Unlikely	Moderate
4	Risk to areas of public assembly from structural fire	Social	Infrastructure	Multiple causes, site dependent	Loss of social space, potential impact on persons if space is occupied	There are a number of these premises within the Municipality including public halls, sporting complexes, churches, schools, preschools and childcare centres. Each facility or premises has its own particular risk that will require individual evaluation	Unlikely	Moderate
5	Risk to Industrial and commercial properties from structural fire	Economic	Production	Multiple causes, site dependent	Loss of business and local employment	There are several industries within the Municipality that are generally located close to their supply of raw materials. The major industries at risk are the light	Unlikely	Moderate

Table 9: Risk Register – Structural Fires and Hazardous Chemical Incidents

ID#	RISK DESCRIPTION	RISK GROUP	RISK CATEGORY	CAUSE	IMPACT	COMMENT	LIKELIHOOD	RISK RATING
						engineering/fabrication, egg production, fruit packing and processing and bulk fuel depots. There are several risks associated with these industries that include fire, hazardous materials spills (both storage and transport), and environmental damage from pollution and/or spillage		
6	Risk to commercial centres of towns from structural fire	Economic	Production	Multiple causes, site dependent	Loss of business and local employment	The major Commercial Centres within the Municipality are located within the towns of Euroa and Nagambie, with smaller establishments located within the other villages and hamlets. There are a number of risks associated with the occurrence of fire related to these commercial centres that include; a higher concentration of flammable materials and the proximity to other similar premises. The loss of these premises as a result of	Possible	Moderate

Table 9: Risk Register – Structural Fires and Hazardous Chemical Incidents

ID#	RISK DESCRIPTION	RISK GROUP	RISK CATEGORY	CAUSE	IMPACT	COMMENT	LIKELIHOOD	RISK RATING
						fire, may result in major economic loss and the loss of employment		
7	Risk that people may not be able to travel due to road closure for a hazardous material incident or accident	Economic	Infrastructure	Crash, fatality, truck rollover, hazardous material spill, discarded cigarette causing fire etc	Loss of income, localised environmental impact	The Hume Freeway and Goulburn Valley Highway traverse the Municipality. These roads are critical to the economy of the State, and the region and provides significant opportunity for future economic development. These transport links however provide a potential fire ignition source (due to vehicle malfunction, accident or inappropriate disposal of burning material by the users, such as cigarettes) which subsequently requires traffic to detour onto lower standard roads. Access to some areas may be restricted for up to half a day. Hazardous material incidents may also cause similar access/egress issues.	Almost Certain	Moderate

5.3 Risk Management Strategy

Having developed a register of risks for Strathbogie Shire, the committee was able to allocate the current treatments of responsible agencies against relevant risk areas and thus develop a Risk Management Strategy. This strategy is a matrix of;

Priority risks x treatment x agency x time frames

This creates a snapshot of who is doing 'what', 'where' and 'why' within the municipality, to reduce the risks posed by fire within the municipality.

The following Table 10 details all of the treatments or procedures being undertaken by all of the major infrastructure providers, regulatory agencies and community based agencies throughout Strathbogie Shire. Each of the statements was given by the Responsible Agency as something that they see as treatment essential to fire prevention, preparedness, response, recovery and the use of fire.

5.3.1 Risk Management Strategy - Bushfire

There are several state-wide and municipal treatments that have been identified for each fire risk management strategy which can be used by agencies to reduce the risk and affect of fire on the community. The generic state wide and municipal wide treatments include:

- Community education programs
- Community education and engagement activities
- Public awareness – multimedia communications
- Powerline hazard tree identification, management and reporting
- Fire hazard inspection program and issue of notice
- Compliance and enforcement of legislation
- Bushfire management overlays
- Building code of Australia
- Permits to Burn
- Local laws.

To effectively reduce community vulnerability to fire requires more than inter-agency effort alone. It requires the facilitation of a more self-reliant and self-aware community who have the knowledge, motivation and capacity to manage the risks to reduce the threat of fire in their own communities as an active partner with fire management agencies. The key objectives and outcomes sought through the implementation of the primary fire risk management strategies for bushfire are outlined in Table 10 below.

Table 10: Risk Management Strategy - Bushfire

Risk Group	Risk Category	Treatment		Treatment description	Spectrum					Responsible agency	Application	
		ID #	Name		Prevention	Preparedness	Response	Recovery	Use		Targeted*	Period (Year 1, 2, 3)
Social	People and Social Setting	1	Schools Program	Fire Safe Kids, Mobile Education Bushfire Unit.	.	✓	.	.	.	CFA	Y	All
		2	Brigade Burn Program	Removal of vegetation through burning to protect life & property includes Township Protection Burning, Planned Burn Program & Fuel Reduction Burns by CFA Brigades.	✓	✓	.	.	.	CFA	Y	All
		3	Vulnerable Communities Fire Awareness	Community education & information for vulnerable groups about fire.	✓	✓	.	.	.	CFA	Y	All
		4	Awareness	Fire awareness programs targeted at communities via shows/events/displays	.	✓	.	.	.	CFA	N	All

Table 10: Risk Management Strategy - Bushfire

Risk Group	Risk Category	Treatment		Treatment description	Spectrum					Responsible agency	Application	
		ID #	Name		Prevention	Preparedness	Response	Recovery	Use		Targeted*	Period (Year 1, 2, 3)
Social	People and Social Setting	5	Fire Ready Victoria	Assists in perception & understanding of bushfire risk so as to modify behaviours and make individuals act more safely. Includes bushfire awareness sessions for communities, community groups, businesses & service providers.	.	✓	.	.	.	CFA	Y	All
		6	Public Information	Fire information through Fire Danger Rating signs, media etc to raise awareness of fire risk. Includes Fire Action Week.	✓	✓	.	.	.	CFA	N	All
		7	Community Information Guides	Planned response (for both emergency services & the community) to a bushfire within a close proximity to a township, which has the potential to impact on the local community.	.	✓	.	.	.	CFA	Y	All
		8	Community Fire Guard	A community development program designed to help reduce the loss of lives & homes in bushfires. It assists neighbouring residents to develop bushfire survival strategies that suit their level of risk, lifestyle, environment & values.	.	✓	.	.	.	CFA	Y	All
		9	Property Advice Service	Individual 1:1 plus Streetscape fire awareness & education for residents with the highest level of bushfire and grass fire risk. Advice on property management, planning, personal capacity & potential fire hazards.	.	✓	✓	.	.	CFA	Y	All

Table 10: Risk Management Strategy - Bushfire

Risk Group	Risk Category	Treatment		Treatment description	Spectrum					Responsible agency	Application	
		ID #	Name		Prevention	Preparedness	Response	Recovery	Use		Targeted*	Period (Year 1, 2, 3)
Social	People and Social Setting	10	Community Debriefs	Post fire debriefings for CFA members, community & stakeholders	.	.	.	✓	.	CFA	N	All
		11	Routine Site Maintenance	Ongoing mowing/slashing/spraying of sites within crown land to reduce fuel loads for protection of assets or adjoining properties. Includes Asset Protection Zone work around high value assets and maintenance of BPLRs formerly NSPs within crown land.	.	✓	.	.	.	PV/DELWP/SSC	Y	All
		12	Communications	Maintenance of a communications network	.	✓	.	.	.	DELWP	N	All
		13	Information kits	"After the fires: Practical Advice" & "Recovery from emergencies"; information kits containing brochures & fact sheets for people affected by fire/emergency	.	.	.	✓	.	DHHS	N	All
		14	Vulnerable persons toolkit	Identifies location, contact details & describes needs of vulnerable persons within a municipality	.	✓	.	.	.	DHHS	N	All
	15	Detection	Maintenance of a detection network. Includes fire lookout towers and detection flights	.	✓	.	.	.	DELWP	N	All	
	16	Incident Control Centres	Maintenance of a strategic network of incident control facilities to support response in emergency management incidents. Includes agreed level 3 ICCs to predetermined standards	.	✓	.	.	.	CFA/DELWP	Y	All	

Table 10: Risk Management Strategy - Bushfire

Risk Group	Risk Category	Treatment		Treatment description	Spectrum					Responsible agency	Application	
		ID #	Name		Prevention	Preparedness	Response	Recovery	Use		Targeted*	Period (Year 1, 2, 3)
		17	Air support facilities	Maintenance of a strategic network of air support facilities. Includes airbases & helipads.	.	✓	.	.	.	DELWP	Y	All
		18	Fire Risk Management System	GIS program identifying location & details of community facilities managed by DHHS and allied agencies.	.	✓	.	.	.	DHHS	N	All
Economic	Production	19	Agricultural Management	Fire management & safety issues for land owners/managers to assist in the preparation of property fire management plans. Includes publication "On the land", "Farm Fire Safety" module (delivered via DELWP & TAFE Whole Farm Planning courses on request).	.	✓	.	.	.	CFA/DELWP	N	All
Economic	Production	20	Native Animal Welfare	Management of native animal welfare associated with an emergency incident.	.	.	.	✓	.	DELWP	N	All
		21	Relief & recovery services to primary producers	Assess damage to and loss of agricultural crops, livestock and infrastructure of commercial primary producers and rural land managers (including aquaculture), identify & refer personal and technical needs to appropriate businesses (within DELWP) or agencies	.	.	.	✓	.	AgVic	N	All

Table 10: Risk Management Strategy - Bushfire

Risk Group	Risk Category	Treatment		Treatment description	Spectrum					Responsible agency	Application	
		ID #	Name		Prevention	Preparedness	Response	Recovery	Use		Targeted*	Period (Year 1, 2, 3)
Economic		22	Animal Welfare Needs	Liaise with animal welfare support agencies and organisations to deliver animal welfare services including assessing injured and affected animals (livestock & companion animals) in emergencies with an emphasis on the needs of commercial primary producers and rural land managers	.	.	✓	.	.	AgVic	N	All
	Infrastructure	23	Access Roads and Tracks	Establishment of constructed and maintained roads, bridges and tracks to allow safe passage for fire fighting vehicles. Includes Walking Track Maintenance on crown land parks and reserves.	.	✓	.	.	.	PV/DELWP	Y	All
		24	Water point Maintenance	Maintenance of a strategic network of water points on crown land parks and reserves.	.	✓	.	.	.	DELWP	Y	All
		25	Fire Access Roads and Tracks	Maintenance of roads, bridges and tracks to specified standards on crown land parks and reserves.	.	✓	.	.	.	DELWP	Y	All
	Infrastructure	26	Routine Maintenance of facilities	Ongoing mowing/slashing/spraying of sites to reduce fuel loads to ensure protection of assets, minimise ignition potential and ensure adequate access and egress. Includes routine maintenance of structures (eg gutter cleaning).	✓	✓	.	.	.	Ausnet Services	N	All

Table 10: Risk Management Strategy - Bushfire

Risk Group	Risk Category	Treatment		Treatment description	Spectrum					Responsible agency	Application	
		ID #	Name		Prevention	Preparedness	Response	Recovery	Use		Targeted*	Period (Year 1, 2, 3)
		27	Routine maintenance of transmission & powerlines	Vegetation management around powerlines and along easement, regular inspections, maintenance of access tracks.	✓	✓	.	.	.	Ausnet Services	N	All
		28	Routine Maintenance of facilities	Ongoing mowing/slashing/spraying of sites to reduce fuel loads to ensure protection of assets, minimise ignition potential and ensure adequate access and egress. Includes routine maintenance of structures (eg gutter cleaning)..	.	✓	.	.	.	Telstra	N	All
		29	Bushfire Mitigation	Removal of identified fire risks to lines & facilities, eg tree lopping	.	✓	.	.	.	Telstra	N	All
		30	Fire Plug and Hydrant Installation and Maintenance	Works carried out to ensure that the system will operate correctly when required to do so.	.	✓	.	.	.	LGA/GVW	Y	All
		31	Fire access Roads and Tracks	Establishment of constructed and maintained roads, bridges and tracks to allow safe passage for fire fighting vehicles on the Council's road network.	.	✓	.	.	.	LGA	Y	All
		32	Fuel Hazard Management	Reducing fuel loads to protect assets, fuel hazard mitigation eg slashing, burning, within townships, roadsides, reserves	✓	✓	.	.	.	LGA	Y	All

Table 10: Risk Management Strategy - Bushfire

Risk Group	Risk Category	Treatment		Treatment description	Spectrum					Responsible agency	Application	
		ID #	Name		Prevention	Preparedness	Response	Recovery	Use		Targeted*	Period (Year 1, 2, 3)
Economic	Infrastructure	33	Powerline Clearance	Vegetation management around powerlines in Euroa and Avenel.	✓	✓	.	.	.	LGA	Y	All
		34	Roadside Vegetation Management	Removal of fuel and vegetation management along roadsides. Includes Strategic Fire Fuse Breaks and routine Roadside Maintenance.	.	✓	.	.	.	RRV/LGA	N	All
		35	Routine Maintenance of facilities	Ongoing mowing/slashing/spraying of sites to reduce fuel loads to ensure protection of assets, minimise ignition potential, includes routine maintenance of structures (eg gutter cleaning)..	✓	✓	.	.	.	DEECD	N	All
		36	Routine Maintenance of facilities	Ongoing mowing/slashing/spraying of sites to reduce fuel loads to ensure protection of assets, minimise ignition potential and ensure adequate access and egress. Includes routine maintenance of structures (eg gutter cleaning)..	.	✓	.	.	.	GVW	N	All
		37	Routine Maintenance of facilities	Ongoing mowing/slashing/spraying of sites to reduce fuel loads to ensure protection of assets, minimise ignition potential and ensure adequate access and egress. Includes routine maintenance of structures (eg gutter cleaning).	✓	✓				Gas Pipeline Operator (APA Group)	Y	All

Table 10: Risk Management Strategy - Bushfire

Risk Group	Risk Category	Treatment		Treatment description	Spectrum					Responsible agency	Application	
		ID #	Name		Prevention	Preparedness	Response	Recovery	Use		Targeted*	Period (Year 1, 2, 3)
		38	Routine Maintenance of facilities	Ongoing mowing/slashing/spraying of sites to reduce fuel loads to ensure protection of assets, minimise ignition potential and ensure adequate access and egress. Includes routine maintenance of structures (eg gutter cleaning).	✓	✓				ARTC/ VicTrak	Y	All
Environment	Biodiversity	39	Vegetation Management	Advice to landholders & linkages to CFA Brigades to manage vegetation & lower bushfire risk	✓	✓	.	.	.	CFA	Y	All
Planning	Governance and Regulation	40	Statutory & Legislative activities	Bushfire Prone Areas & Bushfire Management Overlay, declaration of TFBs, declared danger periods, regulation of burning permits.	✓	✓	.	.	.	CFA	N	All
Planning	Governance and Regulation	41	Park closures	Closure of parks/forests and facilities at times of very high fire danger	.	✓	.	.	.	PV/DELWP	N	All
		42	Patrol/Inspection	Inspections of assets to ensure compliance with regulations and safety requirements and to assess for fire hazards. Includes Campfire Patrols and Parks Victoria Ranger Patrol Program.	✓	✓	.	.	.	PV	Y	All
		43	Enforcement	Programs which support legislative compliance. Includes patrols to enforce campfire regulations, forest closures, fire cause investigations and prosecutions.	✓	.	.	.	.	DELWP/PV	N	All

Table 10: Risk Management Strategy - Bushfire

Risk Group	Risk Category	Treatment		Treatment description	Spectrum					Responsible agency	Application	
		ID #	Name		Prevention	Preparedness	Response	Recovery	Use		Targeted*	Period (Year 1, 2, 3)
Planning	Governance and Regulation	44	Bushfire Management Overlay	Development of a new overlay, includes opportunity to modify to local conditions through schedules.	✓	.	.	.	.	DELWP	N	All
		45	Bushfire Prone Areas	Interactive online map service that identifies areas likely to be subject to fires and consequent construction standards requirements	✓	.	.	.	.	DELWP	N	All
		46	Patrol/ Inspection	Inspections of assets to ensure compliance with regulations and safety requirements and to assess for fire hazards. Includes Private Property Inspections and Fire Hazard Inspection Program.	✓	.	.	.	.	LGA	N	All
		47	Operation Firesetter	Increased resources in high risk areas on Severe+ FDI days, increased patrols, increased visibility and covert surveillance to reduce the risk of arson and increase capacity in the event of a bushfire occurring.	.	.	✓	.	.	Vic Pol	Y	All
		48	Investigations	Investigate suspicious fires to ascertain cause and identify perpetrator(s)	.	.	.	✓	.	Vic Pol	N	All
		49	Emergency Management Plan (Site)	CFA input into site specific Emergency Management Plans including bushfire component	.	✓	.	.	.	CFA	Y	All

Table 10: Risk Management Strategy - Bushfire

Risk Group	Risk Category	Treatment		Treatment description	Spectrum					Responsible agency	Application	
		ID #	Name		Prevention	Preparedness	Response	Recovery	Use		Targeted*	Period (Year 1, 2, 3)
		50	Emergency Management Response Plans	Ensure that proper and sufficient works for wildfire prevention and suppression activities in Victoria are conducted in an operationally safe, environmentally sensitive and cost- effective manner. Ensure efficient and appropriate response	.	✓	✓	.	.	PV	Y	All
		51	Technical advice	Provision of specialist technical advice and support to other agencies involved in fire management activities	.	.	✓	.	.	PV	N	All
		52	Fire Management Planning	DELWP Fire Management Zones. Strategic landscape scale zoning of public land across the state to achieve fuel management outcomes	.	✓	.	.	.	DELWP/ FFMV	N	All
		53	Planned burning	Implementation of planned burning and other works as identified in FOP on public land	.	✓	.	.	.	DELWP/ FFMV	Y	All
		54	Crown Land fuel management	Managing fuel loads on crown land. Includes slashing, mulching and burning.	.	✓	.	.	.	DELWP/ FFMV	Y	All
		55	Bushfire readiness	Provision of specified levels of skills and resources to respond to emergencies. Includes people (PFFs), equipment, heavy plant, aircraft, facilities and consumables	.	✓	.	.	.	DELWP/ FFMV	N	All

Table 10: Risk Management Strategy - Bushfire

Risk Group	Risk Category	Treatment		Treatment description	Spectrum					Responsible agency	Application	
		ID #	Name		Prevention	Preparedness	Response	Recovery	Use		Targeted*	Period (Year 1, 2, 3)
Planning	Planning and Communication	56	Education	Programs which maintain public awareness of the bushfire threat, promote the importance of self-protection & encourage the responsible use of fire by the community. Includes multimedia messaging, in field patrols and publications.	✓	.	.	.	.	DELWP/PV	N	All
		57	Bushfire response	Respond to bushfires on public land to protect life and minimise impacts on property, communities and the environment. Includes timely provision of public information.	.	.	✓	.	.	DELWP	N	All
		58	Rehabilitation plan	Implement a works program to repair or replace fire affected infrastructure and minimise impacts upon natural values.	.	.	.	✓	.	DELWP/PV/ CFA(Private land)	N	All
		59	Emergency management support	Provide support to other organisations for emergency management, including expertise and specialist resources.	.	.	✓	.	.	CFA, DELWP, LGA	N	All
		60	Emergency Relief Handbook	Information & direction for emergency relief arrangements in Victoria	.	.	.	✓	.	DHHS	N	All
		61	Bushfire plan	Individual Bushfire plans for DHHS run facilities (as necessary)	.	✓	✓	✓	.	DHHS	N	All

Table 10: Risk Management Strategy - Bushfire

Risk Group	Risk Category	Treatment		Treatment description	Spectrum					Responsible agency	Application	
		ID #	Name		Prevention	Preparedness	Response	Recovery	Use		Targeted*	Period (Year 1, 2, 3)
Planning	Planning and Communication	62	Bushfire hazard identification framework	Identifies the different level of bushfire hazard at a state wide scale and the different responses that planning and building systems will implement	✓	.	.	.	.	DELWP	N	All
		63	Public Awareness	Fire information through notice boards, brochures, signage etc to raise awareness of fire risk.	.	✓	.	.	.	Ausnet Services	N	All
		64	Technical advice	Provision of specialist technical advice, information & assistance to other agencies involved in emergency response eg temporary power cessation, line inspection in conjunction with field operations.	.	.	✓	.	.	Ausnet Services	N	All
		65	Supply continuity	Maintain a response capability (scaled to level of risk) to minimise length of power disruptions from incidents eg fire/storms	.	.	✓	.	.	Ausnet Services	N	All
		66	Restoration	Repair & replace damaged assets post fire to restore full services and minimise community impact	.	.	.	✓	.	Ausnet Services	N	All
		67	Powerlines Hazard Identification	Preparedness around powerlines including risk ratings, inspections, maintenance and response arrangements. Includes Powerlines Bushfire Mitigation Strategy, Powerlines Faults and Emergency Events.	✓	✓	.	.	.	Ausnet Services	Y	All

Table 10: Risk Management Strategy - Bushfire

Risk Group	Risk Category	Treatment		Treatment description	Spectrum					Responsible agency	Application	
		ID #	Name		Prevention	Preparedness	Response	Recovery	Use		Targeted*	Period (Year 1, 2, 3)
Planning	Planning and Communication	68	Specialist Support	Provide specialist support to other agencies (eg Vic Pol, CFA, DHHS, DELWP) involved in response to an emergency, eg doorknocks, transport, staging area management.	.	.	✓	.	.	SES	N	All
		69	Traffic Diversion Plans	Establishment of an appropriate traffic flow, through traffic management in the community and appropriate access and egress for property and business owners. Includes Traffic Management Strategies Assistance to other agencies.	.	.	✓	.	.	RRV/LGA	N	All
		70	Bushfire Management Overlay	Planning referral for new subdivisions, buildings and works that increase population. Applies conditions for access, Water Supply, Buildings/ Works and Vegetation Management.	.	✓	.	.	.	LGA	N	All
		71	MERC	Coordinate municipal emergency response effort in the event of a major bushfire	.	.	✓	.	.	Vic Pol	N	All
		72	Evacuations	Coordinate evacuation measures undertaken in response to a bushfire threat	.	.	✓	.	.	Vic Pol	N	All
		73	Specialist Support	Provide specialist support to other agencies involved in response to a bushfire eg vehicle escorts	.	.	✓	.	.	Vic Pol	N	All

Table 10: Risk Management Strategy - Bushfire

Risk Group	Risk Category	Treatment		Treatment description	Spectrum					Responsible agency	Application	
		ID #	Name		Prevention	Preparedness	Response	Recovery	Use		Targeted*	Period (Year 1, 2, 3)
Planning	Planning and Communication	74	Strategic Fire Plan	Development and maintenance of strategic fire breaks and fire access tracks, operational restrictions on plantation activities based on forecasted FDI, a range of fire fighting resources on varying levels of preparedness based on forecasted FDI (includes fire fighting appliances, trained and experienced personnel, heavy machinery, and aerial support), strategic water points/ fire tanks placed throughout estate to ensure water availability for suppression activities.	✓	✓	✓	.	.	HVP	N	All
		75	Emergency Management Plan (Site)	Established framework for the effective handling of emergencies, includes an Emergency Management Plan for each school, childcare centre, preschool (public & private), mandatory training for staff, nominated bus routes, code red closures.	.	✓	.	.	.	DEECD	N	All
		76	Emergency response plan	Respond appropriately to the impacts of fire on water supply and waste water management	.	.	✓	✓	.	GVW	N	All
		77	Alternative drinking water supply plan	Provision of alternative drinking water supplies to specific towns in the event of loss of normal supply	.	✓	✓	.	.	GVW	N	All

Table 10: Risk Management Strategy - Bushfire

Risk Group	Risk Category	Treatment		Treatment description	Spectrum					Responsible agency	Application	
		ID #	Name		Prevention	Preparedness	Response	Recovery	Use		Targeted*	Period (Year 1, 2, 3)
	Operational	78	Standard Operating Procedures	Dictate level of readiness according to the conditions to ensure appropriate resourcing & preparedness for optimum response	.	✓	.	.	.	CFA	N	All
		79	Resourcing	Strategic network of qualified & equipped staff, volunteers & appliances for mounting timely response to fires on private land.	.	.	✓	.	.	CFA	Y	All
		80	Fire Operations Plan	Planning of proposed fire prevention activities to be carried out on public land (includes all land managed by DELWP and PV) with the objective of reducing impacts of bushfire on life, community, critical infrastructure, industry and the environment. Includes planned burns, slashing and track works, grazing, and additions to the permanent network of strategic fuel breaks.	.	✓	.	.	.	DELWP/ FFMV	N	All
		81	Regional Resourcing & activation guidelines	Identifies DHHS resource requirements for different emergencies and describes triggers for activation of different levels	.	✓	.	.	.	DHHS	N	All

Table 10: Risk Management Strategy - Bushfire

Risk Group	Risk Category	Treatment		Treatment description	Spectrum					Responsible agency	Application	
		ID #	Name		Prevention	Preparedness	Response	Recovery	Use		Targeted*	Period (Year 1, 2, 3)
Planning		82	Response program	Maintain service continuity and minimise disruptions by responding to faults or damage to facilities, includes deployment of mobile communication units and use of generators during power outages	.	.	✓	✓	.	Telstra	N	All
		83	Risk Management procedures	Operating procedures varied to reduce risk during high fire danger periods/events (eg reduce methane gas levels at waste water treatment sites) and strategic spread of facilities and generators to spread risk and ensure continuity of supply	.	✓	.	.	.	GVW	N	All
	Financial	84	Fire Access Roads, Tracks & Water Points	Coordination of Fire Access Roads Subsidy Scheme (FARSS) to enable construction & maintenance of roads, bridges & water points.	.	✓	.	.	.	CFA/LGA	Y	All
		85	Emergency grants	Grant to families whose home is impacted by fire	.	.	.	✓	.	DHHS	N	All

5.3.2 Risk Management Strategy – Structural Fire and Hazardous Material Incident

It should be recognised that a range of strategies and treatments exist, which are applied consistently state-wide and throughout municipalities to reduce the occurrence and impact of structure fires. These include:

- Provisions in the Victorian Building Act 1993
- Provisions in the Victorian Planning Scheme
- Provisions in the Building Code of Australia (BCA)
 - Compliance and enforcement of legislation
- Council Essential Safety Measures (ESM) Procedures and audit inspections (see 5.5.2.1 below)
- Industry guidelines
- Standards (i.e. electrical safety)
- Engineered controls (i.e. sprinkler systems, monitored fire alarms etc.)
- Fire service response, planning and training
- Staff training
- Event permits and event management plans
- Targeted education programs
- Public awareness programs – multimedia communications

Table 11 below details the specific local treatments undertaken to mitigate structural fire risk and the management of hazardous material incidents.

Table 11: Risk Management Strategy – Structural Fires and Hazardous Materials Incidents

Risk Group	Risk Category	Treatment		Treatment description	Spectrum					Responsible agency	Application	
		ID #	Name		Prevention	Preparedness	Response	Recovery	Use		Targeted*	Period (Year 1, 2, 3)
Social	People and Social Setting	1	Community Information	Home fire safety checklist, Early fire safe program (prevention of burns and scalds), Reduce the Risk (of home fires)	✓	✓	·	·	·	CFA	Y	All
		2	Fire Equipment maintenance	Service of fire extinguishers, (fire prevention pamphlets/brochures to be left by CFA brigades when servicing extinguishers), hose reel and other fire apparatus testing and service, service and maintenance of fire alarms		✓	·	·	·	CFA	Y	All
Economic	Production	3	Prevention of haystack fires	CFA, DJPR and VFF Information is produced regarding the proper curing and storage of hay to prevent hay bale fires	✓	✓	·	·	·	DJPR, CFA, VFF	Y	All
Planning	Governance and Regulation	4	Road Management Plan	Ensure compliance with Council’s Road Management Plan	·	✓	·	·	·	LGA	N	All

Table 11: Risk Management Strategy – Structural Fires and Hazardous Materials Incidents

Risk Group	Risk Category	Treatment		Treatment description	Spectrum					Responsible agency	Application	
		ID #	Name		Prevention	Preparedness	Response	Recovery	Use		Targeted*	Period (Year 1, 2, 3)
		5	Planning and Building Controls	New buildings are required to have minimum construction standards (electrical, structure, substructure etc) and Essential Safety Measures (ESMs). ESMs are items installed or constructed in buildings to ensure adequate levels of fire safety. Typically installed in commercial buildings, ESMs include fire services such as heat and smoke alarms, sprinkler systems, hydrants and hose reels etc., but also include passive fire safety elements such as fire rated walls, fire and smoke doors and paths of travel to exits (A full list is contained in Schedule 9 of the Building Regulations 2006).	.	✓	.	.	.	LGA	Y	All
		6	Annual ESM Audit of Council Controlled Properties	Council conducts an annual ESM audit of buildings under its control. Private owners are required to maintain and audit their own ESMs		✓	.	.	.	LGA	Y	All
		7	Audit High Risk Buildings as Required	Municipal Building Team to audit high risk buildings for ESM and Part 7 of the Building Regulations 2006 as required. High risk buildings are prioritised and include accommodation style buildings, particularly	.	✓	.	.	.	LGA	Y	All

Table 11: Risk Management Strategy – Structural Fires and Hazardous Materials Incidents

Risk Group	Risk Category	Treatment		Treatment description	Spectrum					Responsible agency	Application	
		ID #	Name		Prevention	Preparedness	Response	Recovery	Use		Targeted*	Period (Year 1, 2, 3)
				where people are staying and the layout of the building is unfamiliar to patrons.								
		8	Statutory & Legislative controls the transport of dangerous goods	Transport and storage of hazardous materials controlled by the Dangerous Goods Act 1985 and the 'Dangerous Goods (Storage and Handling) Regulations 2012', National heavy vehicle register	·	✓	·	·	·	VWA	Y	All
		9	Smoke alarm requirements	Both private and Council building surveyors are required to inspect all new buildings and ensure they have appropriate smoke detectors in place before occupancy permits can be given.	·	✓	·	·	·	LGA	N	All
		10	Event Management Plans	When staging significant events requiring organisers to submit an Event Management Plan (EMP) for approval, the plan needs to be developed in consultation with the Local Fire brigade at least four weeks prior to the event. All relevant emergency services and hospitals also have to be contacted as part of planning process.	·	✓	·	·	·	LGA	Y	All

5.4 Action Plan

In addition to the above Risk Assessment and Risk Management Strategy, the MFMPC came up with an Action Plan. The Action Plan (Table 12 below) highlights the specific activities either currently undertaken or proposed to be undertaken to mitigate fire risk further and give further detail than listed in the Risk Management Strategy. Activity custodians refer to all agencies involved in the treatment regime. In terms of a timeline, the year column refers to the three year life cycle of the plan and which year the treatment is applicable.

Table 12: Action Plan

Action Plan ID #	Description	Specific Action	Treatment Status	Preparation, Prevention, Response, Recovery or Use	Lead Agency	Other Agencies	Year 1	Year 2	Year 3	Comment
1	Fire Access	Maintenance of all Fire Access Roads prior to the DFDP	Current	Preparation	LGA	CFA	Yes	Yes	Yes	Rolling program – over 26km of Fire Access tracks identified
2	Roadside Fuel Management	Roadside spraying program	Current	Prevention	LGA/RRV	CFA	Yes	Yes	Yes	Limited funding, applies to 841km of road network
3	Roadside Fuel Management	LGA slashing program	Current	Prevention	LGA	CFA	Yes	Yes	Yes	As required, limited funding, work prioritised with road safety in mind
4	Property Inspections	Property Inspections and issue of fire prevention notices for non-conformances	Current	Prevention	LGA	CFA	Yes	Yes	Yes	Inspections focused on towns and surrounding properties that may impact town areas.

Table 12: Action Plan

Action Plan ID #	Description	Specific Action	Treatment Status	Preparation, Prevention, Response, Recovery or Use	Lead Agency	Other Agencies	Year 1	Year 2	Year 3	Comment
5	Roadside Vegetation Management	Annual roadside burn programs	Current	Prevention	CFA	CFA, DELWP	Yes	Yes	Yes	CFA have conducted these burns over several years using local brigades with LGA approval
6	Project 'Saferlinks'	Implementation of Emergency Services Safer Areas "ESSA" on High Bushfire Risk Roads	Current	Preparedness	LGA	CFA (relevant brigades)	Yes	Yes	Yes	Implementation under FARSS Review annually
7	Water Supply	Implement an agreement with GVW for the ongoing inspection and maintenance of township fire plugs (hydrants)	New	Prevention	LGA	GVW	Yes	Yes	Yes	To include option for joint arrangement with neighbouring LGAs to minimise costs.
8	Community Planning	Undertake a community Bushfire planning engagement	New	Preparedness	CFA	LGA	Yes	Yes	Yes	Part of the Safer Together program – Longwood community

5.5 Fire Management Responsibility

Fire management responsibility within the municipality may be described in three categories.

5.5.1 Response Agencies

Country Fire Authority (CFA):

CFA is charged under the CFA Act with the responsibility for Fire Safety Planning and Fire Suppression in all areas of Victoria excepting the area covered by the Fire Services Victoria (formerly Metropolitan Fire Brigade) and Fire Protected Areas. The CFA is a community-based fire and emergency service whose mission is to protect lives and property. CFA responds directly to a range of emergency incidents, as well as conducting broader activities with the community such as education, awareness raising, industry brigades and fire investigation.

It should be noted that the treatments listed in Figure 18 above are proposed treatments only for the next 3 years, and that actual implementation in any given year may be influenced by a variety of factors such as availability of resources and seasonal conditions

Link to CFA website: www.cfa.vic.gov.au/

Department of Environment Land Water & Planning:

DELWP is responsible for fire suppression and management on public land (with support from Parks Victoria), including planned burning for ecological and risk management objectives. Their objective is to protect communities and critical infrastructure from fire and to promote healthy and resilient ecosystems.

Link to DELWP FOPs Planning:

<http://www.DELWP.vic.gov.au/fire-and-emergencies/planned-burns/fire-operations-plans>

DELWP is also responsible for agriculture recovery programs and animal welfare and for managing the state's planning system and building stronger communities.

Strathbogie Shire Council

Strathbogie Shire Council is responsible for the management of all council owned property, as well as ensuring that private land holders appropriately manage their land. Council officers inspect properties within the municipality to assess the potential risk of a fire and where necessary may issue a fire prevention notice. They also undertake annual fire prevention works on roadsides and reserves leading up to and during the fire season. Strathbogie Shire is also involved in the delivery of the Local Government outcomes identified by the Victorian Bushfire Royal Commission (VBRC). The VBRC outcomes for Local Governments are (and are not limited to):

1. Integrated Fire Management Planning
2. Community Information Guides
3. Shelter options, including neighbourhood safer places
4. Native vegetation removal along roadsides
5. Land use planning
6. Local government resourcing and support
7. Identification of vulnerable people
8. Evacuation planning
9. Hazard trees identification and notification procedures
10. Animal welfare during emergencies
11. Community alert sirens
12. Fire Ready campaign

Link to Strathbogie Shire Website: www.strathbogie.vic.gov.au/

Link to VBRC: <http://www.royalcommission.vic.gov.au/>

Department of Health & Human Services (DHHS)

DHHS is the appointed agency to co-ordinate recovery planning and operations at the State and regional levels. At a municipal level, the responsibility for recovery is with the Local Government Authority with recovery arrangements and plans outlined in the Municipal Emergency Management Plan (MEMP).

Link to DHHS website: www.dhhs.vic.gov.au

Parks Victoria

Parks Victoria is responsible for managing the parks and reserves in Victoria and supporting DELWP response efforts.

Link to Parks Victoria Website: <http://parkweb.vic.gov.au/>

State Emergency Services (SES)

VICSES is a volunteer-based organisation responding to emergencies and working to ensure the safety of communities around Victoria. VICSES is the lead agency when responding to floods, storms and earthquakes and support agency in fire situations.

Link to SES website: www.ses.vic.gov.au/

Rural Roads Victoria (RRV)

RRV manage the Victorian arterial road network and its use as an integral part of the overall transport system.

Link to Vic Roads (RRV) Web site: www.vicroads.vic.gov.au/

Victoria Police (VICPOL)

Victoria Police are responsible for ensuring a safe and secure society.

Link to Victoria Police Web Site: www.police.vic.gov.au/

Goulburn Valley Water (GVW)

GVW provides water and sewerage services to 38 towns, villages and cities in North East Victoria, serving an estimated population in excess of 113,000 people in an area of approximately 20,000 square kilometres.

Link to GVW Web Site: www.gvwater.vic.gov.au/

Goulburn-Murray Water (G-MW)

G-MW is responsible for the operation of irrigation distribution channels, dams, lakes, and stock and domestic water diversion from streams. Goulburn Murray Water is responsible for the management of its assets, and the undertaking of fire prevention and fuel reduction works as part of their asset management.

Link to GMW Website: www.g-mwater.com.au/

Ausnet Services

Ausnet Services manages three Victorian energy networks – electricity transmission, electricity distribution and gas distribution.

Link to Ausnet Services Web Site: www.sp-ausnet.com.au/

Telecommunications (Telstra/Optus)

Telstra and Optus provide communication services and are responsible for telephone exchanges, mobile telephone towers, cabling and radio communication towers.

Link to Telstra Website: www.telstra.com.au/

Link to Optus Website: www.optus.com.au/

Goulburn –Broken Catchment Management Authority (GBCMA)

The Goulburn Broken Catchment Management Authority is responsible for service delivery for waterways (rivers and streams) and floodplain management.

Although the Goulburn Broken Catchment Authority is not the manager of the land, the spreading of fires is a consideration when undertaking new vegetation plantations.

Link to GBCMA Website: www.gbcma.vic.gov.au/

Local Reserves Committees of Management

There are a considerable number of reserves throughout the Municipality, which are under the management of local Committees of Management. These Committees are responsible for fire prevention on these reserves. The extent of fire prevention work undertaken on these reserves should be determined after consultation with the local Fire Brigade.

Landcare

There are many active Landcare groups within the Municipality. Their main objective is to ensure the sustainable use of and the rehabilitation of the natural environment.

One of the functions of Landcare Groups is the planting of trees. It is acknowledged that trees play a vital part in the preservation of a healthy environment. Tree planting on roads should only be undertaken after consultation with the Municipality and should always have fuse breaks incorporated in any linear plantations. Trees with a low degree of fire resistance should not be planted closer than 40 m to buildings.

It must be noted that the approval of RRV is required before any trees can be planted on a Highway (Declared) Road Reserve. Council also has a Rural Roadside Tree Planting policy.

Link to Strathbogie Landcare Website: http://strathbogie.org/?page_id=333

5.5.2 Community

Land managers, the community and individuals all have a responsibility to maintain their properties and to conduct their activities in a responsible manner with respect to fire management. The effectiveness of the Risk Management Strategy relies heavily upon the community understanding and accepting their responsibilities and acting accordingly.

While specific treatments cannot be attributed to private individuals within the Risk Management Strategy the MF MPC does have an expectation that members of the community will where appropriate;

1. Prepare and plan for fires, both bushfire and structural
2. Prepare their properties for fire events during the declared Fire Danger Period;

Township/Semi Rural

- If your block is less than 2.0 hectares (approximately 5 acres), you should cut any grass and keep it less than 100mm high throughout the Declared Fire Danger Period.
- Remove other fire fuels on site, or treat it to minimise the risk.

Rural

- If the block is larger than 2.0 hectares, you should clear an area for 20 metres around buildings and create a fire break at least 6 metres wide on the property boundary by keeping grass to less than 100mm high.

Properties located next to Townships

Properties that are located next to urban land boundaries pose a higher risk to the Community.

It is very important that these standards are maintained to include a 6 metre fire break on that boundary and the removal of dry or flammable material including a 20 metres fire break around buildings.

3. Ensure adequate access and water for fire fighting appliances
4. Maintain an awareness of fire danger levels and listen for alerts and warnings.

Advice, training and support to groups, businesses and individuals concerning all these expectations can be obtained from the CFA (see link below).

Link to CFA Fire Safety: www.cfa.vic.gov.au/firesafety

5.6 Balancing Fire Risk Against Other Values

In the course of developing the Risk Register it became apparent to the MFMPC that some of the concerns being raised lay less with the impact of the actual fire and more with that of the treatments being applied. Several the fire risk treatments adopted in Risk Management Plan pose a potential threat to some of the very values the MFMPC is seeking to safeguard. It is important that these threats are noted and that a balance be struck between protecting the community from fire and maintaining the economic, social, and environmental well-being of the municipality.

Several processes and treatments are already in place to ensure that all values are taken into consideration and protected during the planning and implementation of fire risk treatments. Where conflict does occur the MFMP offers a dispute resolution process for member agencies by establishing a pathway for issues to be escalated and resolved at either a regional or state level by the responsible authorities.

5.7 Cross Boundary Management and Links to Other Programs/Processes

In developing this plan the STRATHBOGIE MFMPC has endeavoured to ensure that concerns which cross municipal, regional or state boundaries are treated in a seamless manner with regard to risk assessment and treatments. This has been achieved through;

1. Consistent use of processes and tools across the region.
2. Deliberate alignment of municipal and regional objectives.
3. Frequent cross membership of MFMPC's by agencies.
4. Making draft and final MFMP's available to other MFMPC's.

6 Improvement, Plan Reporting and Review Process

It is important to track the performance of the plan and the degree to which it contributes to achieving the desired outcomes of the Fire Management Plan. Monitoring, evaluation and reporting occur throughout the life of the plan, the aim being to identify those treatments working effectively and those that may need to be modified. It also seeks to provide a transparent and accurate means of assessing the MFMP's progress in achieving its objective. The table below summarises the proposed implementation, reporting and review activities, as well who is responsible for undertaking them.

Table 13: Strathbogie MFMP Reporting and Evaluation Program

Frequency	Task / Action	Responsible Party
Ongoing	Implement treatments identified in the risk strategies and the agreed actions	All treatment owners
Biannually (every 6 months)	Report to MFMPC on the progress of treatment implementation, including an evaluation of treatment appropriateness, impact, effectiveness, efficiency, and legacy	All treatment owners
	Update Risk Register & Action Plan to reflect treatment status, as reported by treatment owner	MFMPC
Annually (every 12 months)	Conduct strategic review of risks and associated treatment program, asking: Are the identified risks still valid? Do their pre-treatment and residual risk ratings still hold true? Are there new risks that need to be added to the register and managed? Do the treatments currently in place adequately address the identified risks? Are there any new or enhanced treatments required?	MFMPC
	Review and update Plan content and mapping to ensure validity	MFMPC
	Provide overarching progress report to Municipal Emergency Management Planning Committee, focusing on the collective effectiveness of treatments in the management of risks and progress towards the achievement of objectives	MFMPC
Triennially (every 3 years)	Conduct end-to-end review of Plan	MFMPC

7 Attachments

7.1 Attachment 1: Risk Assessment Tables

State Bushfire Consequence Table (From State Fire Management Planning Committee)

STATE DESCRIPTOR BUSHFIRE	People - Bushfire	Infrastructure - Bushfire	Public Admin - Bushfire	Environment - Bushfire	Economy - Bushfire	Social Setting
Catastrophic	50+ lives lost. Hundreds injured 1000+ houses destroyed. 2000+ people displaced. 30,000 + livestock lost.	Loss of critical infrastructure and/or services for 24-48 hours to the Melbourne metropolitan area. Loss of services to a major regional city/several suburbs for more than a week.	Significant statewide outrage. Royal Commission or other similar inquiry leading to changes in policy and practice.	Permanent total loss of one or more ecosystems or critical habitat elements. Loss of nationally significant cultural assets.	\$1B or 30% of State revenue	Severe disruption to community wellbeing over the whole area or a large part of it for a period of many years
Major	10 -50 fatalities as a direct result of the bushfire event. 300 - 1000 houses destroyed. 500 -2000 people displaced. 10,000 - 30,000 livestock lost. Significant loss of breeding stock.	Loss of critical infrastructure and/or services for up to 8-24 hours to the Melbourne metropolitan area. Loss of services to a major regional city/several suburbs for 4 days and up to a week.	Significant regional and local outrage, with some occurring at state level. Parliamentary or other inquiry leading to change in practice.	Permanent partial loss of one or more ecosystems or critical habitat elements. Extinction of a species or significantly increase the likelihood of extinction to almost certain that intervention such as captive breeding programs are required. Loss of state significant cultural assets.	Damage costs including legal actions and/or industry impacts (tourism, forestry, wine and grape etc) to the value of more than \$300M.	Severe disruption to community wellbeing over a wide area or for more than 24 months.
Serious	2 - 10 fatalities as a direct result of the bushfire event. Large number of people affected by smoke. 30 - 300 houses lost. 200- 500 people displaced 4000 - 10000 livestock lost.	Loss of critical infrastructure and/or services for up to 2-8 hours to the Melbourne metropolitan area. Loss of services to a major regional city/several suburbs for 2-4 days.	Some outrage at local and regional level.	Long term disturbance to one or more ecosystems or critical habitat elements. National response and/or support for animal welfare. Loss of a regionally significant cultural asset such as Phillip Island penguins, Healesville Sanctuary, Puffing Billy.	Damage costs including legal actions and/or industry impacts (tourism, business etc) to the value of more than \$100M.	Major disruption to community wellbeing over a moderate to large area* or for a period of months.
Significant	Single fatality and/or multiple serious injuries requiring hospitalisation as a direct result of the bushfire event. Up to 30 houses lost. 50 - 200 people displaced. 2000 - 4000 livestock lost.	Loss of critical infrastructure and/or services for up to 1 hour to the Melbourne metropolitan area. Loss of services to a major regional city for 1 day. Loss of services to local community for a week.	Local outrage and concern.	Temporary disturbance to one or more ecosystems or critical habitat elements. Local response and/or support for animal welfare.	Damage costs including legal actions and/or industry impacts (tourism, business etc) to the value of more than \$30M.	Localised disruption to community wellbeing over a small area or for a period of weeks.

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Important	Serious injury and disability, up to 50 people displaced, up to 2000 livestock lost	Loss of services to regional town for a day. Loss of services to local community of up to a week	Local concern	Temporary disturbance to local habitat . Local response and/or support for animal welfare.	Damage costs including legal actions and/or industry impacts (tourism, business etc) to the value of less than \$30M.	Localised disruption to community wellbeing over a small area or for a period of up to one week.
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Likelihood Table

Level	Descriptor	Description
		In any one year, the likelihood of the event occurring is:
A	Almost Certain (Annually)	Close to 100% - Annually.
B	Likely	33% (i.e., once in every three years)
C	Possible	10% (i.e., once every 10 years)
D	Unlikely	3% (once every 30 years)
E	Rare	1% (once every 100 years)

Risk Assessment Matrix

Likelihood Level	Consequence Level				
	Important	Significant	Serious	Major	Catastrophic
Almost Certain	Moderate	Moderate	High	Extreme	Extreme
Likely	Low	Moderate	High	High	Extreme
Possible	Low	Low	Moderate	High	High
Unlikely	Low	Low	Moderate	Moderate	High
Rare	Low	Low	Low	Moderate	Moderate

7.2 Attachment 2: Stakeholder Analysis & Community Engagement Plan

Stakeholder type and engagement level		
Stakeholder Type	Description	Participation Level*
Internal	Formal responsibilities for IFMP process and outcomes	Collaborate and empower
Primary	MFMP membership, responsibility for development of the plan, communication and engagement across and within organisations rest with these organisations	Collaborate and empower
Secondary	RSFMPC membership or fire management role within municipality, may be requested to provide specific inputs, dependent upon outputs, or requested to be involved in specific tasks,	Involve and consult
Tertiary	Anyone with a strong interest in outcomes	Inform and consult

*IAP2 Public Participation Spectrum: *empower* → *collaborate* → *involve* → *consult* → *inform*

Fire Management Roles	
Role	Description
Fire coordination	Bringing together of fire management agencies and elements to ensure effective response to an incident or emergency. CFA has legislated responsibility under the CFA act 1958 for the prevention and suppression of fires and for the protection of life and property in the Country Area of Victoria. In accordance with provisions in the CFA Act and the Forest Act 1958, DELWP has fire management and fire suppression responsibilities for state forests and national, state and regional parks.
Land owner/manager responsibilities	Landholder/managers are heavily involved in fire prevention and fire suppression on land under their control. They have legislated responsibilities to extinguish a fire burning on their land and to prevent fires from starting from the use of equipment and vehicles (CFA Act 1958, Crimes Act 1958). They are also required to comply with relevant State government laws, local government laws, relevant planning and building permit conditions and conditions associated with permits to burn
Response	Actions taken in anticipation of, during and immediately after a fire incident to minimise the impact of the fire.
Recovery	A coordinated process of supporting emergency affected communities in the reconstruction of physical infrastructure and restoration of emotional, social, economic and physical well-being.

MUNICIPAL FIRE MANAGEMENT PLAN

Community education	Community education is learning and social development, working with individuals and groups in their communities using a range of formal and informal methods
Community care	Community care is about identifying and catering for groups or individuals with specific needs, before during and after fire.
Asset protection	Asset protection involves protecting key community infrastructure such as power, water supplies, roads, gas pipes and protecting community assets such as parks and the environment. Asset protection can also involve the protection of private assets such as housing, plantations, crops and fences.
Regulatory	The issuing of permits for lighting fires. The development of and compliance with planning controls and permits for developments and building that take into account fire risk/management. The regulation and issuing of permits involving vegetation removal or fuel reduction activities for fire management purposes.

Strathbogie MFMPC stakeholder analysis

Stakeholder	Type				Fire management role within Hume region									
	Internal	Primary	Secondary	Tertiary	Fire coord	Land mgr	Response	Recovery	Comm Educati on	Comm care	Asset protect	Regulate	RSFMPC member	Other
Hume RSFMPC	✓						✓	✓	✓				✓	Regional IFMP oversight & strategic fire planning
MEMPC	✓						✓	✓	✓					Municipal integrated & strategic emergency planning
MFMPC	✓						✓	✓	✓					Municipal integrated & strategic fire planning
Strathbogie Shire Council		✓				✓	✓	✓	✓	✓	✓	✓		

Strathbogie MF MPC stakeholder analysis														
Stakeholder	Type				Fire management role within Hume region									
	Internal	Primary	Secondary	Tertiary	Fire coord	Land mgr	Response	Recovery	Comm Educati on	Comm care	Asset protect	Regulate	RSFMPC member	Other
CFA		✓			✓		✓	✓	✓		✓	✓	✓	Fire safety expertise
DELWP		✓			✓	✓	✓	✓	✓		✓	✓	✓	Forest fire expertise
Parks Victoria			✓			✓	✓	✓	✓		✓		✓	
Landcare Groups			✓			✓								
DHHS			✓				✓	✓		✓			✓	
DELWP			✓					✓				✓	✓	Oversight of rural adjustment & development programs, development of planning controls
Vic Pol			✓				✓						✓	
SES			✓				✓						✓	
Vic Roads			✓			✓	✓				✓	✓	✓	
Power Industry			✓							✓			✓	
Rail Industry			✓			✓					✓		✓	
Goulburn Valley Water			✓							✓	✓		✓	

Strathbogie MF MPC stakeholder analysis														
Stakeholder	Type				Fire management role within Hume region									
	Internal	Primary	Secondary	Tertiary	Fire coord	Land mgr	Response	Recovery	Comm Educati on	Comm care	Asset protect	Regulate	RSFMPC member	Other
Goulburn Murray Water			✓			✓					✓			
Telstra			✓							✓	✓		✓	
Optus			✓							✓	✓			
DELWP				✓				✓					✓	Animal health, agricultural loss & recovery responsibilities
VFF				✓		✓								
GBCMA				✓		✓		✓			✓	✓		
HVP				✓		✓		✓			✓			
DEECD				✓						✓				
School Camps, Private Schools				✓						✓				
Ambulance Vic				✓						✓				
Media				✓				✓						
Local community/ industry groups				✓										

Strathbogie MFMPC stakeholder analysis														
Stakeholder	Type				Fire management role within Hume region									
	Internal	Primary	Secondary	Tertiary	Fire coord	Land mgr	Response	Recovery	Comm Educati on	Comm care	Asset protect	Regulate	RSFMPC member	Other
General public				✓		✓	✓	✓			✓			Responsibility for private property, social networks & personal well being.

Strathbogie MFMPC Communication & Engagement Plan											
Stakeholder	Engagement Level	Engagement activity									
		Meeting minutes, reports & agendas	1:1 consultation	IFMP & Strathbogie Shire web site	Email document updates	Media articles	Special meetings	Draft consultation	3 year review	Individual org networks	
Internal Stakeholders											
Hume RSFMPC	Collaborate & empower			✓		✓	✓	✓	✓	✓	
MEMPC		✓		✓		✓	✓	✓	✓		
MFMPC		✓		✓		✓	✓	✓	✓		
Primary – answerable for activity/decision											
Strathbogie Shire Council		✓	✓	✓	✓	✓	✓	✓	✓	✓	

Strathbogie MFMPC Communication & Engagement Plan										
Stakeholder	Engagement Level	Engagement activity								
		Meeting minutes, reports & agendas	1:1 consultation	IFMP & Strathbogie Shire web site	Email document updates	Media articles	Special meetings	Draft consultation	3 year review	Individual org networks
CFA	Collaborate & empower									
DELWP										
Secondary – Contributory responsibility										
Parks Victoria	Involve & consult									
DHS										
DPCD										
Vic Pol										
SES										
Vic Roads										
Power Industry (eg SPAusnet etc)				✓	✓		✓	✓	✓	✓
Rail Industry										
Goulburn Valley Water										
Goulburn Murray Water										
Telstra										
Optus										
Landcare Groups										
Tertiary - Interested										
DELWP	Inform & consult			✓		✓		✓	✓	

Strathbogie MFMPC Communication & Engagement Plan										
Stakeholder	Engagement Level	Engagement activity								
		Meeting minutes, reports & agendas	1:1 consultation	IFMP & Strathbogie Shire web site	Email document updates	Media articles	Special meetings	Draft consultation	3 year review	Individual org networks
VFF										
GBCMA										
HVP										
DEECD/Schools										
Ambulance Vic										
Media										
Local community/industry groups										
General public										

7.3 Attachment 3: Environmental Scan maps & data

Map 1: Strathbogie Shire Bushfire History and Fuel Management Plan

This map shows recorded bushfire history and current fuel management plan together with planned burns documented since 1990 in a map prepared by DELWP in June 2020..

Map 2: Strathbogie Shire Fire Origins

This map shows recorded fire origins for 2015-2020.

Map 3: : Victorian Fire Risk Register, Human Settlements

This map is the Victorian Fire Risk Register map produced by the CFA. It details where population centres are and rates locations from low to extreme fire risk (see legend).

Map 4: Strathbogie Shire DELWP Fuel Loads

The map is a Hazard layer developed and maintained by DELWP, Office of Land and Fire. It is a state-wide coverage of <30 m²> cell resolution with approximately 27 attributes detailing surface and elevated fuel loads, hazard ratings and vegetation descriptions. This map is a DELWP data layer and based upon computer modelling and limited ground verification. It is updated yearly by DELWP. The fuel load map details where it might be expected to find fuel loadings of low to extreme. This map is simply a guide and should not be relied upon to provide 100% accuracy in the determination of fuel loads. Visual and scientific tests should be applied in the field to properly determine fuel loads.

Map 5: Strathbogie Shire DELWP Fire Management Zones

This map details DELWP's fire management zones. Different management regimes are used in each zone. For more information, contact DELWP

There are four distinct DELWP fire management zones. These are:

1. **Asset Protection Zone (APZ):** This zone aims to provide the highest level of localised protection to human life, property and highly valued assets. Through reducing radiant heat, flame front and ember attack to a reasonable level using intensive fuel management. Fuel management will be carried out in the APZ through a combination of planned burning, and other methods such as mowing or slashing.
2. **Strategic Wildfire Moderation Zone (SWMZ):** This zone aims to reduce the speed and intensity of future bushfires. This zone complements the APZ, and also provides strategic areas to mitigate risk through the landscape. The use of planned burning in the SWMZ is designed to protect nearby assets from ember spotting during a bushfire.
3. **Ecological Management Zone (EMZ):** This zone aims to promote biodiversity and ecological renewal. Planned burning will be used to manage native species and ecological communities which require fire to regenerate. This also assists with fire protection outcomes by reducing the overall fuel hazard in the landscape.

4. **Prescribed Burning Exclusion Zone (PBEZ):** This zone excludes the use of planned burning, primarily in order to protect biodiversity – for example, fire sensitive rainforest.

Map 6: Strathbogie Shire DELWP Work Centres and CFA Fire Stations

This map highlights the DELWP work centres and CFA Fire Stations spread throughout the Shire.

Map 7: Strathbogie Shire Biodiversity Values

This map details the Biodiversity values of the Strathbogie Shire including Ecological Vegetation Classes. It is not an exhaustive list and should only be used as a guide for the location of biodiversity values. It flags values that need to be factored into any discussions regarding possible fire treatments.

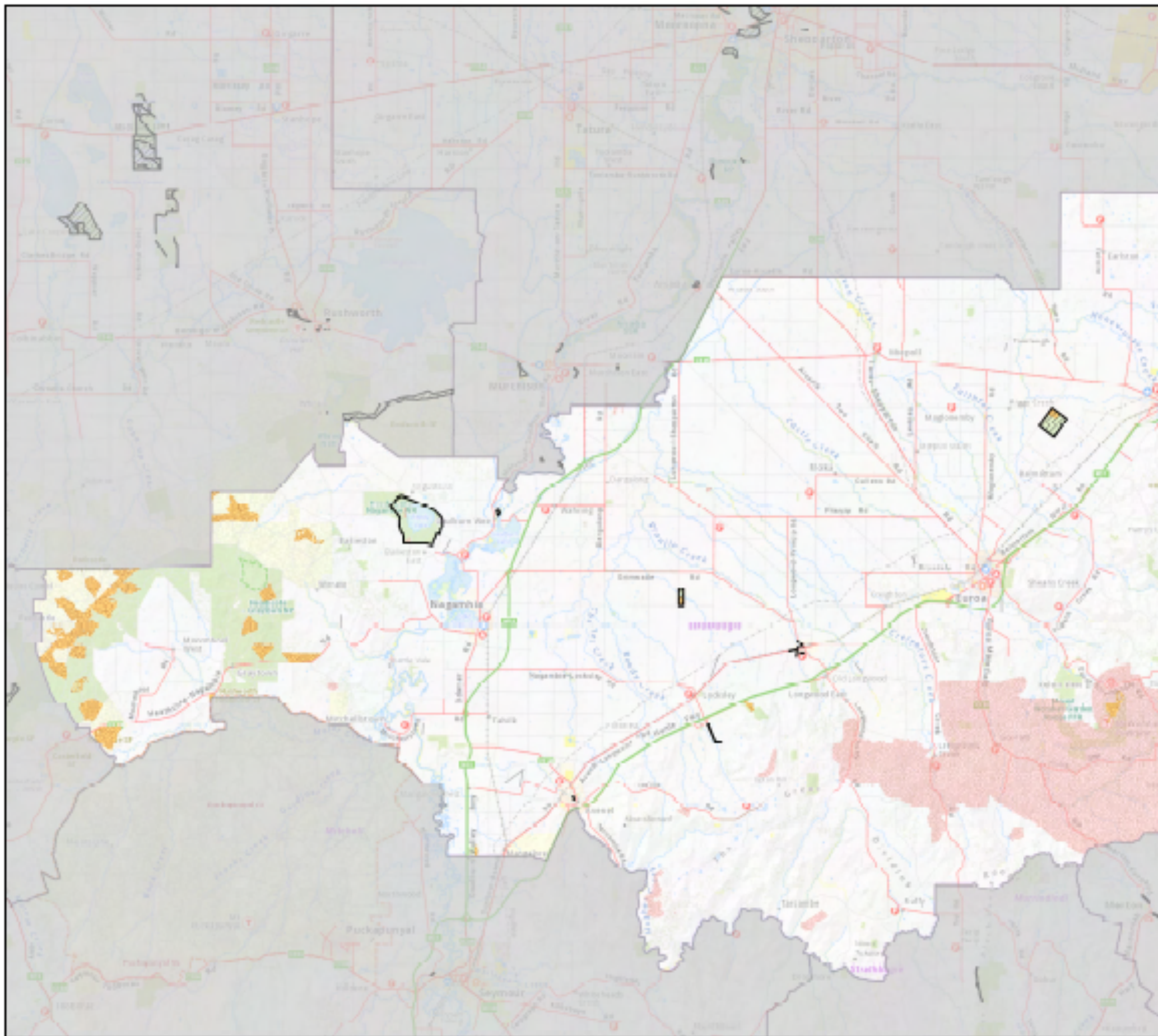
Map 8: Native Vegetation Classes in Strathbogie Shire

This map shows the vegetation classes within the Strathbogie shire.

Map 9: Strathbogie Shire Key CFA Access/Egress Roads

This map, provided by CFA, shows municipal roads capable of providing vehicular access under normal conditions. It is noted that most roads have potential to become impassable during severe storm or fire events.

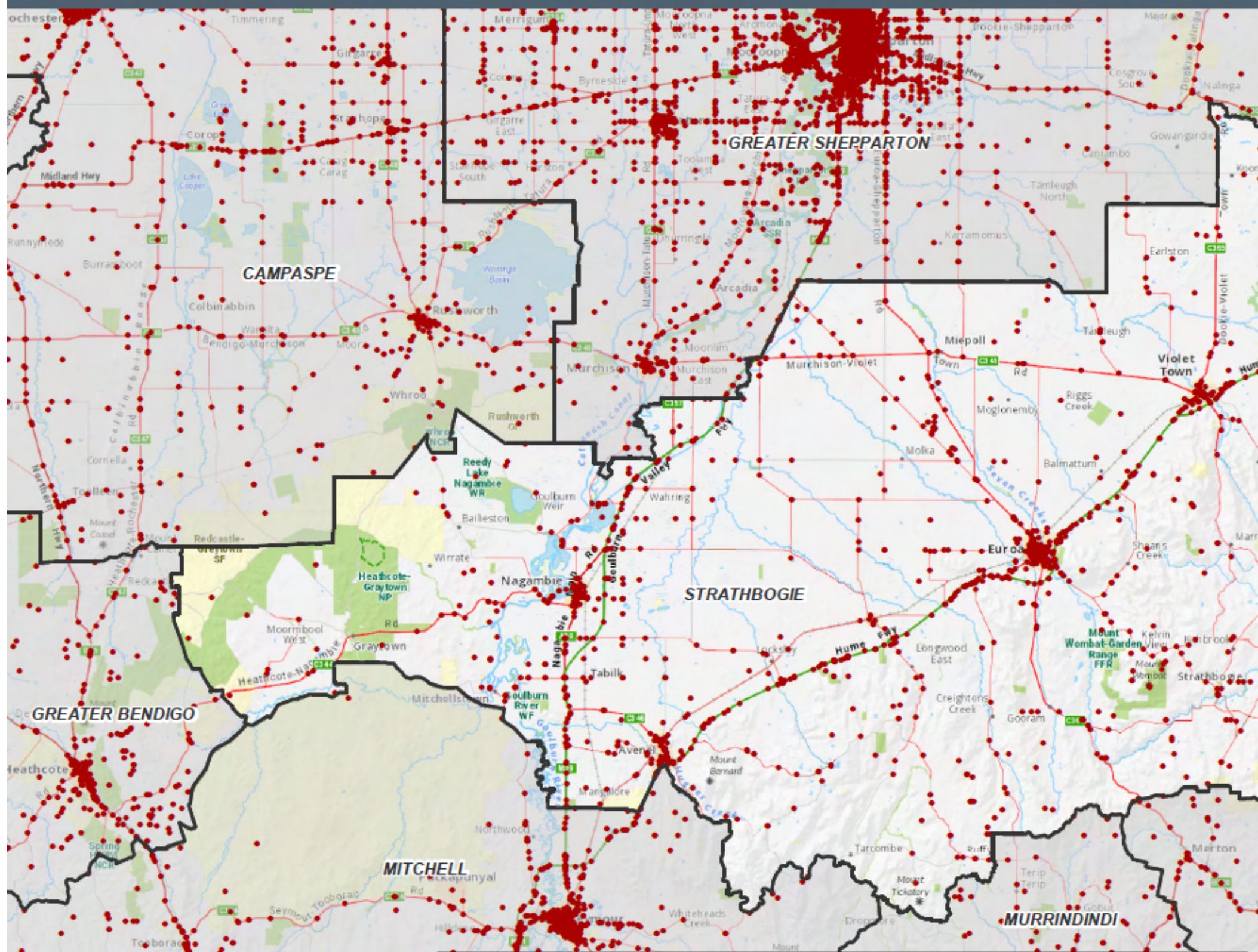
Map 1: Strathbogie Shire Fire History and Current Joint Fuel Management Plan



Map 2: Strathbogie Shire Fire Origins

Strathbogie Shire Fire Origins (2015-2020)

Map showing all fire origins within the Strathbogie Shire boundary



Privacy:
This map is provided to Peter Dedman for the sole purpose of inclusion in the Strathbogie Shire Municipal Fire Management Plan and must ONLY be used for this purpose. It must not be kept or used for other purposes and must not be provided to anyone not responsible for providing the work associated with this described use. Any use of this map contrary to the above stated use will be considered an intentional breach of duties and responsibilities associated with the Privacy and Data Protection Act 2014. Use, transferal and disposal of this product must be handled with care.

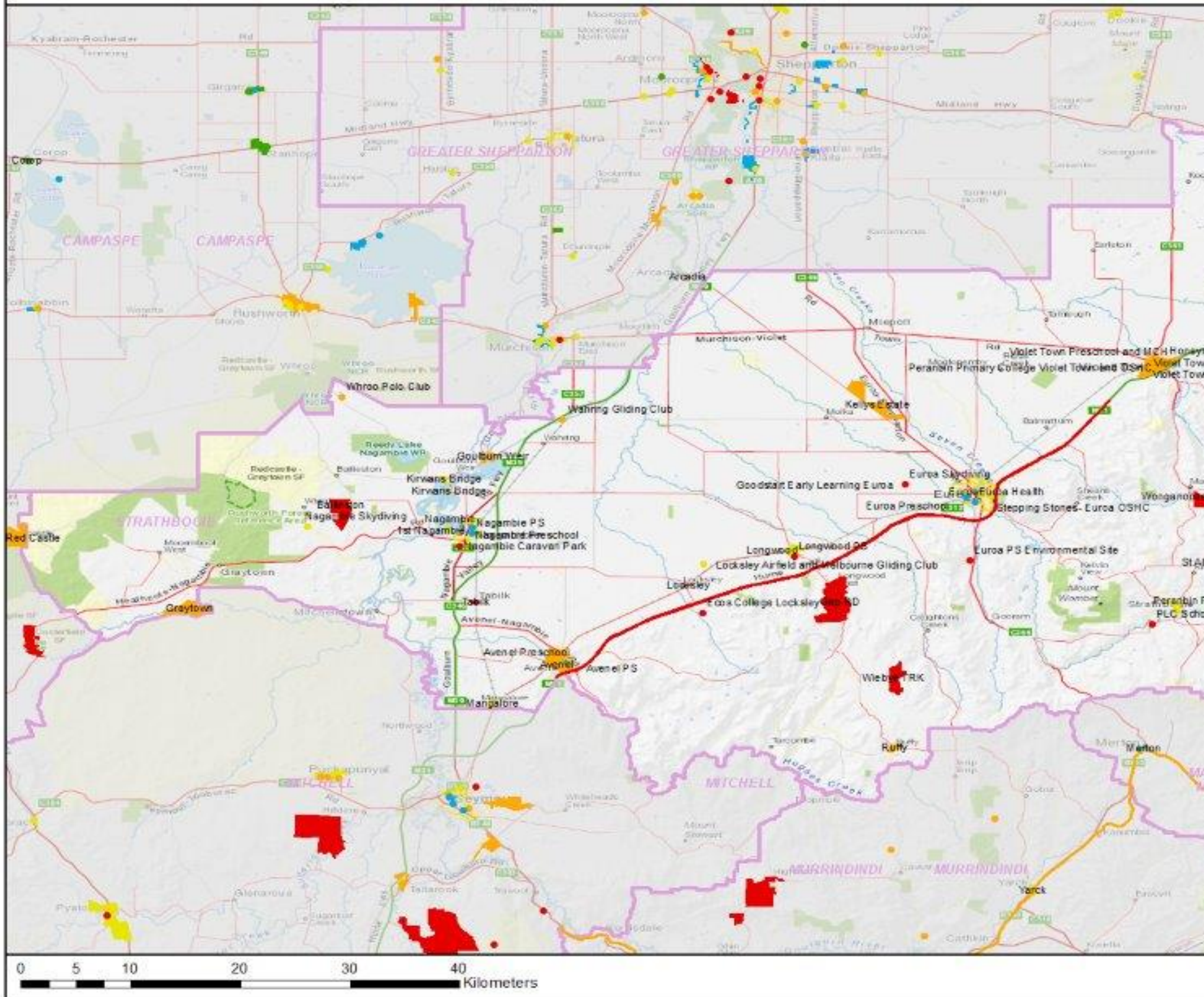
Disclaimer:
This map is a snapshot generated from Victorian Government data as well as data from various other sources. This does not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for error, loss or damage which may arise from reliance upon it. All persons accessing this information should make appropriate enquiries to assess the currency of the data.

Explanation:

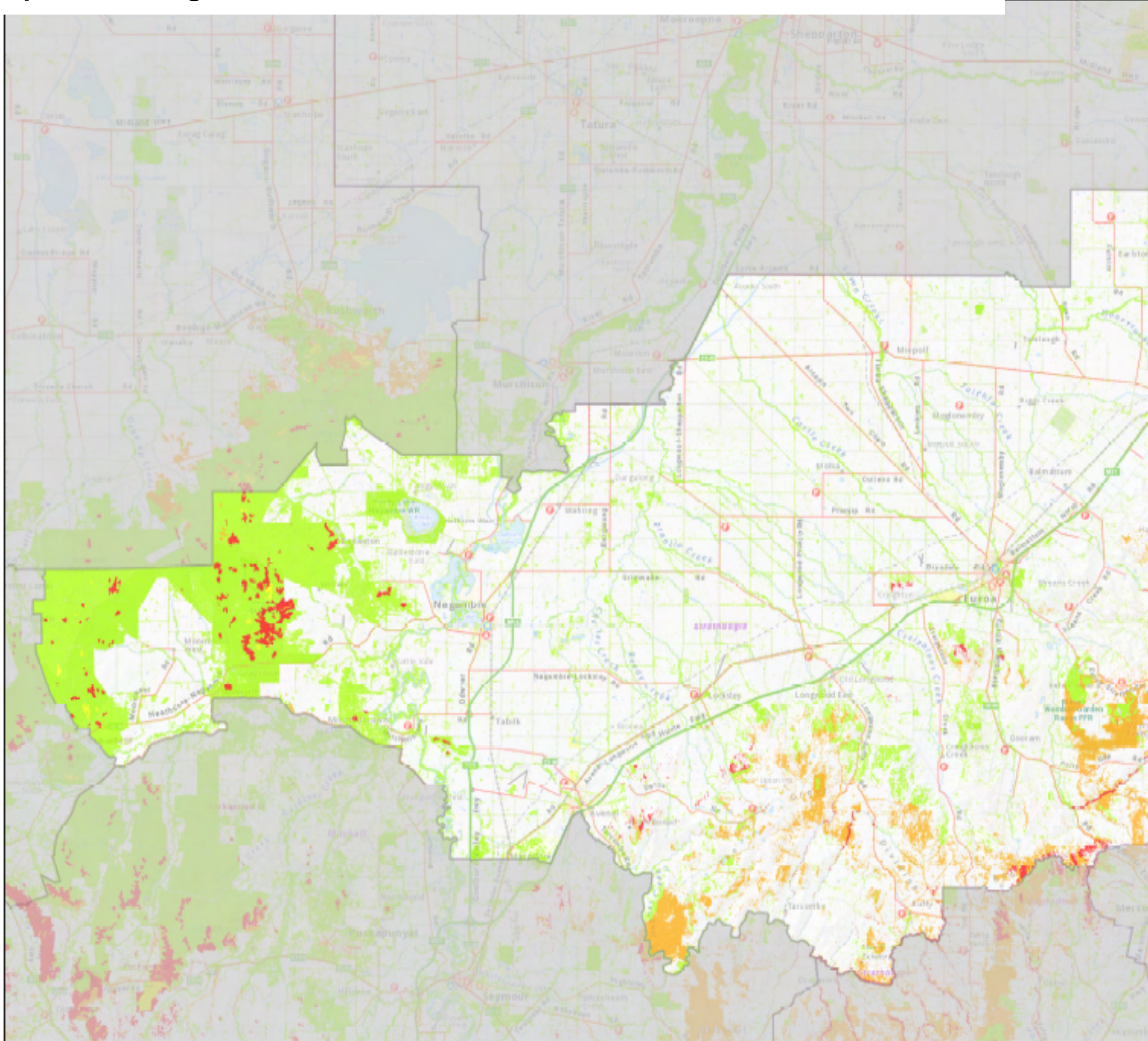
54.5%

Map 3: Victorian Fire Risk Register, Feature of Interest and Human Settlement

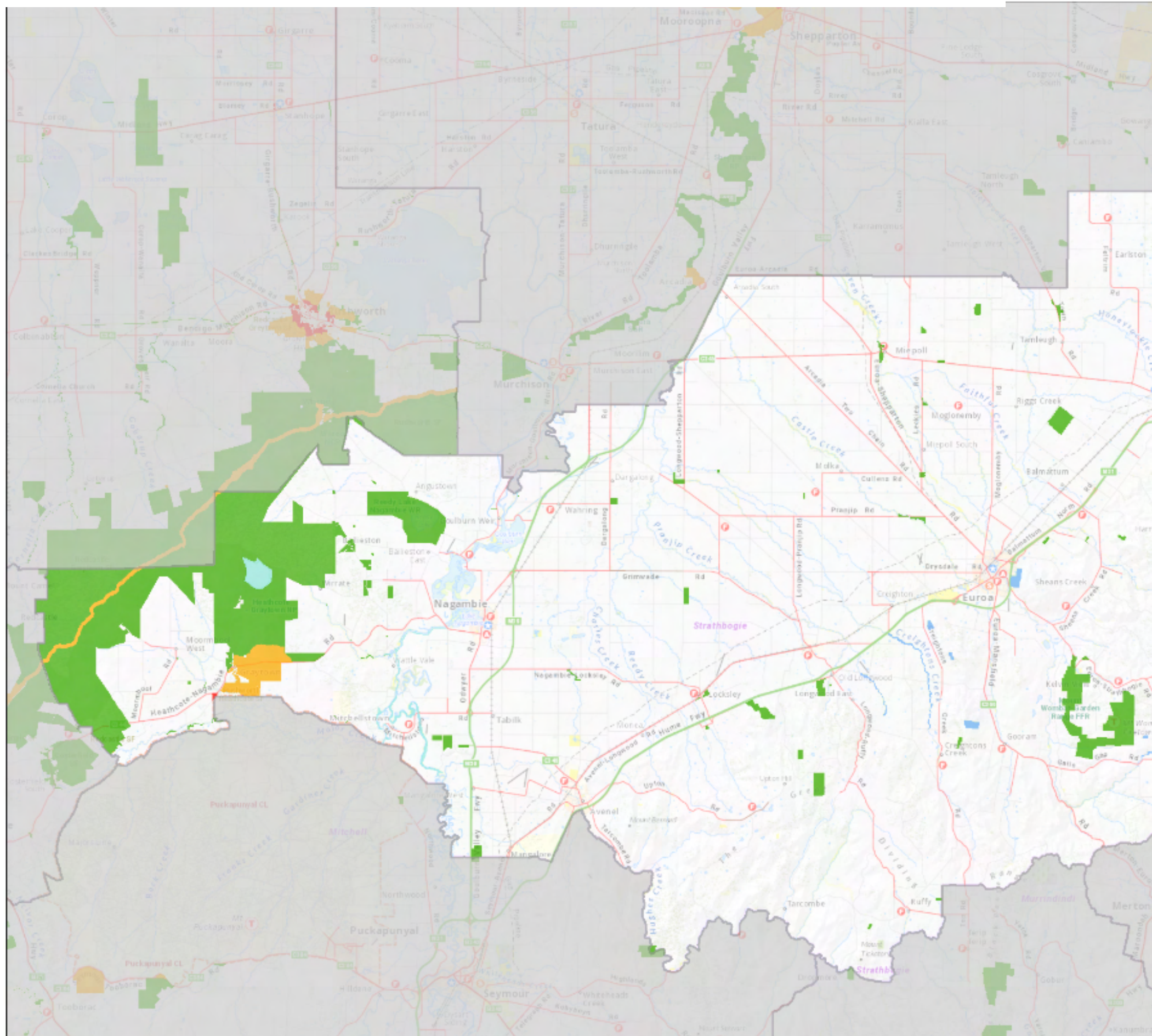
Strathbogie Shire Victorian Fire Risk Register - Human Settlement



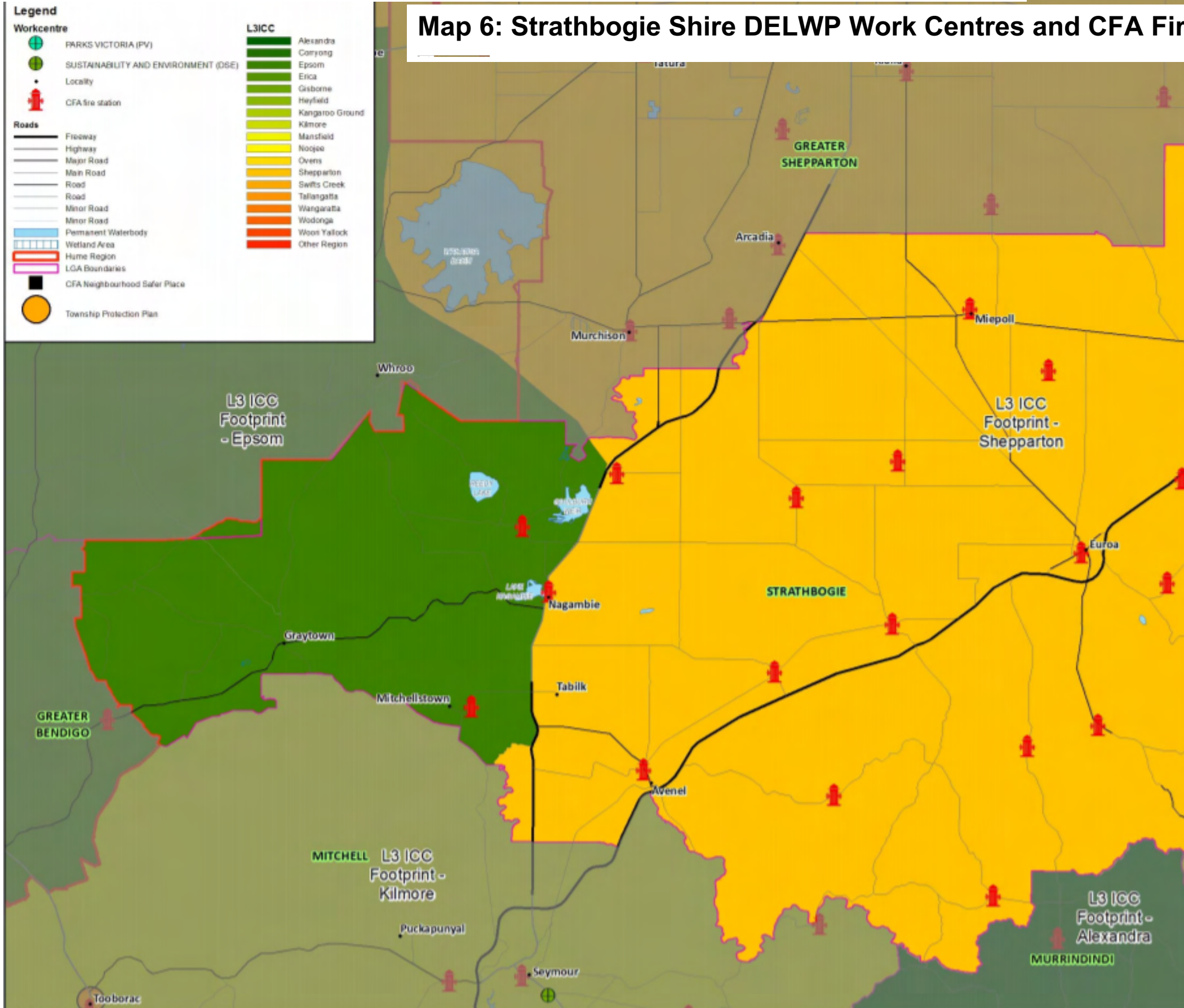
Map 4: Strathbogie Shire DELWP Fuel Loads



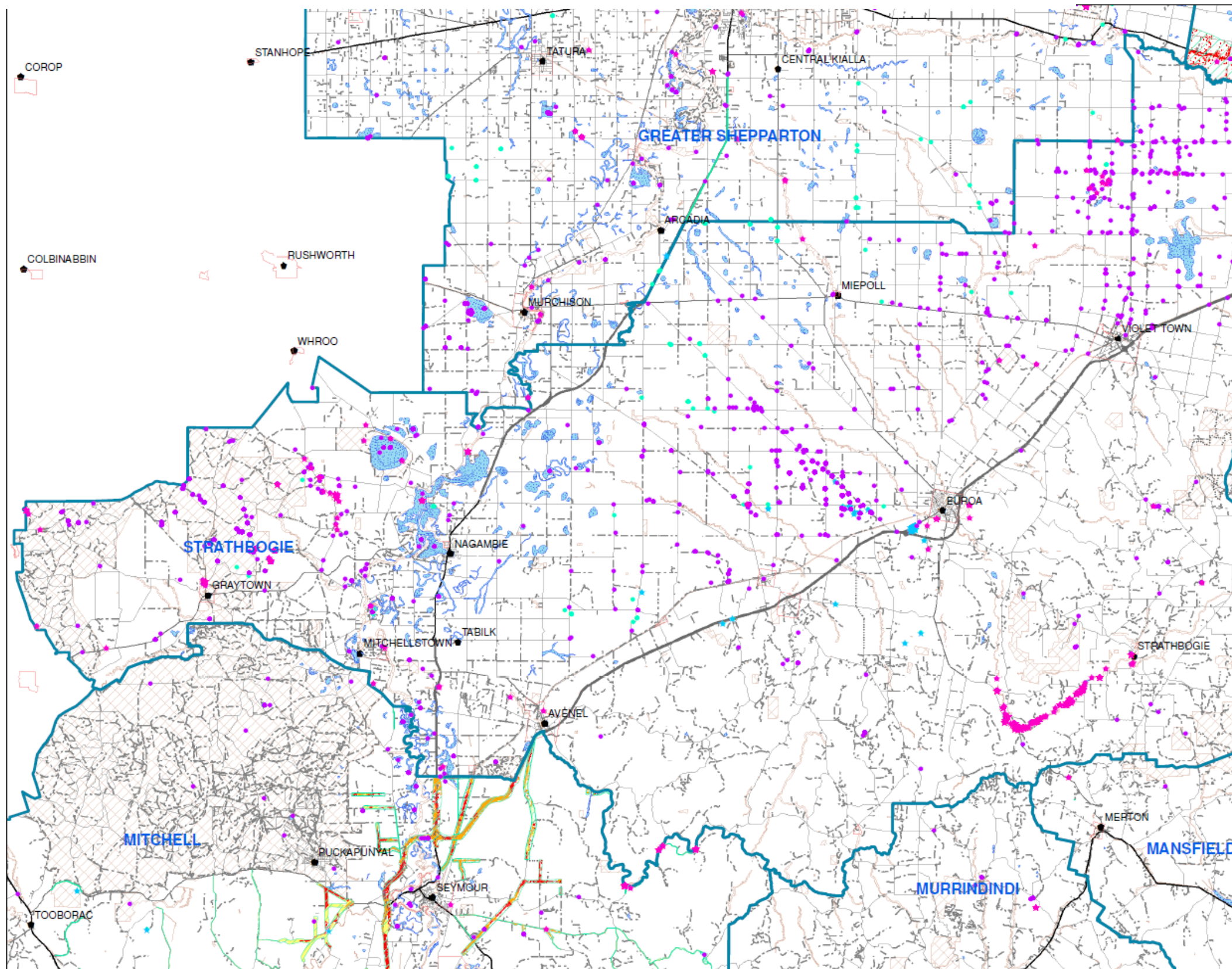
Map 5: Strathbogie Shire DELWP Fire Management Zones



Map 6: Strathbogie Shire DELWP Work Centres and CFA Fire



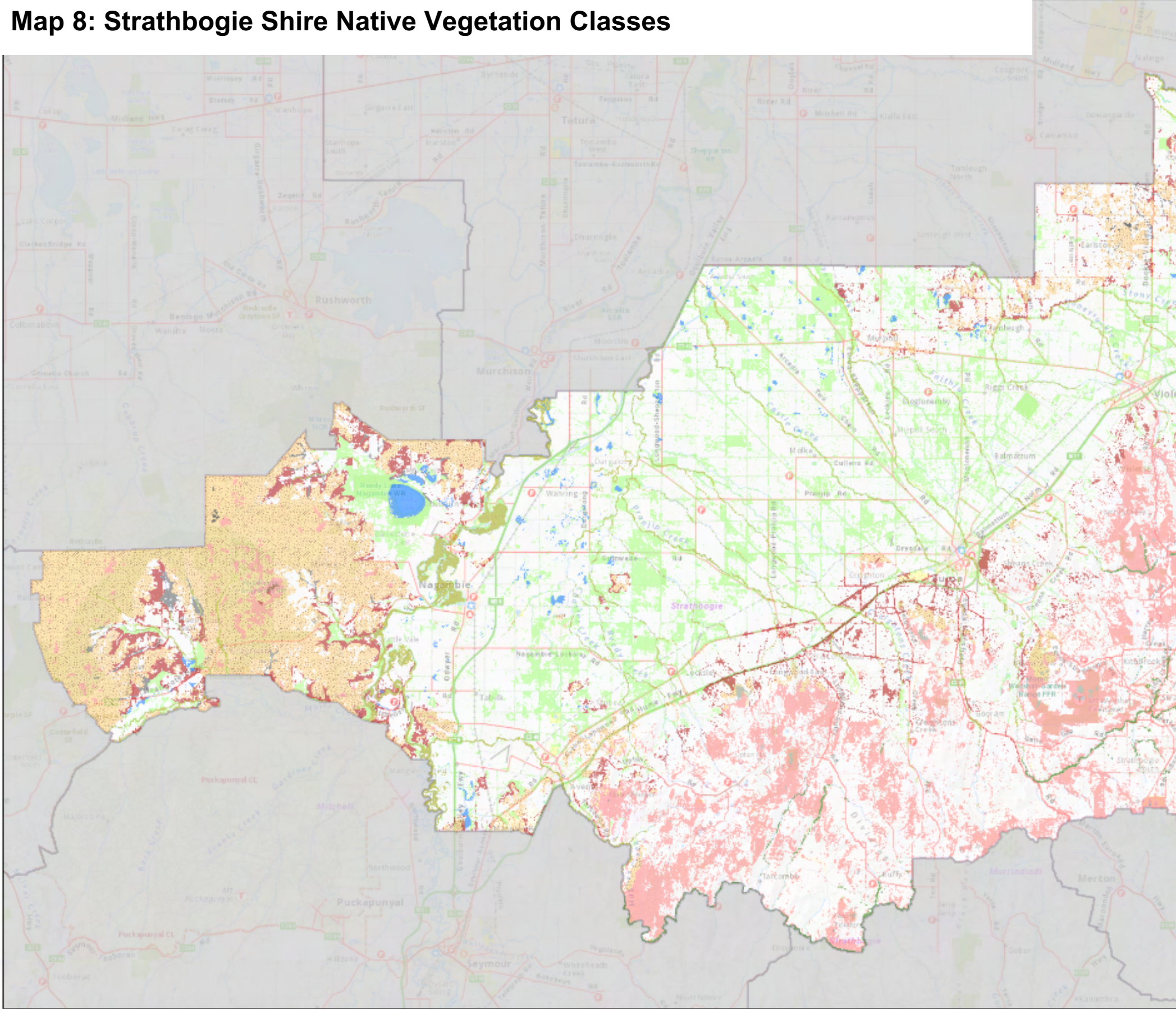
Map 7: Strathbogie Shire Biodiversity Values



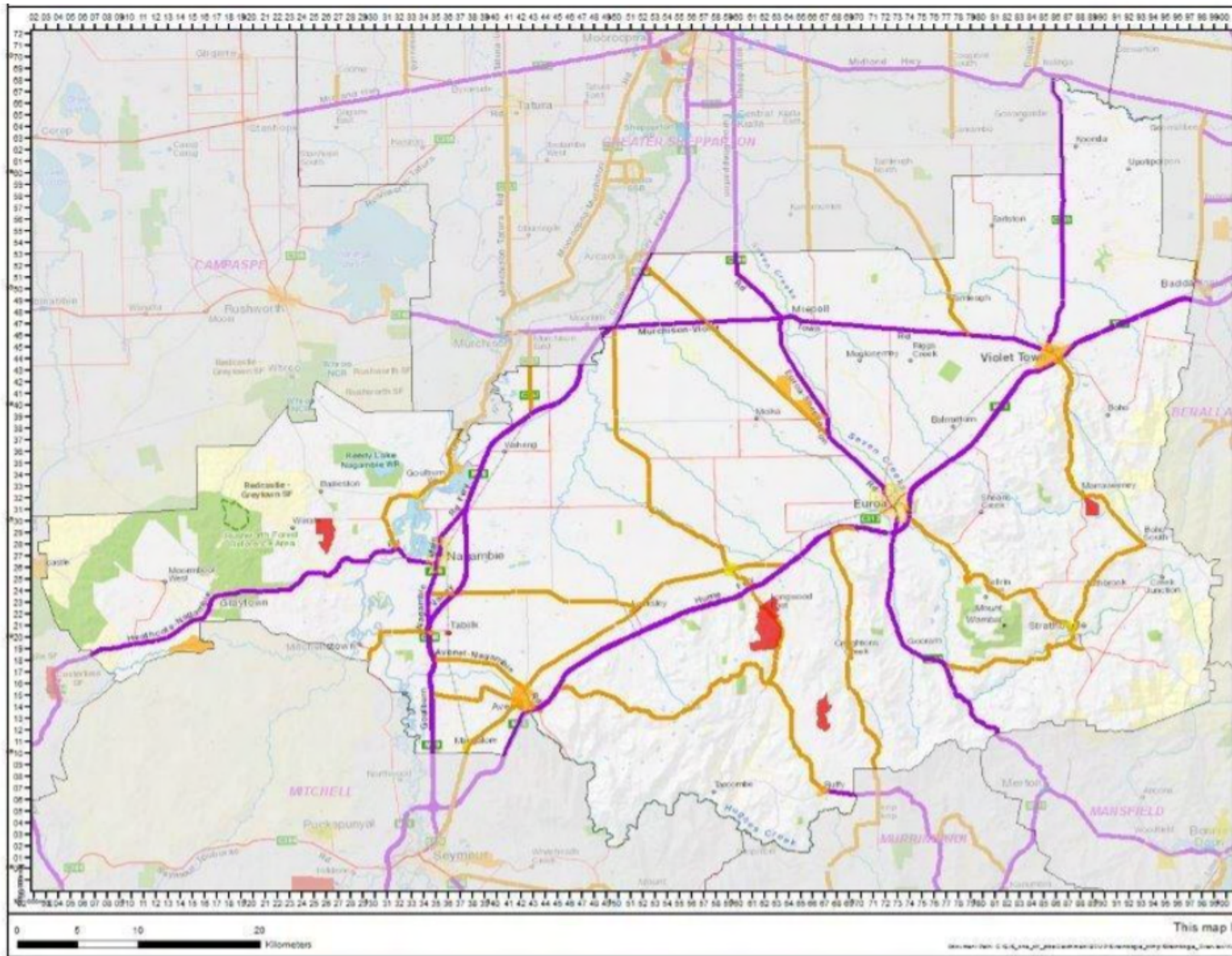
Map Produced by Wodonga GIS team, May, 2012
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Disclaimer: This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purpose and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication.

0 3.75 7.5 15
Kilometers

Map 8: Strathbogie Shire Native Vegetation Classes



Map 9: Strathbogie Shire Key CFA Access/Egress Roads



7.4 Attachment 4: Community Information Guides (formerly Township Protection Plans) and Neighbourhood Safer Places

Community Information Guides (CIGs) :

Community Information Guides provide a planned response for both emergency services and the community to a bushfire within close proximity to a township, with potential to impact on the local community. These guides address the specific needs of the town's people, their safety and pre-planning, property preparation, asset protection, environment and economy, and is typically divided into 3 parts: a) Community Information. b) Township planning factors. & c) Fire Prevention

A Community Information Guide has been completed and is available for the township of Strathbogie.

More information and copies of these Guides can be found on the CFA website at:

1. cfaonline.cfa.vic.gov.au/mycfa/Show?.pageId=publicTownshipProtectionPlans

Bushfire Places of Last Resort (BPLR) formerly known as Neighbourhood Safer Places (NSPs):

Bushfire Places of Last Resort (BPLR) should only be used if a resident's Bushfire Survival Plan fails and residents have no other place for shelter. Welfare facilities will not be made available and the place may not provide shelter from smoke and embers.

Bushfire Places of Last Resort have a number of limitations:

2. They have limited capacity and provide no guarantee of safety;
3. They do not cater for animals;
4. There is no expectation that emergency services will be present;
5. They do not provide meals, amenity or cater for special needs (eg. Infants, the elderly, the ill or the disabled);
6. They may not provide shelter from the elements, particularly flying embers;
7. There are risks to people during access, shelter during passage of the fire front and egress from the Bushfire Places of Last Resort.
8. They are NOT a Fire Refuge, Relief Centre, Recovery Centre, Assembly Area, or informal Places of Shelter, each of which has a different and specific purpose.

BPLRs may require prescribed treatments to be in place throughout the fire danger period to meet the assessment criteria. These treatments must be secured by agreed terms entered into by the landowner ie Council, a public authority, an agency or private person.

CFA request a Statement of Activity for vegetation management at the time of BPLR Annual Review.

To date there are 8 Bushfire Places of Last Resort that have been designated for Strathbogie Shire:

9. Longwood Community Centre, Down Street (Depot Road) Longwood.
10. Nagambie Regatta Centre, Loddings Lane (Off Vickers Road) Nagambie.

11. Violet Town Recreation Reserve Pavilion, Tulip Street, Violet Town.
12. Mangalore Airport, Aerodrome Road, Mangalore.
13. Strathbogie Golf Club House, Armstrong Street, Strathbogie.
14. Car park at the Euroa Memorial Swimming Pool 16a Bury St, Euroa.
15. Ruffy Recreation Reserve, "Maygar Park", Noye Lane, Ruffy.
16. Avenel Recreation Reserve Pavilion, Anderson Street Avenel

The most up to date list of BPLRs and the CIG for the Strathbogie township can be found on the CFA Website:

1. <http://www.saferplaces.cfa.vic.gov.au>

7.5 Attachment 5: Hazard Trees – Identification and Notification Procedures

Purpose

The Electricity Safety Act 1998 (Vic) (**ES Act**) provides that a municipal council must specify, within its Municipal Fire Prevention Plan:

1. procedures and criteria for the identification of trees that are likely to fall onto, or come into contact with, an electric line (**hazard trees**); and
 1. procedures for the notification of responsible persons of trees that are hazard trees in relation to electric lines for which they are responsible.

Scope

This procedure applies to all powerlines with the Strathbogie Shire.

Due to legal requirements which require a clearance space to be created in all directions around an electric line, hazard trees are usually located outside the regulated clearance space. Despite being outside the clearance space, the tree may still have the potential to contact the line due to its size or because of a structural fault or weakness which renders part, or all, of the tree likely to contact or fall onto the line.

Definition

A hazard tree is a tree which 'is likely to fall onto, or come into contact with, an electric line'.

Who is responsible for a hazard tree?

Under the ES Act, the person responsible for maintaining vegetation and clearance space around power lines is referred to as the 'responsible person'. This includes responsibility for keeping the whole or any part of a tree clear of the line. Responsibility is allocated between distribution businesses and other owners of electricity infrastructure, land owners and occupiers, public land managers such as municipal councils and VicRoads.

Municipal councils are responsible for trees on public land within their municipalities, for which they are the land manager, where these are also within a Declared Area for the purposes of the ES Act. Primary responsibility for vegetation clearance and management within the municipality, for areas which are not within a Declared Area, will usually fall to the relevant electricity distribution company.

In relation to powerlines on private property the responsible person will generally be the person who occupies the land where the tree is located. This responsibility extends to situation where the tree has the potential to contact a private line located on an adjacent property.

Responsible Persons within Strathbogie Shire Council

For Strathbogie Shire Council, the Responsible Person is detailed in the table below:

Responsible Person	Area of responsibility
David Roff Director Corporate Operations Strathbogie Shire Council	Township of Avenel Township of Euroa
PRIMARY RESPONSIBLE PERSON Craig Velt Ausnet Services -	All areas of Strathbogie Shire not included above.

Other relevant information

Responsible persons, other than private persons, must have an electric line clearance management plan in place for areas for which they have responsibility (*refer Electricity Safety (Electric Line Clearance) Regulations 2010*)

CRITERIA FOR REMOVING HAZARD TREES

In the course of everyday duties, potentially hazardous trees may come to the attention of staff or volunteer members of the entities with representation on the Municipal Fire Prevention Committee (**the Committee**), staff of the distribution business(es) or other persons, including members of the public.

There are a range of factors which may indicate that a tree is a hazard tree. That is, a tree which is likely to fall onto, or come into contact with, an electric line. Some of these factors will be obvious when looking at the tree but many may only be apparent when the tree is assessed by a person with specific expertise and training, such as an arborist.

The following criteria may be used to assist in identifying a hazard tree:

1. The size of the tree suggests that it is likely to come into contact with the electric line, for example because it appears to be encroaching or growing into the line clearance space.
2. There is an excessive lean on the tree, or branches hanging off the tree and the tree is in proximity to an electric (power) line.
3. The size or appearance of the tree suggests it could come into contact with the line including under foreseeable local conditions.

If a potentially hazardous tree is identified, the notification procedure outlined below should be followed. Where a person becomes aware of a potentially hazardous tree for which they have responsibility, they must follow their own applicable internal procedure and the notification procedure described below does not apply.

Procedures for notifying of hazard trees

To ensure that information regarding potentially hazardous trees is captured in an efficient manner and, as appropriate, referred to the responsible person for action, the following procedure for the notification of hazardous trees should be followed:

Contact Strathbogie Shire Council (at a customer service centre or lodge an on-line request through Council's website. Details of the report are to be captured on CSS and referred to the Coordinator Roads and Parks.

1. Reports must include, at a minimum:
 1. The name and contact details and any relevant qualifications where known of the person making the report
 2. As much detail as possible about the location of the tree (including, where known, GPS coordinates, details of numerical/name plate on nearest pole, name of nearest road or crossroads, closest landmark, whether tree is on private land or road reserve etc.)
 3. A description of the tree (including, if known, the genus and species of tree)
 4. The primary reasons given for the tree being identified as potentially hazardous (eg. tree is in proximity to an electric line AND there is evidence of structural weakness and/or excessive lean and/or appears to be encroaching into line clearance space etc.)
 5. An indication of whether or not urgent action is required.
2. If the tree is **not** in the Euroa township area or Avenel township area, the Coordinator Roads and Parks shall forward the report to the **primary responsible person** (or their representative **PRPR**) ie **Ausnet**.
3. If the tree is in the Euroa township area or Avenel township area, the Coordinator Roads and Parks shall instigate investigations and take appropriate action as required to rectify the hazard tree conditions. These actions shall be recorded on CSS.

7.6 Attachment 6: Emergency Services Safer Areas (ESSA's) on High Bushfire Risk Roads

Emergency Services Safer Areas (ESSA's) are places along a road where emergency services vehicles, specifically CFA vehicles, can take refuge from a fire. ESSA's are intended to have low fuel loadings and in the event of a fire front passing through an ESSA, the fire intensity is predicted to be minimal and therefore pose an acceptable risk to a well prepared fire truck (or strike team) and crew that may seek refuge there.

It must be made succinctly clear; ESSA's **are not intended to provide refuge for the general public in their vehicles**, rather the objective is to specifically provide a safety aspect to fire service vehicles in bushfire suppression activities.

ESSA's are only applicable on High Bushfire Risk Roads (HBRR). Generally, a HBRR is a road in a High to Extreme fire risk rating area (according to Victorian Fire Risk Register), that has potential to generate $>10\text{kW/m}^2$ of radiant heat flux (a value recognized as the maximum safe exposure for persons in a vehicle). For more detail on determining a high bushfire risk road refer to the risk assessment process flowchart - Figure 6.1, and Figure 6.2 for currently identified List of High Bushfire Risk Roads.

On roads where the potential for radiant heat is $<10\text{kW/m}^2$, ie lower fuel loadings, there is no real need to develop an ESSA as the inherent risk is considered acceptable. A fire truck caught on one of these roads would have a much reduced chance of fire impact on its occupants.

ESSA's are generally areas of grazing land (farmer's paddocks) adjacent to the road reserve that have acceptable fuel loadings. They should be no more than 3 minutes travel time apart where roadside fuel loadings are high.

Generally all vegetation within the ESSA should be grass with the majority of the grass less than 100mm in height for a radius of 100m from the entry point ie gateway. It is understood that a fire in this type of fuel would not generate more than 10kW/m^2 of radiant heat.

Establishment and Maintenance of ESSA's

The establishment of ESSA's should be approved and coordinated through the MFMP. ESSA's should be assessed by persons experienced in farming practices, fuel loadings and fire behavior eg an experienced fire fighter that also happens to be a farmer and the CFA's Vegetation Management Officer. Assessment should also be done with a representative of the road manager eg. Council's MFPO.

If the potential ESSA is on private property, the land owner must be consulted. Most farmers have an appreciation for fire management and are expert in their own property management practices. The success and sustainability of an ESSA is dependent on land owner cooperation.

Close grazing is probably the best and cheapest method of fuel management and is ideal for establishing an ESSA. Another option is to slash the grass at the end on the growing season ie late spring or early summer.

However the land owner may have other plans eg cyclic cropping that would disallow the establishment of an ESSA. Once agreement with the land owner is established, a sign to the attached specification (refer Figure 6.8) is to be installed on a star picket on the roadside, adjacent to the ESSA.

The signs should be located clear of traffic at least 2.0m from the edge of the road surface or at least 0.6m behind the line of the guide posts.

The local fire brigade needs to liaise with the particular land owner annually to determine if the fuel management goals are achievable. If not, the ESSA must be abandoned at least for the forthcoming fire season and signage removed. Reinstatement of the ESSA should be considered before the next season.

The GPS locations of ESSA's must be maintained and data made available to CFA District 22.

Cost

The cost of establishment and maintenance of an ESSA, apart from the fuel management costs that can be negligible ie stock eating grass, time talking to the land owner(s) is probably the highest cost next to purchase and installation of signs. It is currently estimated that the costs for signage that require the provision of a star picket, sign and bolts totaling \$35.00 per site. It is expected installation of the signs would be done by the local fire brigade. Funding for this could be through the Fire Access Roads Subsidy Scheme applicable through the Municipal Fire Management Planning Committee on a scale appropriate to the need. Replacement of faded or damaged signs (only) would be the responsibility of the Strathbogie Shire Council on confirmation from the CFA Commander District 22.

Figure 6.1 : Flowchart for the Identification of High Risk Bushfire Roads

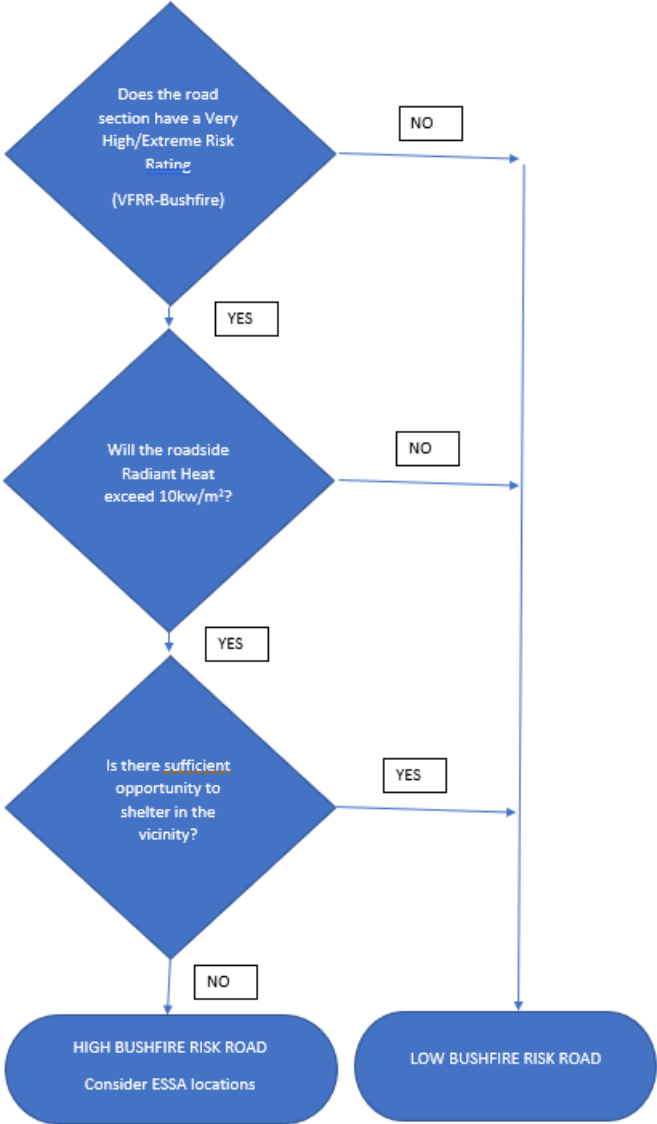
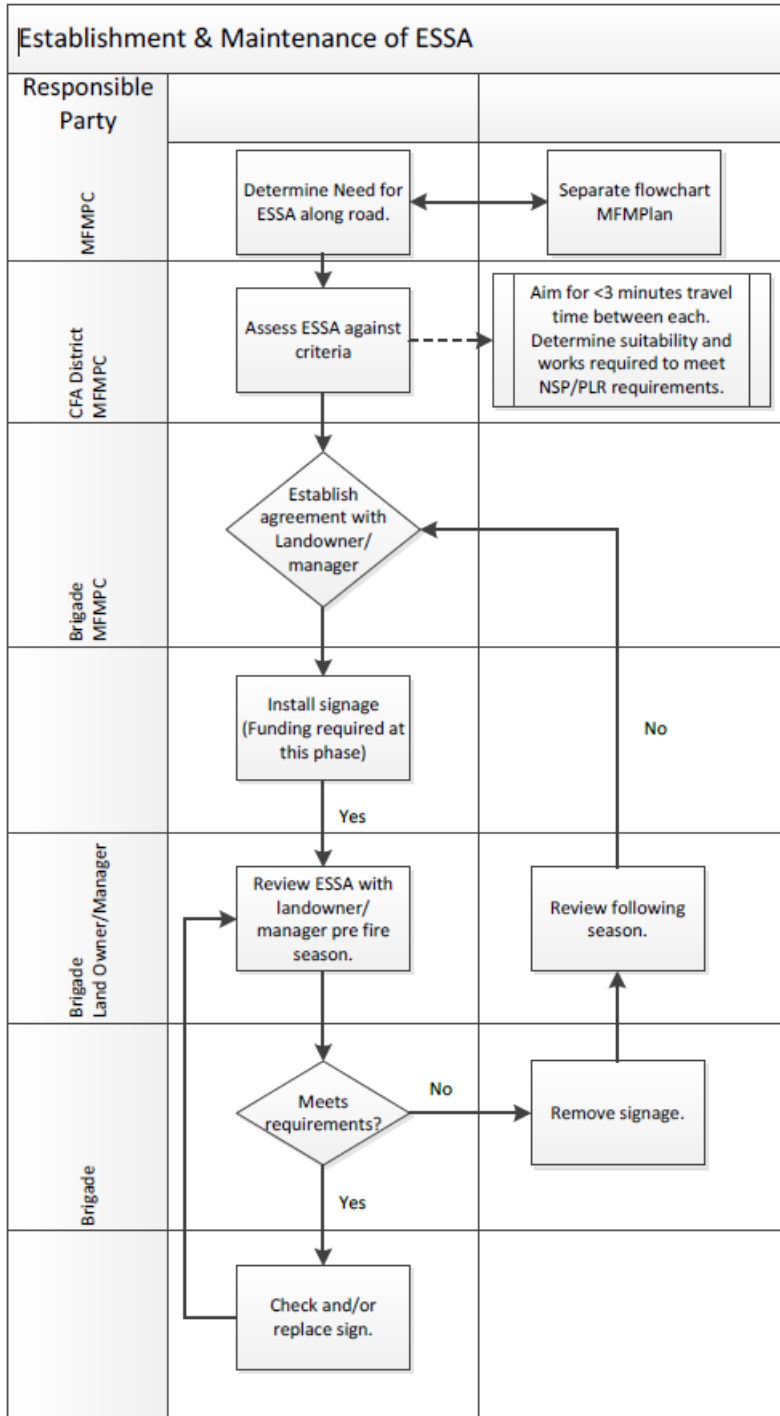


Figure 6.2 : List of High Bushfire Risk Roads

High Bushfire Risk Roads	Comment on ESSA's Implemented
Upper Boho Rd	2016/17 FARSS
Bonnie Doon Rd	
Boundary Hill Rd	
Creek Junction Rd	
Ankers Rd	
Spring Creek Rd	
Boundary Hill Rd	
Merton Strathbogie Rd	
Polly McQuinns Rd	
Gap Rd	
Harrys Creek Rd	2014/15 FARSS
Euroa Strathbogie Rd	2014/15 FARSS
Creightons Creek Rd	2016/17 FARSS
Longwood Ruffy Rd	2016/17 FARSS
Weibye Track	
Oak Valley Rd	
Upton Rd	2014 (Pilot project)
Other roads as determined by risk assessment process	

Figure 6.3: Establishment and Maintenance of ESSA – flowchart



Emergency Services Safer Areas

Figure 6.4: Typical Roadside Fuel Loadings on High Bushfire Risk Road



Figure 6.5: ESSA Sign indicating Emergency Services Safer Area



Figure 6.6: Tanker in the Refuge of an ESSA

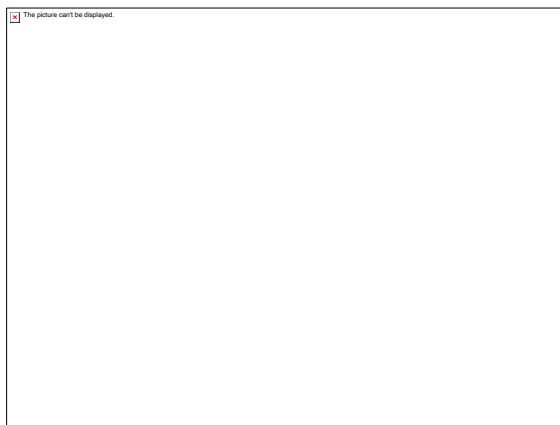
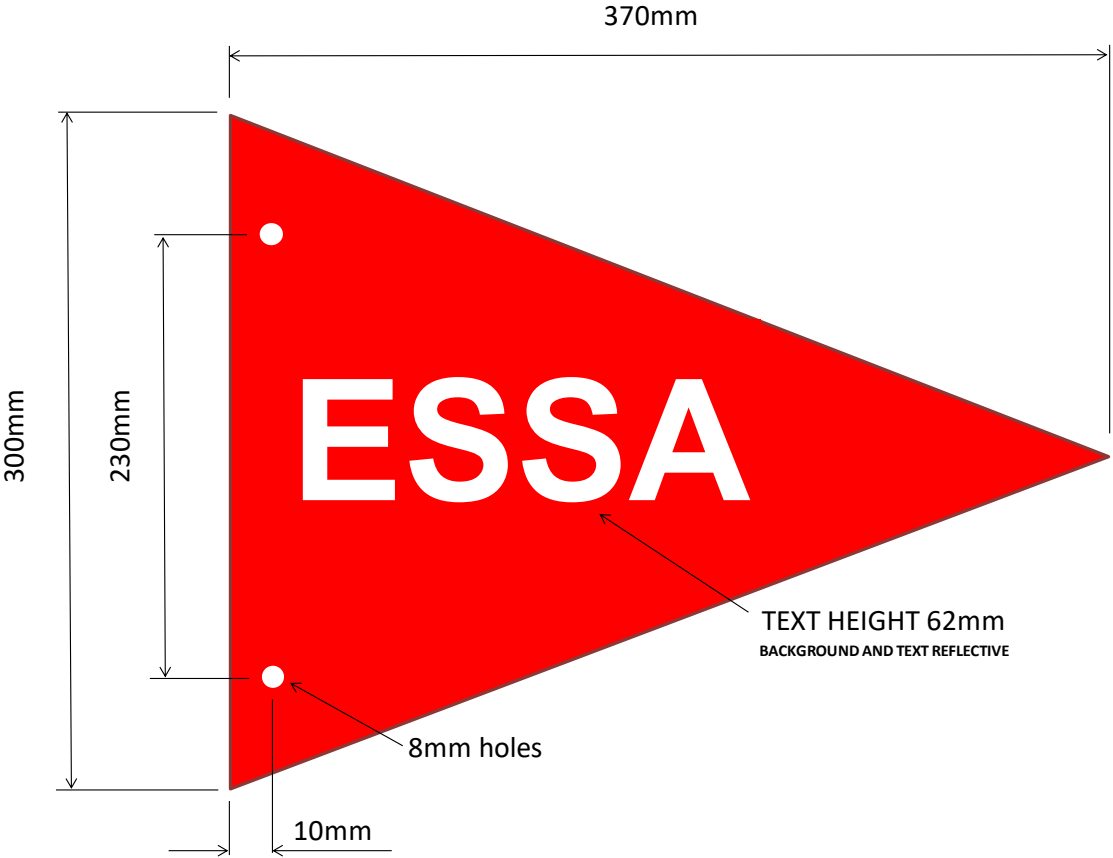


Figure 6.7: Bushfire Risk Sign (Refer Doc ID 389533)



Figure 6.8: ESSA Sign Design (Refer Doc ID 389535)

EMERGENCY SERVICES SAFER AREAS SIGN - DESIGN



7.7 Attachment 7: Fuel Reduced Corridors and Priority Access Roads

General

It is acknowledged that Fire Brigades may identify and undertake treatments on local roads as Fuel Reduced Corridors within their own brigade boundaries. These Fire Prevention works are not always undertaken annually, however all such works are undertaken specifically to minimise the threat to life and property from uncontrolled wildfire.

Fire Brigades are required to submit annually prior to the Fire Season, details of proposed Fuel Reduction Works proposed to be undertaken on council roads and/or reserves through CFA's Vegetation Management Officer.

All works must be approved by the Council's MFPO and are to be undertaken in accordance with the details following.

Fuel Reduced Corridors

Fuel Reduced Corridors must be sufficiently fuel-reduced to provide a safe corridor for the travelling public, provide a means of establishing a control line, reduce the time of travel to low-risk areas and to slow the spread of fire on the road reserve.

All overhanging obstructions less than 5 m above the road pavement should be removed, and dangerous trees/limbs should be removed to allow the safe passage of fire fighting appliances. They must be inspected annually by the controlling road authority and maintained throughout the fire danger period.

One or more of the following methods can be used to meet the requirements:

1. Mowing or slashing of grass to the table drain or at least 3 metres wide behind the guideposts whichever is greater on one or both sides of the road reserve where practical, either adjacent to traffic lanes, or next to or inside the adjoining property, at the appropriate time to prevent regrowth and accumulation of dry slashed material.
2. The ploughing of an earth strip not less than 2 meters wide on both sides of the road reserve adjacent to the fence-line, where there has been a history of ploughing.
3. Fuel reduction low intensity burning by fire brigades on a coordinated basis.
4. The spraying of herbicide to remove grass from the traffic lanes to the table drain or at least 3 metres wide behind the guideposts whichever is greater on one or both sides of the road where practical. Spraying of native grasses should be avoided.
5. Thinning out of vegetation within the reserve or easement and removing potentially dangerous trees.

Fuel Reduced Corridors are to be identified in Brigade Fire Prevention Plans. Both the Council and Brigades may undertake works on these roads as resources permit.

The following **Fuel Reduced Corridors** (All managed by Rural Roads Victoria (RRV)) have been identified:

1. Euroa Shepparton Road
2. Hume Freeway
3. Goulburn Valley Highway
4. Murchison Violet Town Road

Municipal Priority Access Roads

Priority Access Roads should be cleared of all low overhanging obstructions less than 5 m above the road pavement and dangerous trees/limbs need to be removed. A 3.0 m minimum width fuel-fuel reduced area on both sides of the road is desirable, to provide a clear travelled path all year round that has a 6.0 m minimum width.

These roads must be inspected annually by the controlling road authority and maintained prior to the fire danger period.

The following RRV maintained **Priority Access Roads** have been identified:

Avenel Nagambie Road

Euroa Mansfield Road

Euroa Shepparton Road

Goulburn Valley Highway

Heathcote Nagambie Road

Hume Freeway

Murchison Violet Town Road

The following Council maintained **Priority Access Roads** have been identified:

- Aerodrome Road---FROM Goulburn Valley Highway (0m) TO Rail Crossing (8200)**
- Ankers Road---FROM Bonnie Doon Road (0m) TO Merton Strathbogie Road (12925m)**
- Arcadia Two Chain Road---FROM Goulburn Valley Highway (0m) TO Euroa Shepparton Road (21040m)**
- Avenel Longwood Road---FROM Hume Freeway (0) TO Monea Road + 5500m (24710m) (Valentines Lane)**
- Ballantynes Road---FROM Railway Crossing (0m) TO Goulburn Valley Hwy (1540m)**
- Balmattum Church Road---FROM Giffin Road (0m) TO End of Road (3095m)**
- Balmattum North Road---FROM Saxon Street (0m) TO Wilbrahams Road (8690m)**
- Balmattum Road---FROM Harrys Creek Road (0m) TO Sheans Creek Road (10700m)**
- Balmattum Siding Road---FROM Balmattum North Road (0m) TO Lomers Road (3010m)**
- Barrymore Court --- FROM Arcadia Two Chain Road (0m) TO End of Road (472m)**
- Billabong Lane---FROM Boho Road (0m) TO End of Road (1320m)**
- Black Swamp Lane - FROM Cahill Road TO Bunganail Road**
- Boho Church Road---FROM Hume Freeway (0m) TO Upper Boho Road (9825m)**
- Boho Road---FROM Upper Boho Road (0m) TO Smiths Road (4695m)**
- Bonnie Doon Road---FROM Harrys Creek Road (0m) TO Watkins Road (14535m)**
- Boundary Hill Road---FROM Creek Junction Road (0m) TO Bonnie Doon Road (5630m)**
- Brookliegh Road--- From Ankers Rd (0) TO Spring Creek Rd (4130)**
- Bunganail Road - FROM Goulburn Valley Freeway TO Youngs Road**
- Buntings Hill Road---FROM Creighton Creek Road (0m) TO Ruffy Terip Road (6690m)**
- Burnells Road---FROM Harris Road (2260m) TO Cemetery Road (3335m)**
- Carmodys Road---FROM Nagambie Locksey Road (0m) TO Grimwade Road (9410m)**
- Carters Road---FROM Euroa Shepparton Road (0) TO Angle Road (14405)**
- Cemetery Lane - FROM Barwood Drive TO Goulburn Valley Freeway**
- Cemetery Road---FROM Dookie Violet Town Road (0m) TO Frazers Road (7025)**
- Coombs Road---FROM Aerodrome Road (0m) TO Gerrards Road (3545m)**
- Cowells Lane---FROM Drysdale Road (0m) TO Arcadia Two Chain Road (2500m)**
- Creamery Lane---From Longwood Ruffy (0m) To Buntings Hill Rd (2400m)**
- Creek Junction Road---FROM Euroa Strathbogie Road (0m) TO Ankers Rd (9940m)**

Creightons Creek Road---FROM Freeway Overpass (0m) TO Sinclairs Road (24395m)
Creightons Siding Road---FROM Hume Freway (0m) TO Angle Road (8630)
Crillys Road---FROM Feltrim Road (0m) TO Creek (675m)
Cullens Road---FROM Euroa Shepparton Road (0m) TO Longwood Shepparton Road (17415)
Dargalong Road---FROM Douglas Road (0m) TO Grimwade Road (12290m)
Dargalong Road---FROM Nagambie Locksley Road (19785m) TO Monea Road (25640m)
Deanes Road - FROM Goulburn Valley Highway TO Murchison Longwood Road
Depot Road---FROM Down Street (0m) TO Hume Fwy (1805m)
Dip Lane---FROM Sheans Creek Road (0m) TO End of Road (2365m)
Diviny Lane ---FROM Arcadia Two Chain Road (0m) TO 370m (370m)
Doherty Road---FROM Avenel Nagambie Road (0m) TO Aerodrome Rd (3070m)
Drysdale Road---FROM Birkett Street + 280 (280m) TO Longwood Pranjip Road (13800m)
Euroa Strathbogie Road---FROM Barnes Street (0m) TO Spring Creek (21270m)
Faithfuls Creek Road---FROM Roundabout Hume Fwy Overpass (0m) TO Sheans Creek Road (8025m)
Feltrim Road---FROM Camerons Road (0m) TO Murchison Violet Town Road (17360m)
Galls Gap Road---FROM Euroa Mainsfield Road (0m) TO Kippings Road (7365m)
Gap Road---FROM Longwood Ruffy Road (0m) TO Longwood Ruffy Road (8080m)
Goulburn Weir Murchison Road ----FROM McLeod Street (0m) TO Shire Boundary (7100m)
Goulburn Weir Road ---FROM Hayshed Road (0m) TO End of Road (2470m)
Grimwade Road ---FROM Goulburn Valley Hwy (13350m) TO Withers St (23400m)
Harris Road---FROM Burnells Road (0m) TO Shire Boundary (4880m)
Harrisons Road---FROM Dookie Violet Town Road (0m) TO Robinsons Road (7160m)
Harrys Creek Road---FROM Balmattum Road (0m) TO Creek Junction Road (21800m)
Hayes Road---FROM Harrys Creek Road (0m) TO Boho Road (1785m)
Hayshed Road - FROM Moss Road TO Grimwade Road
Horse Gully Road---FROM Footers Rd TO Balmattum Rd
Jefferies Road---FROM Alexandersons Road (0m) TO End at gate (2780m)
Kettels Road ---FROM McLeod Street (From Sky Dive Entrance) (520m) TO Reedy Lake Road (1645m)
Killeens Hill Road---FROM Euroa Mainsfield Road (0m) TO Major culvert (8000m)
Kirwans Bridge Road---FROM Hayshed Road (0m) TO Lobbs Road (2120m)

- Leckies Road**---FROM Euroa Shepparton Road (0m) TO Murchison-Violet Town (8200m)
- Lobbs Lane** ----FROM Grimwade Road (0m) TO Kirwans Bridge Road (2675m)
- Lomers Road**---FROM Dudley Road (0m) TO Balmattum Siding Road (6235m)
- Longwood-Mansfield Road**---FROM Faithfull Road (0m) TO Euroa Mansfield Road (10950m)
- Longwood-Pranjip Road**---FROM Grimwade Road (0m) TO Pranjip Road (7785m)
- Longwood-Ruffy Road**---FROM Faithfull Road (0m) TO Nolans Road (20350m)
- Longwood-Shepparton Road**---FROM Grimwade Road (0m) TO Murchison-Violet Town (17050m)
- McCombe Road**---FROM Tames Road (0m) TO Watkins Road (7035m)
- McCrackens Road**---FROM Alexandersons Road (0m) TO End of Road (5720m)
- McDiarmids Road**---FROM Cowslip Street (0m) TO Mahers Rd/Hume Fwy (4730m)
- McDonalds Road** ---FROM Morgans Road TO Zanelli Road (Ballantynes Road) (9270m)
- Merton-Strathbogie Road**---FROM Shire Boundary (0m) TO Bridge (7434m)
- Miepoll School Rd** --- FROM Murchison Violet Town Rd (0m) TO Gate/House (2570m)
- Mitchellstown Road**---FROM Goulburn Valley Highway (0m) TO Northwood Road (5840m)
- Moglonemby Hall Road**---FROM Leckies Road (0m) TO Moglonemby Road (5210m)
- Moglonemby Road**---FROM Euroa Shepparton Road (0m) TO Murchison-Violet Town Rd (13935m)
- Morningside Road** ----FROM Moss Road (0m) TO Old Goluburn Valley Hwy (5445m)
- Nagambie-Locksley Road** ---- FROM O'Dwyers Road (0m) TO Avenel Longwood Road (17770m)
- Nagambie-Rushworth Road** ----FROM Heathcote Nagambie Road (0m) TO Weir Road (2940m)
- Nolans Road** ---FROM Longwood Ruffy Road (0m) TO Redgate Lane (4500m)
- Nook Road** ---FROM Goulburn Valley Hwy (0m) TO Muller Road (2335m)
- Northwood Road**---FROM Shire Boundary (0m) TO Mitchellstown Road (4850m)
- Noye Lane**---From Bunting Hill Rd (0m) to End of Road (430m)
- Oak Valley Road**---From Hume Hwy to Upton Road
- Pagets Road**---FROM Robinsons Road (0m) TO Tarnook Road (3230m)
- Pine Lodge Road**---FROM Murchison Violet Town Road (0m) TO Arcadia Tamleugh Road (6260m)
- Polly McQuinns Road**---FROM Merton Strathbogie Road (0m) TO Kippings Road (4885m)
- Ponkeen Creek Road**---FROM Longwood Ruffy Road (0m) TO Tarcombe Ruffy Road (10750m)

Pranjip Road---FROM Euroa Shepparton Road (0m) TO Longwood Shepparton Road (16540m)

Racecourse Road ----FROM Last House (280M) TO McDonalds Road (3530m)

Reedy Lake Road---FROM Kettles Rd (230m) to Snipey Rd (3000m)

Robinson Road---FROM Harrisons Road (0m) TO Pagets Road + 1500m (3960m)

Ruffy-Terip Road---FROM Bridge (0m) TO Longwood Ruffy Road (2760m)

Selectors Road---FROM South Boundary (0m) TO Ludlow Park (4950m) Aerodrome Rd

Seven Creeks Estate Road---FROM Neelands Road (0m) TO End of Road (4150m)

Seymour Avenel Road---FROM Mitchell Shire Boundary (0m) TO Lambing Gully Road (6635m)

Sheans Creek Road---FROM Euroa Strathbogie Road (0m) TO Balmattum Church Rd (10665m)

Shepparton-Violet Town Road---FROM Murchison Violet Town Road (0m) TO Andrew Road (7435m)

Siems Road---FROM Euroa Shepparton Road (0m) TO End of Road (2905m)

Sinclairs Lane---FROM Creighton Creek Road (0m) TO Buntings Hill (2630m)

Smiths Road---FROM Boho Church Road (0m) TO Boho Road (4850m)

Spring Creek Road---FROM Euroa Strathbogie Road (0m) TO Creek Junction Road (4840m)

Station Road---FROM Aerodrome Road (0m) TO O'Connors Road (3680m)

Tabilk Monea Road ----FROM Avevenl Nagambie Road (0m) TO McDonalds Road (4595m)

Tames Road---FROM Merton Strathbogie Rd(0m) TO Bonnie Doon Road (10895m)

Tarcombe Road---FROM Hume Freeway (0m) TO Upton Road (19800m)

Tarcombe-Ruffy Road---FROM Ponkeen Creek Road (0) TO Red Gate Lane Nolans Road (5030m)

Taylor Drive ---FROM Arcadia Two Chain Road (0m) TO End of Road (1210m)

Temple Court---FROM Thorndyke Drive (0m) TO End of Road (630m)

Thorndyke Drive ----FROM Arcadia Two Chain Road (0m) TO End of Road (1605m)

Tipsy Road - FROM Bunganail Road TO Deanes Road

Tracey Court ---- FROM Arcadia Two Chain Road (0m) TO End of Road (510m)

Upton Road---FROM Tarcombe Road (0) TO Gap Road (22855m)

Vidlers Road---FROM Euroa Mainsfield Road (0m) TO End of Road (3940m)

Wahring-Euroa Road---FROM Goulburn Valley Hwy (0m) TO Longwood Shepparton Road (14050m)

Wallis Road---FROM Murchison Violet Town Road (0m) TO Richards Road (3310m)

Warrenbayne West Road---FROM Boho Church Road (0m) TO McEwan Lane (3920m)

Watkins Road---FROM Ankers Road (0m) TO Bonnie Doon Road (5545m)

Weibye Track---FROM McLeans Road (6825m) TO Longwood Gobur Road

Weibye Track---FROM Buntings Hill Road (0m) TO McLeans Lane (6825m)

Weir Road ---FROM Heathcote Nagambie Road (0m) TO Richards Road (5290m)

Youngs Road---FROM Wahring Euroa Road (1635m) TO Bugarail road

Zanelli Road---FROM Akers Road (0m) TO Goulburn Valley Highway + 250 (10280m)

Municipal Fire Access Roads

These roads are required to provide summer access for fire fighting vehicles and will be maintained by the Council accordingly, prior to the summer period.

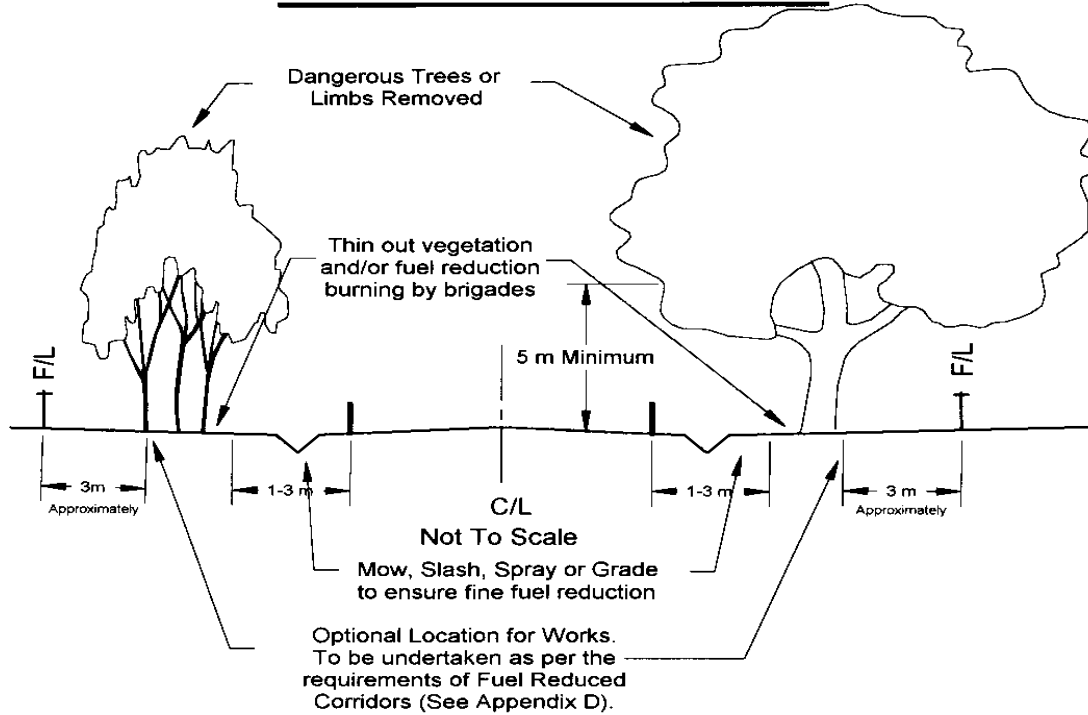
The following Municipal Fire Access Roads have been identified:

- Bonds La** - FROM Sargoods Road TO Creightons Creek Road (3,780m)
- Buchans Rd** - FROM Browns Road to the end (925m)
- Clarkes Rd** - FROM Oxenburys Road +4,430 TO Carmodys Road (1,940m)
- Clement La** - FROM Euroa Strathbogie Road TO Nagles Road (805m)
- Desaillys La** – FROM Upper Boho Road TO Cross Road (1,570m)
- Doxey’s Lane**– FROM Upton Road TO Tarcombe Road (2,600m)
- Falcon Vale Rd** – FROM Ponkeen Creek Road TO the end (1,150m)
- Fergusons La** – FROM O’Connors Road TO Station Road (1,610m)
- Fletchers Rd** – FROM Murchison Violet Town Road TO Jacks Road (2,700m)
- Frosts Rd** – FROM Unnamed Fire Access Road TO Arcadia Two Chain Road (1,625m)
- Killeens Hill Rd** – FROM Church Lane+5840 TO Church Lane+6940 (1,100m))
- Lehmann Rd** – FROM Strathaird Road TO Andrew Road (1,635m)
- Lewis Rd** – FROM Euroa Shepparton Road TO end (175m)
- Long Gully Rd** – FROM Harrys Creek Road 700 TO Harrys Creek Road 1760 (1,060m)
- McKenzies Rd** – FROM McCrackens +2570 Road TO McCrackens Road +3405 (835m)
- McPherson Rd** – FROM Roach Road TO Depot Road (1,110m)
- Monea Rd** – FROM Dargalong Road TO Ryans Lane (5,560m)
- Morgan St** , Tabilk
- Nagles Rd** – FROM Murchison Violet Town Road TO end (925m)
- Stubbs Rd** – FROM Pranjip Road TO Ryans Road (1,640m)
- Vidlers Rd** – FROM Euroa Mansfield Road TO the end (3,940m)
- Watkins La** - FROM end of seal TO Bonnie Doon Road (4,330m)
- Wicket Hill Rd** – FROM Tarcombe Road TO Ponkeen Creek Road (7,040m)

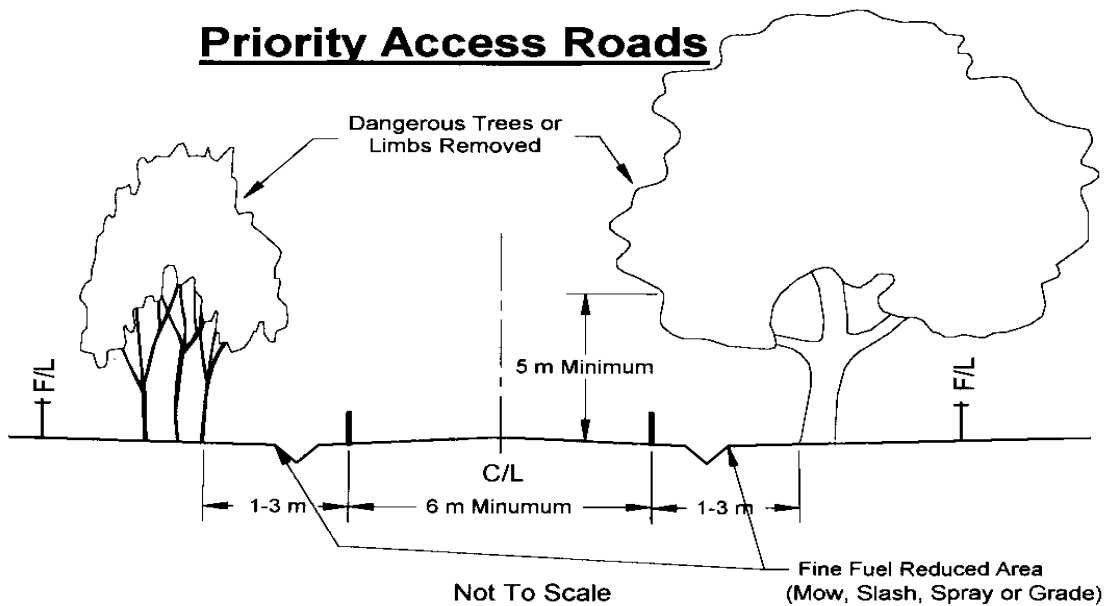
Diagram of Typical Works on Roads

NOTE: The following diagrams show the optimum desirable situation. It must be noted that this may not be achievable or practical in all situations.

Fuel Reduced Corridors



Priority Access Roads



Attachment 8: Glossary & Acronyms

Term	Description
ABS	Australian Bureau of Statistics
Acceptable Risk	The level of potential losses that a society or community considers acceptable, given existing social, economic, political, cultural, technical and environmental conditions.
APT	Australian Pipeline Trust
ARMB	Alpine Resort Management Board
AIIMS	Australasian Inter-service Incident Management System A nationally adopted structure to formalise a coordinated approach to emergency incident management.
Assets and Values	Recognised features of the built, natural and cultural environments. Built assets may include buildings, roads and bridges; Structures managed by utility and service providers; or recognised features of private land, such as houses, property, stock and crops plus associated equipment. Natural assets may include forest produce, forest regeneration, conservation values including vegetation types, fauna, air and water catchments. Cultural values may include recreational, indigenous, historical, and archaeological and landscape values. (Code of Practice for Emergency Management on Public Land)
AWS	Automatic Weather Station The Bureau of Meteorology's standard AWSs use sensors to monitor temperature, humidity, wind speed and direction, pressure and rainfall. Various advanced sensors are available for specialised applications. These sensors can monitor cloud height (ceilometer), visibility, present weather, thunderstorms, soil temperature (at a range of depths) and terrestrial temperature. (Developed from the BOM).
BASO	Brigade Administration Support Officer (for CFA)
BMO	Bushfire Management Overlay is a map based planning-scheme overlay that identifies areas of high fire risk in Victoria. Proposed buildings in these areas require a specific planning permit and type of building construction. It replaced the Wildfire Management Overlay (WMO) in 2012.
BOM	Bureau of Meteorology
Burning Program	A program of prescribed burns scheduled these for a designated area over a nominated time, normally looking ahead over one fire season (for the coming spring to the following autumn), but can also look ahead five years or more.
Burn Plan	The plan which is approved for the conduct of prescribed burning. It contains a map identifying the area to be burnt and incorporates the specifications and conditions under which the operation is to be conducted.
Bushfire	Unplanned vegetation fire. A generic term which includes grass fires, forest fires and scrub fires both with and without a suppression objective.

Term	Description
Bushfire Danger Period	A period of the year either established by legislation or declared by the relevant agency, when restrictions are placed on the use of fire due to dry vegetation and the existence of conditions conducive to the spread of fire.
Bushfire Management	All those activities directed to prevention, detection, damage mitigation, and suppression of bushfires. Includes bushfire legislation, policy, administration, law enforcement, community education, training of fire fighters, planning, communications systems, equipment, research, and the multitude of field operations undertaken by land managers and emergency services personnel relating to bushfire control.
BPLR	Bushfire Place of Last Resort (formerly Neighbourhood Safer Places (NSPs))
Campaign Fire	A fire normally of a size and/or complexity that requires substantial fire fighting resources, and possibly several days or weeks to suppress.
CERM	Community Emergency Risk Management
CFA	Country Fire Authority
COL	Consequence of Loss - OESC A dataset that is owned and maintained by the OESC. The dataset contains records of infrastructure and assets under the categories: Economic Infrastructure, Economic Production, Environmental Biodiversity, Social Cultural, Social Human Life and Social Infrastructure. The dataset contains detailed attributes about the assets type, value and location.
CIG	Community Information Guide (formerly Township Protection Plan)
Consequence	Outcome or impact of an event
Control Authority	The agency, service, organization or authority with legislative responsibility for control of the incident. (Also referred to as the responsible authority or agency.)
Coordination	The bringing together of agencies and elements to ensure effective response to an incident or emergency. It is primarily concerned with the systematic acquisition and application of resources in accordance with the requirements imposed by the emergency or emergencies. Coordination relates primarily to resources and operates: <ul style="list-style-type: none"> • vertically, within an agency, as a function of the authority to command; • horizontally, across agencies, as a function of the authority to control.
CSIRO	Commonwealth Scientific and Industrial Research Organisation
Curing	Drying and browning of herbaceous vegetation due to mortality or senescence.
DEECD	Department of Education and Early Childhood Development
DHHS	Department of Health and Human Services

Term	Description
DOT	Department of Transport
DJPR	Department of Jobs Precincts and Regions
DELWP	Department of Environment Land Water & Planning
EHO	Environmental Health Officer – Council
Elements at Risk	The population, buildings and civil engineering works, economic activities, public services and infrastructure etc., exposed to sources of risk.
EMA	Emergency Management Act
EMMV	Emergency Management Manual Victoria
EPBC	Environmental Protection Biodiversity Conservation
ESSA	Emergency Services Safer Area
Essential Infrastructure	Those services, physical facilities, supply chains, information technologies and communication networks that, if destroyed, degraded or rendered unavailable for an extended period, would significantly impact on the social or economic wellbeing of the community E.g. Water supply facilities.
FDI	Fire Danger Index A relative number denoting the potential rates of spread, or suppression difficulty for specific combinations of temperature, relative humidity, drought effects and wind speed.
FDP or DFDP	Declared Fire Danger Period The FDP is set by CFA and typically this is over the summer period of November through to the 30 th of April.
FDR	Fire Danger Rating A relative class denoting the potential rates of spread, or suppression difficulty for specific combinations of temperature, relative humidity, drought effects and wind speed, indicating the relative evaluation of fire danger.
FFG Act 1988	<i>Flora and Fauna Guarantee Act 1988</i> – Victorian State Legislation
Fire Management	All activities associated with the management of fire prone land, including the use of fire to meet land management goals and objectives.
FOI	Freedom of Information
Fuel Break System	A series of modified strips or blocks tied together to form continuous strategically located fuel breaks around land units.
Fuel Management	Modification of fuels by prescribed burning or other means.
Fuel Modification	Manipulation or removal of fuels to reduce the likelihood of ignition and/or to lessen potential damage and resistance to control (e.g., lopping, chipping, crushing, piling and burning).

Term	Description
Fire Season	The period during which bushfires are likely to occur, spread and do sufficient damage to warrant organised fire control.
FRB	Planned Burn
FSV	Fire Services Victoria
Fuel	Any material such as grass, leaf litter and live vegetation which can be ignited and sustains a fire. Fuel is usually measured in tonnes per hectare. Related Terms: Available fuel, Coarse fuel, Dead fuel, Elevated dead fuel, Fine fuel Ladder fuels, Surface fuels, and Total fine fuel.
Fuel Hazard	A fuel complex, defined by volume, type condition, arrangement, and location, that determines the degree of ease of ignition and of resistance to control.
Fuel Management	Modification of fuels by prescribed burning or other means. (AFAC)
GBCMA	Goulburn Broken Catchment Management Authority
G-MW	Goulburn-Murray Water
GVW	Goulburn Valley Water
Hazard	A source of potential harm or situation with a potential to cause loss. A potentially damaging physical event that may cause loss of life or injury, property damage, social and economic disruption or environmental degradation.
Hazard Layer – DELWP	Hazard layer developed and maintained by DELWP, Office of Land and Fire. It is a state-wide coverage of 30 m^2 cell resolution with approximately 27 attributes detailing surface and elevated fuel loads, hazard ratings and vegetation descriptions.
HBRR	High Bushfire Risk Road
HRSFMPC	Hume Region Strategic Fire Management Planning Committee
HRSFMP	Hume Region Strategic Fire Management Plan
IAP	Incident Action Plan
IFMP	Integrated Fire Management Planning
IRSED	Index of Relative Social & Economic Disadvantage ABS scoring method for determining and comparing levels of social and economic disadvantage in given areas at a given point in time, with information displayed according to IRSED values from lowest (most disadvantaged) to highest (least disadvantaged).
ISO	International Standards Organisation

Term	Description
ISO 31000:2009	An international risk management standard that provides principles and general guidelines on how to manage risk (replaces standard AS/NZS 4360:2004)
ICC	Incident Control Centre The location where the Incident Controller and various members of the Incident Management Team provide overall direction of response activities.
LGA	Local Government Authority Represents relevant Municipal Council (or ARMB) for area of concern.
Likelihood	Probability or frequency of an event can be either qualitative or quantitative.
Loss	Any negative consequence or adverse effect, financial or otherwise.
MBS	Municipal Building Surveyor - Council
MDA	Map Display Area
MEM	Municipal Emergency Manager
MEMPC	Municipal Emergency Management Planning
MEMPC	Municipal Emergency Management Planning Committee
MERC	Municipal Emergency Response Coordinator – Victoria Police
MERO	Municipal Emergency Resource Officer – Council
MFMP	Municipal Fire Management Plan
MFMPCC	Municipal Fire Management Planning Committee
MFPO	Municipal Fire Prevention Officer
Mitigation	Measures taken in advance of a disaster, aimed at decreasing or eliminating its impact on society and environment.
Municipal Area	The geographic footprint of the relevant LGA/ARMB
OESC	Office of Emergency Service Commission
PPRR	Prevention, Preparedness, Response, Recovery
Practicable	What is realistic to achieve in the context of: The severity of the hazard. The state of knowledge about the hazard or risk and any ways of removing or mitigating it. The availability and suitability of ways to remove or mitigate that hazard or risk. The cost of removing or mitigating that hazard or risk (Dangerous Goods (Storage and Handling) Regulations 2000)
Preparedness	Arrangements to ensure that in the event of an emergency occurring all those resources and services that area needed to cope with the effects can be efficiently mobilised and deployed.

Term	Description
Prescribed Burning	The controlled application of fire under specified environmental conditions to a predetermined area and at the time, intensity, and rate of spread required to attain planned resource management objectives.
Prevention	Regulatory and physical measures to ensure that emergencies are prevented, or their effects mitigated.
Probability	A measure of the chance of an event occurring, often expressed as a number.
Recovery	The coordinated process of supporting emergency affected communities in the reconstruction of the physical infrastructure and restoration of emotional, social, economic and physical wellbeing.
Residual Risk	Risk remaining after implementation of a risk treatment.
Resilience	The capacity of a system, community or society potentially exposed to hazards to adapt, by resisting or changing in order to reach and maintain an acceptable level of functioning and structure. This is determined by the degree to which the social system is capable of organising itself to increase its capacity for learning from past disasters for better future protection and to improve risk reduction measures. (UN/ISDR, Geneva 2004)
Response	Actions taken in anticipation of, during and immediately after an emergency, to ensure its effects are minimised and that people affected are given immediate relief and support.
Risk	The exposure to the possibility of such things as economic or financial loss or gain, physical damage, injury or delay, as a consequence of pursuing a particular course of action. The concept of risk has two elements, i.e. the likelihood of something happening and the consequences if it happens.
Risk Analysis	A systematic use of available information to determine how often specific events may occur and the magnitude of their likely consequence.
Risk Assessment	The overall process of risk identification, analysis and evaluation.
Risk Criteria	Terms of reference by which the significance of risk is assessed.
Risk Evaluation	Process of comparing the level of risk against criteria.
Risk Identification	The process of determining what, where, when, why and how something could happen.
Risk Management	The culture, process and structure that are directed towards potential opportunities whilst managing adverse effects.
Risk Management Process	The systematic application of management of policies, procedures and practices to the tasks of communicating, establishing the context, identifying, analysing, evaluating, treating, monitoring and reviewing risk.
Risk Reduction	Actions taken to lessen the likelihood, negative consequences, or both, associated with a risk.

Term	Description
Risk Register	A listing of risk statements describing sources of risk and elements at risk, with assigned consequences, likelihoods and levels of risk.
Risk Treatment	Process of selection and implementation of measures to modify risk.
RSFMPC	Regional Strategic Fire Management Planning Committee
SEACI	South East Australia Climate Initiative
SES	State Emergency Services
SFMPCC	State Fire Management Planning Committee
SMR	StateNet Mobile Radio
SOP	Standard Operating Procedures
Source of Risk	Source of potential harm
Stakeholders	Those people and organisations who may affect, be affected by or perceive themselves to be affected by a decision, activity or risk.
Susceptibility	The potential to be affected by loss
TAPO	Technical Administrative Project Officer (for IFMP)
TFB	Total Fire Ban (A day of Total Fire Ban)
Tolerable Risk	A risk within a range that society can live with so as to secure certain net benefits. It is the range of risk regarded as non-negligible and needing to be kept under review and reduced further if possible.
TOR	Terms of Reference
TPP	Township Protection Plan renamed by CFA as Community Information Guide (CIG)
Treatment	An existing process, policy, device, practice or other action that acts to minimise negative risk or enhance positive opportunities. The word control may also be applied to a process designed to provide reasonable assurance regarding the achievement of objectives.
Treatment Assessment	Systematic review of processes to ensure that controls are still effective and appropriate.
Urban Rural Interface	The line, area, or zone where structures and other human development adjoin or overlap with undeveloped bushland.
VBRC	Victorian Bushfire Royal Commission
VFRR	Victoria Fire Risk Register CFA process that identifies assets at risk from bushfire, assesses the level of risk and highlights the risk mitigation treatments currently in place along with the responsible agencies for implementing these treatments. The output is a geographic layer and associated attributes that identifies the asset type;

Term	Description
	name; location and risk factors and priorities of these assets based on a wildfire occurring in its vicinity on a day of 100 FDI.
VICPOL	Victoria Police
Vulnerability	The conditions determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards. (UN/ISDR, Geneva 2004)
Vulnerable People	Those living in high bushfire risk areas and who are unable to make an independent decision, including due to cognitive impairment; physically dependant and totally reliant on in home personal care and support; and people who live alone and are geographically isolated with no co-resident carer or family. (DHS)
WTP	Water Treatment Plant