
# Road Bushfire Risk Assessment Guideline

**Report commissioned by**

**VicRoads**

Terramatrix
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Report prepared by Terramatrix on behalf of VicRoads


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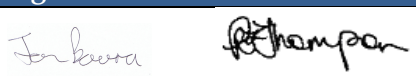
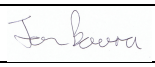
| Report compilation | Rachael Thompson, Jon Boura |  |
| Approval for release | Jon Boura |  |

## Version Control

| Version | Date | Comments | Distribution |
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| 1 | 8th June 2011 | Report outline, methodology | RT |
| 2 | 9th June 2011 | Re-structure | JB, RT, Project Board |
| 3 | 30th June 2011 | Stakeholder feedback, procedure edited | Client |
| 4 | 17th August 2011 | Incorporate late feedback and minor changes | RT |


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# 1. Introduction

VicRoads manage over 23,000 kilometres of roads comprising freeways, major highways and arterial roads in urban, regional and remote rural locations, about 3000 bridges and approximately 80,000 hectares of roadside.

Road corridors are managed for multiple objectives. As well as their transport function, road corridors contain essential infrastructure, significant environmental and cultural assets and are managed to enhance transport safety, efficiency, amenity and the environment. Each aspect is governed by a raft of legislation.

VicRoads, as a public authority, has statutory obligations under Section 43(1) of the *CFA Act* (1958):

*'In the country area of Victoria it is the duty of every municipality and public authority to take all practicable steps (including burning) to prevent the occurrence of fires on, and minimise the danger of the spread of fires on or from:*

*(a) any land vested in it or under its control or management; and*

*(b) any road under its care and management'.*

The 2009 Victorian Bushfires Royal Commission recommended that VicRoads implement a systematic statewide program of bushfire risk assessment for all roads for which it is responsible to ensure that they are meeting their obligations under s.43 of the *CFA Act*.

This Guideline has been developed to assist VicRoads to implement a consistent bushfire risk assessment program. The Guideline was developed with support of a multi-agency project team.

## 2. Purpose

The purpose of this Guideline is to:

- Confirm road bushfire management objectives;
- Outline processes for assessing risk in regards to each objective;
- Determine the priority for bushfire mitigation works on particular roads; and
- Provide guidance on selecting appropriate risk treatments.

The Guideline also facilitates the integration of road bushfire safety within the broader fire management planning environment.

The Guideline aligns closely with the VicRoads road maintenance planning process, which takes a two-stage approach comprising a high level 'desk top' prioritisation supported by a more detailed assessment of the actual works needed on a particular segment of road at a particular time.

## 3. Regulatory context

Asset managers must take into account the implications of the regulatory framework when planning for and undertaking works on road corridors. The most influential legalisation in the current regulatory environment includes:

*Transport Safety Act 2010*
*Road Safety Act 1986*
*Metropolitan Fire Brigades Act 1958*
*Forests Act 1958*
*Electricity Safety Act 1998*
*Road Management Act 2004*
*Country Fire Authority Act 1958*
*Flora and Fauna Guarantee Act 1988*
*Planning and Environment Act 1987*
*Summary Offences Act 1966*
*Environment Protection and Biodiversity Conservation Act 1999*

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# 4. Fire management objectives

The CFA *Roadside Fire Management Guidelines* (CFA, 2001) list fire management objectives agreed by a range of stakeholders and which were supported by the 2009 Victorian Bushfires Royal Commission.

Five objectives are provided:

1. Prevent fires on roadsides
2. Contain roadside fires
3. Manage safety or road users
4. Provide control lines
5. Recovery from roadside fires

This Guideline considers four of these five objectives.

Objectives 1 and 2 are central to VicRoads s.43 obligations under the *CFA Act* and as such VicRoads leads planning for them in regards to their road network. The VicRoads Bushfire Risk Mapping described below assesses the risk of a fire starting and spreading from the roadside.

Roads under VicRoads management are important for Objective 3, managing the safety of road users. Providing adequate access and egress from towns determined by CFA to be high risk is dealt with in this Guideline.

Planning for Objective 4, provide control lines, is undertaken by the fire services in conjunction with the road manager through the Municipal Fire Management Planning Committee.

The fifth objective, recovery from roadside fires, is important but risk assessment for it occurs through other planning processes undertaken by each infrastructure owner.

A VicRoads road may be nominated as high priority for bushfire management because it:

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- Is assessed as high risk in regards to the start and spread of bushfire; and/or
- Is nominated as high priority emergency access/egress; and/or
- Has been nominated as a control line by the relevant fire service.

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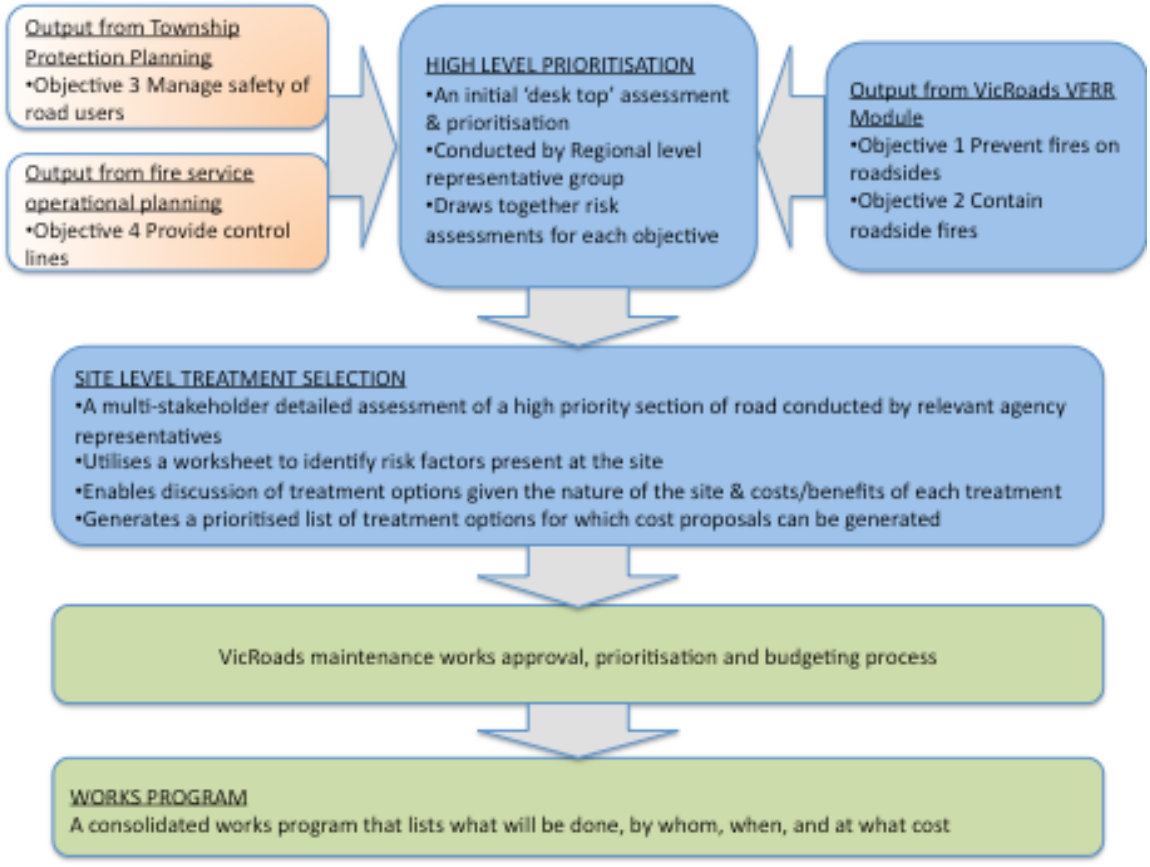
Separate risk assessments are required for the different objectives, as different factors are important in determining the level of risk. The risk assessment methods are summarised in the next section.

Once it has been determined that a segment of road requires bushfire mitigation works by VicRoads, these works are entered into the maintenance works approval and budgeting process. The completed works plan is provided to the Municipal Fire Management Committee for inclusion into the Municipal Fire Management Plan.




A more detailed procedure describing the bushfire management planning process is included in this Guideline in Section 7.

# 5. Planning for fire management objectives

## *5.1 Meeting Objectives 1 and 2 – Prevent ignition and spread*

### 5.1.1 Context

Roads can be a source of ignition due to their high level of use and the presence of power lines and other potential ignition sources. The ability for a fire to spread significantly is determined largely by the nature of the landscape down wind of the road, and the overall consequence of a bushfire started on a road is determined by the amount, type and vulnerability of assets on the road reserve and beyond the road reserve in the potential path of the fire.

### 5.1.2 Risk assessment

The VicRoads Bushfire Risk Mapping quantifies factors that influence the likelihood and consequence of a bushfire starting and spreading from the road network. It does not assess risk in relation to Objectives 3 or 4.

The VicRoads Bushfire Mapping assesses the likelihood of an ignition in the road corridor, and the likelihood of fire spread beyond the road reserve. The consequence theme is also made up of two components; the consequence of fire on the road reserve and consequence of fire spread beyond the road reserve. A range of contributing factors is assessed, which are weighted to reflect their relative importance in determining the bushfire risk.

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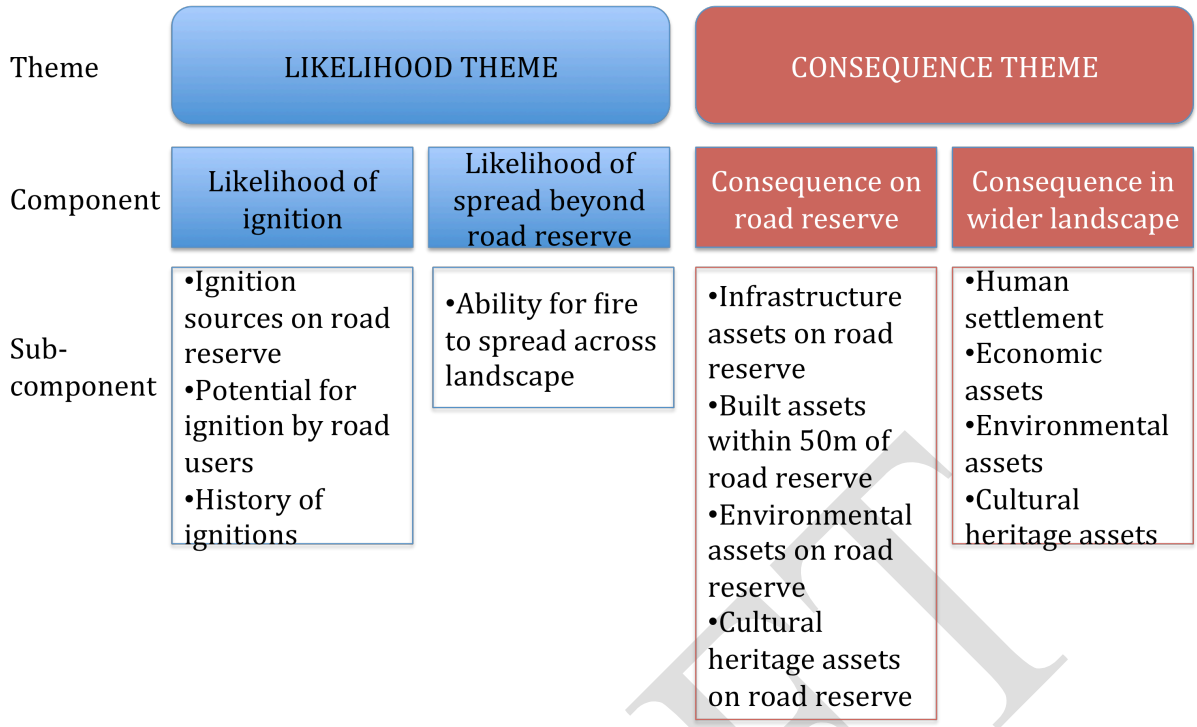


The output of the risk assessment is a prioritised list of roads classified into three groups according to the level of risk.

- **Low risk roads** are those where the level of bushfire risk does not warrant specific bushfire mitigation works;
- **Moderate risk roads** will receive the standard suite of treatments from the routine maintenance program; and
- **High risk roads** require additional detailed assessment and may warrant additional fire risk mitigation treatments. As the risk cannot be managed on the roadside alone consideration needs to be given to broader treatments.

The VicRoads Bushfire Risk Mapping is housed within the Victorian Fire Risk Register (VFRR) and combines VFRR asset/consequence data with road-specific likelihood factors. The VFRR is maintained by CFA and identifies assets at risk from bushfire, assesses the level of risk and documents the range of treatments to mitigate the risk.

For those who want to understand the VicRoads Bushfire Risk Mapping more fully a detailed methodology is available.

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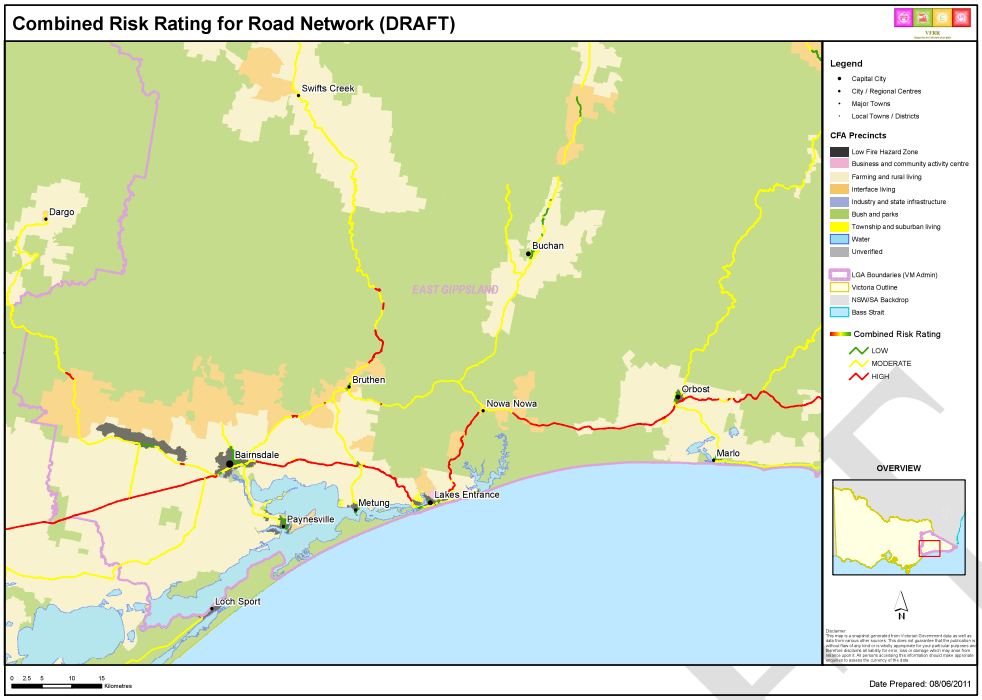


**An example of a map that will be produced by the VicRoads Bushfire Risk Map.**

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In addition, works may be required to manage tress on roadsides to prevent ignitions. The Electricity Safety Act (1998) defines a hazard tree as one 'that is likely to fall onto, or come into contact with, an electric line'. The Electricity Safety (Electric Line Clearance) Regulations 2010 state that VicRoads may cut or remove such a tree 'provided that the tree has been assessed by a suitably qualified arborist; and that assessment confirms the likelihood of contact with an electric line having regard to foreseeable local conditions'.

Any tree reported to VicRoads as being hazardous will be assessed according to the requirements of the Electricity Safety (Electric Line Clearance) regulations and the appropriate action taken. Any such tree is considered a High priority.

### 5.1.3 Potential mitigation treatments

- Regulation
- Enforcement
- Education
- Fuel-free shoulder maintained during fire danger period
- Vertical separation between fuel and vehicle (Standard Section 750 & 752)
- Management of trees near power lines
- Bare earth fuel break to contain small ignitions
- Fuel reduction burning
- Fuel management around assets adjacent to the road and in the path of potential fire spread
- Bushfire scenario operational planning and preparedness

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## 5.2 *Meeting Objective 3 – Manage the safety of road users*

### 5.2.1 Context

It is important to recognise that it is impossible to ensure safe travel on roads during and after a bushfire. The safest option is to leave early on days of high fire risk and that driving during a bushfire should be a last resort. Vehicles offer little protection from radiant heat, smoke over roads and emergency vehicles responding to the fire increase the risk to road users. It is not feasible to make a road safe during the passage of the fire front.

Although it is strongly advised not to travel on roads during a bushfire, it must be accepted that this will unfortunately occur. The 2009 Victorian Bushfires Royal Commission acknowledged that individuals' capacity to escape from fire and fire fighters ability to respond to fire are compromised if roads are impassable, poorly maintained or blocked by fallen trees. The most effective method for reducing the risk to road users is to reduce the likelihood of them travelling on roads during a fire. Supporting and promoting leave early messaging should be the primary focus of treating this objective. Secondary should be the provision on safe egress.

The key factor in managing road user safety considered in this Guideline is providing egress/evacuation routes from high risk townships that are as safe as practically possible. High risk townships are those that have Township Protection Plans in place.

Township Protection Plans (TPPs) have been, or are being, developed for a number of high risk towns across the State. These plans provide bushfire advice and guidance to the local community and visitors. Essential access and egress roads are identified within TPPs where limited roads are available thus making the town particularly vulnerable to being isolated in a bushfire. Neighbourhood Safer Places (NSPs) are also included in TPPs however may not be designated in every town. NSPs are designated community areas that may provide some protection from radiant heat, and are designed to be used as places of last resort when all other bushfire plans have failed. Shelter options are a term used to describe the range of options available to the public to shelter during the passage of fire. These may include

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public bunkers, community fire refuges, Neighbourhood Safer Places and other places of last resort.

The potential for evacuation is determined as part of the TPP planning process in accordance with the Bushfire Safety Policy Framework and if appropriate will be implemented by the Incident Controller/Victoria Police.

### 5.2.2 Risk assessment

In order to determine the priority for roads requiring management to provide access and egress the following criteria is applied:

| Evacuation options | Access arrangements | Priority rating | |
|---|---|---|---|
| | | Shelter Option available | No Shelter Option |
| Evacuation is an option | Single access/egress road | **High** (on access route to shelter option) | **High** (on single access/egress road) |
| | Multiple access/egress roads | **Moderate** (on access route to Shelter Option) **Low** (all other roads) | **Moderate** (on multiple roads) |
| Evacuation is not an option | Single access/egress road | **High** (on access route to Shelter Option) | **Moderate** (on single access/egress route) |
| | Multiple access/egress roads | **High** (on access route to Shelter Option) | **Low** (on multiple access/egress road) |
| | | | |

### 5.2.3 Potential mitigation treatments

For Objective 3, the priority rating equates directly to a standard of vegetation management. Each road should be assessed to establish the correct level of treatment according to the criteria set out in the table above, and then the level of vegetation management determined from the table below.

| Priority rating | Treatment | Treatment standard |
|---|---|---|

| | | |
|---|---|---|
| **High** | **Permanent** | **Permanent**ly treated roads are managed to the current VicRoads maintenance standards specified in maintenance contracts (Standard Section 750 & 752) **plus** identified annual fire mitigation treatments and removal of hazardous trees or limbs that could fall on a road in high wind events **plus** removal of all trees within the fall line of the road. |
| **Moderate** | **Periodic** | **Periodic**ally treated roads are managed to the current VicRoads maintenance standards specified in maintenance contracts (Standard Section 750 & 752) **plus** identified annual fire mitigation treatments and removal of hazardous trees or limbs that could fall on a road in high wind events. |
| **Low** | **Routine** | **Routine**ly treated roads are managed to the current VicRoads maintenance standards specified in maintenance contracts (Standard Section 750 & 752). |
| | | |

The length of road requiring treatment should be determined on a case-by-case basis, however should not be longer than a 4 minute driving distance from a shelter option. A qualified arborist should identify hazardous trees/limbs in this area and recommend appropriate treatments.

Other potential treatments include:

- Planning (including Municipal Emergency Management Plans and fire service operational plans)
- Education
- In depth fuel management to reduce flame height, intensity and radiant heat in the vicinity of the road
- Traffic management during and after bushfire

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## 5.3 *Meeting Objective 4 – Provide control lines*

### 5.3.1 Context

A control line is a natural or constructed barrier or treated fire edge used in fire suppression and prescribed burning to limit the spread of fire. Control lines are only likely to be effective if they are supported by suppression activities and hence need to be in areas of low fuel. In many instances control lines are installed tactically in advance of a major fire.

Careful consideration needs to be given to the placement of control lines if they are to be effective, and because they can involve significant and ongoing vegetation management which can degrade environmental and heritage values. There needs to be agreement between the fire service and the road manager as to the suitability of the road for the works proposed.

### 5.3.2 Risk assessment

Preparatory fuel management works on fire control lines should be considered when:

- There is historical evidence to suggest a large fire is likely;
- The use of the roadside is the best way to strategically suppress a fire in low fuel areas;
- Spread of fire beyond the control line will impact upon critical assets; and
- It is probable that the road will be used as an anchor point for prescribed burning on adjacent land.

High priority is given to roads agreed to be control lines.

### 5.3.3 Potential mitigation treatments

- Planning (road must be identified in fire service operational plans)
- In depth fuel management to reduce fire intensity and spotting in vicinity of the control line
- Education linked to operational training

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The relevant fire service will advise VicRoads of their requirements for control lines. This is generally done through the Regional Strategic Fire Management Committee or Municipal Fire Prevention/Management Committee. More detailed information on fire control lines can be found in the DSE/CFA *Guideline for Planning and Designing Fire Control Lines* (DSE & CFA, 2008) and the *Roadside Fire Management Guideline* (CFA, 2001).

The standard of vegetation management works should be agreed with the relevant fire service.

# 6. Designing a treatment regime

The previous section discussed how bushfire risk is identified and analysed in regards to the VicRoads network, and roads prioritised for treatment. It also provided lists of treatments that might be applicable to each objective.

This section provides principles to consider when designing a treatment regime for a particular segment of road.

## *6.1 Principles of treatment selection*

It is important to recognise that none of the fire management objectives can be achieved through works on the road/roadside alone. There needs to be a broad approach that utilises programs and services from across government and the community.

In selecting a risk treatment you should:

- Be clear about what risk the road poses (i.e. what objectives are being managed for);
- Have assessed the level of risk as it is important that the degree of treatment is commensurate to the risk;
- Have regard both to assets immediately adjacent and critical assets in the possible path of a fire;
- Ensure that the works being proposed address one or more of the risk factors present on the particular road segment;

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- Assess the issue at a landscape scale and consider what treatments on and beyond the road reserve may be most effective; and
- Consider whether the potential benefits of the treatment justify the economic, environmental and aesthetic costs of the works;
- Consider the current legislative framework and ensure that all appropriate permits and permissions have been obtained;
- Consider synergies in objectives for roadside management;
- Consider alternative treatments such as community education, emergency management arrangements etc. which may be more appropriate in some circumstances.

More detailed descriptions of the range of treatments available, plus commentary on their purpose, efficacy and impacts, is provided in the *Roadside Fire Management Guidelines* (CFA, 2001). The CFA Guideline should be used in conjunction with this Road Bushfire Risk Assessment Guideline.

## 6.2 Road Bushfire Treatment Selection Tool (RBTST)

The Road Bushfire Treatment Selection Tool is designed for use on roads indentified as High risk by the VicRoads Bushfire Risk Map, or nominated as High priority as control lines or for managing the safety of road users.

The focus of the tool is identifying those risk factors, affecting either likelihood or consequence of fire start and spread, that are present on a particular segment of road, and thus guiding selection of treatments that address the factors present.

Inspection of high priority roads and selection of treatments should occur as a multi-stakeholder process to ensure a balanced approach and to enable the full range of agency bushfire safety programs to be considered. This group could include VicRoads, Municipal Fire Prevention Officer, Council Environmental Officer, CFA Vegetation Management Officer, DSE Fire Prevention Planner and Operational Officers from the relevant fire services.

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# 7. Monitoring and review

Ongoing monitoring and review is essential to ensure that the treatment recommendations remain relevant. Risk analysis represents a snap shot in time, whilst bushfire risk is dynamic and will be influenced by changes to hazard, exposure and vulnerability over a range of time scales as well as any contextual changes such as amendment of objectives or change to risk appetite.

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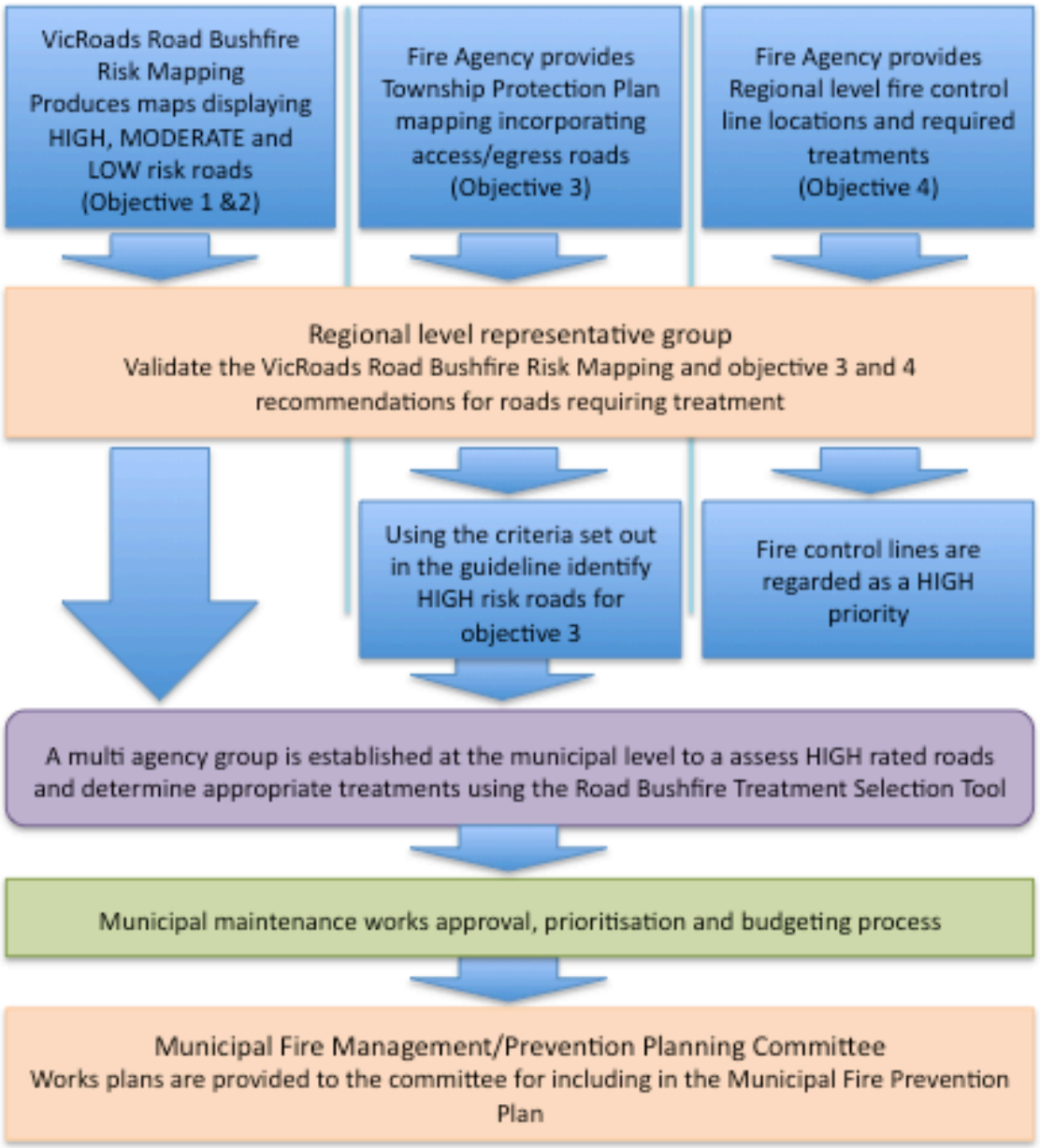
# 8. VicRoads bushfire assessment and treatment procedure

## *8.1 Bushfire management planning process*

The following chart is provided to assist road managers to understand the planning process required to implement the Guideline within the regulatory, operational and planning regimes the following chart is provided.



VicRoads will proactively assess and treat roads for Objectives 1 and 2 in order to meet our requirements under s.43 of the *CFA Act*. We will actively participate in wider fire management planning in relation to Objectives 3 and 4 where it involves our road network.

### 8.1.1 Gather the information


*1. Access the VicRoads Bushfire Risk Maps*

The VicRoads Bushfire Risk Maps will be provided for each VicRoads Region on a disk or via the VicRoads internal server. The maps will enable users to zoom in to enable segment identification. The different data layers created to build the final risk ratings can also be viewed to enable users to establish the factors that contribute to a roads High rating, and hence target those factors for treatment.

*2. Access the Township Protection Plans*

Currently, CFA are responsible for leading the development of Township Protection Planning. The townships are identified by CFA however the detail in the TPPs is developed in collaboration with a number of key local stakeholders. All TTPs are available on CFA's website or from the CFA region. It is useful to make contact with these staff as TTPs for new towns are constantly under development and existing TPPs under review.

*3. Understand fire control lines and ask for clarification*

Most Municipal Fire Management Plans have appendices that include Fuel Breaks, Primary Fire Breaks, and Secondary Fire Breaks etc that can provide a 'control line'. Some may be areas fuel reduced for other purposes. It will be useful to reassess Objective 4 from a Regional perspective and then the Municipal level to ensure consistency in language and purpose. Contact the relevant fire service for assistance in gaining Regional and Municipal fire control line information.

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### 8.1.2 Validate high risk roads at the Regional level

Regional level representative group
Validate the VicRoads Road Bushfire Risk Mapping and objective 3 and 4 recommendations for roads requiring treatment

*1. Make time in the agenda*

Regional Strategic Fire Management Planning Committees (RSFMPC) generally meet monthly to quarterly. They are made up of senior representatives of a range of agencies that have responsibilities in fire management within the Region. These committees may have a number of working groups reporting to them, including a Planning group or a Risk sub-committee. It is useful to establish where the RSFMPC would prefer this work done. In the first year of introduction a Regional level representative group is being used in the process.

*2. Run the validation session*

A validation session could be conducted at each Regional committee in order to confirm or vary the maps produced and to work through the Objective 3 and 4 requirements. With a report being produced through this process to enable the Committee's regional concerns and recommendations to be considered and implemented by VicRoads.

*3. Gain support*

Engaging this wider fire management expertise is vital. Input from this group will ensure that the locations where work is planed and the objectives being managed for, are valid and necessary to manage the assessed bushfire risk. This is a crucial step for non-fire experts in determining the best mix of treatments.

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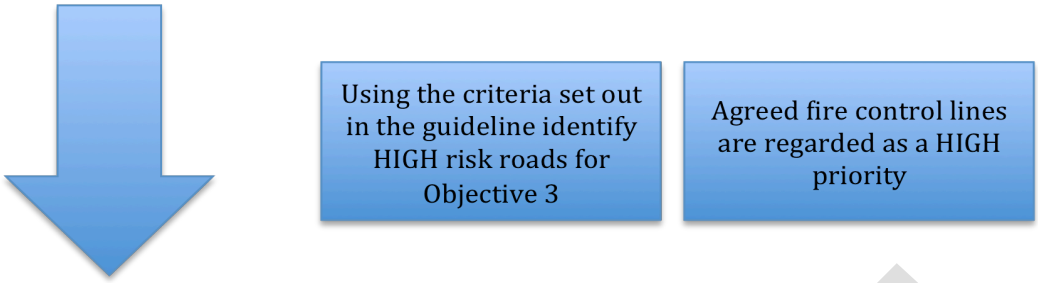
### 8.1.3 Combine all high rated roads




The arrow represents nothing needing to be done in regard to VicRoads Bushfire Risk Mapping as the High rating is already established.

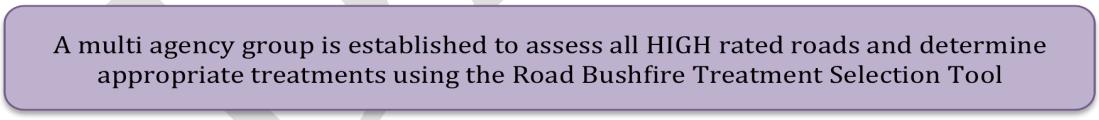
*1. Establish roads that need treating for Objective 3 – Manage safety of road users*

Refer to the table in Section 5.2 and work through the roads within each TTP against the criteria to establish the priority of each road. Many of these roads within the urban area may be municipal roads, and where the road transitions to a rural road responsibility may shift to VicRoads.

*2. Establish roads that need treating for Objective 4 – Provide control lines*

As fire control lines are important for suppression activities and for fire fighter safety it is deemed that fire control lines will be treated as a High priority.

### 8.1.4 Assess the roadside




*1. Complete preparatory work*

It is important to understand the land being managed. Check the Planning Scheme overlays applicable to the High risk segments of road being inspected. Some overlays may impose restrictions on fuel management activities. This can be done on the Internet through the land channel website or ask VicRoads or Council environmental staff. Check the DSE's biodiversity interactive maps to ensure there are no threatened flora and/or fauna, print maps if there are and take them to the site inspection for discussion with environmental officers.

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### 2. *Organise on site inspections of High risk roads*

A multi-stakeholder participatory site inspection will ensure a balanced approach to roadside vegetation management and provide expert advice to managing the balance between bushfire safety and environmental sustainability.

This group could include VicRoads officers, MFPO, Council Environmental Officer, CFA Vegetation Management Officer, DSE Fire Prevention Planner and operational officers from the relevant fire services.

The Road Bushfire Treatment Selection Tool should be used to maintain consistency across the network and provide a record for future reference.

The tool will assist in identifying risk factors present on a segment of road, and in determining what treatments can be put in place to reduce the likelihood of ignition or the consequence of fire occurrence. In the event that, upon inspection, a roadside does not appear to be High risk the Road Bushfire Treatment Selection Tool allows a simple re-assessment through identification of the risk factors actually present.

### 3. *Select an appropriate treatment*

The RBTST tool supports the selection of treatments for roads nominated as High priority for prevention of ignition and spread of fire, as control lines or critical access/egress roads. Often you will be managing for multiple fire management objectives requiring a variety of complementary treatments. If there is a major conflict between proposed fire prevention works and other values such as environmental, cultural or heritage values there may be other management solutions available that do not involve vegetation management. Education and planning treatments can also be effective.

Education solutions could include expanding on fire agency key messages in summer about travelling on roads in fire, incorporating specific concerns about local roads into Fire Ready Victoria sessions, or a specific summer road safety campaign. Driving licence testing could incorporate questions around driving during bushfires.

Planning treatments can be applied that could provide traffic management options such as traffic being able to run contra flow when there is sufficient time to evacuate prior to a fire front arriving. Road closures could be planned for specific predetermined locations. Portable traffic signals can be deployed to allow traffic to travel more smoothly.

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### 8.1.5 Prioritisation, budget and approval

VicRoads maintenance works approval, prioritisation and budgeting process

Based on the prioritisation and assessment of roads through this process a risk-based bid can be developed to reflect the requirements of the S7 – Fire Management Asset Management Guideline.

In accordance with the VicRoads Roadside Asset Management Guideline, fire management activities must be included in Municipal Fire Management Plans, approved by VicRoads processes and give consideration to other management priorities identified in the Roadside Management Strategy 2011.

### 8.1.6 Include works plans in the Municipal Fire Management/Prevention Plan

Municipal Fire Management/Prevention Planning Committee
Works plans are provided to the committee for inclusion in the Municipal Fire Prevention Plan

*1. Content for the Municipal Fire Management Plan*

The Municipal Fire Management Plan will require some broad information relating to the activities undertaken on roadsides by VicRoads. These will be related to the objectives being treated. Examples of this could be:

| | |
|---|---|
| Activity: | Identify roads with High risk of ignition and fire spread |
| Treatment: | Create and validate VicRoads Bushfire Risk Mapping |
| Timeframe: | September 2011 |
| Responsible parties: | VicRoads, CFA(VFRR) |

| | |
|---|---|
| Activity: | Assess and treat High priority roads for managing the safety of road users |
| Treatment: | Undertake inspections of the townships with TPP's and run a local education campaign on the dangers of driving during fire events. |
| Timeframe: | November 2011 |
| Responsible parties: | VicRoads, CFA |

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Municpal Fire Management Plans usually include maps of fire control lines, these are generally provided by the fire service or municipality. VicRoads detailed works plans for submission to the MFMPC/MFPC should include the objective being managed, the location, and treatments. See example road bushfire risk works plan appendix 3.

In order for any roadside works to be undertaken by CFA brigades they must be appended in the MFMP in line with their Roadside Fire Management Works (CFA Guidelines and Procedures) and in accordandance with the CFA/VicRoads Memorandum of Understanding (CFA/VicRoads roadside fire management responsibilities – works planning) See Appendix 1.

When the Municpal Fire Management Plan is complete it is endorsed by the MFMPC/MFPC and then sent to the Regional Strategic Fire Management Committee for comment. It is then sent to Council for adoption. This provides a level of formal endorsement of VicRoads' approach to managing the bushfire risk.

## 2. *Muncipal Fire Management/Prevention Committees*

Most Municipal Fire Management/Prevention Committees meet four times a year however some, in more rural locations, may only meet once a year, prior to the fire danger period (FDP) around October and April after the FDP has been lifted.

The role of the MFMPC/MFPC is to:

- plan burning or clearing of fire breaks;
- advise appropriate authorities as to the existence of and steps to be taken for the removal of fire hazards within the municipal district;
- advise and make recommendations to the municipal council in the preparation of the MFMP;
- recommend to CFA or to the appropriate authorities any action which they deem necessary or expedient to be taken to reduce the risk of an outbreak of fire or for suppressing any fire;
- advise the MFPO concerning the removal of fire hazards under section 41 of the CFA Act;
- refer to the Regional Fire Prevention Committee for consideration all matters which in the opinion of the committee should be referred; and
- carry out such functions as are conferred or imposed upon MFPC's by regulations made upon recommendations of the CFA.

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# 9. References

AS/NZS (1999). *4360:1999 Risk Management Standard*. Standards Australia, Sydney.

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# *Appendix 1* CFA/VicRoads responsibilities for fire management

## Overview of CFA VicRoads Responsibilities for fire management

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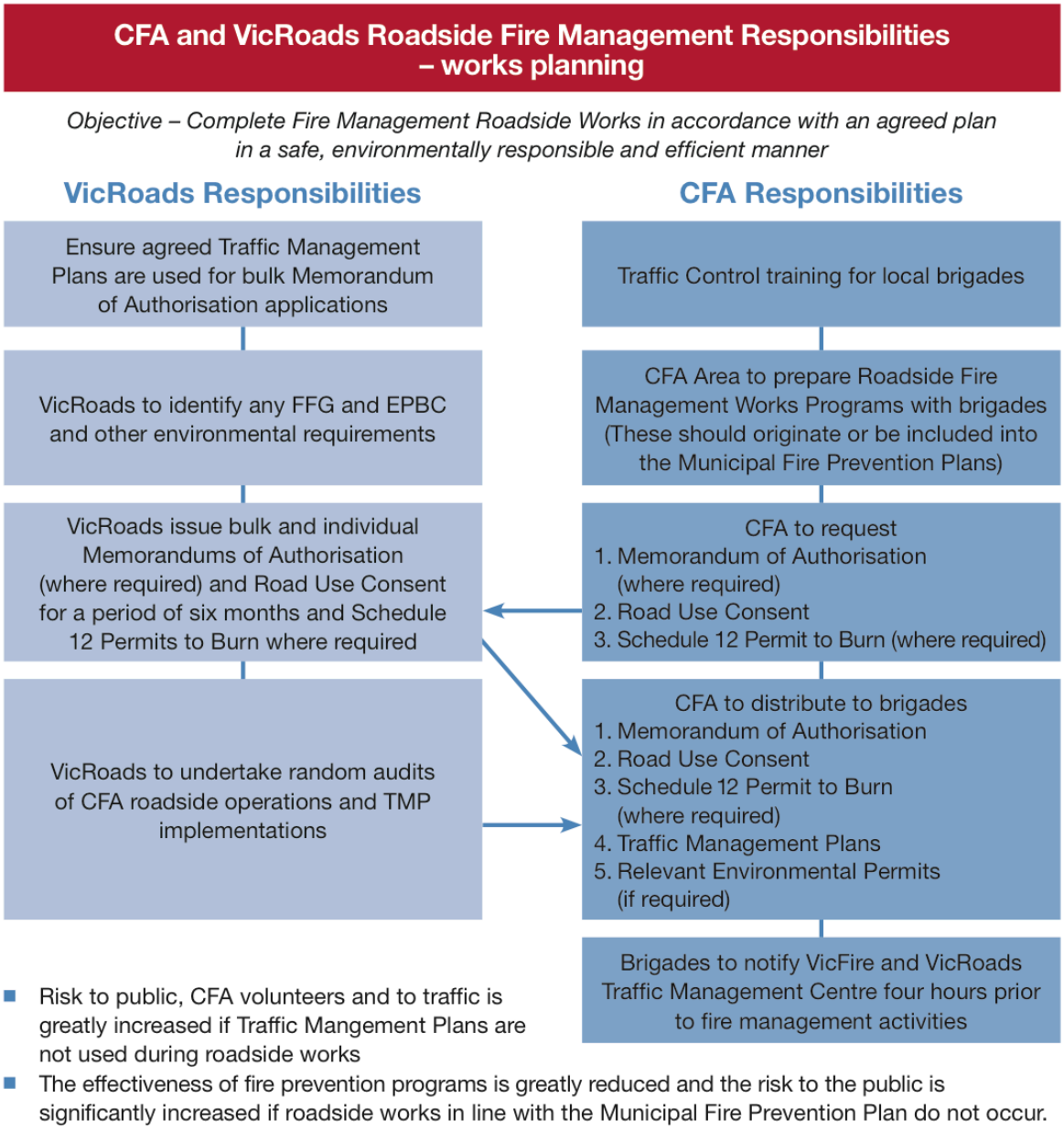


Part D of CFA Roadside Fire Management Works, guidelines and procedures.