

# Updating Emergency Management Plans to align with AFDRS

LAND USE PLANNING



[cfa.vic.gov.au](http://cfa.vic.gov.au)



# Acknowledgement of Country

CFA would like to acknowledge the Traditional Owners of the land across Victoria and pay our deep respect to the Elders past and present.



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## Introduction

The transition to the Australian Fire Danger Rating System (AFDRS) represents a pivotal change in how bushfire risk is assessed and managed across Victoria and Australia. This guideline explains how to update existing McArthur-based emergency management plans within the land use planning and other regulatory environments to ensure fire safety standards are maintained.

Historically, fire danger ratings have played a crucial role in land use planning, particularly in high bushfire risk areas where planning permit conditions restrict land use based on fire risk. With the introduction of AFDRS, the number of fire danger ratings has been reduced, including the removal of the former McArthur-based Severe rating. The implications of this change on land use planning and other regulatory environments result from the subsequent removal of this key risk threshold that was commonly used as a trigger dictating when land use in bushfire risk areas should cease.

Since the implementation of AFDRS, CFA has considered the implications of the reduced number of fire danger ratings. A statistical analysis of historical fire weather data compared the ratings frequency of the former McArthur system to the AFDRS. The outcome of this analysis was used to determine the application of AFDRS as triggers where existing planning permits and emergency management planning relies on the old McArthur system.

## Who is this guideline for?

This guideline applies to anyone updating emergency management plans which reference the former McArthur fire danger rating system and are intended to mitigate bushfire risk in response to an existing planning permit. Figure 1 shows the former McArthur and the new AFDRS fire danger ratings systems.

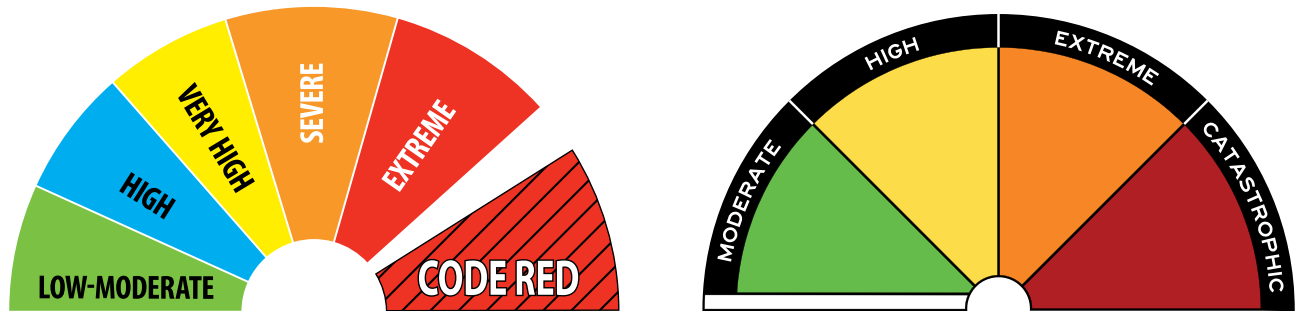


Figure 1 – McArthur (left) and AFDRS (right) fire danger ratings systems

Emergency management plans in the Bushfire Management Overlay (BMO) or Bushfire Prone Areas (BPA) should have triggers and action statements referencing the Australian Fire Danger Rating System.

## Emergency management plans and land use planning

Within Victoria, land use planning decisions are administered under the Planning and Environment Act 1987 (PE Act). As a ‘referral authority’, CFA provides advice to the community and councils on bushfire risks associated with both development and land use. This advice is provided in line with the objectives and requirements of the Victoria Planning Provisions (the Scheme).

In land use planning, emergency management plans may be formally implemented through several mechanisms including Bushfire Emergency Management Plans (BEMP) and permit conditions. This requirement is likely due to the use and development of land where premises have a number of occupants residing, visiting or working, who may have increased vulnerability to the effects of a bushfire.

Emergency management plans must include appropriate action statements correlating to triggers based on AFDRS Fire Weather District forecasts. The application of AFDRS as triggers within emergency management plans supports proposals in meeting the bushfire objectives of the Scheme, specifically: *‘to strengthen the resilience of settlements and communities to bushfire through risk-based planning that prioritises the protection of human life.’*

## Understanding AFDRS

The AFDRS has redesigned the forecasting of fire danger in Australia. It aims to improve public safety and reduce the impacts of bushfires by:

- » Improving the scientific accuracy behind fire danger predictions.
- » Improving the way that fire danger is communicated.
- » Providing government and industry with better decision-making tools.
- » Reducing the costs associated with bushfire impacts.

The AFDRS provides two main outputs by which to assess potential bushfire risk:

- » Fire Danger Rating (FDR)
- » Fire Behaviour Index (FBI)

## Fire Danger Ratings

There are four Fire Danger Ratings (FDR) which describe the potential level of danger should a bushfire start. They are important because they provide people with information to take action to protect themselves, their property, and others from the potentially dangerous impacts of bushfires. They do not indicate the chance of a fire occurring, although this is a common misconception. Ratings are calculated using a combination of weather forecasting and information about vegetation that could fuel a fire. Figure 2 shows corresponding community actions for each FDR.

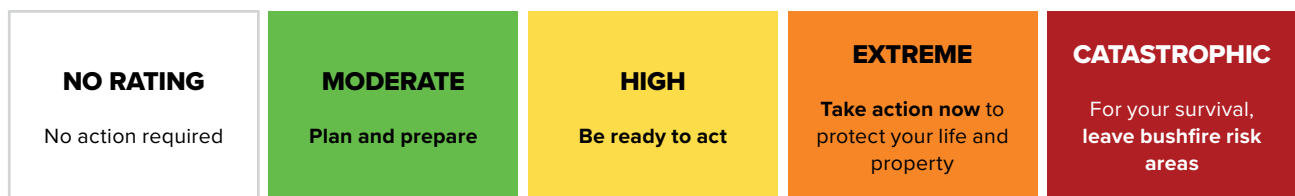


Figure 2 – FDRs and community actions



**Fire Danger Ratings** Where to learn more, visit  
[cfa.vic.gov.au/fdr](https://cfa.vic.gov.au/fdr)

## Fire Behaviour Index

The Fire Behaviour Index (FBI) provides a scale of potential fire behaviour based on fuel and weather conditions. The scale underpins the Fire Danger Ratings and runs from 0 to 100 and beyond, with increasingly high values indicating increasingly dangerous fire behaviour and therefore bushfire risk. FBI values unite a range of potential fire behaviour characteristics predicted from fire behaviour models for particular vegetation types, including fire intensity, flame height, and rate of spread. Figure 3 shows the alignment of the FDRs to the FBI values.

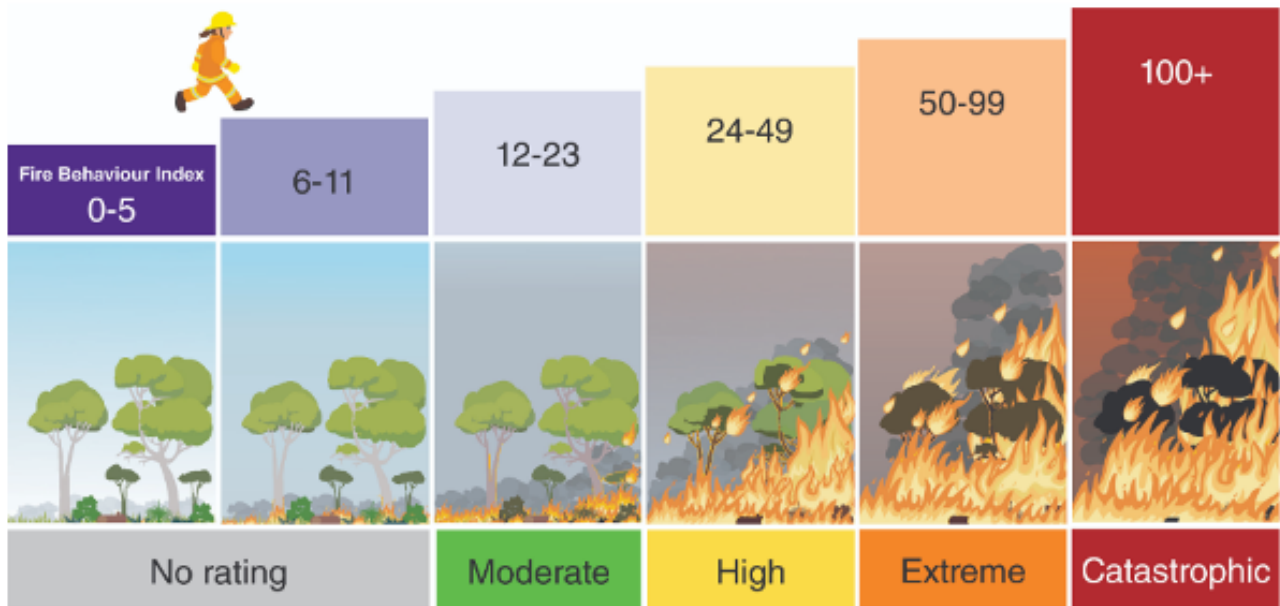
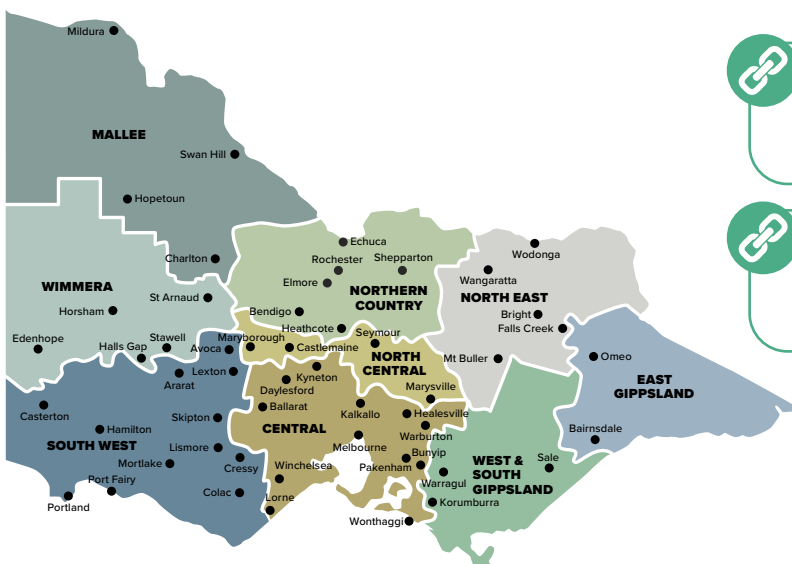


Figure 3 – FDR to FBI alignment

## Where to find AFDRS forecast information

The Bureau of Meteorology calculates the official AFDRS forecasts based on the Victorian Fire Weather Districts.

AFDRS forecast information is provided for up to four days in advance for each Fire Weather District. The four-day forecast provides both the Fire Danger Rating and the Fire Behaviour Index value.



Find your Fire Weather District:  
[cfa.vic.gov.au/warnings-restrictions/find-your-fire-weather-district](https://cfa.vic.gov.au/warnings-restrictions/find-your-fire-weather-district)



The four-day forecast can be accessed here: [bom.gov.au/vic/forecasts/fire-danger-ratings.shtml](https://bom.gov.au/vic/forecasts/fire-danger-ratings.shtml)

## AFDRS triggers

AFDRS triggers utilise both the Fire Danger Ratings (FDR) and Fire Behaviour Index (FBI) values. The triggers are used to determine appropriate actions such as site closure, site evacuation, or reduced land use capacity. The requirements for specific actions are conditionally applied by CFA as part of the planning permit referral assessment process.

To assist in the application of AFDRS triggers to existing McArthur-based emergency management plans, the Extreme FDR has been split into two FBI ranges resulting in an additional trigger point once the FBI value reaches 70.

This FBI value (70) was selected based on an analysis of historical fire weather data comparing the frequency of the former McArthur values to the new AFDRS values. As such, use of this specific trigger point is only appropriate in instances where an existing permit references the former McArthur-based Severe rating.

FIRE DANGER RATING	FIRE BEHAVIOUR INDEX RANGE
No Rating	0-11
Moderate	12-23
High	24-49
Extreme	50-69
	70-99
Catastrophic	100+

*Figure 4 – AFDRS triggers for updating McArthur-based emergency management plans*

It is important to note that the application of AFDRS as triggers does not supersede community facing AFDRS advice and messaging unless for approved private land uses as described above.

## Updating emergency management plans

The following section provides step-by-step guidance on updating existing emergency management plans referencing the former McArthur system in alignment with AFDRS.

### Step 1

#### Locate trigger points and associated action statements within existing emergency management plans

Locate the trigger points and associated action statements in the existing emergency management plan. This will likely be a table listing the old McArthur fire danger ratings and associated action statements for each of the ratings. See an example below.

McArthur FDR	Action Statements		
	Action	Procedures	Responsibility
Low to Moderate	OPEN	No special procedures	NA
High	OPEN	No special procedures	NA
Very High	OPEN	Monitor conditions and official sources of information.	Manager
Severe	OPEN for reduced hours (only from 8am to 1pm and 6pm to 8pm - conditions permitting)	Monitor conditions and official sources of information.	Manager and Fire Warden
Extreme	CLOSED	CLOSED	NA
Code Red	CLOSED	CLOSED	NA
Total Fire Ban (TFB)	CLOSED	CLOSED	NA



Note – if the existing emergency management plan does not include trigger points you could use a plan template created for tourism businesses. Find this template on the CFA website: [www.cfa.vic.gov.au/tourism-bushfire-planning/](http://www.cfa.vic.gov.au/tourism-bushfire-planning/)



**Step 2****Translate McArthur-based triggers in alignment with AFDRS**

Use the translation table below to update action statements in an emergency management plans required by an existing planning permit. Applications for a new planning proposal will need to undertake a risk assessment and consider planning objectives to determine appropriate triggers.

MCARTHUR FIRE DANGER RATINGS	AFDRS TRIGGERS
Low-Moderate	No Rating
High	Moderate
Very High	High
Severe	FBI = 50-69
Extreme	FBI = 70-99
Catastrophic/Code Red	Catastrophic

Note – if the existing trigger points reference a Total Fire Ban (TFB), then the updated trigger point and associated action statement referencing the TFB should remain the same; the functionality of the TFB has not changed with the introduction of AFDRS.

See the example below which shows an amended version of the triggers shown in Step 1.

AFDRS Triggers	Action Statements		
	Action	Procedures	Responsibility
No Rating	OPEN	No special procedures	NA
Moderate	OPEN	No special procedures	NA
High	OPEN	Monitor conditions and official sources of information.	Manager
FBI = 50-69	OPEN for reduced hours (only from 8am to 1pm and 6pm to 8pm - conditions permitting)	Monitor conditions and official sources of information.	Manager and Fire Warden
FBI = 70-99	CLOSED	CLOSED	Manager
Catastrophic	CLOSED	CLOSED	Manager
Total Fire Ban (TFB)	CLOSED	CLOSED	Manager

**Where to get more information**

Visit the CFA website: [cfa.vic.gov.au/plan-prepare/building-planning-regulations/planning-controls](https://cfa.vic.gov.au/plan-prepare/building-planning-regulations/planning-controls)

☒ Contact CFA Land Use Planning for assistance if required: [firesafetyreferrals@cfa.vic.gov.au](mailto:firesafetyreferrals@cfa.vic.gov.au)

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Dial: **000** If you see smoke, flame or embers

VicEmergency Hotline for fire warnings and updates: **1800 226 226**

Translating and Interpreting Service: **131 450**

National Relay Service: **1800 555 677**

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