

PLANNING SCHEME POLICY

# BUSHFIRE



**Mackay Region**

**PLANNING SCHEME**

# Planning Scheme Policy – bushfire

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## Amendment history

This planning scheme policy commenced on 24 July 2017 as part of the Mackay Region Planning Scheme 2017. Amendments since this date are listed in the below table.

Version number	Amendment title	Summary of amendment	Date adopted and commenced
2.0	Planning scheme policy amendment – bushfire	A complete revision of the Planning scheme policy – bushfire to compliment amendments to the Bushfire hazard overlay code under Major amendment 2 to the Mackay Region Planning Scheme 2017.	Adopted 13 April 2022  Commenced 26 April 2022
1.0	Planning scheme administrative amendment 6, and  Planning scheme policy administrative amendment 1	This amendment removed the planning scheme policies from Schedule 6 of the Mackay Region Planning Scheme 2017 and placed them in individual PDFs on Council's website.  This amendment introduced standardised formatting, introductory sections and explanatory information regarding intent and legislative relationship for this planning scheme policy. It also updated numbering and cross references.	Adopted 11 December 2019  Commenced 3 February 2020

# 1 Introduction

## 1.1 Application

This planning scheme policy supports the Mackay Region Planning Scheme 2017 by providing information on: how to achieve compliance with assessment benchmarks; supporting information/studies required; and/or actions required under the development assessment process. This planning scheme policy has been made by Mackay Regional Council in accordance with Chapter 2, Part 3, Division 2 of the *Planning Act 2016*.

## 1.2 Relationship with planning scheme

Mackay Region Planning Scheme 2017 refers to this planning scheme policy in Part 1, the following code/s or any other relevant part of the scheme:

- (a) Table 8.2.5.3.A – Bushfire hazard overlay – accepted development subject to requirements
- (b) Table 8.2.5.3.B – Bushfire hazard overlay – assessable development

## 1.3 Purpose

This purpose of this planning scheme policy is to:

1. set out design guidelines for the design of bushfire protection measures to protect life, property and the environment for development within bushfire hazard areas; and
2. provide information and guidance for the design of development in bushfire prone areas. Designs shall satisfy the requirements of Council and the *Bushfire Resilient Communities - Technical Reference Guide* prepared by Queensland Fire and Emergency Services (QFES); and
3. support the implementation of the Bushfire hazard overlay code and outline the detailed design requirements to avoid or minimise bushfire hazard exposure for development. The principles outlined are to be incorporated at an early stage of development design.

In detail, this planning scheme policy provides:

- a) information which is intended to be provided as part of a development application; and
- b) guidance in relation to how to satisfy specific assessment benchmarks which identify this planning scheme policy.

## 1.4 Referenced documents

- a) Queensland legislation and planning instruments:
  - i. Planning Act 2016
  - ii. State Planning Policy – planning for safety and resilience to hazards state interest
  - iii. Natural hazards, risk and resilience – Bushfire: State Planning Policy – state interest guidance material
  - iv. Bushfire Resilient Communities Technical Reference Guide for the State Planning Policy State Interest ‘Natural hazards, risk and resilience – bushfire’
- b) Council guidelines:
  - i. C501 – Bushfire protection (perimeter tracks)
- c) Other relevant technical reference materials:
  - i. AS3959 – Construction of Buildings in Bushfire Prone Areas, prepared by Standards Australia
  - ii. NASH Standard – Steel Framed Construction in Bushfire Areas

- iii. Land Use Planning for Disaster Resilient Communities Handbook, prepared by the Australian Institute for Disaster Resilience
  - iv. National Land Use Planning Guideline for Disaster Resilient Communities, prepared by the Planning Institute of Australia
  - v. ISO 31000:2018 - Risk management, prepared by the International Organisation for Standardisation
  - vi. National Emergency Risk Assessment Guidelines, prepared by the Australian Institute for Disaster Resilience
  - vii. Queensland Emergency Risk Management Framework, prepared by Queensland Fire and Emergency Services
  - viii. A new methodology for State-wide mapping of bushfire prone areas in Queensland, prepared by CSIRO
  - ix. Estimating the potential bushfire hazard of vegetation patches and corridors, prepared by CSIRO
  - x. State-wide interactive mapping system (IMS) and site-wide bushfire prone areas mapping, prepared by Queensland Fire and Emergency Services
  - xi. QSpatial - Queensland Government data portal, hosted by the Queensland Government
  - xii. Queensland Strategy for Disaster Resilience, prepared by the Queensland Government
  - xiii. National Disaster Risk Reduction Framework, prepared by the National Resilience Taskforce
- d) Interstate best practice reference materials:
- i. Planning for Bush Fire Protection 2019 – A guide for councils, planners, fire authorities and developers, prepared by New South Wales Rural Fire Service
  - ii. Position Statement: Tourism land uses in bushfire prone areas, prepared by the Western Australian Planning Commission.

## 2 Design criteria

### 2.1 General

Bushfire hazard assessment reports, bushfire management plans and vegetation management and landscaping plans in bushfire prone areas are required to be submitted to Council, addressing all relevant components and in accordance with all relevant methodologies as per the *Bushfire Resilient Communities* – Technical reference guide prepared by Queensland Fire and Emergency Services.

For the purposes of this document, a suitably qualified and experienced professional, is as per the definition in Part 10 of the *Bushfire Resilient Communities – Technical reference guide*.

### 2.2 Asset protection zones

The provision of Asset Protection Zones (APZs) shall be integrated as part of subdivision and material change of use designs, preferably located on private land. The *Bushfire Resilient Communities – Technical reference guide* defines APZs as:

*'a specified area of land that enables emergency access and operational space for firefighting. Vegetation is modified and maintained within the APZ to reduce fuel load and mechanisms of bushfire attack such as flame contact and radiant heat. The zone may include a combination of elements such as perimeter road, fire trail and working area and open space where vegetation is managed'.*

Development, including building envelopes on new allotments, is required to provide adequate separation from hazardous vegetation by way of an APZ. For material changes of use, the APZ is measured from the canopy line of adjacent hazardous vegetation to the outermost projection of the proposed development or buildings. For new subdivisions, whether in an urban or rural context, the APZ is measured from the canopy line of adjacent hazardous vegetation to the boundary of the proposed building envelope. Where no building envelope is proposed, the APZ is measured to the proposed allotment boundary. APZs should be contained within the bounds of the development site and cannot require fuel management on adjoining private land which does not form part of the development application. APZ maintenance provisions should be provided as part of a bushfire management plan prepared in support of a development application.

Vegetation clearing for the purpose of establishing an APZ is to be avoided where possible. Development should be sited to avoid or minimise the need for vegetation clearing to achieve the required APZ.

A maximum radiant heat flux of 29 kW/m<sup>2</sup> must be achieved, unless the use is a vulnerable use, community infrastructure for essential services or a use involving hazardous materials. These uses should not locate in a designated bushfire prone area.

Only in instances where overriding community need can be demonstrated, a maximum radiant heat flux of 10 kW/m<sup>2</sup> is to be achieved for vulnerable uses and community infrastructure for essential services. This is due to the unique characteristics of these uses which involve vulnerable persons (or materials) and the challenges associated with evacuation of vulnerable persons. An increased APZ which achieves a maximum radiant heat flux of 10 kW/m<sup>2</sup> provides a safer environment for firefighters to operate around the external areas of the building, to protect the building and its occupants. Perimeter roads, internal development roads and overlapping APZs from adjoining development may contribute to the APZ. However, APZs are to avoid burdening public land.

The calculation of radiant heat profiles must be undertaken by a suitably qualified and experienced professional and relevant calculations are to be provided to Council as part of any bushfire hazard assessment and management plan.

For other land uses including tourism-related facilities, tourist parks, animal keeping, environment facilities, places of worship and service stations, APZs are to take account of both the radiant heat profile of the site, as well as the nature of the land use and occupants which may use the facility.

## 2.3 Site landscaping

Unless otherwise required, on-site landscaping should be designed, implemented and maintained in a manner which reduces the opportunity for fire propagation across the site, beyond the bushfire hazard area.

This can be achieved by compliance with the landscaping design parameters set out at Part 8 of the *Bushfire Resilient Communities - Technical reference guide*. The concept of 'discontinuous fuel structures' means designing landscaping and landscaped areas to avoid or reduce vertical and horizontal fuel connectivity, across the site as well as within APZs, see Figure 2.3. This can be achieved, for example, by separating garden areas from each other by mown lawns, pathways and driveways, as well as separating plant species which provide ground, mid-layer and canopy fuel continuity. Ensuring dense groundcovers and shrubs are not within the drip line of tree canopies is key.

Organic mulch should be avoided where possible, and the selection of plant species should focus on the use of low-flammability species or 'low threat vegetation'. Specimens which minimise leaf and bark litter are a good option.

The above is a summary of selected terms and concepts related to site landscaping but does not represent a comprehensive set of requirements. Further detail on on-site landscaping can be obtained

from Part 8 of the *Bushfire Resilient Communities - Technical reference guide*. A landscape concept plan should be provided which articulates the intended construction, plant selection and maintenance of any APZ and the broader site area.

Within APZs as well as the broader development site, landscaping should be maintained in a 'low fuel condition'. This includes mown lawn which is kept to a height of no more than 100 millimetres. A maximum of 8 tonnes per hectare of total fuel is commonly adopted for low fuel areas. Other non-residential examples of 'low fuel' vegetation can include the fairways of golf courses, mangrove and saline wetlands, public parks which are maintained, sporting fields, vineyards, orchards, nurseries, cultivated gardens and nature strips. A full definition of 'low threat' vegetation can be found at Section 2.2.3.2 of AS3959.

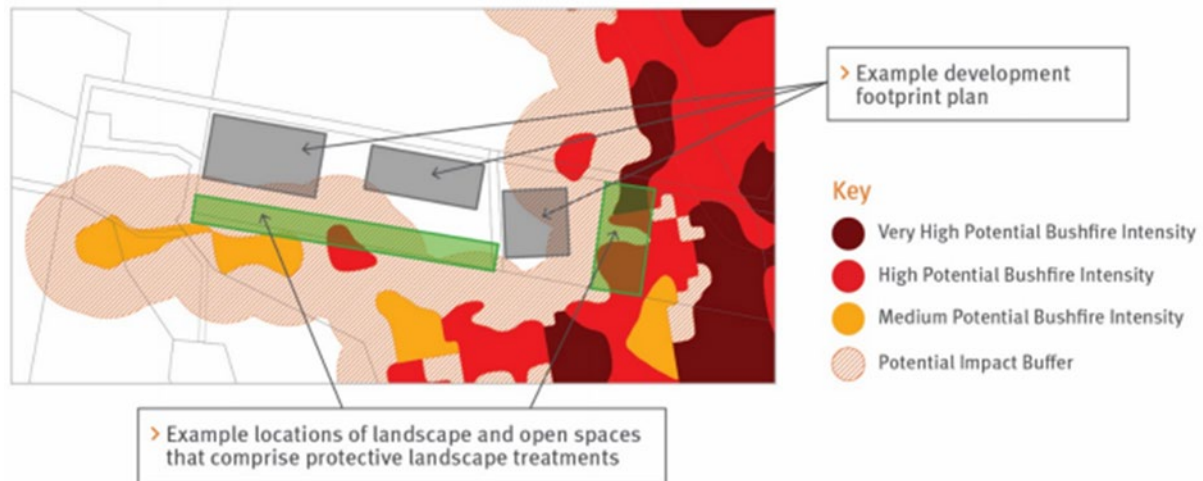


Figure 2.3 - Siting of protective landscaping treatments (Source: Queensland Government)

## 2.4 Perimeter roads, fire trails and access

As noted in the Bushfire hazard overlay code, the provision of perimeter roads are ideally required for reconfiguration of allotments involving more than five allotments. Perimeter roads are a critical element of bushfire hazard mitigation by providing:

- passive surveillance of bushland areas;
- a guaranteed separating land use between development and hazardous vegetation;
- direct access to the hazard interface for firefighting and land management (fuel load reduction) activities;
- the ability for firefighters to fallback from the area to safety, using the formal road network; and
- the ability for persons to evacuate the area using the formal road network.

Perimeter roads are preferred over the provision of fire trails to separate dwelling houses and reconfigured land from hazardous vegetation. In terms of design, the perimeter road reserve should:

- be a minimum of 20 metres in width clear of hazardous vegetation; and
- provide a two-lane, preferably sealed, carriageway; and
- be connected to the wider public road network at both ends and at intervals of no more than 200 metres; and
- does not include design elements that may impede access for firefighting and maintenance for firefighting purposes (for example traffic calming involving chicanes); and
- enables access to reticulated water supply for firefighting; and

- incorporates roll-over kerbing; and
- has a maximum gradient of 12.5 per cent.

Where fire trails are required to support or facilitate access to hazardous vegetation to enable land management activities and access in case of emergency, the fire trail network is designed in accordance with the following design provisions set out at Table 2.4. These provisions also apply to on-site working areas required where access to reticulated water supply is not available.

*Table 2.4 - Fire trail and working area design parameters*

<b>Parameter</b>	<b>Provisions</b>
<b>Width</b>	<p>Contains a width of at least 20 metres including:</p> <ol style="list-style-type: none"> <li>1. A trafficable area (cleared and formed):               <ol style="list-style-type: none"> <li>a) with a minimum trafficable width of 4 metres that can accommodate a rural firefighting vehicle</li> <li>b) with no less than 4.8 metres vertical clearance from canopy vegetation</li> <li>c) with no adjacent inhibiting embankments or retaining walls</li> <li>d) appropriately drained and constructed to avoid erosion</li> </ol> </li> <li>2. A working area each side of the trafficable area:               <ol style="list-style-type: none"> <li>a) with a minimum width of 3 metres each side</li> <li>b) cleared of all flammable vegetation greater than 10 centimetres in height</li> </ol> </li> <li>3. The balance (i.e. 10 metre width) managed vegetation area:               <ol style="list-style-type: none"> <li>a) sited to separate the trafficable area from adjacent mapped medium, high or very high bushfire hazard areas managed vegetation</li> <li>b) comprising managed vegetation clear of major surface hazards.</li> </ol> </li> </ol>
<b>Access</b>	<p>Access is granted in favour of the local government and Queensland Fire and Emergency Services.</p> <p>Note – This access is commonly granted in the form of an easement that is to be maintained by the grantor.</p>
<b>Egress</b>	<p>Contains trafficable vehicle routes into low hazard areas, with passing bays measuring 20m in length every 200 metres.</p>

The provision of adequate internal access is also controlled by reconfiguration design. The internal or site-based roads and road network shall incorporate the following features:

- a) width, vertical clearances and gradient which allow the two-way movement of firefighting appliances;
- b) construction standards of roads and any bridges which allow for the carrying of fully loaded fire appliances (28 tonnes or 8 tonnes per axle);
- c) curves which have a minimum inner radius of 12 metres and are minimal in number;
- d) maximum grades which do not exceed 12.5 per cent (1:8) and preferably not more than 10 per cent (1:10);
- e) clearly signposted roads;
- f) exclude cul-de-sacs, except where the cul-de-sac is provided with an alternative access linking the cul-de-sac to other through roads and length of the cul-de-sac is limited to 200m;
- g) the head of any cul-de-sac incorporates a minimum turning circle of 12.5 metres diameter; and
- h) a road network which connects regularly to any access tracks.

## 2.5 Evacuation

The Bushfire hazard overlay code requires that development establishes evacuation areas, arrangements and procedures, to achieve an acceptable or tolerable risk to people and does not worsen evacuation capability of other premises or result in significant additional burden on emergency services personnel.

In the first instance, this is achieved through road network design and enabling persons to evacuate a site or area, without the need to do so through bushfire hazard areas. Where this cannot be avoided, multiple egress opportunities are provided to avoid one-way-in and one-way-out situations. Evacuation routes should be identified by a bushfire management plan, see Figure 2.5.

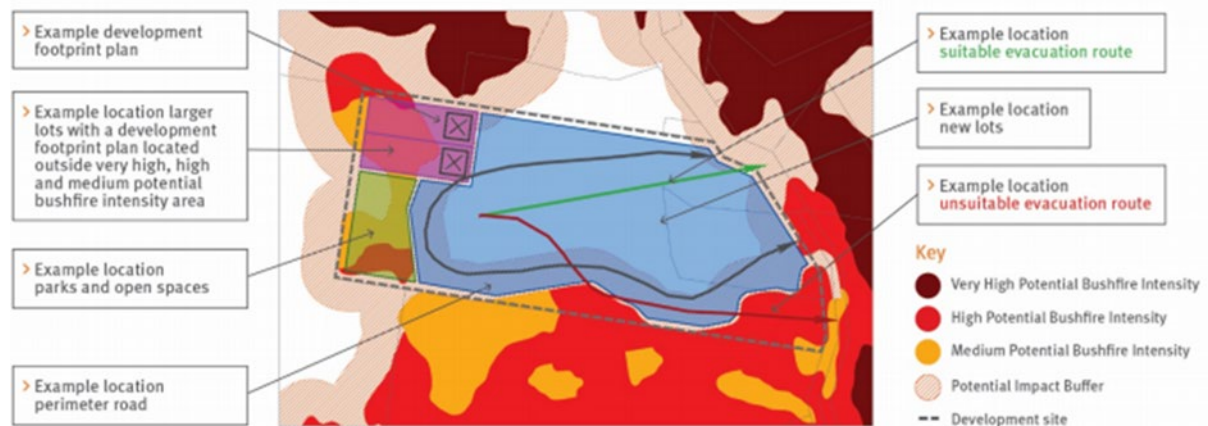


Figure 2.5 - Indicative reconfiguration layout and evacuation routes (Source: Queensland Government)

Beyond consideration of the road network, bushfire emergency evacuation is not the same as other forms of emergency evacuation, where persons may be directed to outdoor assembly areas. In many cases, the outdoor emergency assembly areas identified for developments are in fact not safe in bushfire emergencies. Alternative emergency provisions and evacuation plans are likely required.

This is especially the case for land uses which involve residents, occupants, visitors and animals which may require fit-for-purpose evacuation considerations. These considerations may include, but are not limited to:

- site-based evacuation and ability of the wider road network to support evacuation of the use;
- avoiding evacuation through bushfire hazard areas to reach safety;
- access to vehicles to undertake self-evacuation;
- safe assembly places on site (i.e. buildings built to AS3959 standards);
- any specific requirements of occupants or visitors (i.e. the aged, ill, young children and persons with disability);
- evacuation of animals (i.e. animal keeping uses, equine-related facilities);
- the potential need for staged evacuation in certain instances; and
- the need for specific operating provisions to limit or avoid operation or activity on days of higher fire weather conditions.

These matters should be addressed by a bushfire management plan, prepared by a suitably qualified and experienced professional.



## 2.6 Water supply

New development is located within a reticulated water supply area. Where this is not possible, development may only be considered where a dedicated static water supply for the sole purpose of firefighting is capable of being provided, and can be accessed by emergency services. This will only be considered for certain uses in certain instances.

It is noted that swimming pools, farm ponds and dams are not considered reliable sources of static water supply in Queensland due to regular drought events.

The Bushfire hazard overlay code provides the design requirements for static water supply tanks and volume requirements for different uses and lot sizes in Table 8.2.5.3.C.

Static water supplies for other activities must be provided at a volume that is sufficient to supply the firefighting needs of the use.

In addition to static water supply, development which is not within a reticulated water supply area is required to provide fire trail and working areas in addition to APZs, refer to Figure 2.6. These trails and access from the formal road network is required to be designed and constructed in accordance with the provisions in Table 2.4.

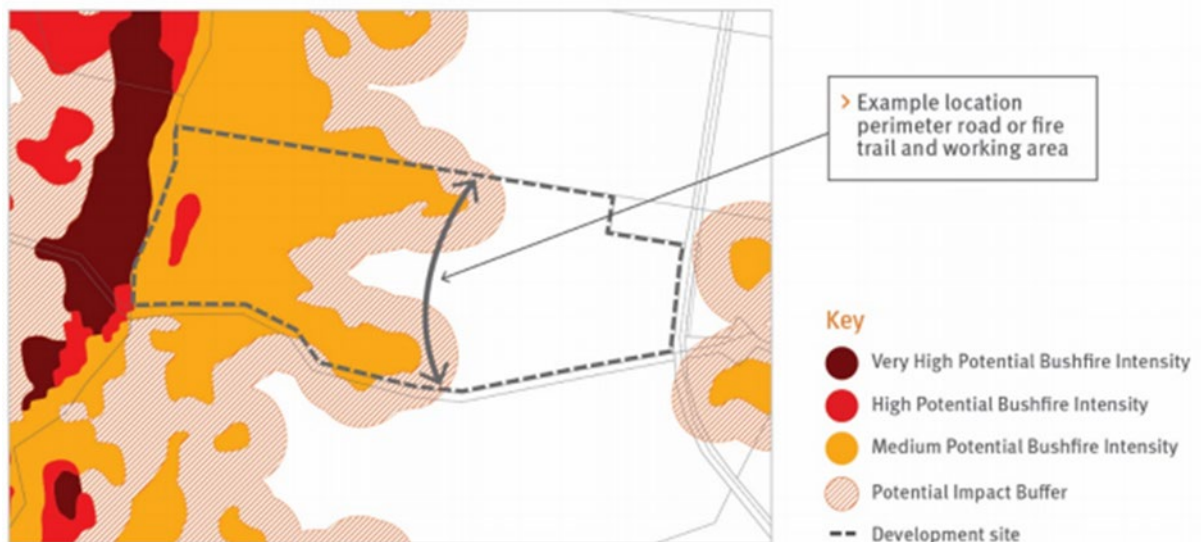


Figure 2.6 - Example siting of fire trail and working area for development where not within a reticulated water supply area (Source: Queensland Government)

## 2.7 Revegetation and rehabilitation

Revegetation or rehabilitation areas where outside of the APZ are designed and managed to ensure they do not result in an unacceptable level of risk or an increase in bushfire intensity level. This is relevant to avoid situations where the introduction of rehabilitation may introduce hazard where it does not currently exist.

Development that requires revegetation or rehabilitation:

- considers existing development in the surrounding area; and
- is located outside of any asset protection zone; or
- maintains a potential available fuel load which is less than eight tonnes per hectare in aggregate and fuel structure which is discontinuous.

## 2.8 Staging works

For larger-scale developments which are intended to be completed over a series of two or more stages, staged approaches to bushfire protection must be considered. This may be in the form of temporary APZs around the perimeter of each development stage. This approach may continue to require assessment against and compliance with AS3959 for relevant development, unless the temporary APZ is 100 metres in width, providing sufficient separation between the development stage and hazardous vegetation. Where a temporary APZ is less than 100 metres in width, assessment against and compliance with AS3959 for relevant development.

Limiting the development perimeter's interface with the bushfire hazard area is ideal. Staged approaches to bushfire protection will be considered on a case-by-case basis, having regard to the potential that future development stages may not occur, the potential implications of which must be carefully considered.