SC6.4 Bushfire planning scheme policy

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1 Introduction

1.1 Relationship to planning scheme

This planning scheme policy provides:
(a) information the Council may request for a development application;
(b) guidance or advice about satisfying an assessment criteria which identifies this planning scheme policy as providing that guidance or advice.

1.2 Purpose

This planning scheme policy provides information required for a development application and guidance and advice for satisfying an assessment criteria for the preparation of a site specific bushfire hazard assessment and bushfire management plans.

Note—The bushfire overlay area consists of the mapped high and medium bushfire hazard areas, and the buffers to the high and medium bushfire hazard areas. This area is a ‘natural hazard management area’ for the purposes of State Planning Policy 1/03 Managing the Adverse Impacts of Flood, Bushfire and Landslide.

2 Bushfire hazard mapping

(1) The Bushfire overlay code map identifies the High bushfire hazard sub-category, Medium bushfire hazard sub-category, Medium bushfire hazard buffer sub-category and High bushfire hazard buffer sub-category.

(2) Queensland Fire and Rescue Service (QFRS) mapping has been used for Moreton Island.
(3) Areas of vegetation less than five hectare have not been included in the mapping.

(4) Due to the scale at which the mapping has been prepared, site specific investigation of bushfire hazard will be necessary to determine the exact nature of the hazard on the site.

3 Preparation of a bushfire management plan

A bushfire management plan (BMP) is to be prepared by a professional who is suitably qualified and experienced with technical expertise in the field of bushfire hazard identification and mitigation including protection of biodiversity values. This may include the following:

(a) knowledge and experience in applying relevant legislation, plans, policies, standards and guidelines relating to bushfire hazard and fire ecology relating to Queensland requirements and South East Queensland conditions;
(b) knowledge and experience in developing bushfire management plans in accordance with the methodology in SPP 1/03 Guideline - Mitigating the Adverse Impacts of Flood, Bushfire and Landslide;
(c) qualifications and experience in the field of ecology, environmental management or similar to assess and protect site based and strategic biodiversity values, preferably relating to South East Queensland;
(d) accredited competency training in fire fighting such as the Level 1 and Level 2 Fire Management Training (through the State Government).

4 Requirements for a bushfire management plan

(1) A BMP identifies the strategies for mitigating the impacts of bushfire on life, property and the environment for a development. This includes identifying specific risk factors associated with the development, planning for the separation of at-risk elements and potential hazards, and providing access and treatments to facilitate an effective response to bushfire.

(2) A BMP is to include the following information:

(a) A site specific bushfire hazard assessment using the methodology set out in Appendix 3 of SPP 1/03 Guideline - Mitigating the Adverse Impacts of Flood, Bushfire and Landslide.
(b) An assessment of other site-specific factors that are important in devising suitable bushfire mitigation strategies, such as likely direction of bushfire attack, environmental values that may limit mitigation options, location of evacuation routes and safety zones and identification of the risks on site and from nearby sites.
(c) An assessment of the specific risk factors associated with the development including:
   (i) the intended future population size and characteristics;
   (ii) the likely usage patterns on the site;
   (iii) the estimated traffic generation;
   (iv) the nature of activities to be conducted on the site;
   (v) the storage or handling of dangerous goods and combustible liquids in quantities greater than those in Table 9.3.14.3.H Storage of dangerous goods and combustible liquids maximum volumes/quantities in the Industry Code;
   (vi) the use of the site for emergency services or disaster response purposes;
   (vii) particular warning or evacuation requirements;
   (viii) the total extent of clearing, revegetation and landscaping proposed for the site which is to be indicated on a site plan.
(d) Mitigation measures identified for the development that address major factors in bushfire attack, including embers and burning debris, radiant heat, direct flame contact and wind. Smoke should also be addressed where it is relevant to mitigation measures for vulnerable uses, such as hospitals, aged care facilities and facilities in which aged or disabled persons reside, or where resident populations are susceptible to respiratory disorders.
(e) A plan for mitigating the bushfire risk identified in the bushfire hazard assessment. The plan is to recommend specific mitigation actions for the development including:
   (i) appropriate land uses;
(ii) access, including road layout, accessways, driveways, evacuation routes, including an easement on site and on adjoining lands, access routes for 2 wheel drive vehicles and fire-fighting appliances; and evacuation requirements;

(iii) lot layout and orientation;

(iv) site layout including identification of proposed locations of buildings or building protection zones;

(v) the need and construction standards for fire maintenance trails;

(vi) access requirements and access routes for two wheel drive vehicles and fire fighting appliances;

(vii) warning and evacuation procedures, plans and routes including capacity of public roads especially perimeter roads and traffic management treatments, and responsibility for their maintenance;

(viii) fire fighting requirements including infrastructure and water supply;

(ix) landscaping, including details of new vegetation or landscape treatments to be used on site, particularly in the building protection zone;

(x) operational, design, construction or management measures for responding to particular requirements of some land uses, such as air quality management and design standards of tanks and fittings;

(xi) any other specific measures such as external sprinkler systems which are only as an adjunct to other passive controls, and alarms;

(xii) ongoing purchaser or resident education and awareness programs;

(xiii) ongoing maintenance, management and response awareness programs, including tenure and community title arrangements. This should also include identification of specific responsibilities for actions required in the BMP for owners or occupiers of the development, the developer and Council.

5 Assumptions for assessing bushfire risk

For most types of development, bushfire risk is assessed based on the vegetation existing on and in proximity to the site. However if reconfiguring a lot the level of bushfire hazard should be assessed as if the vegetation in that area, including any areas designated for revegetation has reached its mature state.

6 Requirements for essential community infrastructure

(1) Essential community infrastructure provides services vital to the community and may be in public or private ownership. In some cases, these facilities are integral to the City’s ability to respond to disaster events. This infrastructure must remain functional during and immediately after disaster events.

(2) Assessment of essential community infrastructure will need to consider the role and function of the infrastructure, including during a natural hazard event and the potential impacts on the community should the infrastructure be operationally impaired by a natural hazard.

(3) Not every part of every facility will be vital to the wellbeing of the community. For instance, training rooms may be less vital than control rooms or equipment storage areas. The BMP is to justify any prioritisation of functionality for different elements of the development based on their significance during a disaster event. The level of functionality achieved during a disaster should be sufficient to ensure continuity of essential service provision. However there may not be full functionality for the whole facility. Availability of alternative access routes during a bushfire is to be addressed if access to the facility is required to maintain operations or service to its catchment.

(4) Development including elements of essential community infrastructure which are vital to the functionality of that infrastructure in a bushfire should be located to avoid high and medium bushfire hazard areas.
7 Principles for siting buildings in high and medium bushfire hazard areas

(1) The way a building is sited on land is a basic factor influencing survival. The following factors should be considered for maximising survival:

(f) Checking data about previous fires in the local district to determine the possible direction bushfire would travel;
(g) Most bushfires occur during dry conditions, particularly in times of hot temperatures and low humidity, and are often accompanied by strong winds;
(h) Fires accelerate going uphill and decrease in speed travelling downhill;
(i) Building out over the hazard will increase the risk (a pole house with timber decks will be much more exposed than one set into the slope);
(j) Siting the structures downhill from the hazard reduces the risk. Setbacks are still necessary to avoid falling trees and debris rolling downhill;
(k) Buildings are not sited in higher risk areas, particularly locations with a combination of slope and certain aspects;
(l) Setbacks from hazardous vegetation is to be maximised.

(2) On larger lots it may be possible to site buildings in areas subject to lower bushfire hazard. The site assessment will assist in locating buildings having regard to combinations of slope and aspect on the site.

(3) The order of preference for siting buildings is a low flat site set into southerly or south-east slopes, a site at the bottom of more exposed west and north-west slopes. The most dangerous sites are on or at the top of west or north-west slopes: The head of gullies with westerly aspects are to be avoided because fire winds funnel up such sites. The preferable location of buildings will also depend on the location and area of vegetation.

(4) Reducing bushfire hazard may involve managing the structure of vegetation and the fuel load. Requirements for the building protection zone may involve managing the structure of vegetation and therefore, the fuel load. The requirement for building protection zone can assist in the management of hazardous vegetation as it is in an area maintained to minimise fuel loads so that a fire path is not created between the bushfire hazard and the building.

Note—Clearing of some types of vegetation is controlled in Brisbane. Reference should be made to other codes in the planning scheme and to relevant local laws for requirements. The bushfire code provides requirements for separation from vegetation likely to pose a bushfire hazard, specifically vegetation scoring higher than 4 on Table 8.2.5.3.D in the Bushfire overlay code.

8 Separation from sources of bushfire hazard

Topographical features of the site and design elements are used to maximise separation between sources of bushfire hazard and dwellings or buildings, and manage risk. These features include the following:

(a) Roads particularly perimeter roads and roads separating building locations on lots from vegetation scoring higher than 4 as described in Table 8.2.5.3.D of the Bushfire overlay code;
(b) Fire maintenance trails where utilised;
(c) Parkland and other areas maintained with reduced fuel loads such as mown grass, sports ovals, golf courses and car parks;
(d) Water bodies and waterways;
(e) Landscaped areas;
(f) Easements and other reserves such as future road reserves and maintained overland flow paths.
9 Design and construction of building protection zones

(1) Building protection zones are to be established for the protection of buildings from bushfire:
   (a) The inner 10m of the building protection zone is to be maintained in a very low fuel state. This area is designed to prevent continuity of fuel, such as shrubs or build-up of leaf litter extending to the building through:
      (i) the use of paving, lawn or non-combustible mulch such as gravel;
      (ii) tree retention only if there is a vertical and horizontal separation of 2m between plants to ensure that canopy is not continuous.

(2) The outer 10m of the building protection zone is to be maintained in a reduced fuel state. This area is designed to reduce bushfire intensity and shield buildings from radiant heat, and prevent flames transferring from ground fuels to the canopy. In the outer zone, trees may be retained or planted in small clumps, retaining vertical and horizontal separation between any other plants to ensure that canopy is not continuous.

(3) In all areas of the building protection zone, trees should be a distance 1.5 times the mature canopy height away from buildings, and should not overhang buildings.

10 Roads and fire maintenance trails

10.1 Design of public roads

(1) When reconfiguring a lot involving the opening of a new road, a perimeter road is the preferred option to separate bushland from urban areas. The public road system in a bush fire prone area is to provide alternative access or egress for fire-fighters and residents during a bush fire emergency if part of the road system is cut by fire. Roads should provide sufficient width to allow fire fighting vehicle crews to work with fire fighting equipment about the vehicle.

(2) Figure b demonstrates the perimeter road network separating development from potential sources of bushfire hazard. New lots do not back directly onto hazardous vegetation. The perimeter road allows for fire fighting access. If a perimeter road is not used to isolate a cul-de-sac from the hazardous vegetation, alternative formal access and egress is provided. The use of public roads is preferable to easements.

10.2 Property access

The dwelling house is located as close as possible to the public road to allow for the safety of evacuating residents and emergency service personnel. Long property access roads linking dwelling houses to public roads are to be minimised.

10.3 Fire maintenance trails

(1) Fire maintenance trails are only effective in the context of a strategic advantage and access for hazard reduction operations. Fire maintenance trails present difficulties and costs associated with maintaining fire maintenance trails on private land. Proposals for fire maintenance trails will need to demonstrate clear benefits over the use of a perimeter road. A perimeter fire trail cannot be imposed on the adjoining lands.

(2) Fire maintenance trails are primarily used as access for fire fighters. They are also used for fire control lines and maintenance of buffers protecting development. In non-urban areas, they may surround isolated dwellings or groups of dwellings. In suburban subdivisions they may function as a strategic control line around the hazard side of the development, if they are connected to the public road system at frequent intervals.

(3) Fire maintenance trails are to be designed and located in accordance with a BMP prepared in accordance with this planning scheme policy. The BMP is to demonstrate that the fire maintenance trails:
(a) are located, designed and constructed to buffer development from bushfire hazard and allow access for fire fighting vehicles to strategic areas of the site for fire fighting;
(b) are designed in compliance with Table 8.2.2.3.3.C of the Bushfire overlay code;
(c) adjacent to Council parkland are to be on private land where no public road interface can be achieved;
(d) are unfenced and accessible at all times by fire fighting vehicles;
(e) connect through to a road network or network of other fire maintenance trails;
(f) respond to site topography and bushfire characteristics of the site and surrounding area;
(g) are located, designed and constructed to protect fire fighter safety and provide for movement, manoeuvring and access to water supplies for fire fighting;
(h) are designed so that dead ends are avoided; however if a dead ends exist, a turnaround of sufficient radius for a full lock by a Category 1 fire tanker should be constructed (radius³ 12m) and if there is insufficient space for such a turnaround due to the topography, provision should be made to allow a maximum three-point turn (radius³ 10m);
(i) are designed and constructed to avoid adverse environmental impacts, including soil erosion, impacts on natural hydrological flows, or other land degradation;
(j) do not traverse areas of high bushfire hazard and are not located within 50m above an area of high bushfire hazard;
(k) link to existing fire maintenance trails or roads at each end and at maximum intervals of 200m, having regard to site topography, fire fighter safety and the need to regularly access water supplies;
(l) do not alter natural hydrological flows or expose acid sulphate soils;
(m) primary trails are maintained to provide safe four-wheel drive access by fire fighting vehicles.

11 Landscaping

(1) The preparation of a landscaping plan is to be guided by the BMP requirements and best practice. The design and species selection in the landscape plan:
(a) prevent flame impingement on the dwelling;
(b) provide space and access for property protection;
(c) reduce fire spread;
(d) deflect and filter embers;
(e) provide shelter from radiant heat;
(f) reduce wind speed;
(g) meet the spacing requirements in the bushfire protection zone;
(h) utilise site features including topography and driveways to manage hazards;
(i) maximise separation distances between structures and sources of bushfire hazard;
(j) identify the use of appropriate materials and species in landscaping to manage fuel loads.

(2) All vegetative material can burn under the influence of bush fire. Careful attention must be paid to species selection, their location relative to their flammability, avoidance of continuity of vegetation horizontally and vertically, and ongoing maintenance to readily remove flammable fuels such as leaf litter, twigs and debris. Selection of plant species is not to be relied upon as a primary measure to reduce bushfire risk.

12 Useful references


Queensland Government (2003 September), State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide, Department of Local Government and Planning.


Figure a—Preferred building location to minimise bushfire risk
Figure b—Preferred road network design to separate development from bushfire risk