

8.2.3 Bushfire hazard overlay code

8.2.3.1 Application

This code applies to assessing material change of use and reconfiguring a lot for development subject to the Bushfire hazard overlay and identified in **Part 5.10 Categories of development and assessment – Overlays**.

When using this code, reference should be made to **Section 5.3.2** and, where applicable, **Section 5.3.3**, in **Part 5**.

8.2.3.2 Purpose

- (1) The Bushfire hazard overlay constrains areas of land identified as very high, high or medium bushfire hazard and potential impact buffers. It applies, at a minimum, to development that:
 - (a) increases the number of people living and working in the bushfire hazard area, except where the premises are occupied on a short term or intermittent basis; or
 - (b) involves uses where evacuating people may be difficult; or
 - (c) involves the manufacture or storage of hazardous materials in bulk.

Note: Land shown on the bushfire hazard overlay map is designated as the bushfire hazard area (bushfire prone area) for the purposes of section 12 of the *Building Regulation 2006*. The *Building Act 1975* adopts the requirements of the Building Code of Australia and *AS 3959: 2009 Construction of buildings in bushfire-prone areas* and thus regulates construction standards of all premises identified in bushfire prone areas subsequent to development approval.

- (2) The purpose of the Bushfire hazard overlay is to ensure that risk to life, property and the environment as a result of bushfire is mitigated to an acceptable or tolerable level.
- (3) The purpose of the code will be achieved through the following overall outcomes:
 - (a) Land use and development is located, designed and managed to mitigate the risk to life and property, but does not occur at the expense of other identified environmental values.
 - (b) Development is designed to have adequate bushfire radiation zones and road layouts which do not restrict the operational requirements of fire fighters and provides safe entry and exit for residents during bushfire events.
 - (c) Development is provided with water-supply facilities, fire-fighting vehicle fittings and appropriate access arrangements for fire fighters and ongoing fire management.
 - (d) Development supports the ecological role of fire in the landscape and ensures that hazard reduction and conservation burns can be conducted in the city's natural areas.
 - (e) Development in bushfire hazard areas is avoided where conservation and landscape protection constraints preclude necessary risk-reduction measures, including clearing and provision of adequate access. Bushfire hazard and risk mitigation treatments associated with new development does not have a significant negative impact on the biodiversity and health of the city's ecosystems.

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8.2.3.3 Specific benchmarks for assessment

Part A applies to accepted development subject to requirements.

Part B applies to assessable development.

PART A – ACCEPTED DEVELOPMENT SUBJECT TO REQUIREMENTS

Table 8.2.3-1: Bushfire hazard overlay code – for accepted development subject to requirements

Required outcomes	
Bushfire hazard	<p>RO1</p> <p>A written assessment by a suitably qualified and experienced bushfire management consultant confirms that the site is not in a Bushfire Hazard Area for the purpose of accepted development.</p> <p>OR</p> <p>The development complies with an existing approved Bushfire management plan as referenced within the approved reconfiguration of a lot.</p> <p>OR</p> <p>Development is for a dwelling house that occurs on a lot smaller than 1,000m² and is serviced by reticulated water.</p> <p>Editor's note – Development will be required to comply with the <i>Building Code of Australia</i> and the standards of <i>AS 3959-2009 Construction of buildings in bushfire-prone areas.</i></p>
WHERE DEVELOPMENT IS NOT IN ACCORDANCE WITH RO1, RO2-RO6 APPLY.	
Bushfire radiation zones	<p>RO2</p> <p>Development is located such that bushfire radiation zones are located entirely within the boundaries of the private property of the development site.</p> <p>Editor's note – Development should be located away from the most likely direction of a fire front (refer Figure 8.2.3-1: Preferred house site location in Bushfire hazard areas) and so that the elements of the development least susceptible to fire are sited closest to the bushfire hazard. See Vegetation management code for bushfire radiation zone dimensions.</p>
Access requirements	<p>RO3</p> <p>The access driveway for development in areas with reticulated water must have:</p> <ul style="list-style-type: none"> (a) a minimum cleared width of 6m and a height of 4.8m; (b) a minimum formed width of 4m; (c) a maximum gradient of 12.5% constructed to an all-weather standard; and (d) a length of no greater than 70m from the street to the dwelling; and (e) culverts and/or bridges with a minimum load bearing of 15 tonnes (if applicable). <p>OR</p> <p>The access driveway for development in areas without reticulated water must have:</p> <ul style="list-style-type: none"> (a) a minimum cleared width of 6m and a height of 4.8m; (b) a minimum formed width of 4m; (c) a maximum gradient of 12.5% with adequate drainage to prevent soil erosion and minimise ongoing maintenance; (d) a length of no greater than 200m from the street to the dwelling; and (e) culverts and/or bridges with a minimum load bearing of 8 tonnes (if applicable).
Emergency Access	<p>RO4</p> <p>Where located on a property more than 25,000m² in area, development must have:</p> <ul style="list-style-type: none"> (a) An existing public road that provides emergency access by separating the development site from the hazardous vegetation and meets the minimum requirements of a fire trail. (b) A public road network, or alternate emergency access on the development site that separates the development from the hazardous vegetation and meets the minimum requirements of a fire trail. <p>OR Where (a) and (b) have not been met:</p> <ul style="list-style-type: none"> (c) The development includes a fire trail which is contained wholly on the subject site and: <ul style="list-style-type: none"> (i) separates the development from the hazardous vegetation;- (ii) has a minimum formed width of 4m (as shall any gate across the trail), a minimum of 6m clear of standing flammable vegetation, and minimum of 4.8m vertical clearance above the trail;- (iii) has passing bays (20m long x 3m extra trail width) or turning facilities every 200m with adequate drainage and erosion control devices;- (iv) a gradient no greater than 12.5%, a cross fall of no greater than 10 degrees and with access at each end of the fire trail from a public road; (v) has gates that are easily accessed by Queensland Fire and Emergency Services (QFES);

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Required outcomes

and
(vi) has suitable arrangements in place to ensure maintenance in perpetuity.

Water supply requirements

RO5

All development involving a new or existing building with a gross floor area of 50m² or more must have:

(a) a reliable reticulated water supply that has sufficient flow and pressure characteristics for fire-fighting purposes at all times (minimum pressure and flow is 10 litres per second at 200 kPa);

OR

- (a) a dedicated fire-fighting water storage of not less than 10 000 litres for each individual building. The outlet pipe must be 50mm in diameter, fitted with a 50mm male camlock (standard rural fire brigade fitting) and an isolating valve; and
- (b) is provided within 10 metres of each building and is either below ground or of non-flammable construction; and
- (c) the water supply outlet located at least 9 m from any potential fire hazards, such as venting gas bottles and combustible structures; and
- (d) a safe and accessible hard stand area capable of accommodating a fire fighting vehicle is provided not more than 3m from the water supply outlet; and
- (e) the fire-fighting water storage is clearly identified by directional signage provided at the street frontage.

Editor's note – dedicated fire-fighting water storage is in addition to water supply for household use and does not include swimming pools, creeks and dams.

Utility protection and hazardous materials

RO6

The development must ensure:

- (a) mains gas supplies are installed in accordance with AS1596-2014: *The storage and handling of LP Gas*, the requirements of relevant authorities and metal piping is exclusively used;
- (b) electricity supplies within the property are protected and are not vulnerable to falling trees or bushfire threatening the viability of transmission poles;

AND

- (c) uses, involving bulk storage or manufacture of hazardous materials as defined in the *Work Health and Safety Act 2011* do not occur in areas identified as medium, high or very high bushfire hazard or potential impact buffers.

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Editor's note – Buildings in a designated Bushfire hazard area must meet the requirements of the *Building Code of Australia* and the standards of *AS 3959-2009 Construction of buildings in bushfire-prone areas*.

Advisory note

Accepted development identified in the assessment tables as subject to requirements must comply with all the nominated requirements in this and other applicable codes.

PART B – ASSESSABLE DEVELOPMENT BENCHMARKS

Table 8.2.3-2: Bushfire hazard overlay code – for assessable development

Performance outcomes	Acceptable outcomes
Bushfire hazard	
<p>PO1</p> <p>In a bushfire hazard area, the fire mitigation methods used at the site are adequate for the bushfire hazard of the individual site, having regard to:</p> <ul style="list-style-type: none"> (a) vegetation type; (b) slope; (c) aspect; (d) bushfire history; (e) conservation values of the site; (f) ecological restoration, including forest succession; (g) ongoing maintenance; (h) climate change; and (i) on site and off-site¹ fire hazard implications. <p>¹Note: This includes potential hazard from land up to 10kms away from the site. For example, how might large tracts of forest away from the site impact on the bushland that surrounds the site.</p>	<p>AO1</p> <p>A written assessment by a suitably qualified and experienced bushfire management consultant confirms that the site is not in a bushfire hazard area.</p> <p>OR</p> <p>The development complies with an approved Bushfire management plan prepared in accordance with SC6.3 City Plan policy – Bushfire management plans.</p> <p>OR</p> <p>The development complies with an existing approved Bushfire management plan as referenced within the approved reconfiguration of a lot.</p> <p>Note: Prior to:</p> <ul style="list-style-type: none"> (a) plan sealing for a Reconfiguration of a lot; or (b) the issue of a Building final or Certificate of classification for Building work; or (c) the commencement of use where building work is not proposed. <p>Whichever comes first, the applicant must submit to Council, certification from an appropriately qualified and experienced person that the development has been completed in accordance with, and complies with the approved Bushfire management plan and that all risk treatments are functioning in accordance with the approved plan.</p>

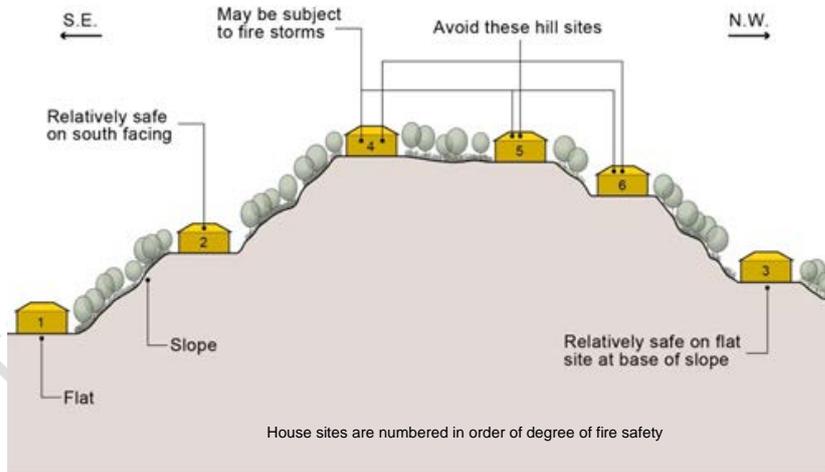


Figure 8.2.3-1
Bushfire hazard overlay – Preferred house site location in bushfire hazard areas. Image adapted from QDHLGP (1993) Bushfire Hazard Planning in Queensland.

Performance outcomes	Acceptable outcomes
Land use	
<p>PO2</p> <p>In a bushfire hazard area, development:</p> <ul style="list-style-type: none"> (a) does not result in a high concentration of people living, working or congregating in a bushfire hazard area; (b) does not result in the bulk manufacture or storage of hazardous materials; and (c) 'essential' community infrastructure is able to function effectively during and immediately after a bushfire event. 	<p>AO2</p> <p>The following land uses are not located in a bushfire hazard area:</p> <ul style="list-style-type: none"> (a) Child care centre; (b) Community care centre; (c) Community use; (d) Development involving the manufacture or storage of hazardous material in bulk; (e) Educational establishment; (f) Hospital; (g) Residential care facility; (h) Retirement facility; (i) Rooming accommodation; (j) Sport and recreation uses; (k) Tourist attraction; (l) Tourist park; and (m) Utility installation (waste management facilities). <p>AND</p> <p>In a bushfire hazard area permitted essential community infrastructure is designed to function effectively during and immediately after bushfire events, as demonstrated in a Bushfire management plan.</p> <p>Note: A Bushfire management plan prepared by a suitably qualified person and in accordance with SC6.3 City Plan policy – Bushfire management plans is Council's preferred method for addressing this acceptable outcome.</p>
Development design and lot layout	
<p>PO3</p> <p>In a bushfire hazard area, developments, including lot layout are designed to avoid bushfire hazard and provide safe sites for people, property and buildings.</p> <p>Editor's note – The development should be located:</p> <ul style="list-style-type: none"> (a) away from the most likely direction of a fire front (refer Figure 8.2.3-1: Preferred house site location in bushfire hazard areas); and (b) so that elements of the development least susceptible to fire are sited closest to the bushfire hazard. 	<p>AO3</p> <p>Development, Lots and/or building envelopes are not located within bushfire hazard areas.</p> <p>OR</p> <p>The development is located in accordance with the approved Bushfire management plan as referenced within the approved reconfiguration of a lot.</p> <p>OR</p> <p>The development is designed to adequately demonstrate that the risk to life and property is minimised to achieve acceptable levels and ensure ongoing site management.</p> <p>AO3.2</p> <p>The development design incorporates bushfire radiation zone/s that:</p> <ul style="list-style-type: none"> (a) use existing or natural fire breaks & minimise the need to clear native vegetation; (b) do not impact matters of environmental significance; (c) are located entirely within the boundaries of the private property of the development site; and (d) incorporates landscaping species that are less likely to exacerbate a bushfire event.
<p>PO4</p> <p>In a bushfire hazard area, when designing for bushfire hazard mitigation the lot layout must avoid impacts on matters of environmental significance.</p>	<p>AO4</p> <p>Development design, Lot size, and layout avoids impact on matters of environmental significance and minimises impacts such as fragmentation, habitat loss and edge effects for any matters of environmental significance.</p>

Performance outcomes	Acceptable outcomes
<p>PO5</p> <p>Development uses fencing that:</p> <ul style="list-style-type: none"> (a) does not contribute to the spread of bushfire; (b) facilitates the safe movement of fauna; and (c) provides access for fire-fighting purposes. 	<p>AO5</p> <p>Fences are constructed:</p> <ul style="list-style-type: none"> (a) using non-combustible or fire retardant materials within 20m of any building used for accommodation; (b) that do not impede the safe movement of fauna (where applicable); and (c) has gates that can be freely accessed for fire-fighting purposes (if applicable).
Vehicular access	
<p>PO6</p> <p>In a bushfire hazard area, vehicular access (including internal roads) is designed to mitigate against bushfire hazard by ensuring adequate access for:</p> <ul style="list-style-type: none"> (a) fire-fighting and other emergency vehicles, and (b) the evacuation of residents and emergency personnel, during a bushfire event. 	<p>AO6.1</p> <p>The development design incorporates a perimeter road that:</p> <ul style="list-style-type: none"> (a) is located between the boundary of the lots and/or buildings and the adjacent natural area and/or bushfire hazard area; (b) has a minimum cleared width of 20m; (c) has a constructed minimum road width of 6m; (d) has a maximum gradient of 12.5%; (e) is constructed to an all-weather standard; and (f) is constructed to ensure all culverts and bridges have a minimum load bearing of 15 tonnes (if applicable). <p>(refer Figure 8.2.3-2b).</p> <p>AO6.2</p> <p>The road design is capable of providing access for fire-fighting and other emergency vehicles, in accordance with SC6.104 City Plan policy – Land development guidelines, Section 2 – Transport network standards.</p> <p>AO6.3</p> <p>The road design does not include dead end roads (refer Figure 8.2.3-2a).</p>

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Figures 8.2.3-2a and 8.2.3-2b: Examples of acceptable and unacceptable road layout designs in bushfire hazard areas

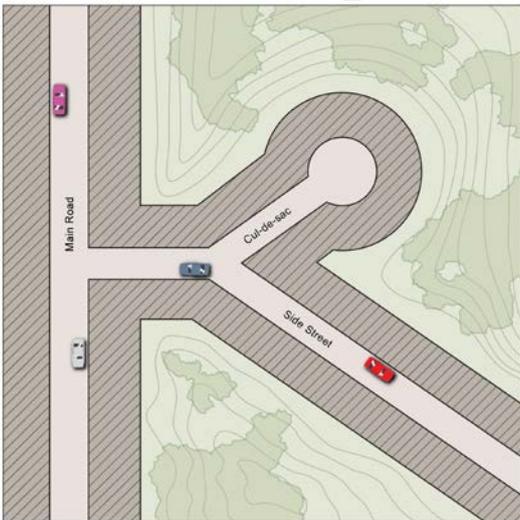


Figure 8.2.3-2a
Unacceptable design – along a ridge top in a bushfire hazard area – the ridge top development has no fire control lines and obstructs fire fighters.

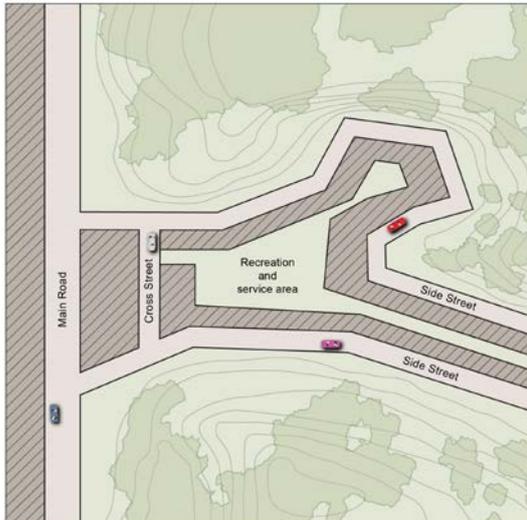


Figure 8.2.3-2b
Acceptable design – Ring road system provides a fire control line and access for fire fighters with all lots located on the inside of the ring-road.

Performance outcomes	Acceptable outcomes
Clearing	
<p>PO7</p> <p>In a bushfire hazard area, the development layout is designed to avoid the requirement to clear vegetation to achieve risk reduction.</p>	<p>AO7</p> <p>The Bushfire management plan details the required extent of vegetation clearing and landscaping and where required modify development design and/or lot layout to minimise clearing of vegetation.</p> <p>Note: For guidance on how to prepare a Bushfire management plan refer to SC6.3 City Plan Policy – Bushfire management plans.</p>
Open space management plan	
<p>PO8</p> <p>For areas to be dedicated to Council as open space, management strategies to mitigate bushfire risk must be identified.</p>	<p>AO8</p> <p>The Bushfire management plan contains a separate section detailing management strategies for areas to be dedicated to Council that can be included within the Open space management plan.</p> <p>Note: For guidance on how to prepare a Bushfire management plan refer to SC6.3 City Plan Policy – Bushfire management plans.</p>
Fire trails	
<p>PO9</p> <p>In a bushfire hazard area, fire trails must be provided to:</p> <ul style="list-style-type: none"> (a) enable access for fire fighters, residents and equipment; (b) contribute to (where required) bushfire radiation zone(s); (c) mitigate against bushfire hazard; and (d) allow access for hazard reduction management programs. <p>Note: fire trails should be located, constructed and maintained with due regard for landscape and ecological values and should not result in soil disturbance or erosion.</p>	<p>AO9.1</p> <p>Fire trails are located on public land (including public open space areas) to facilitate access for fire brigades.</p> <p>OR</p> <p>Fire trails located on private property are located as close as possible to the property boundaries and the adjoining bushfire hazard area, and an access easement is granted in favour of City of Gold Coast and Queensland Fire and Emergency Services.</p> <p>Note: Design and construction of all fire trails located on land to be dedicated to the City as Conservation Estate are in accordance with SC6.3 City Plan policy – Bushfire management plans, Section 3.5(f). For other fire trails, AO9.2 – AO9.6 apply.</p>
	<p>AO9.2</p> <p>The fire trail has:</p> <ul style="list-style-type: none"> (a) a minimum cleared width of 6m; (b) a minimum of 4.8m vertical clearance; (c) a cross fall of no greater than 10 degrees; (d) a minimum formed width of 4m; (e) a maximum gradient of 12.5%, with adequate drainage to prevent soil erosion and minimise ongoing trail maintenance; and (f) culverts and/or bridges with a minimum load bearing of 8 tonnes (if applicable).
	<p>AO9.3</p> <p>Vehicular links are provided along the fire trail either to existing fire trails or roads, and these links are designed having regard to the topography of the site, fire fighter safety and the need to regularly access water supplies.</p> <p>Note: where possible, these links should be at intervals of approximately 200m</p>
	<p>AO9.4</p> <p>The fire trail has vehicular access at each end, and links either to existing fire trails or public roads.</p>
	<p>AO9.5</p> <p>The fire trail provides turning areas for fire-fighting</p>

Performance outcomes	Acceptable outcomes
	<p>appliances. The turning bay can be either:</p> <p>(a) a turning circle;</p> <p>(b) a 'T' shaped turning bay; or</p> <p>(c) a 'Y' shaped turning bay.</p>
	<p>AO9.6</p> <p>The fire trail provides areas for vehicles to pass or turn at intervals of not more than 200m and with a maximum grade of 5% (1 in 20).</p>
Areas with water reticulation	
<p>PO10</p> <p>In a bushfire hazard area, the development maintains the safety of people and property by ensuring that the water supply is reliable and has sufficient flow and pressure requirements for fire-fighting purposes at all times.</p>	<p>AO10.1</p> <p>The development is proposed in a bushfire hazard area, and reticulated water is supplied in accordance with SC6.104 City Plan policy – Land development guidelines, Section 6 – Water supply and sewerage reticulation standards.</p>
	<p>AO10.2</p> <p>Development involving new or existing buildings with a gross floor area of greater than 50m², each lot has a reliable reticulated water supply that has sufficient flow and pressure characteristics for fire-fighting purposes at all times. It must have a minimum pressure and flow of 10 litres a second at 200 kPa.</p>
Areas with no water reticulation (private water supply)	
<p>PO11</p> <p>In a bushfire hazard area, the development maintains the safety of people and property by ensuring that an adequate water supply for fire-fighting purposes is provided.</p>	<p>AO11.1</p> <p>For development with a combined GFA less than 500m² where one or more buildings are proposed, dedicated fire-fighting water storage is provided to protect each individual building. Each dedicated fire-fighting water storage must have a volume of water not less than 10,000 litres for each building, be provided within 10m of each building and be:</p> <p>(a) a separate tank that is either below ground level or of non-flammable construction; or</p> <p>(b) a reserve section in the bottom part of the main water supply tank that is either below ground level or of non-flammable construction.</p> <p>Note: dedicated fire-fighting water storage is in addition to water supply for household use and does not include swimming pools, creeks and dams.</p>
	<p>AO11.2</p> <p>For development that proposes one or more buildings with a combined GFA greater than 500m² there is no acceptable outcome provided.</p>
	<p>AO12</p> <p>The outlet pipe is 50mm in diameter, fitted with a 50mm male camlock (standard rural fire brigade fitting) and an isolating valve.</p>
<p>PO12</p> <p>In a bushfire hazard area, all fire-fighting water storage tanks, including domestic water supply tanks, are fitted with the standard rural fire brigade fittings.</p>	
<p>PO13</p> <p>In a bushfire hazard area, water storage provided for fire-fighting purposes is safely located and accessible at all times.</p>	<p>AO13.1</p> <p>The water supply outlet is located at least 9m from any potential fire hazards, such as venting gas bottles and combustible structures.</p>
	<p>AO13.2</p> <p>A safe and accessible hard stand area capable of accommodating a fire fighting vehicle is provided not more than 3m from the water supply outlet.</p>

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Performance outcomes	Acceptable outcomes
<p>PO14</p> <p>Development in a bushfire hazard area must provide adequate fire-fighting water storage. This infrastructure must be provided on public land so as to be readily accessible to fire brigades for hazard reduction and fire-fighting purposes.</p>	<p>AO14.1</p> <p>Where public water supplies (e.g. fire hydrants or public water storage) do not exist, water supply tanks are provided for fire-fighting purposes on public land within the development. The water tanks must:</p> <ul style="list-style-type: none"> (a) Be installed on land dedicated to Council; (b) hold a volume of at least 22,500 litres per every 20 dwellings; (c) be of concrete construction; and (d) have an outlet pipe of 50mm in diameter, fitted with a 50mm male camlock (standard rural fire brigade fitting) and an isolating valve. <p>AO14.2</p> <p>Development on public land provides a safe and accessible hardstand area capable of accommodating a fire fighting vehicle not more than 3m from the water supply outlet.</p>
<p>Storage of Hazardous Materials</p>	
<p>PO15</p> <p>Development does not cause:</p> <ul style="list-style-type: none"> (a) an unacceptable risk to people, property and the environment due to the impact of bushfire on hazardous chemicals; (b) excess danger or difficulty to emergency services for emergency response or evacuation. 	<p>AO15</p> <p>Development involving the storage, handling or manufacture of hazardous chemicals is not located within a Bushfire hazard area.</p>
<p>Advice to new residents</p>	
<p>PO16</p> <p>In a bushfire hazard area, new residents/occupants of a development in a bushfire hazard area are informed about:</p> <ul style="list-style-type: none"> (a) the potential bushfire hazard on their site; (b) their responsibility for fire management; (c) the measures required for ongoing fire hazard mitigation; and (d) emergency procedures during a bushfire or on bad fire weather days. <p>Editor's note - Further information on bushfire preparation can be found at www.ruralfire.qld.gov.au</p>	<p>AO16</p> <p>A copy of the Bushfire management plan, complete with the Queensland Fire and Emergency Services cover sheet and any other addendums is provided to each resident/occupant for their information.</p> <p>Note: the QFES cover sheet is attached to the approved Bushfire management plan and a notification will be placed on the property's rates notice.</p>

8.2.3.4 Other relevant requirements

SC6.3 City Plan policy – Bushfire management plans is directly relevant to the development of land within bushfire hazard areas.