



Bushfire Management Plan

167-191 Christensen Road South Stapylton

Lot 304SP316171 (Part of Parent Lot 506SP329487)

Gold Coast City Council, Qld

Prepared by:

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Project Reference: **25121**

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Prepared for:

VICTO

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**PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL**

Application No: **MCU/2026/34**

Dated: **22 April 2026**

**Development shall comply with the
conditions of approval as detailed in the
Decision Notice and Council's Planning
Scheme, Local Laws and Planning Policies**



Proviso

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It should be noted that the recommendations within this BMP have been formulated based on site conditions at the time of writing and utilising current best-practise hazard and impact assessment methodologies, and have been developed to reduce the potential severity of impacts on the proposed development in the event of a bushfire emergency rather than prevent impacts altogether. No guarantee is provided or assumed that the area will not be affected by bushfire at some time.



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1.0 INTRODUCTION

Wollemi Eco-Logical has been commissioned to undertake a Site Specific Bushfire Hazard Assessment and to prepare a Bushfire Management Plan for a proposed development on the subject site (**Figure 1**).

This report aims to assess the Bushfire Hazard and risk to the proposed development with regard to the Queensland State Government Single State Planning Policy - Part E (SPP 2017), the Bushfire Resilient Communities Technical Reference Guide (QFES, 2019), the *Gold Coast City Council, Bushfire Hazard Overlay Code (8.2.3)*, and the *Australian Standard – Construction in Bushfire Prone Areas (AS3959:2018)*. These documents detail both the State and Council interest in Bushfire Hazard with regard to determining suitability of development applications.

The potential Bushfire Hazard acting on the proposed development, is informed by vegetation composition and extent, slope and industry standard fuel load classifications, and assessment methodologies. Bushfire Risk Mitigation Measures are subsequently detailed in order to demonstrate compliance with Councils Planning Scheme Performance Outcomes, and to inform the safety of people and property in the event of a bushfire emergency.

1.1 Suitably Qualified Person

This BMP has been prepared by Scott Edwards, a suitably qualified and experienced Bushfire Consultant with over 25 years of relevant experience in Environmental Management & Bushfire Planning and Design experience specific to South East Queensland. Scott is the Managing Director of Wollemi Eco-Logical Pty Ltd, and has Degree qualifications in Environmental Science supported by diverse experience in Ecological Assessment, Land Management and Environmental Resource Management consistent with the requirements for suitably qualified persons as per the *SPP State Planning Policy (SPP) – Natural Hazards, Risk & Resilience – Bushfire (DSDMIP 2019)* and the supporting document *Bushfire Resilient Communities Technical Reference Guide (QFES, 2019)*.



1.2 Subject Site

Address:	167-191 Christensen Road South Stapylton
Titles:	Lot 304SP316171 (Part of Parent Lot 506SP329487)
Local Government:	Gold Coast City Council
Total Area:	7,563sqm
Zoning:	High Impact Industry
Topography:	The proposed development footprint is effectively flat, with a mild downslope to the southeast at ~1 degree.
Current Use:	No formal land use. Site has been benched as part of approved industrial land use.



Figure 1: Subject Site

1.3 Proposed Development

It is understood a Reconfiguration of a Lot (1 into 15) for the construction of light industry units is proposed to be constructed on the subject site. The proposed development layout is represented in **Figure 2**.

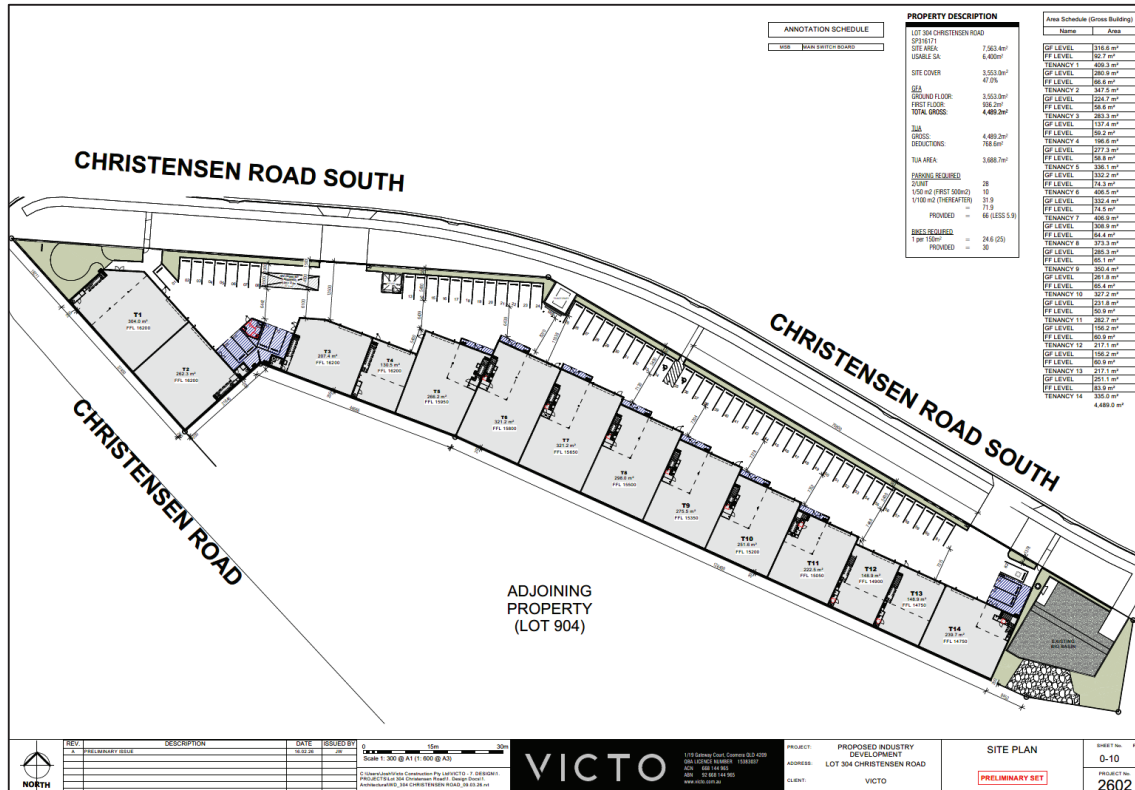


Figure 2: Proposed Development Layout

2.0 Bushfire Hazard Assessment

The prevalence of Bushfire in the landscape is dependent on vegetation type and fuel load available to sustain a bushfire. Bushfire intensity and rate of spread are influenced by fuel load, (including type and extent of vegetation), topography and to a lesser extent aspect. Land uses surrounding potentially hazardous vegetation, and consequently the connectivity of vegetation communities, all influence the potential for a bushfire to develop and be sustained.

2.1 Current Bushfire Hazard Mapping

A review of State Bushfire Hazard Overlay Mapping, as maintained by the Department of State Development, Infrastructure Local Government and Planning (DSDILGP), revealed the site is within a potential bushfire hazard area (**Figure 3**).

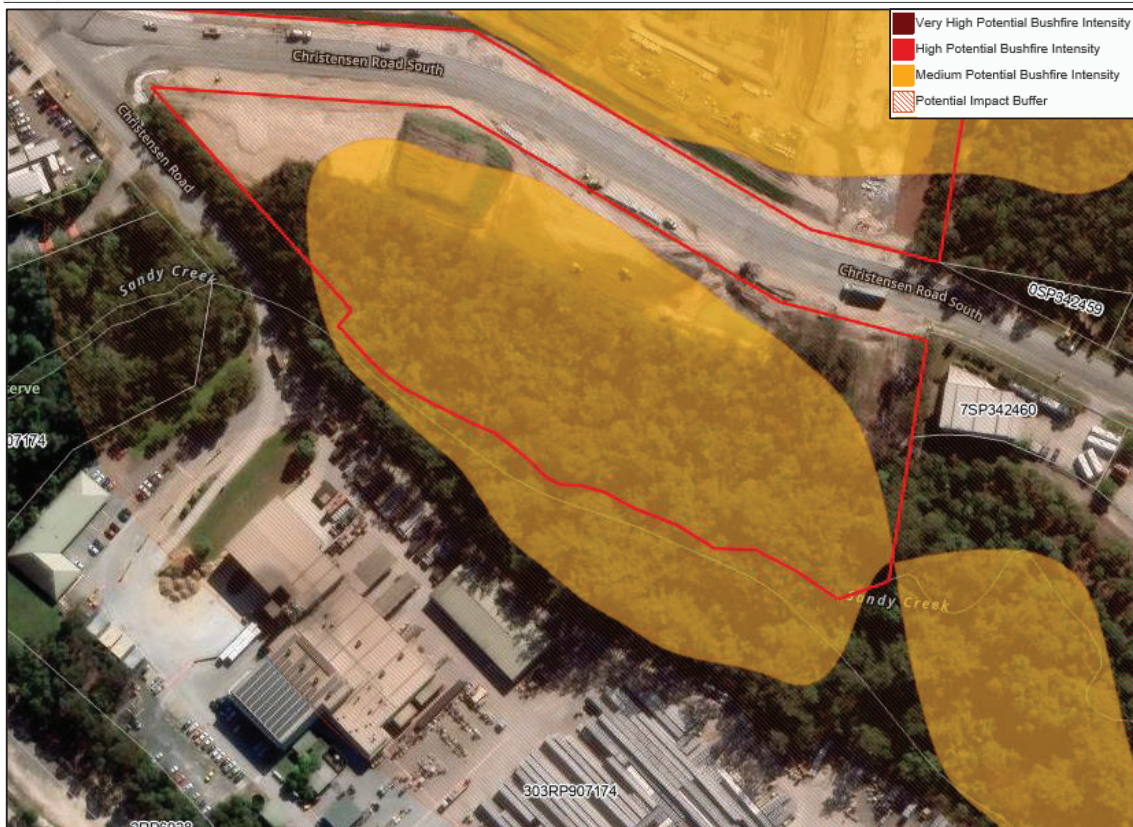


Figure 3: State Bushfire Hazard Overlay Mapping

To verify the Council Bushfire Hazard mapping, a Site-Specific Bushfire Hazard Assessment is triggered, and is addressed below.

2.2 On-Site Hazard Assessment

This site-specific Bushfire Hazard Assessment and Management Plan, references: *State Planning Policy (SPP) – Natural Hazards, Risk & Resilience – Bushfire* (DSDMIP 2019); *A new methodology for state-wide mapping of bushfire prone areas in Queensland*. CSIRO, Australia. (2014)¹; the *Bushfire Resilient Communities Technical Reference Guide* (QFES, 2019)²; the Bushfire Attack Level (BAL), Building setback requirements and Construction Standards as per the Australian Standard AS 3959- 2018 - *Construction of buildings in bushfire prone areas*³; and current industry best-practice assessment and Risk Mitigation Measures in compliance with the SPP Assessment Benchmarks where triggered.

¹ This methodology updates the calculations apparent in the Australian Standard AS3959: 2018 based on current fire weather modelling and includes detailed Vegetation Hazard Classes, used to inform State-wide Mapping.

² The Bushfire Resilient Communities Technical Reference Guide (QFES, 2019), supports the SPP 2019 by providing technical guidance for bushfire hazard assessment and bushfire management Planning.

³ The Australian Standard AS3959: 2018 defines Fire Danger Index as the chance of a fire starting, its rate of spread, its intensity and the difficulty of its suppression, according to various combinations of air temperature, relative humidity, wind speed and both the long and short term drought effects.



Additionally, this BMP will address the requirements of the proposed development against *Gold Coast City Council, Bushfire Hazard Overlay Code (8.2.3)* with regard to the proposed development.

Two key features of the landscape strongly contribute towards the behaviour of bushfires:

1. Vegetation community structure/composition

The structure and composition of vegetation communities determine the rate at which dry fuel accumulates. Some vegetation communities protect fuel from drying out in all but extreme bushfire seasons, making the vegetation susceptible to very destructive bushfires, whilst other vegetation communities may expose fuels to drying and therefore be frequently available for burning.

2. Slope

As a general rule, bushfire intensity and the rate of spread of bushfires rises in proportion to slope, with bushfires burning faster uphill and slower downhill. Studies have shown that the speed and intensity of fires moving up slopes generally doubles every 10 degrees of slope. Steeper slopes also increase the difficulty of constructing ring roads and firebreaks and limit the access for emergency crews.

Several investigative tools were utilised to determine the site specific bushfire hazard risk including:

- A review of local aerial photography;
- A review of site and local topography;
- Review of site development plan;
- A review of DoR Regional Ecosystem Mapping; and
- An inspection of the site.

The risk assessment comprised an analysis of the site and the surrounding lands (i.e. within 100m) to determine characteristic bushfire risk based on Vegetation Hazard Classifications for vegetation within 100m of the site.

2.2.1 Site Inspection & Findings

A site inspection was completed on the 3rd March 2026 to verify the bushfire hazard mapping over the site and surrounds. All vegetated areas of the site and within 100m of the proposed development site were assessed during the site investigations.

A summary of the findings of the site inspection is provided:

1. Site access is via Christensen Road South from the immediate north through northeast of the site. Christensen Road South is a formed bitumen public roadway.

2. The subject site is part of a previously subdivided industrial subdivision (i.e. Lot 506SP329487) for the purpose of industrial land uses.
3. The proposed development footprint is effectively flat, with a mild downslope to the southeast at ~1 degree.
4. Regulated Vegetation as maintained by Qld Department of Resources (DoR), maps the vegetation to the south of the site, and adjacent areas to the southeast, southwest and to the northeast, as containing Regional Ecosystems (RE): 12.11.25, 12.11.5 and 12.3.11 (Refer **Figure 4**).

Site assessment confirmed the presence of assessable vegetation communities reflective of the above described RE's.

- Balance of the site and adjacent areas to the northwest through north are absent of assessable vegetation.



Figure 4: Regional Ecosystem Mapping



2.2.2 Vegetation Classification

The structure and composition of vegetation communities determine the rate at which dry fuel accumulates. Some vegetation communities protect fuel from drying out in all but extreme bushfire seasons, making the vegetation susceptible to very destructive bushfires, whilst other vegetation communities may expose fuels to drying and therefore be frequently available for burning.

Vegetation communities surrounding the proposed development were referenced against mapped RE's in the general vicinity, and Vegetation Hazard Classifications and Potential Fire-line Intensity calculations as detailed in Leonard et al (2014), and reflected in the QFES 2019. Potential Fuel Load calculations were undertaken on site to validate vegetation classifications and subsequently potential bushfire hazard to the proposed development.

Vegetation ecotones result in varying fuel load availability. Subsequently, vegetation communities have been referenced against predominant vegetation with highest fuel loads with regard to potential sources of Bushfire Hazard posed to the proposed development. Observed vegetation communities are described in **Table 1**.

Patch Filtering

Where applicable, Patch Filtering is applied as per QFES 2019, which specifies in Section 4.2.6, Step 2 'downgrade the effective fuel load of continuous vegetation patches measuring (a) 1 to 2 hectares (by 66 %), and (b) 2-3 hectare patches (by 50 %) if the patch is surrounded by either non-continuous fuel or a low-hazard vegetation of land use type, and if the patch is further than 100m from and any other continuous-fuel vegetation patch greater than 2 hectares'.

Corridor Filtering

Where applicable, Corridor filtering is applied as per QFES 2019, which specifies in Section 4.2.6, Step 3: To 'remove narrow corridors and areas of continuous fuel <50m in width that are not sufficiently wide to support a fully developed flame front. These areas are less likely to ignite due to their disconnection with fuels that can carry running fire fronts...is likely to result in fireline intensity of <4000 kW/m, and this presents a low hazard to land use planning and development assessment'.



Table 1 Vegetation Hazard Classifications

Direction of Bushfire Hazard	Vegetation Description (Sub-Unit – if relevant)	DoR Regional Ecosystem	Vegetation Hazard Class (QFES, 2019)	Potential Fuel Load (t/ha)	Potential Fire-line Intensity (kw/m)	Potential Bushfire Hazard
South through Southeast & West	Eucalyptus dominated forest on drainage line (SU1)	RE:12.3.11 (dominant)	Class 16.1 Eucalyptus dominated forest on drainage lines and alluvial plains	16t/ha	10,244	Medium
Northeast	Eucalyptus Open Forest (SU2)	RE:12.11.5	Class 10.1 Spotted gum dominated open forests	20.8t/ha	16,225	Medium

Vegetation Hazard classification as described in **Table 1**, are visually represented in **Figure 5**.



Figure 5: Vegetation Hazard Classification



2.2.3 Potentially Hazardous Vegetation

Based on the above assessment, vegetation posing a Medium Potential Bushfire Hazard to the proposed development is present to the west, south through southeast and to the northeast. These vegetation communities have the potential to accumulate moderate fuel loads and subsequently present a potential Bushfire Hazard to the proposed development.

Vegetation in all other directions have been classified as having a Low Potential Bushfire Hazard.

The following section details Bushfire Risk Mitigation measures to be implemented on the site to address the Bushfire Hazard and compliance requirements acting on the proposed development.



3.0 Bushfire Risk Mitigation Measures

The following section describes Bushfire Risk Mitigation measures, recommended to be utilised at the subject site to reduce the risk of Bushfire impacting on people and property.

The scope of proposed Bushfire Risk Mitigation Measures have been drawn from the following sources:

- the *Queensland State Government Single State Planning Policy - Part E (SPP 2017)*;
- the *Bushfire Resilient Communities Technical Reference Guide (QFES, 2019)*;
- the *Gold Coast City Council, Bushfire Hazard Overlay Code (8.2.3)*; and
- the Australian Standard (AS 3959- 2018) - *Construction of buildings in bushfire prone areas*.

The intent of the above legislation is to protect people and premises in the event of a bushfire emergency, through achieving acceptable Performance Outcomes for the development given the identified bushfire hazard. Performance Outcomes are generally achieved by appropriate separation of a development from bushfire hazard, appropriate access for fire-fighting vehicles, and appropriate construction standards of buildings. Additional factors are detailed where considered appropriate.

3.1 Asset Protection Zones

Asset protection zones (APZ's) provide a defensive tool to assist in the reduction of potential bushfire impact to people and property situated in bushfire prone areas. APZ's are the most strategically valuable defence against radiant heat and flame, and to a lesser extent, embers.

Whilst APZ's should prevent buildings from being subjected to direct contact from flames, and reduced levels of radiant heat in the event of a bushfire, building construction standards will also be key to ensuring the performance of buildings subjected to ember attack. Bushfire Attack Level for the proposed development is determined in **Section 3.2**.

Based on the above Bushfire Hazard Assessment, APZ's may be required adjacent the proposed development. These are detailed in the following section.

3.1.1 Performance Outcomes

APZ and setback distances have not been prescribed in the SPP 2017. The SPP refers to 'provision of appropriate defensible space between dwellings and medium or above Bushfire Hazard'. The *Bushfire Resilient Communities Technical Reference Guide (QFES, 2019)*, a guideline, not a specification, refers to determining APZ's based on achieving a maximum 29kW/m² Radiant Heat Flux exposure. This is achieved by using either the *Method 2 Bushfire Attack Level Assessment as per the AS3959:2018 for Construction of Buildings in Bushfire Prone Areas* or *Bushfire Asset Protection Zone Width Calculator (QFES, 2019)*, which uses the calculations underpinned by the AS3959, 2018 calculation. It is noted that this is stated in



QFES 2019 as being ‘...applicable where a local governments planning scheme contains provisions that identify acceptable radiant heat flux levels to inform APZ’s’.

The Gold Coast City Council, *Bushfire Hazard Overlay Code (8.2.3)* does not prescribe specific separation distances from potentially hazardous vegetation. PO3 prescribes ‘avoiding bushfire hazard and provide safe sites for people, property and buildings’.

As the GCCC code does not contain provisions that identify acceptable radiant heat flux levels to inform APZ’s for industrial uses, APZ’s are not deemed to be triggered by QFES 2019 for industrial uses.

3.2 Bushfire Hazard Modelling

Australian Standard 3959 (2018) Construction of buildings in bushfire-prone areas provides minimum construction standards for new dwellings in designated Bushfire Prone Areas. The construction standards are intended to improve the performance of buildings subjected to burning debris, radiant heat or flame contact. The AS3959- 2018 methodology prescribes Bushfire Attack Levels (BAL’s) to the facades of proposed buildings to which corresponding construction safety standards are applied. AS3959-2018 defines Bushfire Attack Levels as:

‘A means of measuring the severity of a building’s potential exposure to ember attack, radiant heat and direct flame contact, using increments of radiant heat expressed in kilowatts per metre squared, which is the basis for establishing the requirements for construction to improve protection of building elements from attack by bushfire.’

The proposed development does not constitute Class 1-3 structures, consequently Building Construction Standards, as detailed in the Australian Standard – Construction of Buildings in Bushfire-prone Areas (AS3959:2018), are not deemed applicable.

This assessment has been based on the following assumptions:

- A Fire Danger Index (FDI) of 53 (QFD 2026);
- Proposed development will be located in the layout as represented in **Figure 2**.
- Fuel load calculations (Method 2 BAL) for potentially hazardous vegetation adjacent the proposed development have been detailed in Table 1.

Additional parameters used to determine the minimum distances for relative BAL ratings are detailed in the following Tables and elevations to the west and south have been classified as low threat vegetation.

Table 2: Bushfire Modelling - Potentially Hazardous Vegetation to the West through south to Southeast



Calculated March 9, 2026, 6:20 pm (MDC v4.9)

167-191 Christensen Road South Stapylton - W-S-SE

Minimum Distance Calculator - AS3959-2018 (Method 2)			
Inputs		Outputs	
Fire Danger Index	53	Rate of spread	1.23 km/h
Vegetation Classification	Forest	Flame length	9.97 m
Understorey fuel load	13.8 t/ha	Flame angle	54 °, 65 °, 73 °, 78 °, 80 ° & 85 °
Total fuel load	16 t/ha	Elevation of receiver	3.89 m, 4.32 m, 4.47 m, 4.45 m, 4.4 m & 3.65 m
Vegetation height	n/a	Fire intensity	10,244 kW/m
Effective slope	5 °	Transmissivity	0.881, 0.866, 0.845, 0.822, 0.809 & 0.74
Site slope	1 °	Viewfactor	0.5955, 0.4371, 0.2938, 0.1992, 0.162 & 0.0443
Flame width	100 m	Minimum distance to < 40 kW/m ²	8.2 m
Windspeed	n/a	Minimum distance to < 29 kW/m ²	11.2 m
Heat of combustion	18,600 kJ/kg	Minimum distance to < 19 kW/m ²	16.6 m
Flame temperature	1,090 K	Minimum distance to < 12.5 kW/m ²	24.1 m

Table 3: Bushfire Hazard Modelling - Potentially Hazardous Vegetation to the Northeast

Calculated March 9, 2026, 6:53 pm (MDC v4.9)

167-191 Christensen Road South Stapylton - NE

Minimum Distance Calculator - AS3959-2018 (Method 2)			
Inputs		Outputs	
Fire Danger Index	53	Rate of spread	1.5 km/h
Vegetation Classification	Forest	Flame length	12.3 m
Understorey fuel load	19.3 t/ha	Flame angle	54 °, 64 °, 72 °, 77 °, 79 ° & 84 °
Total fuel load	20.8 t/ha	Elevation of receiver	4.8 m, 5.29 m, 5.5 m, 5.49 m, 5.44 m & 4.63 m
Vegetation height	n/a	Fire intensity	16,225 kW/m
Effective slope	3 °	Transmissivity	0.876, 0.859, 0.836, 0.811, 0.797 & 0.733
Site slope	1 °	Viewfactor	0.5976, 0.4407, 0.2974, 0.2026, 0.1644 & 0.0448
Flame width	100 m	Minimum distance to < 40 kW/m ²	10.1 m
Windspeed	n/a	Minimum distance to < 29 kW/m ²	13.7 m
Heat of combustion	18,600 kJ/kg	Minimum distance to < 19 kW/m ²	20.2 m
Flame temperature	1,090 K	Minimum distance to < 12.5 kW/m ²	28.7 m

As the GCCC code does not contain provisions that identify acceptable radiant heat flux levels to inform APZ's for industrial uses, APZ's are not deemed to be triggered by QFES 2019 for industrial uses. It is noted that the proposed development is an approved light industrial use, and the construction standards are understood to be tilt panel walls, with roofing buffered by these tilt panels, ingress of embers is considered to be of limited potential.



The proposed development does not involve the construction of Class 1-3 structures, and consequently Building Construction Standards, as detailed in the Australian Standard – Construction of Buildings in Bushfire-prone Areas (AS3959:2018), are not deemed applicable.

3.3 Landscaping and Vegetation Management

The landscaping and ongoing management of vegetation in areas susceptible to Bushfire Hazard is an important tool to mitigate bushfire risk.

Landscaping and vegetation retention within the site should consider the following guidelines:

- Immediately adjacent proposed buildings should either be fully cleared and regularly maintained (i.e. lawn) or retain trees as clumps or islands and provide a tree canopy cover of less than 15% and tree canopies should be located greater than 2 metres from any part of the roofline of a building. Any trees should have lower limbs removed up to a height of 2 metres above the ground.
- Any landscaping performed on site shall maintain the development footprint effectively free of available fuel. Landscaping plants may be used in this area so long as they are selected for their low combustibility, by virtue of high moisture content, low volatile oil content, high leaf mineral levels, large fleshy leaves, and absence of shedding bark. They should be placed so as to not provide either vertical or horizontal connectedness of plant material, and avoid overhanging rooflines or contact with flammable parts of buildings. Any planted trees should be of species which grow to over 2m, to maintain separation between lower canopy and the ground.
- Turf is to be maintained regularly to reduce the potential for long grass to fuel an advancing fire toward buildings.

N.B. Due to no requirement for an APZ, no ongoing management of vegetation in the adjacent waterway corridor is applicable.

3.4 Emergency Access & Egress

New developments in bushfire prone areas should be serviced by safe access/exit points for both residents and emergency services personnel in the event of an emergency. Development should avoid entrapment potential, provide safe and effective access for emergency services vehicles and safe evacuation routes for occupants.

The *GCCC Bushfire Hazard Overlay Code (PO6)* prescribes ‘in a bushfire area, vehicular access is designed to mitigate against bushfire hazard by ensuring adequate access for: (a) fire-fighting and other emergency vehicles, and (b) the evacuation of residents and emergency personnel, during a bushfire event’.

The proposed development layout includes 3 direct accesses to Christensen Road South to the north through northeast. The proposed development includes a large hardstand area and car parking adjacent Christensen Road South.



Based on the above, site access and egress is considered to be in accordance with *Qld Fire & Emergency Services (QFES) Fire Hydrant and Vehicle Access Guideline* and other bushfire risk mitigation measures as detailed in this report, the vehicular access for the site is deemed to be in accordance with the GCCC planning scheme.

3.5 Water Availability for Fire-Fighting Purposes

All development within bushfire hazard areas require adequate water supply for fire-fighting purposes in the event of a bushfire emergency.

The *GCCC Bushfire Hazard Overlay Code (PO10)* prescribes ‘...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’.

The proposed development will be on reticulated water and it is consequently expected to meet the flow and pressure characterises detailed above. Verification of this via the utility provider is recommended. Where achieved, the proposed development deemed to be in accordance with the GCCC planning scheme requirements.

3.6 Utility Protection & Hazardous Materials

The *GCCC Bushfire Hazard Overlay Code (SO6)* prescribes ‘that the development ensures: mains gas supplies are installed in accordance with AS1596, the requirements of relevant authorities and metal piping is exclusively used; electricity supplies within the property are protected and are not vulnerable to falling trees or bushfire threatening the viability of transmission poles; and that uses involving bulk storage or manufacture of hazardous materials do not occur in areas identified as potential bushfire hazard areas’.

It is understood that site gas and electricity supplies will be constructed to the above standards, and no bulk storage or manufacture of hazardous materials will be undertaken on the subject site.

3.7 Bushfire Hazard Overlay Code

Table 4: Bushfire Hazard Overlay Code (8.2.3) Compliance

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets either the performance outcome or overall outcome	Internal use
Bushfire hazard			
PO1 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: (a) vegetation type; (b) slope;	AO1 A written assessment by a suitably qualified and experienced bushfire management consultant confirms that the site is not in a bushfire hazard area. OR The development complies with an approved Bushfire	The proposed development has been assessed, and informed by a Bushfire Management Plan prepared in accordance with Council planning scheme, and where recommendations are achieved will be considered to be in accordance with the planning scheme.	



Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
(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-site ¹ fire hazard implications.	management plan prepared in accordance with SC6.3 City Plan policy – Bushfire management plans . OR The development complies with an existing approved Bushfire management plan as referenced within the approved reconfiguration of a lot.		

Land use

PO2 In a bushfire hazard area, development: (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.	AO2 The following land uses are not located in a bushfire hazard area: (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). AND 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.	The proposed development has been assessed, and informed by a Bushfire Management Plan prepared in accordance with Council planning scheme, and where recommendations. The proposed development is understood to not involve substantial increase in: a high concentration of people living, working or congregating; the bulk manufacture or storage of hazardous materials; or involve essential community infrastructure.	
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Development design and lot layout

PO3 In a bushfire hazard area, developments, including lot layout are designed to avoid bushfire hazard and provide safe sites for people, property and buildings. Editor's note – The development should be located: (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	AO3 Development, Lots and/or building envelopes are not located within bushfire hazard areas. OR The development is located in accordance with the approved Bushfire management plan as referenced within the approved reconfiguration of a lot. OR 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.	The proposed development has been assessed, and informed by a Bushfire Management Plan prepared in accordance with Council planning scheme, and where recommendations are achieved will be considered to be in accordance with the planning scheme.	
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Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
sited closest to the bushfire hazard.	AO3.2 The development design incorporates bushfire radiation zone/s that: (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.		
PO4 In a bushfire hazard area, when designing for bushfire hazard mitigation the lot layout must avoid impacts on matters of environmental significance.	AO4 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.	The proposed development is understood to not involve impacts of areas of environmental significance.	
PO5 Development uses fencing that: (a) does not contribute to the spread of bushfire; (b) facilitates the safe movement of fauna; and (c) provides access for fire-fighting purposes.	AO5 Fences are constructed: (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).	The proposed development is understood to not involve the inclusion of restrictive or flammable fencing.	
Vehicular access			
PO6 In a bushfire hazard area, vehicular access (including internal roads) is designed to mitigate against bushfire hazard by ensuring adequate access for: (a) fire-fighting and other emergency vehicles, and (b) the evacuation of residents and emergency personnel, during a bushfire event.	AO6.1 The development design incorporates a perimeter road that: (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). (refer Figure 8.2.3-2b).	The proposed development has been assessed, and informed by a Bushfire Management Plan prepared in accordance with Council planning scheme, and where recommendations are achieved will be considered to be in accordance with the planning scheme. This includes site access and egress and emergency vehicle access.	



Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
	AO6.2 The road design is capable of providing access for fire-fighting and other emergency vehicles, in accordance with SC6.11 City Plan policy – Land development guidelines, Section 2 – Transport network standards.		
	AO6.3 The road design does not include dead end roads (refer Figure 8.2.3-2a).¹		
Clearing			
PO7 In a bushfire hazard area, the development layout is designed to avoid the requirement to clear vegetation to achieve risk reduction.	AO7 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. Note: For guidance on how to prepare a Bushfire management plan refer to SC6.3 City Plan Policy – Bushfire management plans.	The proposed development is understood to not involve ongoing vegetation clearing.	
Open space management plan			
PO8 For areas to be dedicated to Council as open space, management strategies to mitigate bushfire risk must be identified.	AO8 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. Note: For guidance on how to prepare a Bushfire management plan refer to SC6.3 City Plan Policy – Bushfire management plans.	NA	
Fire trails			
PO9 In a bushfire hazard area, fire trails must be provided to: (a) enable access for fire fighters, residents and equipment; (b) contribute to (where required) bushfire radiation zone(s); (c) mitigate against bushfire hazard; and	AO9.1 Fire trails are located on public land (including public open space areas) to facilitate access for fire brigades. OR 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	The proposed development has been assessed, and informed by a Bushfire Management Plan prepared in accordance with Council planning scheme, and where recommendations are achieved will be considered to be in accordance with the planning scheme. As the GCCC code does not contain provisions that identify acceptable radiant heat flux levels to inform APZ's for industrial uses,	



Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
(d) allow access for hazard reduction management programs.	Queensland Fire and Emergency Services.	APZ's are not deemed to be triggered by QFES 2019 for industrial uses. It is noted that the proposed development is an approved light industrial use, and the construction standards are understood to be tilt panel walls, with roofing buffered by these tilt panels, ingress of embers is considered to be of limited potential.	
	AO9.2 The fire trail has: (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).		
	AO9.3 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.		
	AO9.4 The fire trail has vehicular access at each end, and links either to existing fire trails or public roads.		
	AO9.5 The fire trail provides turning areas for fire-fighting appliances. The turning bay can be either: (a) a turning circle; (b) a 'T' shaped turning bay; or (c) a 'Y' shaped turning bay.		
	AO9.6 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).		
Areas with water reticulation			
PO10 In a bushfire hazard area, the development maintains the	AO10.1 The development is proposed in a bushfire hazard area, and	The proposed development will be on reticulated water supply, and it is consequently expected to meet	



Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
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.	reticulated water is supplied in accordance with SC6.11 City Plan policy – Land development guidelines, Section 6 – Water supply and sewerage reticulation standards.	the flow and pressure characterises detailed above. Verification of this via the utility provider is recommended. Where achieved, the proposed development deemed to be in accordance with the GCCC planning scheme requirements.	
	AO10.2 Development involving new or existing buildings with a gross floor area of greater than 50m ² , 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.		
Areas with no water reticulation (private water supply)			
PO11 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.	AO11.1 For development with a combined GFA less than 500m ² 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: (a) a separate tank that is either below ground level or of non-flammable construction; or (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. Note: dedicated fire-fighting water storage is in addition to water supply for household use and does not include swimming pools, creeks and dams.	NA	
	AO11.2 For development that proposes one or more buildings with a combined GFA greater than 500m ² there is no acceptable outcome provided.		
PO12 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.	AO12 The outlet pipe is 50mm in diameter, fitted with a 50mm male camlock (standard rural fire brigade fitting) and an isolating valve.	NA	



Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
PO13 In a bushfire hazard area, water storage provided for fire-fighting purposes is safely located and accessible at all times.	AO13.1 The water supply outlet is located at least 9m from any potential fire hazards, such as venting gas bottles and combustible structures.	The proposed development is understood to not the bulk manufacture of storage of hazardous materials.	
	AO13.2 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.		
PO14 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.	AO14.1 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: (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.	The proposed development will be on reticulated water supply, and it is consequently expected to meet the flow and pressure characterises detailed above. Verification of this via the utility provider is recommended. Where achieved, the proposed development deemed to be in accordance with the GCCC planning scheme requirements	
	AO14.2 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.		
Storage of Hazardous Materials			
PO15 Development does not cause: (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.	AO15 Development involving the storage, handling or manufacture of hazardous chemicals is not located within a Bushfire hazard area.		
Advice to new residents			
PO16 In a bushfire hazard area, new residents/occupants of a development in a bushfire hazard area are informed about:	AO16 A copy of the Bushfire management plan, complete with the Queensland Fire and Emergency Services cover sheet and any other addendums is	NA	



Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
(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. Editor's note - Further information on bushfire preparation can be found at www.ruralfire.qld.gov.au	provided to each resident/occupant for their information. 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.		



4.0 Recommendations and Conclusions

This report details the assessment of Bushfire Hazard and risk mitigation measures acting on the proposed development, with consideration to the requirements of: the *Queensland State Government Single State Planning Policy - Part E* (SPP 2017); the *Bushfire Resilient Communities Technical Reference Guide (QFES, 2019)*; the Australian Standard (AS 3959- 2018) - *Construction of buildings in bushfire prone areas*; and the *GCCC Bushfire Hazard Overlay Code*.

This assessment has confirmed vegetation posing a Medium Potential Bushfire Hazard to the proposed development is present to the west, south through southeast and to the northeast (Refer Section 2.2). These vegetation communities have the potential to accumulate moderate fuel loads and subsequently present a potential Bushfire Hazard to the proposed development. Vegetation in all other directions have been classified as having a Low Potential Bushfire Hazard.

The following Bushfire Risk Mitigation Measures, as detailed above, are considered appropriate to substantially mitigate the Bushfire Hazard acting on the proposed development:

- Asset Protection Zone (APZ) widths have been considered for areas of the proposed development (refer Section 3.1). The proposed development does not involve the construction of Class 1-3 structures, and consequently Building Construction Standards, as detailed in the Australian Standard – Construction of Buildings in Bushfire-prone Areas (AS3959:2018), are not deemed applicable.
- As the GCCC code does not contain provisions that identify acceptable radiant heat flux levels to inform APZ's for industrial uses, APZ's are not deemed to be triggered by QFES 2019 for industrial uses. It is noted that the proposed development is an approved light industrial use, and the construction standards are understood to be tilt panel walls, with roofing buffered by these tilt panels, ingress of embers is considered to be of limited potential.
- Vegetation management within the APZ has been detailed to ensure low fuel availability and reduced connectivity to buildings (refer Section 3.3).
- **N.B.** Due to no requirement for an APZ, no ongoing management of vegetation in the adjacent waterway corridor is applicable.
- Emergency Access & Egress of the proposed development has been detailed and is considered appropriate for the Bushfire Hazard acting on the site (refer Section 3.4). The proposed site access, hardstand areas are considered appropriate to service the proposed development in the event of a bushfire emergency.



- Water Availability for Fire-fighting Purposes as per Councils Planning Scheme has been detailed (refer Section 3.5). The proposed development will be on a reticulated water supply, and it is subsequently understood this supply will meet the minimum flow and pressure characteristics (i.e. 10L/Sec at 200kPa) for fire-fighting purposes at all times. Fire-fighting water supply and hydrants is understood to be in accordance with Qld Urban Utilities Standards, and/or the QFES guideline '*Fire Hydrant & Vehicle Access Guidelines for Residential, Commercial & Industrial Lots (2015)*'.
- Utility Protection and Hazardous Material requirements for the proposed development have been detailed (refer Section 3.6).
- Assessment against Councils Bushfire Hazard Overlay Code has been prepared and detailed in Section 3.7.

This assessment has been undertaken based on vegetative condition and bushfire hazards identified on and adjacent the subject site in March 2026.

It should be noted that the recommendations within this BMP have been formulated based on site conditions at the time of writing and utilising current best-practise hazard and impact assessment methodologies, and have been developed to reduce the potential severity of impacts on the proposed development in the event of a bushfire emergency rather than prevent impacts altogether. No guarantee is provided or assumed that the area will not be affected by bushfire at some time.

Site occupants should seek advice from the local fire authority every 5 years (as a minimum) to ensure the subject recommendations remain appropriate as site conditions and hazard assessment methodologies may change over time.

Bushfires are an intrinsic part of Australia's environment, are often unpredictable, and have potentially extremely serious consequences. All Queenslanders should be familiar with the official Bushfire Warnings system and have a completed Bushfire Survival Plan. Print ready guides for preparing a Bushfire Survival Plan and to assist in the interpretation of the official Bushfire Warnings system are available for download from the Queensland Fire Department website:

Current Bushfires: <https://www.fire.qld.gov.au/Current-Incidents>

Bushfire Warnings: <https://www.fire.qld.gov.au/prepare/bushfire/tune-in-to-warnings>

Bushfire Survival Planning: <https://www.fire.qld.gov.au/prepare/bushfires>

There are three formal Bushfire Warning levels:



Advice

Monitor conditions and review your bushfire survival plan.



Watch and act



Conditions are changing. Start taking action and follow your bushfire survival plan.



Emergency Warnings

You are in danger. Act on your bushfire survival plan now.