

JANUARY 2026

# Bushfire Hazard Assessment

184 & 198 GARDNER ROAD AND 56 FARLEY ROAD, ROCHEDALE  
FOR GARDNER RD DEVELOPMENTS PTY LTD



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#### Version Control

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#### Suitably Qualified Person Statement

This BMP has been prepared by Stephen Hayes, a suitably qualified and experienced Bushfire Consultant with over 25 years of relevant experience in Environmental Management & Bushfire Planning and Design experience in Queensland. Stephen is the Director of Environment and Principal Bushfire Analyst for Therefor Group Pty Ltd, with AQF level 8 qualifications in Bushfire Protection and Environmental Science 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 Bushfire Resilient Communities Technical Reference Guide (QFES, 2019).

According to the SPP SQP minimum standards, Stephen provides extensive demonstrated experience and extensive relevant industry experience over his 25-year career as a bushfire consultant. This is further supported by his extensive technical skills in ecological assessment and the application of various GIS platforms. Relevant qualifications in demonstration of Stephens' AQF Level 8 status are as follows:

- Graduate Certificate Bushfire Protection, University of Western Sydney, 2019
- Bachelor of Science (Environmental Science) Honours Class 1, University of the Sunshine Coast, 2005
- Bachelor of Science (Environmental Science), University of the Sunshine Coast, 2004
- Certificate III Applied Environmental Practice - Conservation, TAFE, 2000

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# 1. Introduction

## 1.1 Background

Therefor Group Pty Ltd has been engaged by Gardner Rd Developments Pty Ltd (hereafter referred to as ‘the client’) to prepare a Bushfire Hazard Assessment (**BHA**) for a Reconfiguration of Lots (3 into 16)(Preliminary) and a preliminary approval for a Material Change of Use (Warehouse, Low Impact Industry, Research & Technology Uses, and Multiple Dwellings) located at 184 & 198 Gardner Road, and 56 Farley Road, Rochedale, formally described as Lot 102 on SP226721, Lot 3 on RP114765, and Lot 6 on RP114765 (hereafter referred to as the ‘subject site’). The subject site encompasses approximately 12.9 hectares (129,274 m<sup>2</sup>) and is located within the Brisbane City Council (**BCC**) local government area.

## 1.2 Purpose of the Report

This Bushfire Hazard Assessment has been formulated to identify the potential bushfire risk to the proposed subdivision layout and provide associated recommendations to mitigate the adverse effects of the risks identified.

## 1.3 Objectives of the Assessment

The objectives of this report are:

- To identify bushfire hazard constraints associated with the proposed subdivision layout.
- To quantify the bushfire hazard potential of vegetation associated with the site and its surrounds.
- To identify and quantify potential site use exposure and risk.
- To provide mitigation options to reduce the identified bushfire threat.
- To demonstrate compliance with the relevant regulatory framework.
- To inform potential site end-users of the threat and management strategies to reduce bushfire threat.

## 1.4 Key Definitions

The **subject site** is defined as Lot 102 on SP226721, Lot 3 on RP114765, and Lot 6 on RP114765.

The **development footprint** is the identified area intended to support the Lot Configuration and Material Change of Use

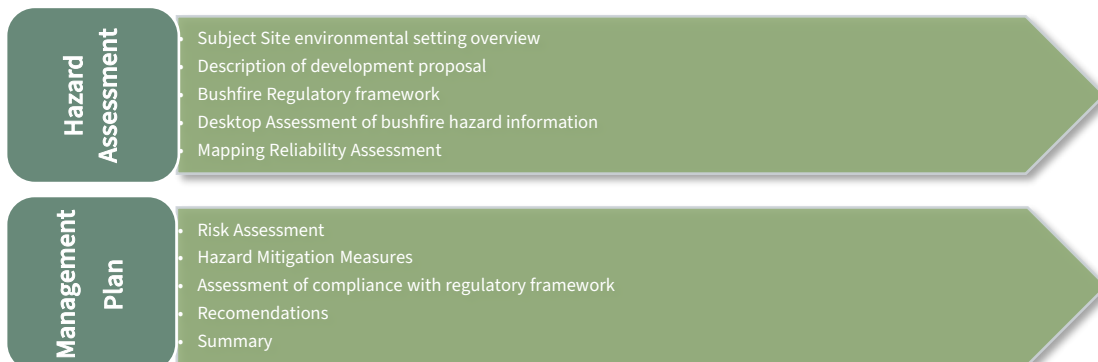
The **study area** is land located within approximately 150m of the footprint.

The **locality** is land within an approximate 2km radius of the subject site.

## 1.5 Outline of the Assessment

This BMP has been structured to provide information consistent with the requirements of the methodologies detailed in Leonard *et al* (2014), AS3959:2018 (Standards Australia 2018), Brisbane City City Plan (2014) (**BCCP2014**), Natural Hazards, Risks and Resilience – State Planning Policy State Interest guidance material (DSDMIP 2019) and Bushfire Resilient Communities Technical Reference Guide for the State Planning Policy State Interest ‘Natural Hazards, Risk and Resilience – Bushfire’ (QFD 2019).

The BMP is structured as follows:



## 2. Site Analysis

### 2.1 Site Location and Characteristics

The subject site is located at 184 & 198 Gardner Road and 56 Farley Road, Rochedale, within the BCC. The site has a total area of approximately 12.9 hectares and is situated 13.5km south east from Brisbane CBD.

The site comprises three (3) lots currently used for rural residual purposes. The land parcel to the east holds a dwelling, in addition to cropping fields. The western land parcels both hold single residential dwellings which front Gardner Road, with the remaining balance comprising managed and unmanaged vegetation. A mapped BCC waterway corridor traverses through the central portion of the western land parcels and the southern portion of the eastern land parcel, and additionally extends to area within the surrounding locality. Vegetation associated with the waterway corridor currently comprises overgrown exotic riparian species with limited tree coverage.

The surrounding locality holds protected vegetation directly north of the subject site, whilst the remainder of the surrounding locality comprises rural residential land parcels. The western extent subject site has direct frontage to Gardner Road, whilst the northeastern extent connects to Farley Road.

**Figure 1** provides an aerial image of the subject site in the context of the surrounding land uses and physical features.

### 2.2 Site Topography

The subject site's topography is broadly described as 'undulating low hills' (Speight 2009). The dominant landform pattern of the site consists of the waterway corridor traversing through the site with a gentle incline from either side of the bank. Additionally a manmade dam is located in the northeastern extent of the site which hold a moderate incline from the bank. The subject site exhibits an average slope gradient of 3°, from 29m ASL within the waterway corridor to the north of the site to 50m ASL as the western boundary.

**Figure 2** displays the site's topography, as demonstrated by LiDAR-sourced topographic contours at 1m intervals and slope categorisation.

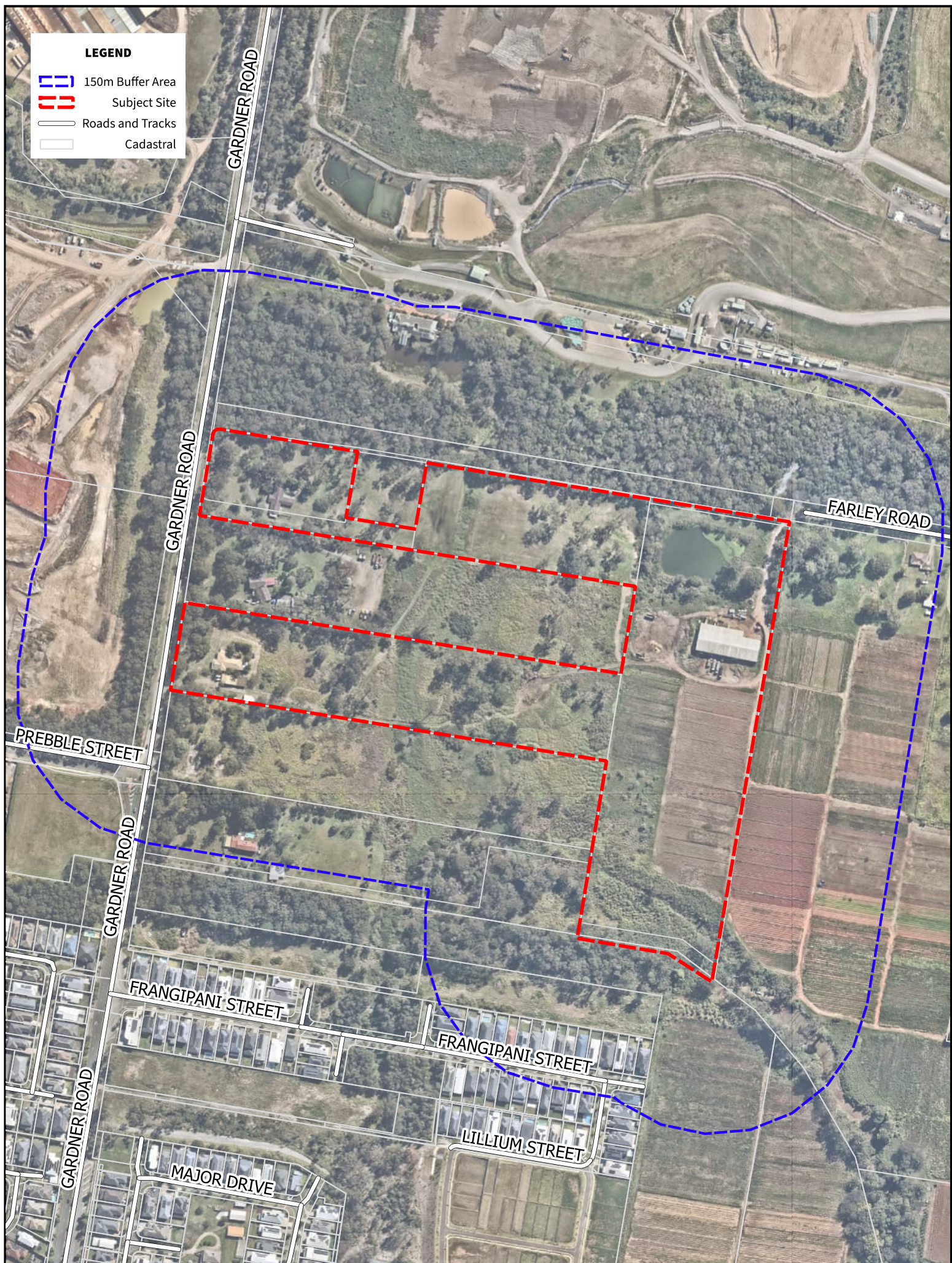
### 2.3 Geology and Soil

The subject site is located within the South-East Queensland Bioregion (Bioregion 12) and features three (3) distinct areas of surface geology. Desktop analysis indicates that majority of the subject site is underlain by Sunnybank Formation stratified sedimentary rock, classified as (**Tos**). The dominant surface geology primarily consists of Lacustrine and fluvial quartzose to sublabe sandstone, conglomerate, silty clay, siltstone, and clayey mudstone. The central extent of the western land parcels are underlain by Tingalpa Formation stratified mudrock, classified as (**Rin**). The dominant surface geology primarily consists of siltstone, shale, and thin coal seams. The northern central extent of the western land parcel is underlain by Quaternary aged stratified colluvium, classified as (**Qr**). The dominant surface geology primarily consists of clay, silt, sand, gravel, and soil. Both Tos and Rin geologies conform with the Department of Environment and Science description of Land Zone 5, typically characterised by Tertiary-early Quaternary loamy and sandy plains and plateaus, whilst the Qr geology conforms to the Department of Environment and Science description of Land Zone 3, typically characterised by recent Quaternary alluvial systems.





The geological configuration of the subject site is demonstrated in **Figure 3**.

### 2.4 Current Land Uses

The subject site is located within the BCC Local Government Area (LGA). Pursuant to the BCP2014, the subject site is zoned as Emerging Community. The surrounding lots are zoned as emerging community, environmental management, or special purposes (utility services) and primarily consist of unimproved land and/or holding dwellings on acreage land. The land zones as special purpose sites currently hold a landfill site.



**LEGEND**

-  150m Buffer Area
-  Subject Site
-  Roads and Tracks
-  Cadastral

**Figure 1 - Aerial Image of Study Area**

184 & 198 Gardner Rd and 56 Farley Rd, Rochedale

Brisbane City Council

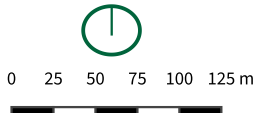
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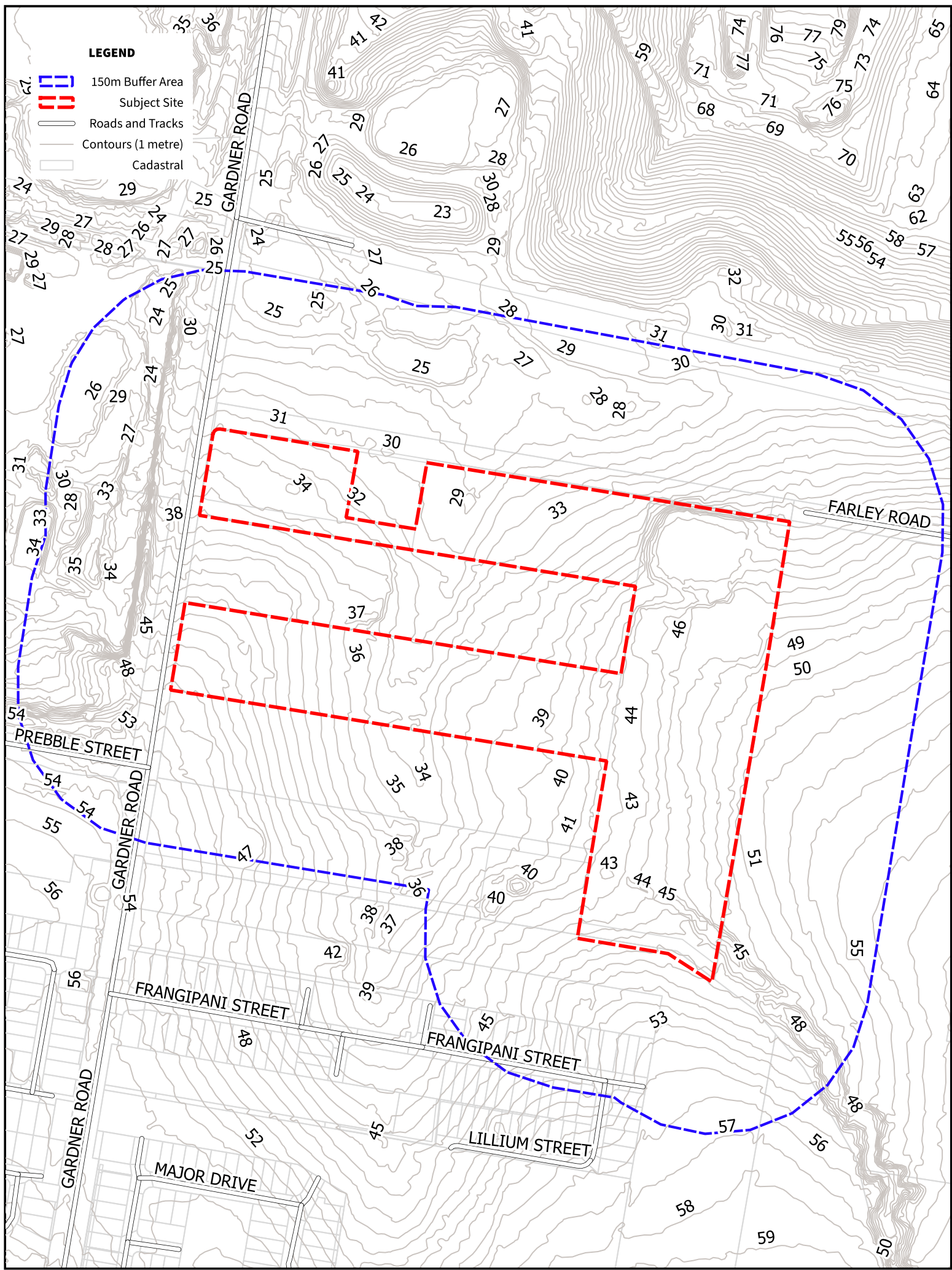
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**Figure 2 - Topography of Study Area**

184 & 198 Gardner Rd and 56 Farley Rd, Rochedale

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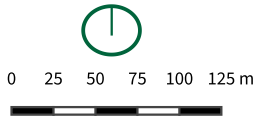
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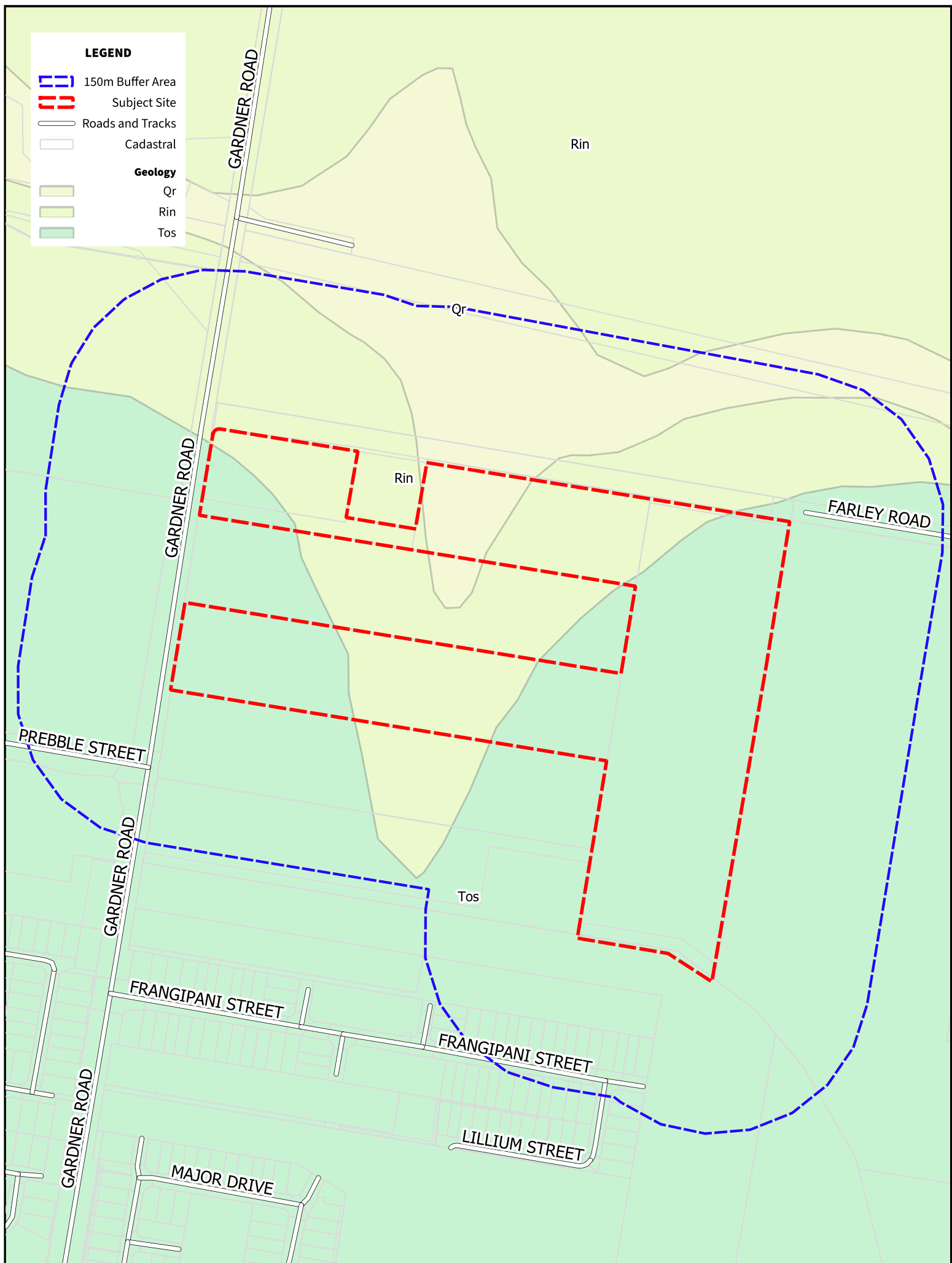
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**Figure 3 - Geology of Study Area**

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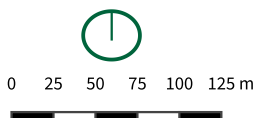
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### 3. Development Proposal

The development application seeks approval for a Preliminary Approval for Material Change of Use (Warehouse, Low Impact Industry, and Multiple Dwellings), including a variation request to vary the planning scheme, in addition to Reconfiguring a Lot – Three (3) into Sixteen (16) lots (preliminary) within the subject site. The development will also include the construction of a new road through the development with a minimum width of 19.5m, and connect the end of Farley Road to Gardner Road.

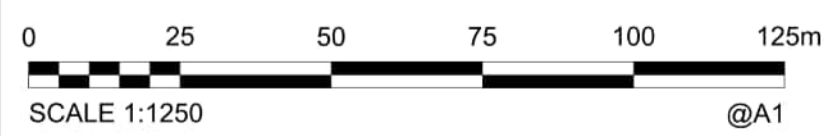
Refer to **Figure 4** to view the Development Proposal.



- Legend**
- Site Boundary
  - Industrial Variation Area
  - Residential Variation Area

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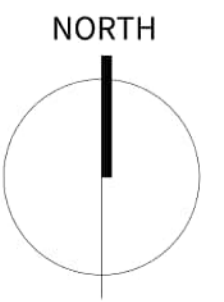
PROJECT  
 198 & 202 Gardner Road  
 Rochedale

PROJECT NO.  
 23-0329P/01

DRAWING NAME  
**Sketch Plan**  
 LOT DESCRIPTION  
 Part of Lots 102 on SP226721, 3 & 6 on RP114765  
 LOCAL GOVERNMENT  
 Brisbane City

REV	DESCRIPTION	DRAWN	APPROVED	DATE
A	Original Issue	JC	MW	19-12-2025
B	Minor Updates	JC	MW	12-01-2026
C	Minor Updates	JC	MW	13-01-2026

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## 4. Bushfire Regulatory Framework

### 4.1 State Planning Policy

In QLD, bushfire legislation and all other development-related regulations are regulated under the *Planning Act 2016 (PA)*, which represents the principal planning instrument governing all planning matters state-wide (DILGP 2017).

Under the PA's framework, development regulation is driven by the QLD State Planning Policy (**SPP**), which identifies matters of state interest (State of Queensland 2017). According to the PA's requirements, all local government entities must incorporate matters of state interest within local government planning instruments.

A proposed subdivision layout within a designated bushfire-prone area is identified in the SPP as a matter of state interest, included under the title '*Natural Hazards, Risk and Resilience*'. As such, the SPP represents the primary planning instrument, subordinate to the PA, related to bushfire hazard management in QLD. The current SPP identifies a bushfire hazard area as (State of Queensland 2017):

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An area identified by a local government in its planning scheme as a bushfire hazard area based on a fit-for-purpose bushfire study; or

An area designated as a bushfire hazard on the SPP Interactive Mapping System.

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Given the above definition, both the State and Local Government have the ability under the SPP to identify and map bushfire hazard areas as a development constraint (Leonard et al. 2009).

In addition to the material provided in the SPP, the policy is supported by the State Planning Policy Interest Guidance Material (DSDMIP 2019), which includes the State's example bushfire-prone areas code. Where a local government planning instrument has not been prepared under the SPP or where the local planning scheme is not relevant to the application, the 'example's code takes precedence to ensure the State interest is addressed appropriately. Both the SPP and the SPP guidance material are supported by the QFD document *Bushfire Resilient Communities Technical Reference Guide* for the State Planning Policy State Interest 'Natural Hazards, Risk and Resilience – Bushfire' (QFD 2019) that provides the best practice methods under which to undertake a bushfire hazard assessment in line with the SPP outcomes.

**Section 5.1** below discusses the State Government's assessment of bushfire hazard for the subject site.

### 4.2 Local Planning Scheme

Notwithstanding the above, at a functional level, Local Government planning schemes provide the actual development constraints and opportunities within their development codes and zoning considerations. Each LGA has its own interpretation of the SPP guidelines, but all are designed to represent the state interest (where up to date) in this and all state interest matters. This site is subject to the provisions of the *BCCP2014*, particularly Section 8.2.5 of the Bushfire Hazard Overlay Code, which has the primary purpose of managing the potential bushfire risk associated with assessable development appropriately.

**Section 5.1** below discusses the Local Government's assessment of bushfire hazard for the subject site.

### 4.3 Australian Standard 3959:2018

*Australian Standard (AS) 3959:2018* (Construction of buildings in bushfire-prone areas) requires all new habitable structures built in a bushfire-prone area to undergo a Bushfire Attack Level (**BAL**) assessment to determine the appropriate BAL construction level. It is worth noting that detailed construction methods and materials are beyond the scope of this report, as these details are typically addressed as part of a detailed building design certified under the Private Building Certification provisions of the National Construction Code. However, the methods and standards in *AS3959:2018* enable a best practice method of adequately addressing bushfire risk mitigation during the development approval stage.

## 4.4 National Construction Code

The *National Construction Code 2022 (NCC)* establishes primary technical and construction provisions for new buildings within Australia. The code establishes performance-based standards to ensure minimum levels of safety, health, amenity, accessibility, and sustainability in building classifications, in accordance with the purpose for which the structure is designed or intended for use. Classification of future dwellings and required construction requirements will be assessment as the detail design phase of the application.

# 5. Bushfire Hazard Assessment

## 5.1 Desktop Assessment

### SPP Bushfire Prone Areas

The QLD SPP recognises the study area as containing three (3) areas of Potential Bushfire Intensity, encompassing the vegetation primarily associated with the mapped waterway corridor and protected vegetation to the north. The associated Potential Impact Buffer (100m) encompasses a large portion of the central extent of the subject site.

Refer to **Figure 5** for an extract of the SPP Bushfire Prone Area mapping for the subject site and surrounding area.

### Local Bushfire Hazard Overlay

The *BCCP2014* Bushfire Hazard overlay mapping recognises the study area as containing two (2) contiguous areas of Medium to High Potential Bushfire Intensity. The hazardous vegetation is located in the northern and southern extents of the subject site and surrounding locality, with the Potential Impact Buffer encompassing majority of the subject site. The extent of hazard areas corresponds to the distribution of remnant and/or non-remnant vegetation communities present within the study area and its surrounding areas at the time of mapping.

Refer to **Figure 6** for an extract of the *BCCP2014* Bushfire Hazard overlay mapping for the subject site and surrounding area.

### Vegetation Community Assessment and Fuel Loads








The Department of Resources (**DoR**) Regional Ecosystem mapping database was interrogated to determine vegetation communities that could contribute to the bushfire hazard. The Regional Ecosystem mapping indicates that the vegetation within the study area is classified as primarily Category B remnant vegetation, with a small corridor to the west of the site containing Category C regrowth vegetation. The regional ecosystem descriptions within the study area are as follows:

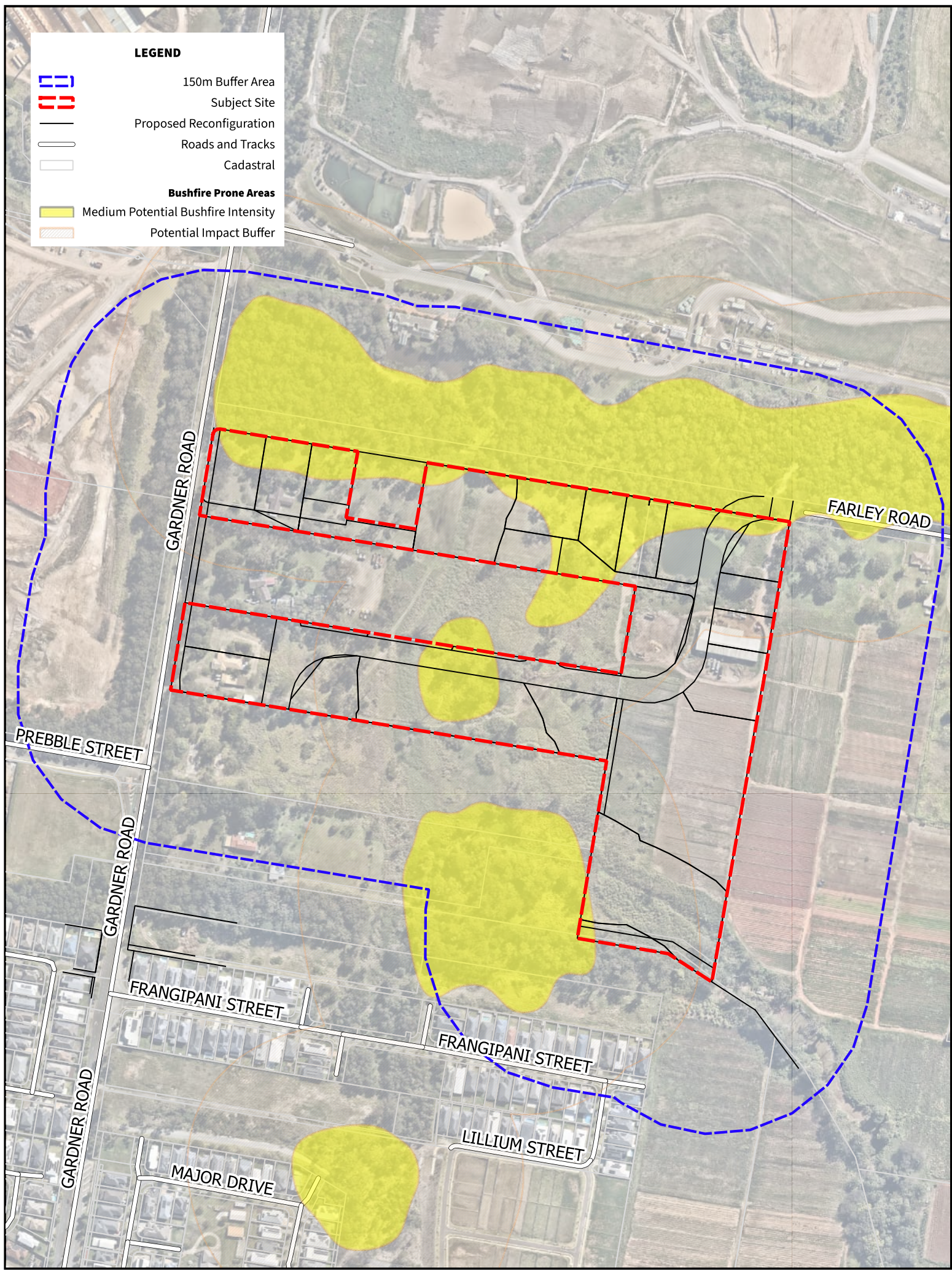
- RE12.5.3 - *Eucalyptus racemosa subsp. racemosa* woodland on remnant Tertiary surfaces
- RE12.5.9a - *Melaleuca nodosa* low open forest on complex of remnant Tertiary surface and Tertiary sedimentary rocks
- RE12.3.11 - *Eucalyptus tereticornis* ± *Eucalyptus siderophloia*, *Corymbia intermedia* open forest on alluvial plains usually near coast

Refer to **Figure 7** for a spatial representation of regional ecosystem designations surrounding the subject site.

A review of the Queensland Fire Department (**QFD**) Vegetation Hazard Class (**VHC**) Fuel Load table (July 2019) provides an accepted conversion of RE descriptions to appropriate Vegetation Hazard Class descriptions. It provides the 80th percentile potential fuel load (**PFL**) categories for the relevant vegetation community, as replicated in the table below (refer to **Table A**).

**LEGEND**

-  150m Buffer Area
-  Subject Site
-  Proposed Reconfiguration
-  Roads and Tracks
-  Cadastral
- Bushfire Prone Areas**
-  Medium Potential Bushfire Intensity
-  Potential Impact Buffer



**Figure 5 - SPP Bushfire Prone Area Mapping**

184 & 198 Gardner Rd and 56 Farley Rd, Rochedale

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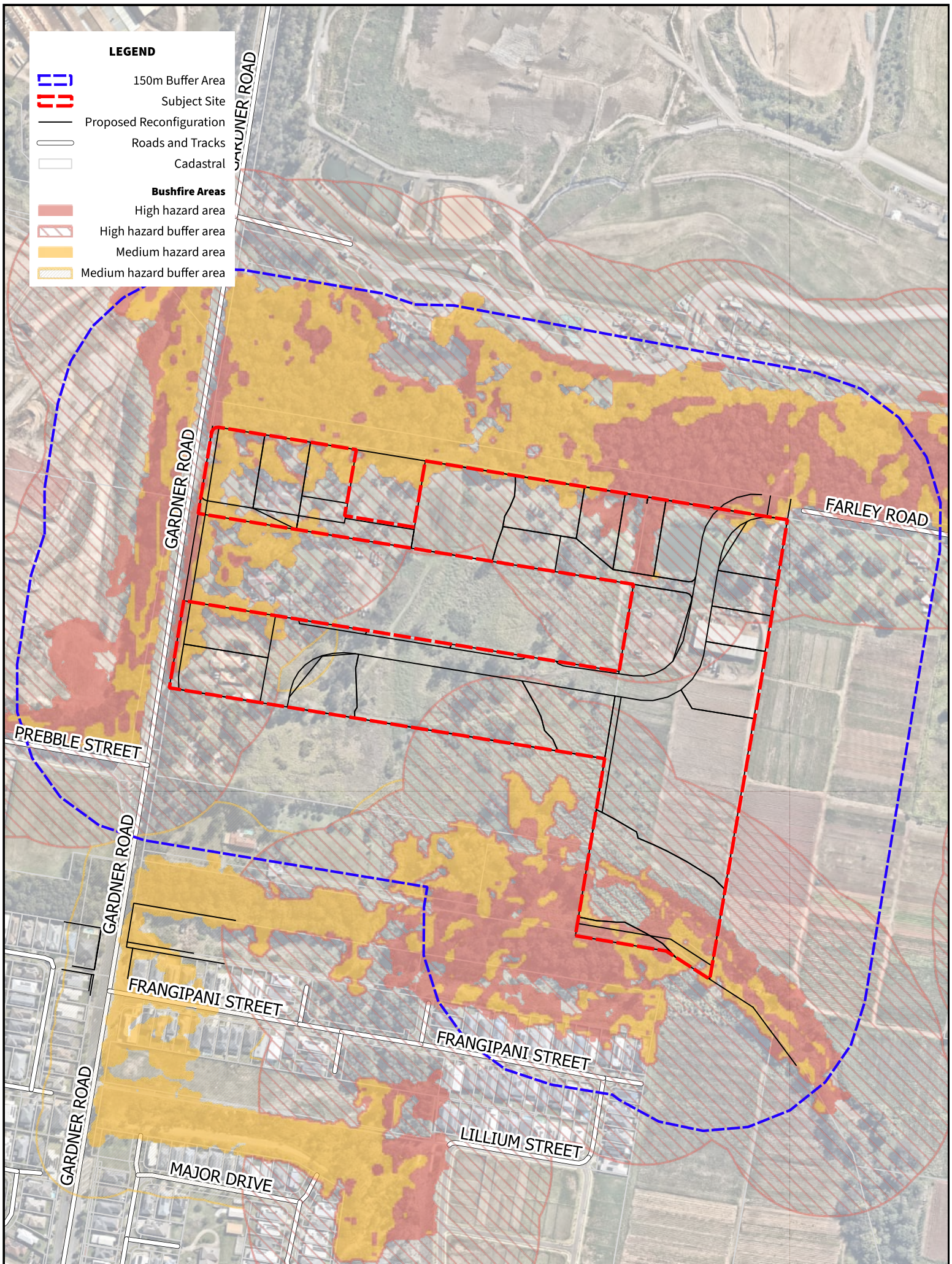
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






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**LEGEND**

-  150m Buffer Area
-  Subject Site
-  Proposed Reconfiguration
-  Roads and Tracks
-  Cadastral
- Bushfire Areas**
-  High hazard area
-  High hazard buffer area
-  Medium hazard area
-  Medium hazard buffer area

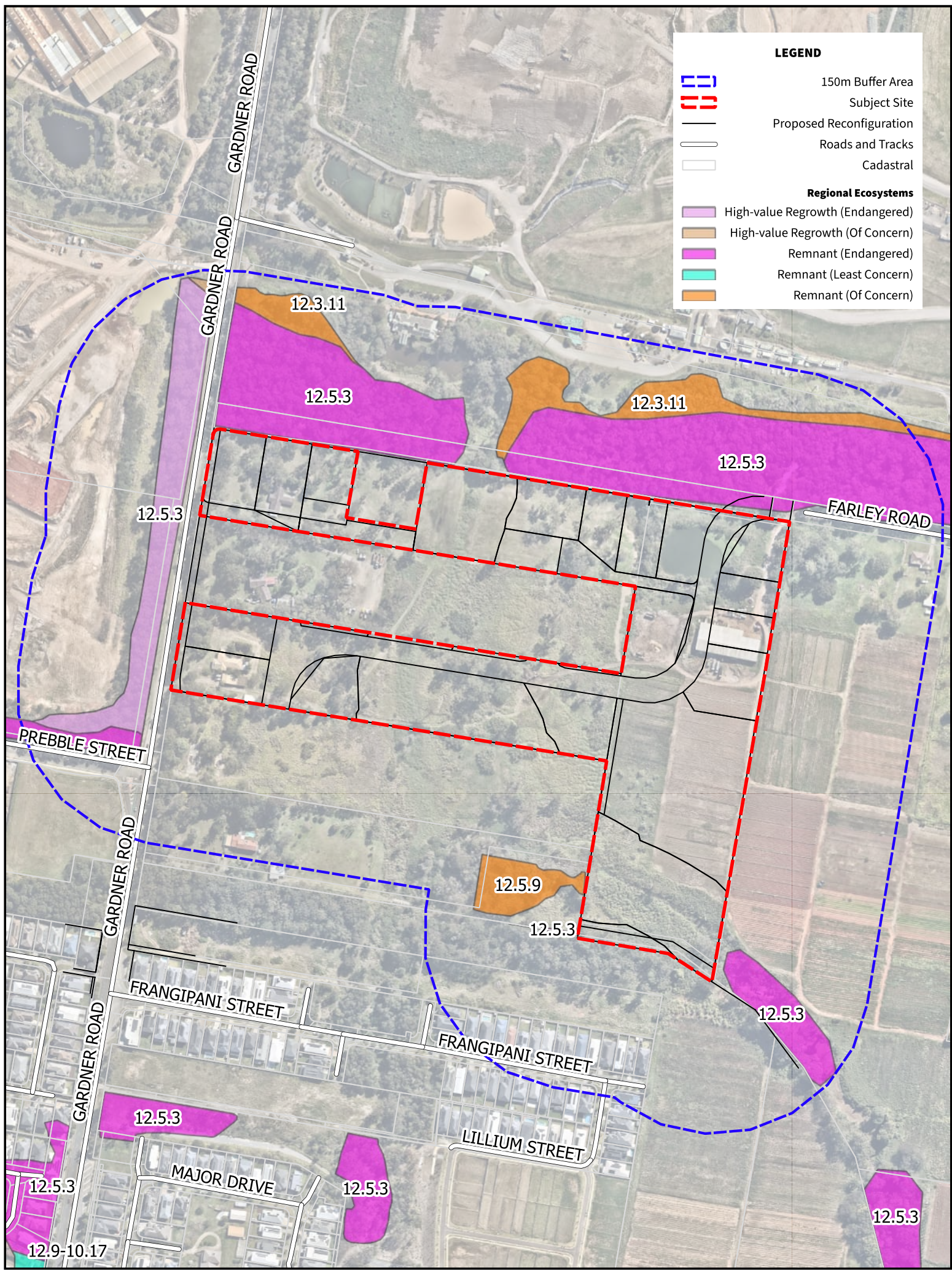
**Figure 6 - Local Bushfire Hazard Overlay Mapping**

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Brisbane City Council






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**LEGEND**

-  150m Buffer Area
-  Subject Site
-  Proposed Reconfiguration
-  Roads and Tracks
-  Cadastral

**Regional Ecosystems**

-  High-value Regrowth (Endangered)
-  High-value Regrowth (Of Concern)
-  Remnant (Endangered)
-  Remnant (Least Concern)
-  Remnant (Of Concern)

**Figure 7 - Regional Ecosystems of Study Area**

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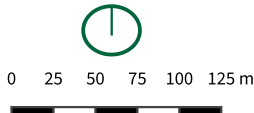


Table A - QFD PFL according to the converted VHC

RE Code	VHC Code	VHC Description	Potential Fuel Load (t/ha)				
			S	NS	E	B	Total*
12.5.3	9.1	Moist to dry eucalypt open forests on coastal lowlands and ranges	17.50	3.50	2.20	1.00	24.20
12.5.9a	21.1	Melaleuca dry open forest on sandplains or depositional plains	7.80	3.70	1.40	2.00	14.90
12.3.11	16.1	Eucalyptus dominated forest on drainage lines and alluvial plains	10.00	3.80	1.20	1.00	16.00

Where S = Surface, NS = Near Surface, E = Elevated, B = Bark  
 \*Total potential fuel load represents understory loads only

### Slope Assessment

Analysis of 1m contours obtained for the study area indicates that hazardous vegetation areas identified north and within the are located *Downslope* from the proposed subdivision layout at an average grade of 0° to 5°. It is anticipated that future developments will level the land to facilitate lot development, and as such a site slope of 1.00° is nominated.

Refer to **Figure 8** for a representation of slope categorisation within the study area.

### Fire Weather Severity

Following AS3959-2009 S.2.2.2 Table 2.0, Queensland's Regional Fire Danger Index is nominated as FFDI 40. However, a review of relevant data developed by the Queensland Fire Department (QFD) in conjunction with CSIRO suggests that a regional-specific FFDI value of 54 is appropriate for the site. This value anticipates future climate trends to 2050 and a 5% annual exceedance probability (AEP). As such, using FFDI 54 is considered a conservative approach to this assessment.

## 5.2 Reliability Assessment

Therefor Group's bushfire specialists undertook a desktop review of the available resources to ensure the reliability of the vegetation and subsequent hazard mapping classification. The following sections detail the outcomes of this assessment.

### Hazard Area Assessment

All vegetation within the subject site and study area was assessed to identify potential fire hazards to the proposed subdivision. As a result, three (3) potential hazard areas with distinct spatial, fuel and topographical characteristics were determined. The identification of hazard areas has additionally considered approved or lodged development applications within the study area, with particular attention to proposed rehabilitation projects (current and future), given that rehabilitated areas will develop into mature hazardous vegetation.

**Table B** below summarises these hazard areas.

All other areas within the study area have been assessed as 'low threat' pursuant to the exclusions stipulated in *Section 2.2.3.2 of AS 3959-2018* and have consequently been excluded from the assessment.

As demonstrated in **Figure 9**, vegetation hazard mapping indicates that areas within the study area meet the following exclusionary criteria:

- Vegetation of any type more than 150 m from the site;
- Areas of vegetation less than 1 ha in area, not within 100 m of classified vegetation;
- Strips of vegetation less than 50 m in width, not within 20 m of classified vegetation;
- Permanently non-vegetated areas (i.e. waterways, exposed beaches, roads, footpaths, buildings), and
- Vegetation is regarded as a low threat due to factors such as flammability, moisture content, or fuel load (i.e., managed grassland, mangroves, and other saline wetlands, maintained lawns and gardens, agricultural cropping, maintained public reserves and parklands, and windbreaks).

**Table B - Identified Hazard Areas**

Fuel Area	Description	Location
HA1	Area of remnant/future regrowth vegetation associated with RE12.3.11	Marginally <i>Downslope</i> from the subject site within the central and southern extent of the subject site
HA2	Area of remnant vegetation associated with RE12.5.3	<i>Downslope</i> from the development footprint to the north.

**Hazard Area Descriptions**

The following section details the individual hazard area. It provides an assessment and verification of the potential bushfire hazard classification based on a qualitative assessment of fuel characteristics and/or potential fireline intensity (kW/m).

Fireline intensity measures the rate that a fire would consume fuel energy per unit time per unit length of fire front and is based upon the following equation (following the *DILGP 2016* 'Fit for Purpose' approach):

$$PFI = 0.62 PFL^2 \times FFDI \exp(0.069 \text{ Slope}) \quad \text{(Equation 1<sup>1</sup>)}$$

The resultant fire-line intensity values are then compared with the *DILGP 2016 Potential Bushfire Hazard Classes* (**Table C** below) to transparently assess the potential hazards of the identified areas in the proposed subdivision layout.

**Table C - Potential Bushfire Hazard Classes (adopted from *DILGP 2016*)**

Hazard Class	Potential Fireline Intensity
1. Very High	40,000+ kW/m
2. High	20,000 – 40,000kW/m
3. Medium	4,000 – 20,000kW/m
4. Low	0 – 4,000kW/m

Unless otherwise detailed, **Table D** provides the references adopted for this assessment.

**Table D - Data Sources for PFI Assessment**

Variable	Reference
Vegetation Hazard Class (VHC)	(QFD 2018)
Potential Fuel Load (PFL)	(QFD 2018)
Slope (°)	(QLD Spatial Data (1m contours))
Fire Weather Intensity (FFDI)	(QFD 2013; Leonard <i>et al</i> 2014)

<sup>1</sup> Where PFI = Potential Fire Line Intensity (kW/m), PFL = Potential Fuel Load (tonnes/ha), FFDI = Fire Weather Severity and Slope = Maximum Slope (°)

### Hazard Area 1 (HA1)

Hazard Area One (HA1) is represented by mapped remnant and proposed future regrowth vegetation. This vegetation is associated with a BCC mapped waterway corridor, currently containing remnant vegetation indicative of RE12.3.11 characterised by a *Eucalyptus tereticornis* ± *Eucalyptus siderophloia*, *Corymbia intermedia* open forest to the north of the subject site. Review of approved and in progress development applications within the surrounding locality has identified that the mapped waterway corridor is intended to be rehabilitated to represent RE12.3.11. Consequently, intended rehabilitation areas will be calculated as mature fuel load during this assessment. HA1 covers an area of approximately 11.7 hectares and is situated marginally downslope from the subject site within the central and southern extent of the subject site. HA1 is located marginally *downslope* from the subject site due to topography the waterway corridor. A small patch of mapped remnant vegetation characteristic of RE12.5.9 is located south of the mapped waterway corridor. Although this remnant vegetation has a lower PFL, it is surrounded by vegetation characteristic of RE12.3.11 and thus will be included within HA1 as a conservative assessment.

The remnant vegetation is currently classified as medium potential bushfire intensity under the SPP and *BCCP2014* Bushfire Hazard Overlay.

Based on the observed floral and structural characteristics, this assessment has adopted the corresponding fuel loads associated with 16.1 Eucalyptus dominated forest on drainage lines and alluvial plains. The slope of 2.5° has been applied to the hazard area since the slope influences fire behaviour by increasing flame length and rate of spread.

HA1 has been treated as a distinct hazard area due to its combination of unique RE classification, which differs from surrounding hazard areas and influences fire spread differently.

**Table E** below provides an assessment of the potential fire-line intensity of HA1 following Equation 1.

**Table E - HA1 Bushfire Intensity Assessment**

Fuel Area	VHC	PFL (t/ha)	Slope (°)	FFDI	PFI (kW/m)	Hazard Class
HA1	16.1	16.0	2.5	54	10,185	MEDIUM

The table above shows that HA1 is considered a *Medium* hazard area. It conforms with the classification detailed in the local and state hazard mapping, albeit in a different spatial configuration.

### Hazard Area 2 (HA2)

Hazard Area Two (**HA2**) is located north of the subject site, and represents remnant vegetation mapped as RE12.5.3, described as *Eucalyptus racemosa subsp. racemosa*. It occupies approximately 5.2 hectares and is located *downslope* from the subject site.

Fuel loads associated with 9.1 Moist to dry eucalypt open forests on coastal lowlands and ranges have been applied to this area. The slope of 2.97° has been applied to the hazard area since the slope influences fire behaviour by increasing flame length and rate of spread.

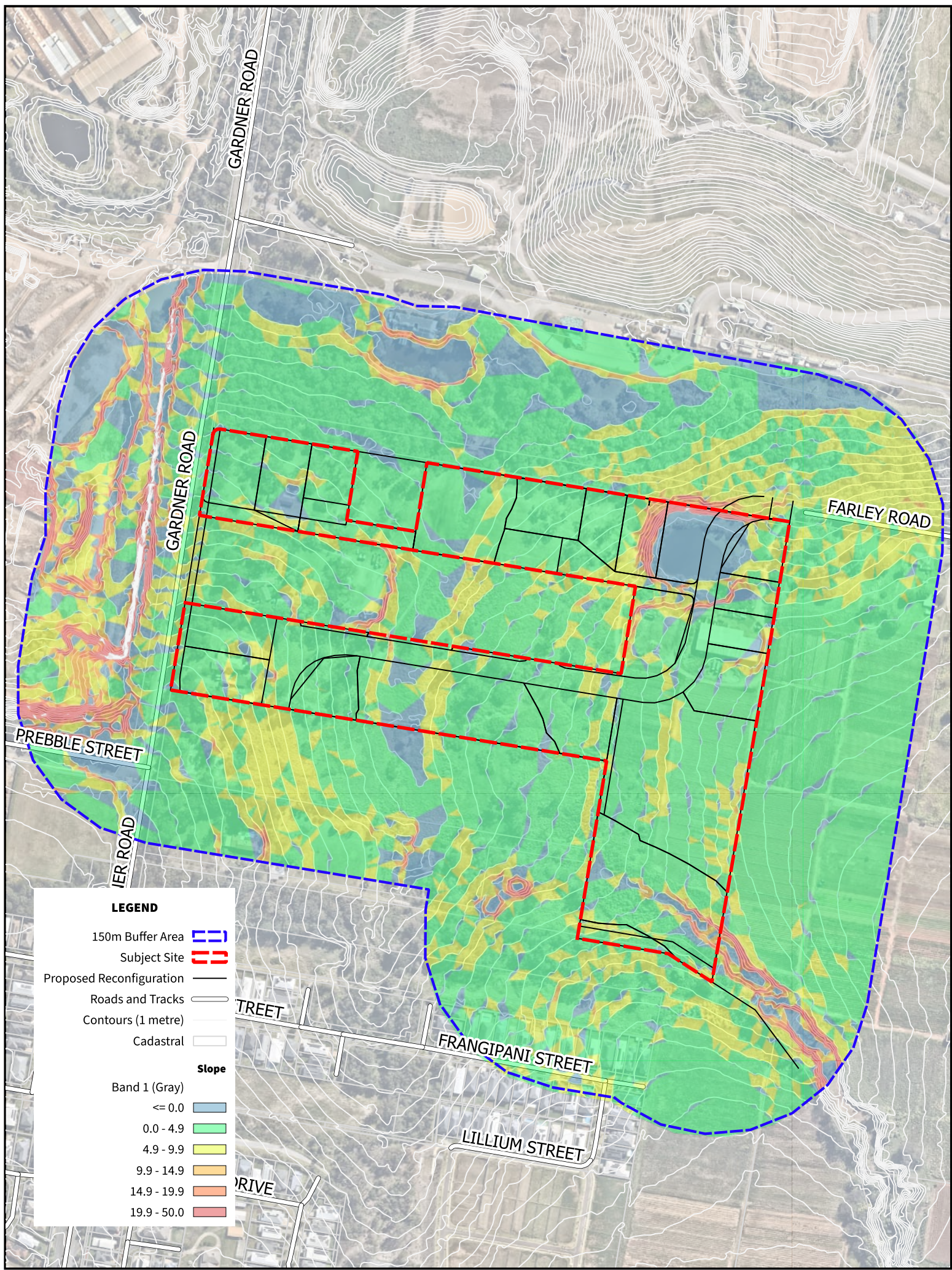
While HA2 shares similar slope categorisation with HA1, it has been separated as a distinct hazard area due to its RE classification which alters the fire behaviour model and corresponding PFI.

**Table F** below provides an assessment of the potential fire-line intensity of HA2 following Equation 1.

**Table F - HA2 Bushfire Intensity Assessment**

Fuel Area	VHC	PFL (t/ha)	Slope (°)	FFDI	PFI (kW/m)	Hazard Class
HA2	9.1	24.20	2.97	54	24,065	HIGH

The table above shows that HA2 is considered a *HIGH* hazard area and as such is inconsistent with the classification detailed in the local and state hazard mapping.



**LEGEND**

- 150m Buffer Area
- Subject Site
- Proposed Reconfiguration
- Roads and Tracks
- Contours (1 metre)
- Cadastral

**Slope**

- Band 1 (Gray)
- <= 0.0
- 0.0 - 4.9
- 4.9 - 9.9
- 9.9 - 14.9
- 14.9 - 19.9
- 19.9 - 50.0

**Figure 8 - Slope Categorisation of Study Area**

184 & 198 Gardner Rd and 56 Farley Rd, Rochedale

Brisbane City Council

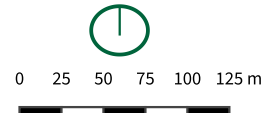
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17/12/2025

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## Figure 9 - Vegetation Hazard Class of Study Area

184 & 198 Gardner Road, and 56 Farley Road, Rochedale

Local Government Area

### EXEMPTION CODE DESCRIPTION

- A = Areas subject to regular maintenance
  - B = Buildings, structures and residential landscaping
  - C = Areas of cleared vegetation
  - D = Biohazard/Low threat vegetation (>8t/ha)
  - E = Roads and easements for future roads
  - F = Areas dedicated to cropping
  - G = Narrow corridors less than 50m in width
  - H = Hardstand areas
- Pursuant to AS3959:2018 section 2.2.3.2 and/or Bushfire Overlay Code SPP mapping Reference Guide for the SPP

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### DRAWING NO.

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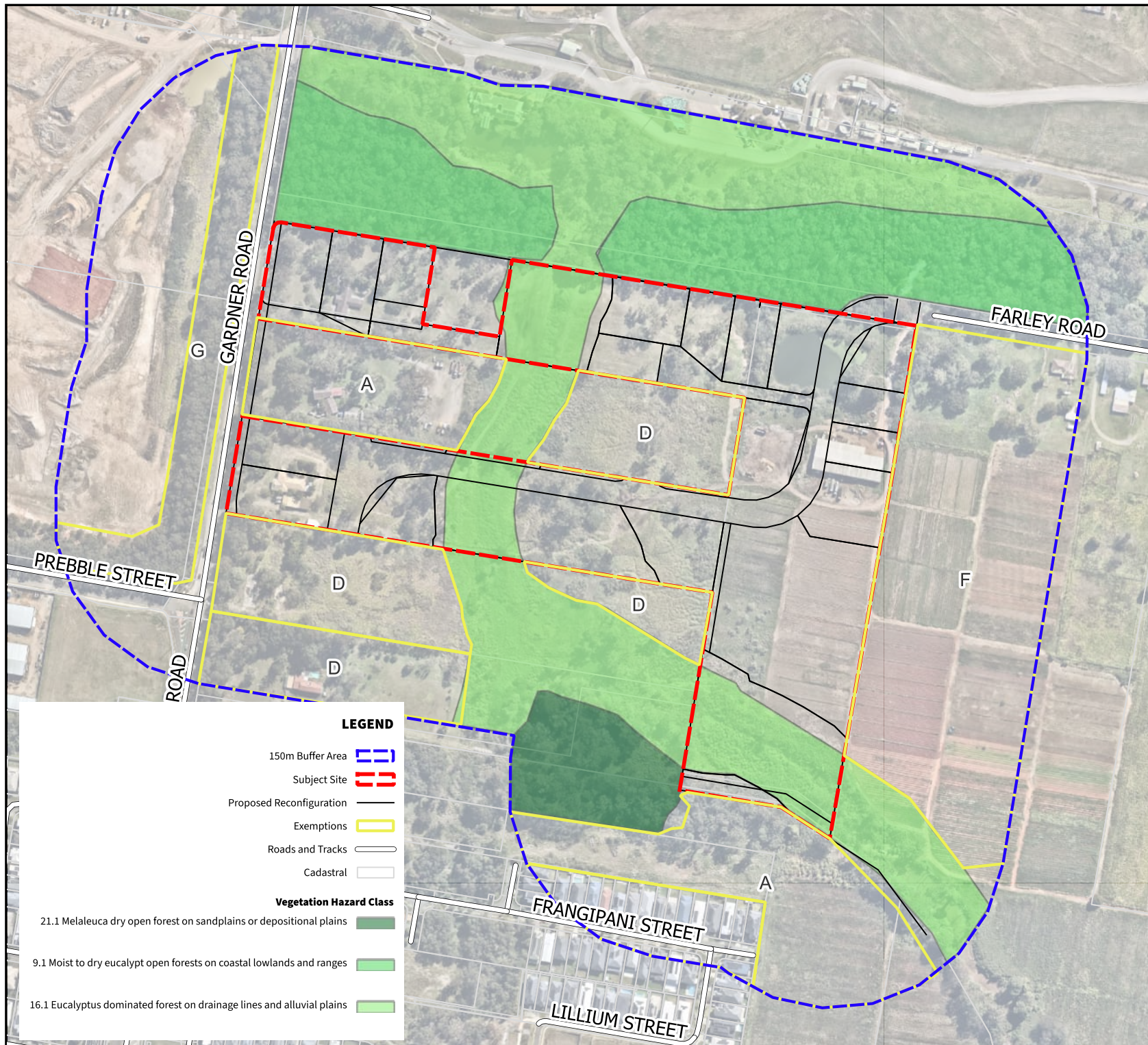
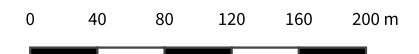
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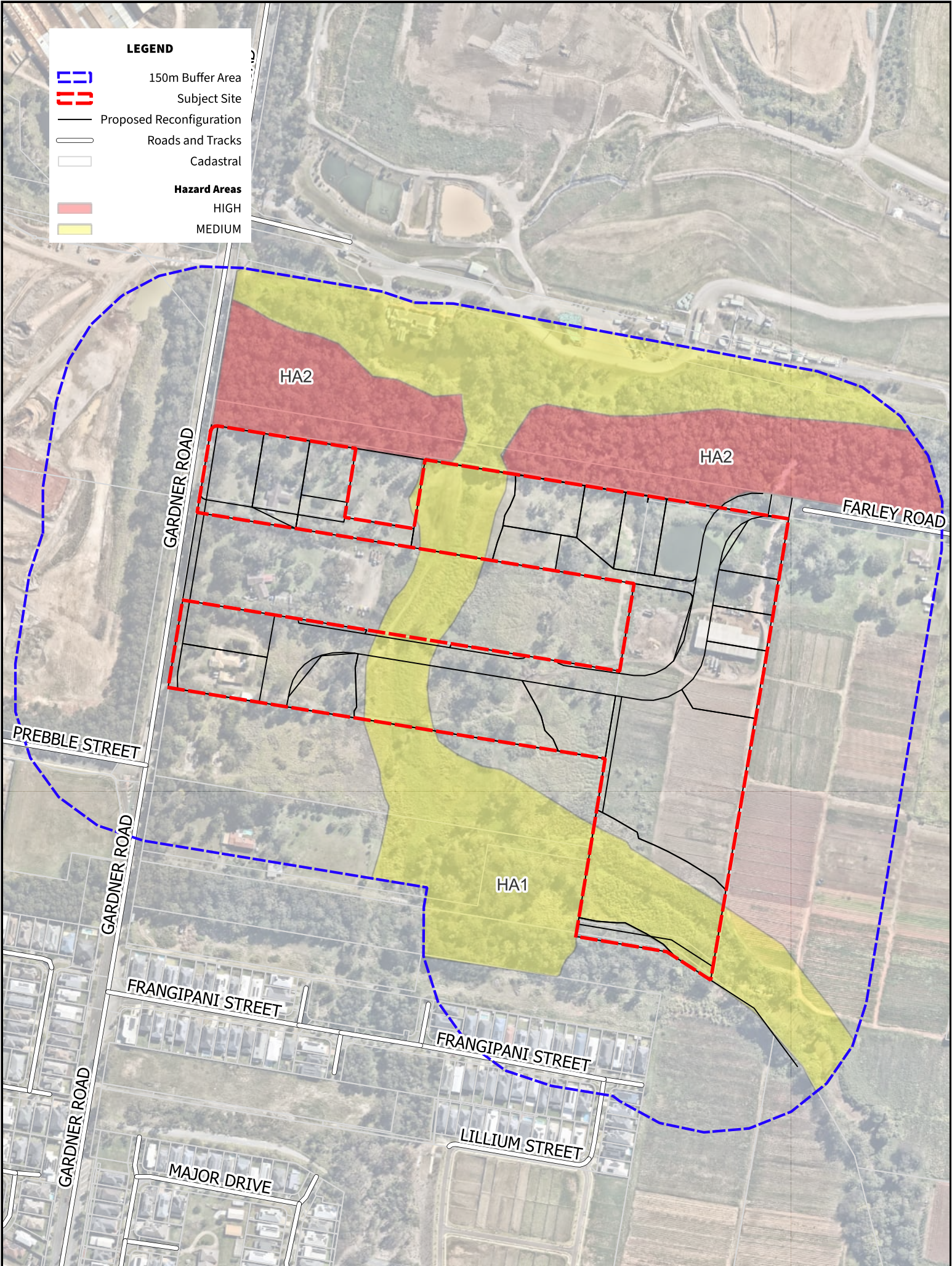


### LEGEND

- 150m Buffer Area
- Subject Site
- Proposed Reconfiguration
- Exemptions
- Roads and Tracks
- Cadastral

### Vegetation Hazard Class

- 21.1 Melaleuca dry open forest on sandplains or depositional plains
- 9.1 Moist to dry eucalypt open forests on coastal lowlands and ranges
- 16.1 Eucalyptus dominated forest on drainage lines and alluvial plains



**Figure 10 - Potential Hazard Areas**

184 & 198 Gardner Rd and 56 Farley Rd, Rochedale  
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## 6. Risk Assessment

This risk assessment has been undertaken as a qualitative assessment of the potential risks posed by an anticipated bushfire hazard following the assessment in **Section 5**. Specific risks are a function of the overall expected likelihood, vulnerability, and consequence levels.

### 6.1 Nature of Site Activities

The application seeks approval for a preliminary Material Change of Use and Reconfiguration of a Lot. The activities associated with the proposed subdivision layout are anticipated to be consistent with typical residential land use and industrial use. No specific activities are likely to be undertaken to present an increased bushfire hazard beyond what is generally expected for this type of development. However, it is acknowledged that fire incidents can be proportionate to the population density and land uses of any given area. Given this, the proposed development may result in:

- Increased risk of material scale damage to infrastructure and potential risk to life from inappropriate storage of hazardous and or explosive materials associated with industrial type land uses;
- Accidental ignition of fire within adjoining vegetation as a result of general use of the development (e.g. cigarette disposal);
- Un-controlled construction activities resulting in accidental ignition of adjoining vegetation; and
- Potential arson-related activities outside the site, not associated with the development, that result in bushland ignition.

Conversely, there is potential for a reduction in in bushfire occurrence associated with developing the subject site. The presence of a larger residential and worker population in the area will increase the detectability of potential ignition within the study area, allowing for a more rapid emergency response to be enlisted.

The risk associated with the proposed land use and the nature of associated activities would be considered tolerable with appropriate mitigation strategies and development design considerations applied.

### 6.2 Fire History

To assess past bushfire activity within the locality, aerial imagery and historical records of fire scars between 2014 and 2024 have been reviewed.

One (1) bushfire event was recorded in 2017, approximately 1.5km west of the subject site. Limited information regarding the fire's cause, extent, or conditions is available. Given that 8 years have passed since the recorded event with no further documented occurrences in the locality, this suggests a low fire recurrence interval.

The recurrence of fire at this frequency can be interpreted utilising the QERMF that provides a method to interpolate fire frequency into a likelihood rating of a wildfire occurring. The following table is replicated from the QERMF handbook.

**Table G – Event Likelihood Definitions (QFES 2018)**

Historical Likelihood	Likelihood Level	Definition
Has occurred 3 or more times in the last year or at least each year over the last 5 years.	Almost Certain	Almost certain to occur in most cases.
Has occurred twice in the last 5 years.	Likely	Likely chance of occurring in most cases.
Has occurred twice in the last 10 years.	Possible	Might occur in most cases.
May occur, and has occurred once in the past 20 years.	Unlikely	Not expected to occur in most cases.
May only occur in exceptional circumstances or has occurred only once in the last 50 years or more.	Rare	Will only occur in exceptional circumstances and has not occurred in most cases.

As can be inferred from **Table G** above, the recurrence interval of wildfires (based on available data) suggests an *Unlikely* likelihood of wildfire outbreak that would *not be expected to occur in most cases*.

In summary, the following factors indicate a *tolerable* risk outcome in regard to the likelihood of wildfire events occurring:

- The absence of recorded bushfire activity over the past 8 years suggests that fire occurrence in the locality is unlikely.
- The site benefits from surrounding road networks and cleared areas, which can act as natural firebreaks and facilitate emergency response.
- Proposed bushfire mitigation measures within **Section 7** will ensure that bushfire risk is managed to an acceptable level by meeting the adequate construction standards and setbacks outlined in *AS3959-2018*.

Based on the available data and risk assessment, the likelihood of future bushfire occurrence remains *low*, and the overall bushfire risk to the proposed subdivision layout is considered *tolerable*.

### 6.3 Bushfire Weather & Anticipated Direction of Attack

Observed wind patterns within the subject locality indicate that the predominant wind force within the subject locality (1.1-12.6 km/h) is considered a light breeze, according to the Beaufort Wind Scale (nearest Data Station 040211 Archerfield Airport, approximately 12 km west of the subject site).

Historical data over five years indicates that light southerly wind is observed most frequently (10.07%) within the locality. During bushfire season (November average), typical wind speed and direction are observed as a moderate north-easterly breeze (5.64%). Figure 9 displays the five-year average wind speed and direction observed at Archerfield Airport (Data Station 040211) annually and during peak fire season.

During peak bushfire season, predominant north-easterly wind patterns are expected to drive a potential fire front within HA1 in a south-westerly direction. As such, smoke and ember attacks would likely be directed predominantly to the west of the subject site and proposed residential lots. Due to proximity, wind direction may result in smoke and ember exposure to the approved park and open space area in the northmost portion of the subject site; however, vegetation within this area will be regularly maintained providing minimal potential for ignition and spread within the subject site.

Given this analysis, the hazard areas relative to the proposed would be considered a *tolerable* risk if the development maintains an adequate setback from hazardous vegetation.

### 6.4 Emergency Response

The nearest fire station to the subject site is the Wishart Fire Station, located at 203 Dawson Road, Wishart, approximately 5.7km via the fastest route. Under normal traffic conditions, the estimated travel time for emergency response is nine (9) minutes.

Based on modelled fire characteristics (refer to **Table H**), a fire front within HA1 is projected to advance at approximately 20.5m per minute and HA2 at 32m per minute. With the estimated fire response time of 9 minutes, the greatest potential for the front to advance is 184.5 or 288m before emergency services arrive, assuming resources are available. Whilst not optimal for supporting extended first attack suppression, the configuration of the hazardous vegetation unit would not support a fully engaged fire immediately, so the predicted rate of spread is considered conservative. The actual rate of spread would be initially reduced, providing the first response with a greater opportunity for first-attack suppression. Additionally, the surrounding agricultural uses and developments are to act as a buffer to the proposed structure would slow the fire spread rate and dampen radiant heat from an advancing fire front, providing additional time for the first response.

As such, it would be considered a *tolerable* risk concerning the proximity of emergency services.

### 6.5 Hazardous Chemicals and Materials

Given the predicted industrial uses of the proposed zoning change, future developments may utilise or be likely to store, use or handle dangerous goods above the threshold quantities specified in Table 15.1 of Schedule 15 of the *Work Health and Safety Regulation*. To mitigate potential risk, it is recommended that storage of all chemicals handle dangerous goods above the threshold include a site and use specific bushfire assessment at the time the use is proposed.

In this manner and given consideration to detailed design outcomes achieving the above recommendation, the associated risk level would be considered as *tolerable*.

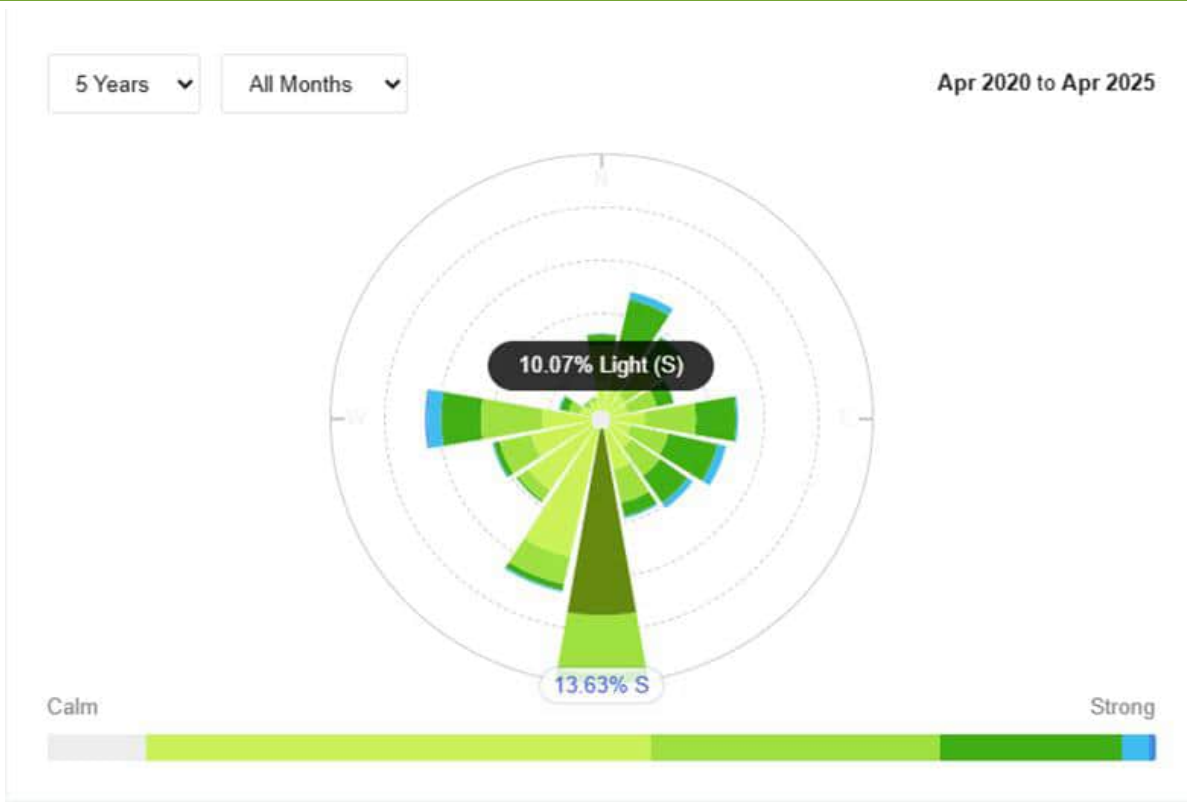
### 6.6 Mobility & Ingress/Egress Capacity

The proposal intends to connect Farley Rd to Gardner Road through a new 19.5m road network, providing the proposal with two (2) ingress or egress routes, to facilitate movement and connect to the broader road network in case of a bushfire hazard. No internal road network within the preliminary residential zone has been proposed at this stage and will be subject to future applications.

Concerning emergency service vehicle manoeuvrability, the proposed road connection is considered to achieve an acceptable outcome for emergency vehicle access meeting minimum width requirements. Any future roads networks are to conform to the requirement stipulated in Table 8.2.5.3.C in the *BCCP2014* Bushfire Overlay Code.

The current stage of development provides opportunity to design adequate ingress and egress opportunities for detailed development applications particularly for, but not limited to, areas nominated for residential land uses. As such, and given the current stage of development the associated risk would be considered as *tolerable*.

Figure 11 - Predominant Wind Direction (Bureau of Meteorology 2025)



## 6.7 Bushfire Severity Modelling

To anticipate and assess the potential severity of a bushfire attack from hazardous vegetation, the predetermined variables for vegetation characteristics, slope values, and relative fuel loads have been used to model key fire parameters, which are detailed in **Table H** below. It is noted that only confirmed hazard areas have been included within fire severity modelling.

Table H - Predictive Fire Severity Modelling Results

Hazard Area 1 Fire Scenario FFDI – 54; PFL/UFL – 16.0 t/ha; Slope – 2.5°; Veg – Forest		
Parameter	Results	Reference
Fire Intensity	10,185kW/m	(Byram 1959)
Rate of Spread	1.23 km/h	(Macarthur 1973; Noble <i>et al.</i> 1980)
Flame Length	9.92 m	(Noble <i>et al.</i> 1980)
Flame Width	100 m	(AS3959:2018)
Hazard Area 2 Fire Scenario FFDI – 54; PFL/UFL – 24.2 t/ha; Slope – 2.97°; Veg – Woodland		
Parameter	Results	Reference
Fire Intensity	24,065kW/m	(Byram 1959)
Rate of Spread	1.92 km/h	(Macarthur 1973; Noble <i>et al.</i> 1980)
Flame Length	15.41 m	(Noble <i>et al.</i> 1980)
Flame Width	100 m	(AS3959:2018)

## 6.8 Radiant Heat Exposure

Radiant heat flux measures the heat energy emitted from a fire front. It influences the potential for structures to ignite and determines appropriate setbacks from hazardous vegetation. Site-specific fire modelling, undertaken following Method 2 of AS3959:2018 and the *Bushfire Resilient Communities Technical Reference Guide* (QFD 2019), has been conducted to predict the radiant heat flux from identified hazardous vegetation areas.

The results of this modelling inform the required separation distances between the development and the bushfire hazard to mitigate exposure to radiant heat. These distances guide the placement of Asset Protection Zones (**APZ**) and assist in defining appropriate Building Location Envelopes (**BLE**) where necessary. heat flux is also used to determine Bushfire Attack Levels (**BAL**), which specify construction requirements under AS3959:2018.

The following table (refer to **Table I** below) provides the results of radiant heat flux modelling and associated minimum setback distances from HA1 and HA2. These results are represented spatially in **Figure 12**. It is noted that a Flame Temperature of 1200°K has been adopted in the analysis to reflect the recommendations provided by QFD in the *Bushfire Resilient Communities Guidance Material* (QFD 2019).

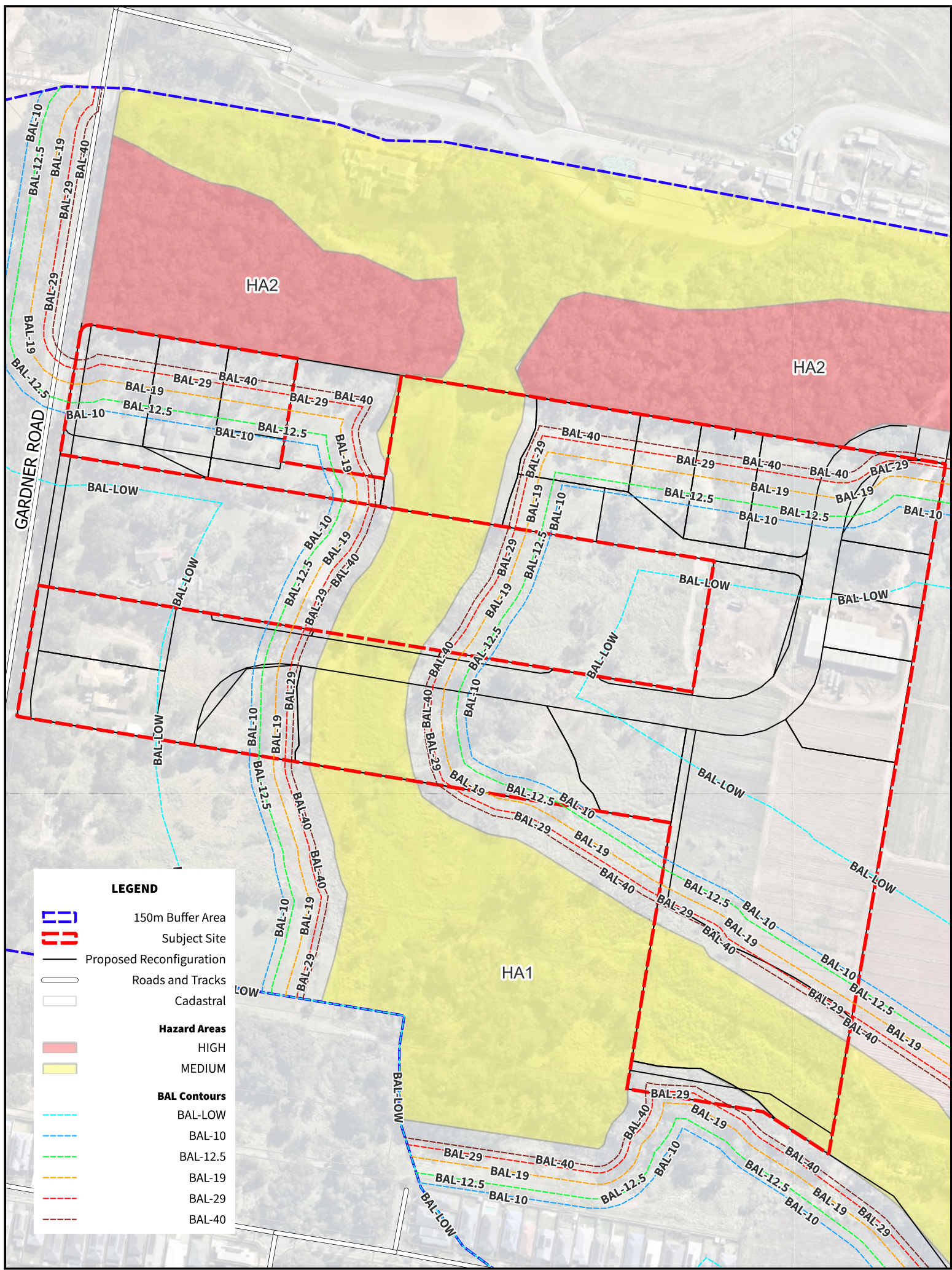
Table I - Radiant Heat Flux Modelling (Method 2 - AS3959:2018)

Radiant Heat	Distance from Hazardous Vegetation	
	HA1	HA2
Flame Zone	0 m - < 11.9 m	0 m - < 1.8 m
40 kW/m <sup>2</sup>	11.9 m - < 16.1 m	18 m - < 24 m
29 kW/m <sup>2</sup>	16.1 m - < 23.5 m	24 m - < 33.9 m
19 kW/m <sup>2</sup>	23.5 m - < 33.1 m	33.9 m - < 46 m
12.5 kW/m <sup>2</sup>	33.1 m - < 39.2 m	46 m - < 53.3 m
10 kW/m <sup>2</sup>	39.2 m – 100 m	53.3 m – 100 m






Based on the above radiant heat estimates, a greater risk profile can be interpolated for land parcels proposed for industrial land uses than those proposed for residential uses. It can be seen in Figure 12 that the residential component of the application is located wholly outside of the 10kW/m<sup>2</sup> radiant heat contour. In a detailed design scenario (i.e. future application) mitigation could be adequately achieved via specification of BAL12.5 construction standards across the whole residential land parcel to achieve a *tolerable* risk outcome. We note that the residential land within Lot 904 has been approved under A005747839 and been subject to a specific bushfire assessment under the subsequent application.

The proposed industrial land parcels adjoining the identified hazard areas, represent a higher risk profile with areas of the lots exposed to heat greater than  $40\text{kW/m}^2$ . Given the general nature of structures associated with industrial land uses (i.e. generally being of a heat resistant nature) this risk is considerably lower than would be associated with residential land uses and dwellings. Notwithstanding, detailed design during future applications must provide due consideration to the identified risk. It is noted that only minor areas of the proposed industrial parcels are exposed to greater than BAL40 exposure. With adequate consideration during detailed design it would be considered that suitable development outcomes could be achieved with the application of appropriate mitigation measures to achieve *tolerable* risk outcomes on all the proposed industrial lots.



In summary, given the estimated heat exposure, the potential risk to life and property can be managed through appropriate mitigation strategies to achieve a *tolerable* risk outcome. Appropriate treatments to further reduce the risk associated with the identified hazards are discussed in **Section 7** below.









**LEGEND**

-  150m Buffer Area
-  Subject Site
-  Proposed Reconfiguration
-  Roads and Tracks
-  Cadastral

**Hazard Areas**

-  HIGH
-  MEDIUM

**BAL Contours**

-  BAL-LOW
-  BAL-10
-  BAL-12.5
-  BAL-19
-  BAL-29
-  BAL-40

**Figure 12 - BAL Assessment**

184 & 198 Gardner Rd and 56 Farley Rd, Rochedale

Brisbane City Council

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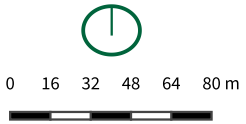
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## 7. Hazard Mitigation Measures

Bushfire hazard mitigation requires an integrated approach of various best practices and mutually supportive protective measures to protect against bushfire attacks. The following sections provide an integrated approach for the proposed subdivision layout to minimise risk to people and property and ensure that development is compatible with the level of bushfire hazard present within the study area following State and Local policies. **Figure 13** below details the various attack mechanisms posed by bushfire hazards.

It is noted that this assessment has been prepared at a preliminary approval stage, and as such represents a high-level assessment of bushfire hazard. Certain detailed mitigation measures cannot be comprehensively addressed at this stage due to the absence of detailed design documentation. These measures will be further refined and specified during subsequent development stages when detailed design information becomes available. These include:

- Minimum Construction Standards
- Asset protection zone
- Landscape specifications
- On going maintenance

Figure 13 - Bushfire Attack Mechanisms on Houses (DELWP 2017)

FORMS OF BUSHFIRE ATTACK				
EMBER ATTACK	RADIANT HEAT	LOCALISED FLAME CONTACT	FLAME CONTACT FROM FIRE FRONT	EXTREME FIRE BEHAVIOUR
				
<ul style="list-style-type: none"> <li>• May occur from the hazard in very close proximity to a building (nearby trees, neighbouring houses).</li> <li>• May occur from fire behaviour in the surrounding landscape.</li> <li>• Most common way houses catch fire during a bushfire.</li> <li>• Occurs when small burning twigs, leaves and bark are carried by wind, landing in and around a building.</li> <li>• Can happen before, during and after a bushfire.</li> </ul>	<ul style="list-style-type: none"> <li>• Occurs from the hazard in close proximity to a building (up to 150 metres).</li> <li>• The heat you can feel from a fire.</li> <li>• Can ignite surfaces without flame contact or ember attack.</li> <li>• Dries out vegetation ahead of a bushfire so that it burns more readily.</li> </ul>	<ul style="list-style-type: none"> <li>• Occurs from the hazard in close proximity to a building (up to 50 metres).</li> <li>• Direct flame contact from individual elements, such as vegetation, fences or structures.</li> <li>• Burning elements may arrive from neighbouring land.</li> <li>• Can occur in areas where the vegetation is modified or is managed as a garden.</li> <li>• Not direct flame contact from a moving fire front.</li> </ul>	<ul style="list-style-type: none"> <li>• Occurs from the hazard in close proximity to a building (150 metres).</li> <li>• Direct flame contact from a fire front where vegetation is in a mostly natural state (such as in national parks).</li> <li>• Occurs when a building is in close proximity to the vegetation.</li> <li>• May arise in lower risk areas (such as from a local park) or in higher risk areas (larger vegetated areas such as forests and coastal reserves).</li> </ul>	<ul style="list-style-type: none"> <li>• Occurs from fire behaviour in the surrounding landscape, including where it interacts with the hazard in close proximity to a building.</li> <li>• Arises in high risk landscapes, with long fire runs, steep topography and vegetation in a mostly natural state.</li> <li>• Influenced by fuel loads and drought conditions.</li> <li>• Associated with high temperatures, wind, cyclonic winds, lightning.</li> <li>• Extreme ember attack will occur.</li> <li>• Associated with weather as seen on Black Saturday.</li> <li>• Any fire that starts and takes hold will be so intense that life safety may be seriously compromised.</li> </ul>

### 7.1 Minimum Setback Requirements

Based on the fire modelling undertaken per Method 2 of AS3959:2018 (as detailed in **Section 6.8**), the proposed residential zoning is exposed to a maximum radiant heat level of under 10 kW/m<sup>2</sup> from HA1. As such, residential dwellings built within this area do not require a structural setback as the existing distance from HA1 supplies adequate mitigation. Subject to detailed design in future applications construction of residential dwellings within the proposed residential land parcel may require minimum construction standard of BAL12.5 to protect from the indirect impacts of wildfire in HA1 (i.e. smoke, ash, ember and burning debris attack mechanisms).

As previously discussed the industrial land parcels adjoining the identified hazard areas hold areas exposed to heat greater than 40kW/m<sup>2</sup>. Given the general nature of structures associated with industrial land uses (i.e. generally being of a heat resistant nature) detailed design during future applications must provide due consideration to the identified risk. It is noted that only

minor areas of the proposed industrial parcels are exposed to greater than BAL40 exposure. Application specific bushfire management planning will refine this recommendation during future development applications.

## 7.2 Services

Any future development must address the requirement to be connected to a reticulated water supply that is considered adequate for fire response purposes. Fire response capabilities are to be supported in accordance with the *QFD Fire Hydrant and Vehicle Access Guidelines* (2019) and *AS 2419.1:2017 Fire Hydrant Installations Part 1: System Design, Installation, and Commissioning Appendix B*. A minimum supply pressure of 10L/sec at 200 kPa will be required at all times to ensure adequate firefighting capacity. Fire hydrants will be marked and positioned per relevant standards to facilitate emergency access.

Electricity, gas, and water supply infrastructure is recommended to be subsurface where feasible but will be specified during the detailed design phase of future applications.

## 7.3 Access Arrangements

Access to the development will be facilitated via ingress and egress through a proposed road connecting Farley Road and Gardner Road. The access arrangement is considered adequate to support future design arrangements that consider limiting 'one way in one way out' development outcomes for mitigating potential risks associated with ingress and egress to residential land uses. The road connection provided in this application is designed following the relevant design standards stipulated within the *Brisbane Standard Drawings* register for infrastructure in the *BCC City Plan 2014 – SC6.16 Infrastructure Design Planning Scheme Policy*.

Any future roads and access within the residential land parcels are to conform to the relevant standard drawings at the detail design phase of the project.

# 8. Compliance Assessment

The proposed subdivision layout is constrained by the SPP Bushfire Prone Areas Overlay code and the *BCC City Plan 2014* Bushfire overlay code; compliance against the code assessment tables is required.

## 8.1 Assessment Against SPP State Interest Guidance Material

Compliance with the SPP Bushfire Overlay code has been assessed against the relevant performance and acceptable outcomes. A detailed compliance assessment is provided in **Table J**, which outlines how the proposed subdivision layout meets the intent of the SPP Bushfire Overlay code, ensuring appropriate risk mitigation measures are implemented.

## 8.2 Assessment Against BCC City Plan 2014 Bushfire Overlay Code

Compliance with the *BCC City Plan 2014* Bushfire overlay code has been assessed against the relevant performance and acceptable outcomes. **Table K** provides a detailed compliance assessment, demonstrating how the proposed subdivision layout aligns with the code's requirements to manage bushfire risk effectively.

Table J - Compliance assessment against *State Planning Policy Example Bushfire Overlay Code (Natural Hazards Risk Resilience)*

Performance outcomes	Acceptable outcomes	Comments
<b>Section A – Reconfiguring a lot (RaL) – where creating lots of more than 2,000 square metres</b>		
<b>PO1</b>	<b>AO1.1</b>	<b>AO1.1</b>
<p>The subdivision layout:</p> <ul style="list-style-type: none"> <li>a. enables future buildings to be located away from slopes and land forms that expose people or property to an intolerable risk to life or property; and</li> <li>b. facilitates emergency access and operational space for firefighters in a reduced fuel area between future buildings and structures and hazardous vegetation, that reduce risk to an acceptable or tolerable level.</li> </ul>	<p>A development footprint plan is identified for each lot that avoids ridgelines, saddles and crests where slopes exceed 15 per cent.</p>	<p>The proposed subdivision layout avoids ridgelines, saddles and crests where slopes exceed 15 per cent.</p>
	<b>AO1.2</b>	<b>AO1.2</b>
	<p>A development footprint plan is identified for each lot that is separated from the closest edge to the adjacent mapped medium, high or very high potential bushfire intensity area by:</p> <ul style="list-style-type: none"> <li>a. a distance that is no closer than the distances specified in Table 5 at all development footprint plan boundaries; or</li> <li>b. a distance that achieves a radiant heat flux level of 29 kW/m<sup>2</sup> or less at all development footprint plan boundaries.</li> </ul>	<p>Residential land parcels hold a minimum separation distance of approximately 90m from the hazardous vegetation area to the proposed residential zoning. This distance achieves a radiant heat flux level of 29 kW/m<sup>2</sup> or less (&gt;BAL10) at the boundary of the residentially zoned land parcel. The risk to proposed industrial zoning is considered tolerable with the implementation of appropriate and design considerations mitigation measures. Given the stage of development it is considered that AO1.2 can be satisfied under future development applications</p>
<b>PO2</b>	<b>AO2</b>	<b>PO2</b>
<p>The subdivision layout enables:</p> <ul style="list-style-type: none"> <li>a. future buildings to be located as close as possible to property entrances to facilitate safe evacuation during a bushfire event; and</li> </ul>	<p>A development footprint plan is identified for each lot that:</p> <ul style="list-style-type: none"> <li>a. is located within 60 metres of the street frontage; and</li> </ul>	<p>The proposed subdivision layout features a road networks that facilitates direct access to all weather public roads facilitate safe evacuation during a bushfire event and ingress capabilities for emergency services, demonstrating</p>

Performance outcomes	Acceptable outcomes	Comments
<ul style="list-style-type: none"> <li>b. future site access to be located and designed to allow safe evacuation of the site by occupants and maintain access by emergency services under critical event conditions.</li> </ul>	<ul style="list-style-type: none"> <li>b. sited to enable a route between the development footprint plan and the street frontage with a gradient that does not exceed of 12.5 per cent.</li> </ul>	<p>compliance with PO2. The road network for the residential zoning has not be proposed at this application stage and will be assessed at further in design development.</p>
<b>Section E – Material change of use</b>		
<p><b>PO10</b></p> <p>Site layout achieve an acceptable or tolerable risk to people. Landscape or open space provided as part of the development:</p> <ul style="list-style-type: none"> <li>a. acts as a buffer between hazardous vegetation and development; and</li> <li>b. does not create additional bushfire prone areas.</li> </ul>	<p><b>AO10.1</b></p> <p>Site layout places the landscape and open spaces within the site between premises and adjacent mapped medium, high or very high potential bushfire intensity areas.</p> <p>Refer Figure 7.</p>	<p><b>AO10.1</b></p> <p>The proposed subdivision layout proposes open space area between areas of hazardous vegetation and residential zoned areas in compliance with AO10.1.</p>
	<p><b>AO10.2</b></p> <p>This landscaping and open space comprises protective landscape treatments that:</p> <ul style="list-style-type: none"> <li>a. comprise only low threat vegetation, including grassland managed in a minimal fuel condition, maintained lawns, golf courses and cultivated gardens; or</li> <li>b. are designed to ensure a potential available fuel load is maintained at less than 8 tonnes/hectare in aggregate and that fuel structure remains discontinuous.</li> </ul>	<p><b>AO10.2 - Not Applicable</b></p> <p>Landscape treatments are not identified as this stage of the application and will be assessed during detailed design phase.</p>

Performance outcomes	Acceptable outcomes	Comments
<p><b>PO11</b></p> <p>The development establishes evacuation areas, to achieve an acceptable or tolerable risk to people.</p>	<p><b>AO11</b></p> <p>If in an isolated location, development establishes direct access to a safe assembly/evacuation area.</p>	<p><b>PO11 – Not Applicable</b></p> <p>As a development footprint has not been created no established evacuation areas have been nominated at this stage for the application. Evacuation areas are to be established during detail design phase.</p>
<p><b>PO12</b></p> <p>If on a lot of over 2000m2, where involving a new premises or an existing premises with an increase in development footprint, development:</p> <ul style="list-style-type: none"> <li>a. locates occupied areas as close as possible to property entrances to facilitate safe evacuation during a bushfire event; and</li> <li>b. ensures vehicular access is located and designed to allow safe evacuation of the site by occupants and maintain access by emergency services under critical event conditions.</li> </ul>	<p><b>PO12</b></p> <p>No acceptable outcome is prescribed.</p>	<p><b>PO12 – Not Applicable</b></p> <p>As a development footprint has not been created no established evacuation areas have been nominated at this stage for the application. Evacuation areas are to be established during detail design phase.</p>
<p><b>PO13</b></p> <p>Development is located within a reticulated water supply area or includes a dedicated static water supply that is available solely for fire-fighting purposes and can be accessed by fire-fighting vehicles.</p>	<p><b>AO13</b></p> <p>No acceptable outcome is prescribed.</p>	<p><b>PO13</b></p> <p>The proposed subdivision will be located within a reticulated water supply area.</p>

Performance outcomes	Acceptable outcomes	Comments
<p><b>PO14</b></p> <p>Vulnerable uses listed in Table 7 are not established or intensified within a bushfire prone area unless:</p> <ul style="list-style-type: none"> <li>a. there is an overriding need in the public interest for the new or expanded service the development provides; and</li> <li>b. there are no other suitable alternative locations within the required catchment; and</li> <li>c. site planning can appropriately mitigate the risk (for example, siting ovals for an educational establishment between the hazardous vegetation and structures.</li> </ul>	<p><b>AO14</b></p> <p>No acceptable outcome is prescribed.</p>	<p><b>PO14 - Not Applicable</b></p> <p>No facilities are proposed as this stage of the application, thus PO14 is not applicable as it is unknown whether vulnerable uses will be included in the detail design phase.</p>
<p><b>PO15</b></p> <p>Community infrastructure providing essential services listed in Table 7 are not established within a bushfire prone area unless:</p> <ul style="list-style-type: none"> <li>a. there is an overriding need in the public interest for the new or expanded service the development provides (for example, there are no other suitable alternative locations that can deliver the required level of service or meet emergency service response times during and immediately after a bushfire event); and</li> <li>b. the infrastructure can function effectively during and immediately after a bushfire event.</li> </ul>	<p><b>PO15</b></p> <p>No acceptable outcome is prescribed.</p>	<p><b>PO15 - Not Applicable</b></p> <p>No facilities are proposed as this stage of the application, thus PO15 is not applicable as it is unknown whether community infrastructure will be included in the detail design phase.</p>

Performance outcomes	Acceptable outcomes	Comments
<p><b>PO16</b></p> <p>Development avoids or mitigates the risks to public safety and the environment from the manufacture or storage of materials listed in Table 7 that are hazardous in the context of bushfire to an acceptable or tolerable level.</p>	<p><b>AO16</b></p> <p>No acceptable outcome is prescribed.</p>	<p><b>PO16</b></p> <p>Due to the industrial zoning associated with the proposed subdivision layout, the manufacture or storage of materials listed in Table 7 may occur within the development site. As such, it is recommended that facilities which may manufacture or store such materials prepare a specific bushfire assessment at the time the use is proposed.</p>
<p>Section G – Where planning provisions or conditions of approval require revegetation or rehabilitation</p>		
<p><b>PO18</b></p> <p>Revegetation or rehabilitation areas are designed and managed to ensure they do not result in an unacceptable level of risk or an increase in bushfire intensity level.</p>	<p><b>AO18.1</b></p> <p>Required revegetation or rehabilitation:</p> <ul style="list-style-type: none"> <li>a. is located outside of any asset protection zone; or</li> <li>b. maintains a potential available fuel load which is less than eight tonnes/hectare in aggregate and fuel structure which is discontinuous.</li> </ul>	<p><b>AO18.1</b></p> <p>Required revegetation areas have been nominated as hazard area and thus are located outside of asset protection zones.</p> <p>Open space areas not nominated with naturalized outcomes are to be designed with respect to achieving LOW fuel load outcomes (i.e. parks and/or passive recreations outcomes).</p>
	<p><b>AO18.2</b></p>	<p><b>See AO18.1</b></p>

Performance outcomes	Acceptable outcomes	Comments
	<p>Revegetation or rehabilitation of areas located within mapped medium, high or very high potential bushfire intensity areas, revegetate and rehabilitate in a manner that maintains or reduces the existing fuel load.</p> <p>OR</p> <p>Revegetation or rehabilitation of areas located within the mapped potential impact buffer area, revegetate and rehabilitate in a manner that maintains or reduces the existing fuel load.</p>	

Table K - Compliance assessment against Assessable Development Benchmarks – *Brisbane City Plan 2014 Bushfire Overlay Code (Table 8.2.5.3.A)*

Performance outcomes	Acceptable outcomes	Comments
Section A – If for accepted development subject to compliance with identified requirements (acceptable outcomes only) or assessable development		
<b>PO1</b>	<b>AO1</b>	<b>AO1</b>
<p>Development:</p> <ul style="list-style-type: none"> <li>a. minimises the bushfire hazard;</li> <li>b. maximises the protection of life and property from bushfire;</li> <li>c. addresses the bushfire hazard determined by a bushfire hazard assessment;</li> <li>d. where not in compliance with an approved bushfire management plan or development footprint: <ul style="list-style-type: none"> <li>i. achieves a bushfire attack level that is less than or equal to BAL-29; or</li> <li>ii. achieves a bushfire attack level that is less than or equal to BAL-12.5 if for vulnerable uses, difficult to evacuate uses, assembly uses, essential community infrastructure or involving the</li> </ul> </li> </ul>	<p>Development is designed and sited in compliance with:</p> <ul style="list-style-type: none"> <li>a. an approved bushfire management plan relevant to the full nature of the uses, which identifies the level of bushfire hazard and the location of hazardous vegetation affecting the development; or</li> <li>b. an approved development footprint identifying the development footprint plan and bushfire management footprint plan; or</li> <li>c. a bushfire hazard assessment and bushfire management plan prepared in accordance with the Bushfire planning scheme policy which: <ul style="list-style-type: none"> <li>i. is undertaken by a suitably qualified person with technical expertise in the field of bushfire hazard identification and mitigation;</li> </ul> </li> </ul>	<p>This bushfire hazard assessment and management plan has been prepared by a suitably qualified professional in accordance with the Bushfire Resilient Communities technical reference, SPP state interest guidance material for bushfire and BCP2014 policy for bushfire management plans. The plan demonstrates that the proposed development complies with the policy including mitigation actions detailed within Section 7.0.</p>

Performance outcomes	Acceptable outcomes	Comments
<p>handling or storage of hazardous chemicals exceeding amount specified in Table 8.2.5.3.D; or</p> <p>iii. if on a site of an existing premises and not a vulnerable use, difficult to evacuate use, assembly use, essential community infrastructure or involving the handling or storage of hazardous chemicals exceeding amounts specified in Table 8.2.5.3.D:</p> <p>A. does not extend beyond the bounds of the existing development footprint;</p> <p>B. does not increase the GFA by 10% or 100m<sup>2</sup>, whichever is the greater;</p> <p>C. does not involve a new use on the site;</p> <p>D. is supported by a bushfire risk assessment prepared by a suitably qualified person with technical expertise in the field of bushfire hazard identification and mitigation, which demonstrates that the bushfire risk is acceptable.</p>	<p>ii. determines the relevant bushfire attack level for that part of the site in which development is proposed;</p> <p>iii. identifies the location of hazardous vegetation that poses a bushfire risk to the development.</p>	

**Additional performance outcomes and acceptable outcomes for all development in the Biodiversity areas overlay if on a site larger than 2,500m<sup>2</sup>**

PO8	A08	A08
<p>Development through the siting, design, and construction of buildings, access routes and fire maintenance trails, and ongoing site management:</p> <p>a. provides effective separation from sources of bushfire risk;</p> <p>b. responds to the bushfire risk in that location;</p> <p>c. maintains the safety and protection of people and property over time;</p> <p>d. maximises the protection of vegetation in areas of high biodiversity value.</p>	<p>Development locates building protection zones as shown on Figure b and Figure c, driveways and access routes and any fire maintenance trails:</p> <p>a. outside of the Biodiversity areas overlay; or</p> <p>b. within the existing disturbed, degraded or cleared areas, using natural fire breaks to avoid vegetation clearing and to avoid or otherwise minimise fragmentation or incursions into a habitat area, fauna movement corridor or remnant vegetation.</p>	<p>The proposed subdivision layout has strategically located all proposed subdivision layout areas outside of mapped biodiversity areas, dedicating said area to open space or rehabilitation.</p>

Performance outcomes	Acceptable outcomes	Comments
Section C – If for ROL		
<p><b>PO15</b></p> <p>Development does not materially increase the number of premises exposed to unacceptable risk during bushfire events.</p>	<p><b>AO15</b></p> <p>Development does not materially increase the number of people living or working in the Bushfire overlay area.</p>	<p><b>PO15</b></p> <p>The bushfire hazard assessment has determined that all lots and proposed zoning are exposed to tolerable level of bushfire risk. As such, the proposed subdivision does not materially increase the number of premises exposed to unacceptable risk during bushfire events and is in conformance with PO15.</p>
<p><b>PO16</b></p> <p>Development is designed to:</p> <ul style="list-style-type: none"> <li>a. mitigate the risk of bushfire hazard to each lot;</li> <li>b. limit the spread of bushfire;</li> <li>c. achieve and maintain sufficient separation distance between development and hazardous vegetation to minimise bushfire hazard to future buildings during a bushfire;</li> <li>d. allow for emergency services access;</li> <li>e. locate buildings within a building protection zone</li> </ul> <p><small>Note—Lot size, location, configuration, dimensions and building measures are balanced to achieve an acceptable level of risk to future occupants.</small></p>	<p><b>AO16</b></p> <p>Development requires that lot number, size, shape and layout allow for the siting of future buildings within the lowest hazard locations on the site being located:</p> <ul style="list-style-type: none"> <li>a. within a building protection zone in accordance with Figure b and Figure c;</li> <li>b. away from ridgelines and hilltop sites in compliance with Figure a;</li> <li>c. on land with a gradient less than 15%;</li> <li>d. preferably on east to south facing slopes and avoiding north to west facing slopes unless the slope is clear of vegetation and is not located in the High hazard buffer area sub-category or Medium hazard buffer area sub-category.</li> </ul>	<p><b>PO16</b></p> <p>The proposed residential lot is in compliance with PO16 as any residential lots created within will be a minimum of 90 m east of the identified hazardous vegetation area (HA1), achieving a sufficient separation distance to minimise bushfire hazard. The current proposed road connection and open space both constitute low hazard areas, and will mitigate and minimize the risk of bushfire hazard to the proposed residential lots.</p> <p>The proposed road will allow for emergency services to access the development via Farley Road and Gardner Road.</p>
<p><b>PO17</b></p> <p>Development promotes safe site access, avoids creating a potential entrapment situation and supports accessibility and manoeuvring for fire fighting during bushfires.</p>	<p><b>AO17</b></p> <p>Development provides a lot layout which:</p> <ul style="list-style-type: none"> <li>a. provides direct road access and egress for new lots to public roads, rather than the creation of easements;</li> </ul>	<p><b>PO17 - Not Applicable</b></p> <p>No subdivision layout within the residential zoning has been proposed at this stage of the application, and thus cannot be assessed within this report. However, the current proposed road connection and supports accessibility and manoeuvring for fire fighting during</p>

Performance outcomes	Acceptable outcomes	Comments
	<ul style="list-style-type: none"> <li>b. in an urban category, avoids creating a new lot less than or equal to 2,500m<sup>2</sup> which directly adjoins hazardous vegetation;</li> <li>c. in an urban category, locates a future building protection zone to avoid a driveway of longer than 70m from the road frontage to a habitable building;</li> <li>d. in a rural category, provides for an alternative access where the private access roads or driveways are longer than 200m to reach a public road.</li> </ul>	<p>bushfires by being in compliance with <i>Brisbane Standard Drawings</i> register for infrastructure in the <i>BCC City Plan 2014 – SC6.16 Infrastructure Design Planning Scheme Policy</i>.</p>
<p><b>PO18</b></p> <p>Development ensures that the road layout and design provides:</p> <ul style="list-style-type: none"> <li>a. efficient emergency services access to sites and manoeuvring within the subdivision;</li> <li>b. safe and efficient movement of residents, workers and visitors out of the subdivision and away from an approaching bushfire;</li> <li>c. safe and efficient movement of emergency services into the subdivision;</li> <li>d. alternative egress routes considering the most likely bushfire scenarios;</li> <li>e. ongoing availability and maintenance of access and egress routes for the purposes of evacuation and emergency services access.</li> </ul>	<p><b>AO18.1</b></p> <p>Development involving a new road or fire maintenance trail is designed and constructed in compliance with:</p> <ul style="list-style-type: none"> <li>a. Table 8.2.5.3.C; or</li> <li>b. an approved bushfire management plan.</li> </ul> <hr/> <p><b>AO18.2</b></p> <p>Development has a road layout and design which:</p> <ul style="list-style-type: none"> <li>a. provides for alternative access routes to the subdivision, by public roads that meet the requirements in Table 8.2.5.3.C and are able to access the arterial road network;</li> <li>b. excludes cul-de-sacs, except where a perimeter road with a cleared width of 20m isolates the development from hazardous vegetation;</li> <li>c. does not include dead-end roads or if a dead-end road is unavoidable, it is a maximum of 60m long, or 200m where located in the Environmental management zone, Conservation zone, Rural zone, or Rural residential zone, and an alternative emergency</li> </ul>	<p><b>PO18</b></p> <p>The new road connection will both be designed and constructed in compliance with Table 8.2.5.3.C and thus are in compliance with PO18. Any roads within the residential zoning will need to additionally conform to specifications stipulated in Table 8.2.5.3.C to provide efficient emergency services access to sites and manoeuvring within the subdivision.</p>

Performance outcomes	Acceptable outcomes	Comments
	<p>evacuation and egress route away from the most likely source of bushfire risk is provided for lots where multiple road access or exit points are not possible;</p> <p>d. links road within the subdivision to, or provides for future links to roads in adjacent subdivisions.</p>	
<p><b>PO19</b></p> <p>Development involving new premises provides adequate infrastructure to support fire fighting.</p>	<p><b>AO19.1</b></p> <p>Development involving new premises ensures that:</p> <ul style="list-style-type: none"> <li>a. lots have access to reticulated water supply and water pressure available for fire-fighting requirements with water supply and pressure that accord with the standards specified by the relevant utilities provider; or</li> <li>b. where reticulated water supply is not available for: <ul style="list-style-type: none"> <li>i. residential lots, there is a minimum water supply available and retained for fire-fighting purposes in compliance with Table 8.2.5.3.B, which may be in the form of a separate tank or a reserve section as part of a main water supply tank;</li> <li>ii. development other than residential lots, onsite water storage is provided which is appropriate to the proposed future use according to the standards specified by the relevant emergency services agency and is not less than 5,000 litres.</li> </ul> </li> </ul> <hr/> <p><b>AO19.2</b></p>	<p><b>PO19</b></p> <p>The proposed subdivision is located within an area that will have access to reticulated water supply, thus providing adequate infrastructure to support firefighting and is compliant with PO19.</p>

Performance outcomes	Acceptable outcomes	Comments
	<p>Development provides fire hydrants in accordance with Central SEQ Distributor-Retailer Authority, Queensland Urban Utilities (incorporating Water Services Association of Australia) standards.</p>	
<p>Section D—If for accepted development subject to compliance with identified requirements (acceptable outcomes only) or assessable development where in Potential impact sub-category</p>		
<p><b>PO20</b></p> <p>Development is designed and constructed to reduce vulnerability to bushfire attack and addresses the bushfire hazard by a bushfire hazard assessment that:</p> <ul style="list-style-type: none"> <li>a. utilises a fit for purpose methodology prepared in accordance with the State Planning Policy – State interest technical manual – Natural hazards, risk and resilience;</li> <li>b. includes the following measures and inputs: <ul style="list-style-type: none"> <li>i. potential fuel loads for vegetation in its mature state from areas subject to revegetation or regrowth vegetation;</li> <li>ii. a published vegetation hazard classification dataset from the relevant fire authority;</li> <li>iii. forest fire danger index of 54 (AEP 5%);</li> <li>iv. potential flame length;</li> <li>v. potential rate of fire spread.</li> </ul> </li> <li>c. is undertaken by a person suitably qualified and experienced with technical expertise in the field of bushfire hazard identification and mitigation, including protection of biodiversity values;</li> <li>d. determines the relevant bushfire attack level for that part of the site in which development is proposed.</li> </ul>	<p><b>AO20.1</b></p> <p>Development is designed and sited in compliance with an approved bushfire management plan relevant to the full nature of the uses, which identifies the level of future bushfire hazard and the location of future hazardous vegetation affecting the development.</p> <hr/> <p><b>AO20.2</b></p> <p>Development other than ROL determines bushfire attack level using:</p> <ul style="list-style-type: none"> <li>a. potential fuel loads for vegetation in its mature state from areas subject to revegetation or regrowth vegetation;</li> <li>b. a published vegetation hazard classification dataset from the Relevant fire authority;</li> <li>c. forest fire danger index of 54 (AEP 5%).</li> </ul>	<p><b>PO20</b></p> <p>This BHAMP, prepared by a suitably qualified professional, has identified the level of future bushfire hazard and the location of hazardous vegetation affecting the development, and is considered to be within tolerable risk in accordance with the Bushfire Resilient Communities technical reference, SPP state interest guidance material for bushfire and the BCC planning scheme policy of bushfire hazards. Measures and inputs specified in PO20.b. have been utilised within this BHAMP and bushfire attack level has been calculated within this assessment.</p>

## 9. Summary & Recommendations

All vegetation providing a potential bushfire risk within 150m of the site has been identified, and the proposed subdivision layout's risk-based factors have been assessed. The dominant bushfire hazards associated with the development are represented by two vegetation areas located north and within the subject site. This assessment calculated the potential fireline intensity for these two hazard areas, relative to the development, as a medium and high bushfire intensity level.

The proposed development has been assessed against the *State Planning Policy (SPP) Bushfire Overlay Code* and the *BCC City Plan 2014 Bushfire Overlay Code*. To achieve compliance with the relevant provisions, this Bushfire Hazard Assessment provides recommendations to mitigate potential risks to within tolerable levels, including:

- Subject to detailed design in future applications construction of residential dwellings within the proposed residential land parcel may require minimum construction standard of BAL12.5 to protect from the indirect impacts of wildfire in HA1 (i.e. smoke, ash, ember and burning debris attack mechanisms).
- For industrial land parcels, it is noted that only minor areas of the proposed industrial parcels are exposed to greater than BAL40 exposure. As such, detailed design during future applications must provide due consideration to the identified risk, and ensure suitable development outcomes are achieved with the application of appropriate mitigation measures, thus providing tolerable risk outcomes to proposed industry lots.
- Any future roads and access within the residential land parcels are to conform to the relevant standard drawings at the detail design phase of the project to ensure suitable emergency vehicle manoeuvrability.
- An integral consideration for future residential development is that the adjoining open space land parcel located immediately to the west (but outside of the waterway corridor and associated rehabilitation area) must be maintained in a LOW fuel state with fuel loads maintained under 8t/ha. This implies that it is essential that the open space area will be designed as a maintained park and/or recreation land use outcome rather than a naturalised area of vegetation.
- Future applications to refine minimum separation distances from hazardous vegetation for the proposed subdivision layout for both residential and industrial land uses.
- Compliance with *QFD Fire Hydrant and Vehicle Access Guidelines (2019)* and *AS2419.1:2021 Fire Hydrant Installations* for adequate fire-fighting water supply for all future detailed applications.

Please do not hesitate to contact us should you have any queries regarding the content of this assessment.

Yours sincerely,

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*The Change Leaders*

Therefor Group is dedicated to enhancing the potential of place by understanding who it's for.

When you need that broader perspective;

When you need more than a bottom line;

When you need a commitment to leading positive change;

*We're there.*

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