



1075 HEIDELBERG-KINGLAKE ROAD, HURSTBRIDGE

Attachment 4 Revised Bushfire Development Plan

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SPOT Planning Pty Ltd

ABN: 86 411 217 404

ACN: 636 682 383

E. info@spotplanning.com.au

M. 0409 962 001

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Bushfire Development Report
Including

Bushfire Management Statement

Bushfire Hazard Site Assessment

Bushfire Hazard Landscape Assessment

Bushfire Management Plan

Response to Clause 13.02 Bushfire

Bushfire Emergency Management Plan

Relating to proposed Primary School at 1075 Heidelberg-Kinglake Road Hurstbridge 3099 Victoria

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Report prepared for
Shourouk Brookes

21 March 2022
Update Version
Version V8.3

Prepared by:



PO Box 913 Templestowe Vic 3106 T: 1300 287 862 M: 0477 287 862
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Executive Summary

SBAFire has been engaged by the property owners of the subject site to prepare a bushfire development report relating to the establishment of a Primary School at 1075 Heidelberg-Kinglake Road Hurstbridge (Subject site), through the conversion of the existing large building on the subject site to a primary School Building. Under Clause 72.01-1 the Minister for Planning (DELWP) (Department of Planning) is the responsible authority, in relation to the use and development of land for a: "Primary school or secondary school, secondary school, or education centre that is ancillary to, carried out in conjunction with, and on the same land or contiguous land in the same ownership as, a primary school or secondary school, if any of the following:

- There is no existing primary school or secondary school on the land.
- The estimated cost of development is \$3 million or greater.

Primary school or secondary school for which an application was made to the Minister for Planning prior to the approval date of Amendment VC180. With the exception of other matters set out in Clause 72.01-1

The nature of the proposed primary school/education centre on the subject site triggers a response to the Planning Policy Framework at Clause 13.02-1 Bushfire Planning, includes the need to consider the bushfire risk associated with both 'use' and 'development' in areas designated as 'bushfire prone' under the Building Act 1993. Amongst other matters, this control requires bushfire risk to be considered when assessing a planning application for an 'Education Centre' and 'Any application for development that will result in people congregating in large numbers'. The site is in a designated bushfire prone area (BPA) and a bushfire management overlay (BMO) and fire authorities are generally of the view that developments such as the proposed primary school on the subject site use aligns with these land use terms, and thus a response to Clause 53.02-4: Bushfire Planning, Bushfire protection objectives, including the decision guidelines of Clause 44.06 – Bushfire Management Overlay is required.

In a BPA, the Building Act 1993, and associated Building Regulations 2006, through application of the National Construction Code (NCC), require bushfire protection standards in designated BPA areas, for class 1, 2 and 3 buildings, Specific Use Bushfire Protection Buildings, and associated class 10A buildings or decks. The applicable performance requirements in the NCC are:

'A building that is constructed in a designated bushfire prone area must, to the degree necessary, be designed and constructed to reduce the risk of ignition from a bushfire, appropriate to the –

(a) *potential for ignition caused by burning embers, radiant heat of flame generated by a bushfire; and*

(b) *intensity of the bushfire attack on the building.* (Australian Building Codes Board (ABCB) 2016).

Compliance with AS 3959-2018 Construction of buildings in bushfire prone areas (Standards Australia, 2018) is 'deemed to satisfy' the performance requirements.

The objective of Clause 13.02 is to strengthen the resilience of settlements and communities to bushfire risk through risk-based planning that prioritises the protection of human life. Clause 13.02 requires the planning permit application to:

- *Reduce the vulnerability of communities to bushfire through the consideration of bushfire risk in decision making at all stages of the planning process.*
- *Consider the risk of bushfire to people, property and the community infrastructure.*
- *Require implementation of appropriate bushfire protection measures to address the identified bushfire risk.*
- *Ensure that new development can implement bushfire protection measures without unacceptable biodiversity impacts.*

This bushfire development report demonstrates that bushfire protection and mitigation objectives for water supply, access, building design, siting and separation, landscape design, vegetation management relevant matters relating to bushfire hazard and the protection of human life have been considered and incorporated in the proposal.

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The subject site is located in a designated bushfire prone area and covered by the bushfire management overlay, which is identified as an area where people and property are particularly vulnerable to bushfire. Planning Advisory Note 68 requires the application for the use and development of the education centre to be accompanied by a Bushfire Management Statement (BMS). The BMS in this report has considered the risk of bushfire to people, property, and community infrastructure, and provided detail on the implementation of appropriate bushfire protection measures to address the identified bushfire risk consistent with the proposed use in accordance with Clause 13.02 Bushfire, of the Planning Scheme.

This report includes a Bushfire Emergency Management Plan (BEMP) as part of the integrated approach to risk management. The BEMP is supported by a thorough assessment of the bushfire risk and includes appropriate actions aimed at ensuring the safety of those on site. A Bushfire Hazard Assessment, Bushfire Hazard Landscape Assessment and Bushfire Attack Level Assessment have been used to inform the development of the BEMP.

Also, consideration has been given to other measures including:

- *Consideration of conditions under which the site should not be occupied.*
- *Appropriate shelter in place option in the event of a fire if the site is occupied.*
- *Activities to be undertaken prior to each fire season such as vegetation management.*
- *Management actions in the event of a fire and clearly identify who is responsible for implementing those actions.*
- *Management action to implement site closure, if required, and clearly identify who is responsible for implementing those actions.*
- *Firefighting access and water supply should also be provided.*

This Bushfire Development Report, includes a Bushfire Management Statement which outlines how the proposed development and use of the existing building 1 which will become a Primary School on the subject site, responds to the purpose and objectives of Clause 13.02 and specifically 13.02-1S Bushfire Planning, Clause 53.02-4: – Bushfire Planning, Bushfire protection objectives, including the decision guidelines of Clause 44.06 – Bushfire Management Overlay **part of a planning process under the Planning and Environment Act 1987.**

The Bushfire Development Report, **Bushfire Management Statement** includes the following:

1. *A Bushfire Hazard Site Assessment including a plan that describes the bushfire hazard within 150 metres of the proposed development;*
2. *A Bushfire Hazard Landscape Assessment including a plan that describes the bushfire hazard of the general locality more than 150 metres from the site;*
3. *A Bushfire Management Statement describing how the proposed development responds to the requirements of Clause 53:02 and Clause 44.06.*
4. *A Bushfire Attack Level Assessment – Detailed procedure (Method 2) AS3959-2018*
5. *A Bushfire Management Plan*
6. *A Response to Clause 13.02 Bushfire, Clause 13.2-1s Bushfire Planning strategies and principles. Including assist to strengthen community resilience to bushfire and bushfire hazard identification and risk assessment strategies*
7. *A Bushfire Emergency Management Plan*

It will be important for the owners to maintain a high level of property vegetation management and maintenance, in order to ensure minimal fuel loading on the property, particularly within the defined defendable space area. The nature of the grassland, woodland, and forest vegetation on, impinging on and surrounding the site will present a very high to extreme bushfire risk, particularly on days of extreme fire weather conditions.

The proposed development appropriately prioritises the protection of human life, and strengthens community resilience to bushfire, through strategic siting, design and construction measures that reduce the bushfire risk to life and property to an acceptable level.

The proposed development takes into account site constraints, the closest vegetation threat and incorporates measures to mitigate bushfire risk. When considering factors of vegetation threat, slope, and vegetation character. The following sets out the primary bushfire related requirements for the site and the buildings on the site.

Bushfire Planning and Design Key Elements for People, the Site and Building on the site, include:

Proposed Primary School Building 1, siting, landscape and bushfire protection measures. The proposed conversion of building 1 to a primary school building on the site at 1075 Heidelberg-Kinglake Road Hurstbridge, is located in a suitable location and the most suitable location on the subject site.

Bushfire Attack Level (BAL) Required Under AS3959-2018:

- *Proposed Primary School building 1 will need to comply with a minimum of BAL 29*
- *The proposed Primary School building 1 will also be the shelter in Place and Place of Last Resort on the site*
- *Future buildings on the subject site are to have a minimum BAL of BAL 29*

Retro Fitting of School Building 1 to Comply with the Construction Requirements:

The proposed school building was constructed approximately 18 years ago, in order to comply with the required bushfire attack level (BAL) BAL 29, the building will need to be retrofitted for bushfire to achieve the for the school building to comply with AS3959-2018 Construction of buildings in bushfire prone areas, and the specific BAL for the building.

Defendable Space Required:

Defendable space around the current building 1, that is to be used as the school building, will require defendable space of 30 metres or the property boundary whichever is the lesser around the school building 1, where vegetation (and other flammable materials) will be modified and managed in accordance with the following requirements of accordance with Table 6 of Clause 53.02-5 as set out below.

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Table 6 of Clause 53.02-5 – Defendable space management requirements:

- *Grass must be short cropped and maintained during the declared fire danger period.*
- *All leaves and vegetation debris must be removed at regular intervals during the declared fire danger period.*
- *Within 10 metres of a building, flammable objects must not be located close to the vulnerable parts of the building.*
- *Plants greater than 10 centimetres in height must not be placed within 3m of a window or glass feature of the building.*
- *Shrubs must not be located under the canopy of trees.*
- *Individual and clumps of shrubs must not exceed 5 sq. metres in area and must be separated by at least 5 metres.*
- *Trees must not overhang or touch any elements of the building.*
- *The canopy of trees must be separated by at least 5 metres.*
- *There must be a clearance of at least 2 metres between the lowest tree branches and ground level.*

Firefighting Water Supply Tank

There will be a 20,000-litre firefighting water supply tank constructed of concrete or steel and located on the site just east of the school building 1, as set out in the bushfire management plan and the bushfire hazard assessment plan.

Mains Water Supply Fire Hydrants and Fire Hoses and Equipment:

There is a fire hydrant on the site located 20 metres south of the school building 1 near the parking bays, and a fire hydrant on the eastern side of the school building near shed 4, as shown on the bushfire hazard site assessment and the bushfire management plan (BMP). Fire hose boxes are required at the fire hydrants, with the following firefighting equipment, fire hoses and adaptors and equipment as set out in this report.

Access and Egress for accessway and fire access track:

The main accessway is approximately 280 metres long from Heidelberg-Kinglake Road to the rear of the proposed school building 1 via the fire access track (Approximately 140 metres long) off the car park on the eastern side of the school building 1 site. The following requirements will apply under AM 4.1.

Firefighting vehicle access and design for accessway and fire access track:

The main accessway length of access is greater than 100 metres from car park to the rear of the proposed school building 1, therefore fire authority access to the water supply tanks is required under clause AM4.1 fire authority vehicle should be able to get within 4 metres of the water supply outlet of the 20,000-litre firefighting water supply tank.

The fire access track, off the main accessway and car park area east of the school building 1, therefore fire authority vehicle access design and construction requirements apply under to clause AM4.1 fire authority vehicle access requirements of table 5 Vehicle Access Design and Construction Requirements.

The following design and construction requirements apply to the accessway and fire access track:

- All weather construction
- A load limit of at least 15 tonnes
- Provide a minimum trafficable width of 3.5m
- Be clear of encroachments for at least 0.5 metres on each side and at least 4 metres vertically
- Curves must have a minimum inner radius of 10m.
- The average grade must be no more than 1 in 7 (14.4 per cent) (8.1 degrees) with a maximum of no more than 1 in 5 (20 per cent) (11.3 degrees) for no more than 50m.
- Dips must have no more than a 1 in 8 (12.5%) (7.1° degrees) entry and exit angle.

A turning area for fire fighting vehicles must be provided close to the building at the western end of the fire access track, by one of the following:

- A turning circle with a minimum radius of eight metres.
- A driveway encircling the dwelling.
- The provision of other vehicle turning heads – such as a T or Y head – which meet the specification of Austroad Design for an 8.8 metres Service Vehicle.

Bushfire Emergency Management Plan (BEMP)

This report includes a Bushfire Emergency Management Plan (BEMP) as part of the integrated approach to risk management. The BEMP is supported by a detailed assessment of the bushfire risk and includes appropriate actions aimed at ensuring the safety of those on site. A Bushfire Hazard Assessment and Bushfire Hazard Landscape Assessment have been used to inform the development of the BEMP.

The proposed development is appropriate for DELWP and CFA/FRV approval and support.

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SBAFire Australia Pty Ltd
 ABN 56 627 573 022 ACN 627 573 022
 PO Box 913 Templestowe Vic 3106
 Tel: 1300 287 862 M: 0477 287 862
 W: www.sbafire.com E: info@sbafire.com

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Document Control

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PREPARED FOR

Client name Shourouk Brookes

Address C/ 1075 Heidelberg-Kinglake Road Hurstbridge 3099 Victoria

PREPARED BY:

Consultant Geoffrey Stone *MBA, FAIM, CFO, MIFireE, AdvDipEmergMgt, CertIVFireSup, CertFireOps*
 Principal Consultant
 SBAFire – Bushfire Advisory

Address PO Box 913 Templestowe 3106 Victoria

Telephone T: 1300 287 862 M: 0477 287 862 Email: info@sbafire.com

VERSION CONTROL:

Version	Details	Date
Original V8.2	Final Document	27/9/2021
Update Version V8.3	Report updated in relation to defendable space	21/3/2022

DISCLAIMER

This report is prepared on the basis the subject site and land that is identified to be 'at risk' of bushfire. Any buildings or structures located on such land subsequently inherit this risk. This report does not seek to remove this risk but provides a bushfire management and assessment report outline of issues relating to bushfire management and planning to assist the ability of the landowner to manage the threat of this risk.

This assessment is prepared based upon local, State and Federal legislative provisions relating to bushfire protection, as relevant at the time of production. SBAFire maintains relevant knowledge with regard to planning and development in bushfire prone areas. However, it is important to note that whilst bushfires generally maintain certain scientific attributes, bushfire events vary in intensity, duration, location and 'typical' behavioural characteristics. Bushfires do not always conform to scientific and widely understood predictabilities and remain subject to variation across fire seasons by virtue of changes in ground fuel loads and vegetation, prevailing weather and wind conditions and topography.

It remains the landowner's responsibility to understand and prepare for the event of bushfire, which requires year-round property maintenance, a proficient understanding of local bushfire knowledge and what to do in the event of a bushfire. A personal bushfire safety plan is recommended, and decisions regarding what to do in an event should be made well in advance of any particular bushfire threat. Regular contact with your local fire authority is advised.

Whilst every care has been taken in the preparation of this report to advise upon the bushfire risk of the property, it forms no guarantee with respect to the safeguard of life and property. SBAFire accepts no responsibility for any damage or loss of life or property as a result of bushfire or any other cause which may in any way be taken to be the subject of this report. This report and the information within it are provided on the understanding that reasonable care will be taken when using it. If there remains any uncertainty regarding the application of the information within the report in a specified circumstance, further professional advice should be sought. SBAFire does not accept responsibility for how the information within this report is applied or relied upon.

Further comment: We reiterate that this report has been prepared to assist you in determining the nature of bushfire management requirements set out in the approved documentation for this property that is stated in this report. We have given careful consideration to the statutory requirements and specific requirements of various authorities. We SBAFire have made our recommendations on the basis of the information made available to us and our understanding of the requirements and using our best endeavors. The information may be of assistance to you. Before relying on information in this report, users should carefully evaluate the accuracy, completeness and relevance of the information provided for their purposes. SBAFire, its directors and employees do not guarantee that it is without flaw or omission of any kind or is wholly appropriate for your particular purposes and therefore disclaim all liability for any error, loss or other consequence that may arise from you relying on any information in this report.

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Consultants Details

Geoffrey Stone

Principal Consultant

SBAFire – Bushfire Advisory

PO Box 913 Templestowe Victoria 3106 T: 1300 287 862 M: 0477 287 862

W: www.sbafire.com E: info@sbafire.com

Qualifications

- Chief Fire Officer (CFO) Designation CPSE/Commission on Professional Credentialing USA
- Member of The Institution of Fire Engineers UK - MIFireE
- Advanced Diploma of Public Safety - Emergency Management
- Major Incident Controller/Commander AIIMS - Australasian Inter-service Incident Management System
- Certificate IV in Training and Assessment
- Certificate IV in Public Safety (Firefighting Supervision)
- Certificate III in Public Safety (Firefighting Operations)
- Certificate II in Public Safety (Firefighting Operations)
- Senior Executive Fire Officer Assessment V – CFA
- Operations Management - CFA
- Operations Officer – CFA
- Fire Officer III Assessment - CFA
- Brigade Officer - QFES
- Crew Leader - CFA & QFES
- Leading Firefighter/Fire Officer I – CFA
- Forest Fire Management – Former DCFL - Forests Commission Victoria
- Master of Business Administration - The University of Melbourne Victoria
- Graduate Diploma in Business Administration - The University of Ballarat Victoria
- Diploma of Leadership and Management
- Fellow of Australian Institute of Management – FAIM
- Certified Professional Manager – CPMgr current

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Area of Expertise

Bushfire management, planning, design and operations. Large scale bushfire incident command and operations. Fire and Emergency Services delivery, operations, policy, management, corporate, strategic and operational planning. Leadership and management of large-scale complex public, private and non-profit organisations.

Experience

Geoffrey Stone has more than 35 years' experience, knowledge, skills and qualifications as a Senior Fire and Emergency Services Officer with the Country Fire Authority Victoria (CFA), Queensland Fire and Emergency Services (QFES), Queensland Fire and Rescue Service (QFRS) and Rural Fire Service Queensland (RFSQ), and recognised industry wide as one of the top experts in the field. He has previously served as CFA Director Strategic and Operational Planning, State Fire Commander, Assistant Chief Officer in various departments and locations, and in other senior state, regional command, group and brigade level positions.

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ADVERTISED PLAN

Instructions and scope

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Primary school or secondary school for which an application was made to the Minister for Planning prior to the approval date of Amendment VC180. With the exception of other matters set out in Clause 72.01-1

The nature of the proposed primary school/education centre on the subject site triggers a response to the Planning Policy Framework at Clause 13.02-1 Bushfire Planning, includes the need to consider the bushfire risk associated with both 'use' and 'development' in areas designated as 'bushfire prone' under the Building Act 1993. Amongst other matters, this control requires bushfire risk to be considered when assessing a planning application for an 'Education Centre' and 'Any application for development that will result in people congregating in large numbers'. The site is in a designated bushfire prone area (BPA) and a bushfire management overlay (BMO) and fire authorities are generally of the view that developments such as the proposed primary school on the subject site use aligns with these land use terms, and thus a response to Clause 53.02-4: Bushfire Planning, Bushfire protection objectives, including the decision guidelines of Clause 44.06 – Bushfire Management Overlay is required.

The subject site is within the Bushfire Prone Area and is also covered by the Bushfire management Overlay (BMO) and therefore a very high bushfire risk environment. The site has extensive bushfire hazard landscape risk and a very high bushfire risk environment. The BDR, considers aspects of Planning Scheme relating to bushfire and protection of human life, and applies AS3959-2018 Construction of buildings in bushfire prone areas to establish the construction BAL level for the dwelling and shed on the site. The BDR considers and applies Clause 53.02 Bushfire Planning, Clause 44.06 Bushfire Management Overlay, and considers aspects of Clause 71.02-3 and 13.02-1S.

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In a BPA, the Building Act 1993, and associated Building Regulations 2006, through application of the National Construction Code (NCC), require bushfire protection standards in designated BPA areas, for class 1, 2 and 3 buildings, Specific Use Bushfire Protection Buildings, and associated class 10A buildings or decks. The applicable performance requirements in the NCC are:

- 'A building that is constructed in a designated bushfire prone area must, to the degree necessary, be designed and constructed to reduce the risk of ignition from a bushfire, appropriate to the –*
- (a) potential for ignition caused by embers, radiant heat of flame generated by a bushfire; and*
 - (b) intensity of the bushfire attack on the building'* (Australian Building Codes Board (ABCB) 2016).

Compliance with AS 3959-2018 Construction of buildings in bushfire prone areas (Standards Australia, 2018) is 'deemed to satisfy' the performance requirements.

The subject site is subject to specific planning and building controls that relate to bushfire, including "Clause 71.02-3 Integrated Decision Making, that states that planning and responsible authorities should endeavour to integrate policies and balance conflicting objectives in favour of net community benefit and sustainable development. In bushfire affected areas the protection of human life must be priorities over all other policy considerations. Clause 13.02-1S Bushfire Planning will be considered with the objective "To strengthen the resilience of settlements and communities to bushfire through risk-based planning that prioritises the protection of human life over all other policy considerations"

The BDR has been prepared in accordance with AS3959-2018, and considered bushfire related planning scheme Clauses including, 71.02-3 Integrated Decision Making, Clause 13.02-1S Bushfire Planning, 53.02 Bushfire Planning and Clause 44.06 Bushfire Management Overlay, best practice standards as applied in Victoria.

The objective of Clause 13.02 is to strengthen the resilience of settlements and communities to bushfire risk through risk-based planning that prioritises the protection of human life. Clause 13.02 requires the planning permit application to:

- *Reduce the vulnerability of communities to bushfire through the consideration of bushfire risk in decision making at all stages of the planning process.*
- *Consider the risk of bushfire to people, property and the community infrastructure.*
- *Require implementation of appropriate bushfire protection measures to address the identified bushfire risk.*
- *Ensure that new development can implement bushfire protection measures without unacceptable biodiversity impacts.*

This report demonstrates that bushfire protection and mitigation objectives for water supply, access, building design, siting and separation, landscape design, vegetation management relevant matters relating to bushfire hazard and the protection of human life have been considered and incorporated in the proposal.

This report includes a Bushfire Emergency Management Plan (BEMP) as part of the integrated approach to risk management. The BEMP is supported by a thorough assessment of the bushfire risk and includes appropriate actions aimed at ensuring the safety of those on site. A Bushfire Hazard Assessment and Bushfire Hazard Landscape Assessment have been used to inform the development of the BEMP.

Also, consideration has been given to other measures including:

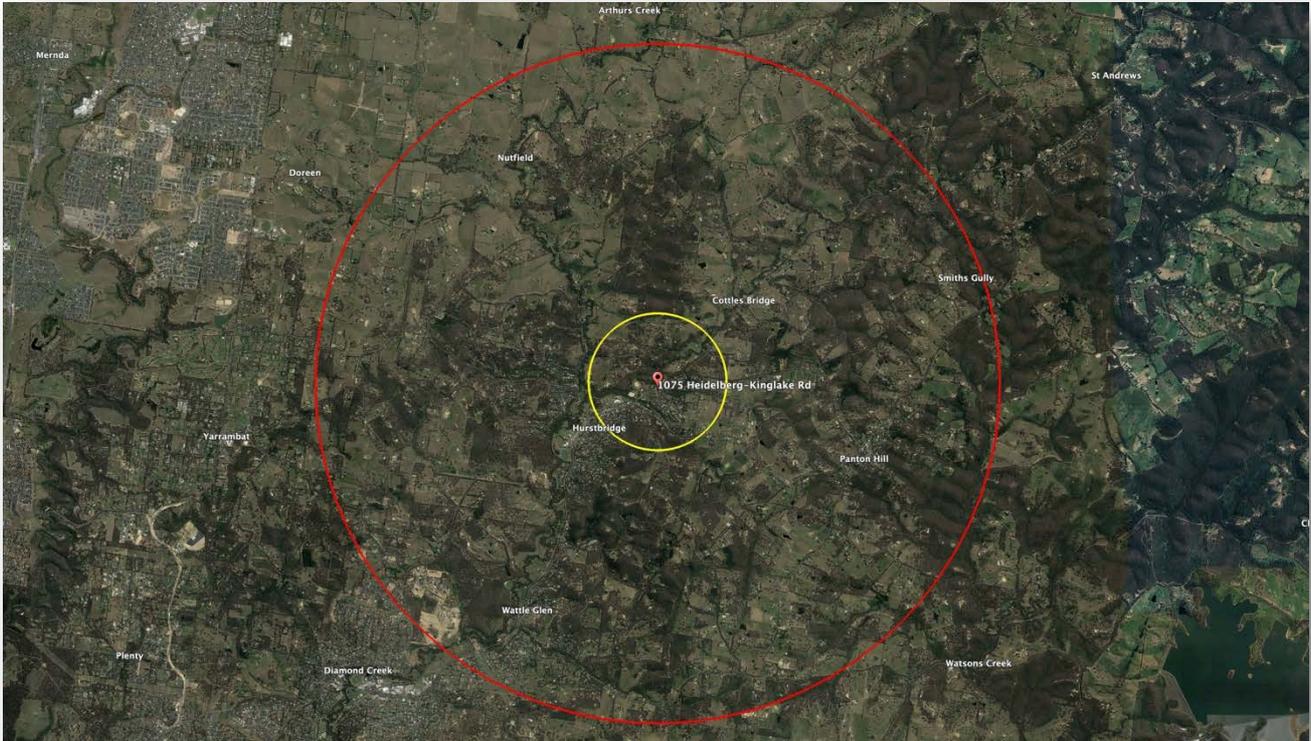
- *Consideration of conditions under which the site should not be occupied.*
- *Appropriate shelter in place option in the event of a fire if the site is occupied .*
- *Activities to be undertaken prior to each fire season such as vegetation management.*
- *Management actions in the event of a fire and clearly identify who is responsible for implementing those actions.*
- *Management action to implement site closure, if required, and clearly identify who is responsible for implementing those actions.*
- *Firefighting access and water should also be provided.*

This bushfire development report and bushfire management statement does not seek to remove the bushfire risk, but provides detailed siting, building and general bushfire hazard related information to assist in the ability of the landowner to manage the risk associated with living and operating in a bushfire environment. This bushfire management statement has been prepared in accordance with AS3959-2018 Construction of buildings in bushfire prone areas, Planning Scheme Clauses 53.02, Clause 44.06 and Clause 13.02 and best practice standards as applied in Victoria and in accordance with Local and State Government bushfire planning, guidelines and policies.

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Location and Site Overview

The subject site is located at 1075 Heidelberg-Kinglake Road Hurstbridge 3099 Victoria, surrounding properties and existing land use and the landscape context will be considered as part of this report.



Aerial Image Site location and surrounding areas, 1 km buffer (Yellow) 5 km buffer (Red)
(Image Source: Googler Earth Pro 2021)

Subject site details

Address: 1075 Heidelberg-Kinglake Road Hurstbridge 3099 Victoria

Site size: 62,911 sqm (6.29 ha)

Council: Nillumbik Council SPI: 2\LP67998 Property No. 103105

Planning Zone: Rural Conservation Zone (RCZ3)

Overlays: Bushfire Management Overlay (BMO), Environmental Significance Overlay (ESO), Land Subject to Inundation Overlay (LSIO)

Primary Planning Scheme Clauses: Clause 71.02-3 Integrated Decision Making, Clause 13.02-1S Bushfire Planning, Clause 53.02 Bushfire Planning and Clause 44.06 Bushfire Management Overlay.

Bushfire Area: Bushfire Prone Area (BPA) and Bushfire Management Overlay (BMO)

Summary of Bushfire Risk: The subject site is in the rural conservation zone adjoining the Hurstbridge township zone residential area to the west and south. Across the surrounding area there is very high to extreme threat woodland and forest vegetation to the west, north, northwest and northeast, with woodland and forest to the east and southeast. The subject site and the surrounding areas are a complex very high to extreme bushfire risk environment. The subject site bushfire risk is elevated by the extensive road verge vegetation on Heidelberg-Kinglake Road and across the wider road network. It is important to highlight that the combination very high to extreme bushfire risk vegetation combined with the potential for short and long fire runs into the site, elevates the bushfire risk the site and people face. There is significant potential for a high impact bushfire to cause extensive neighbourhood destruction and losses across Hurstbridge and the wider area.

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Site Plan

SITE DIMENSIONS

All dimensions and areas are approximate. They may not agree with those shown on a title or plan.



Area: 62911 sq. m (6.29 ha)

Perimeter: 1775 m

For this property:

- Site boundaries
- Road frontages

Dimensions for individual parcels require a separate search, but dimensions for individual units are generally not available.

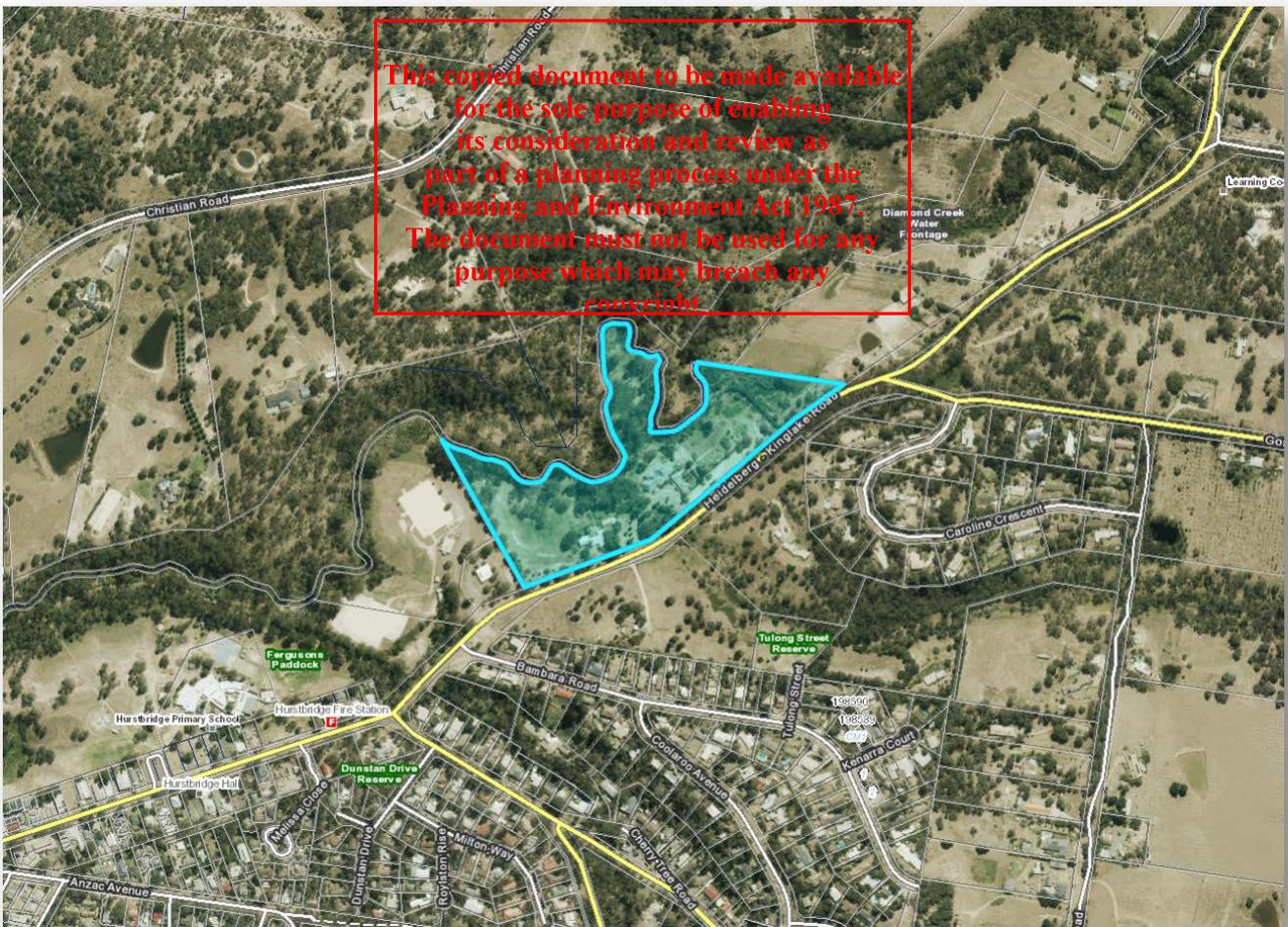
234 overlapping dimension labels are not being displayed

Calculating the area from the dimensions shown may give a different value to the area shown above

For more accurate dimensions get copy of plan at [Title and Property Certificates](#)

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Aerial Site Image of 1075 Heidelberg-Kinglake Road Hurstbridge 3099 Victoria

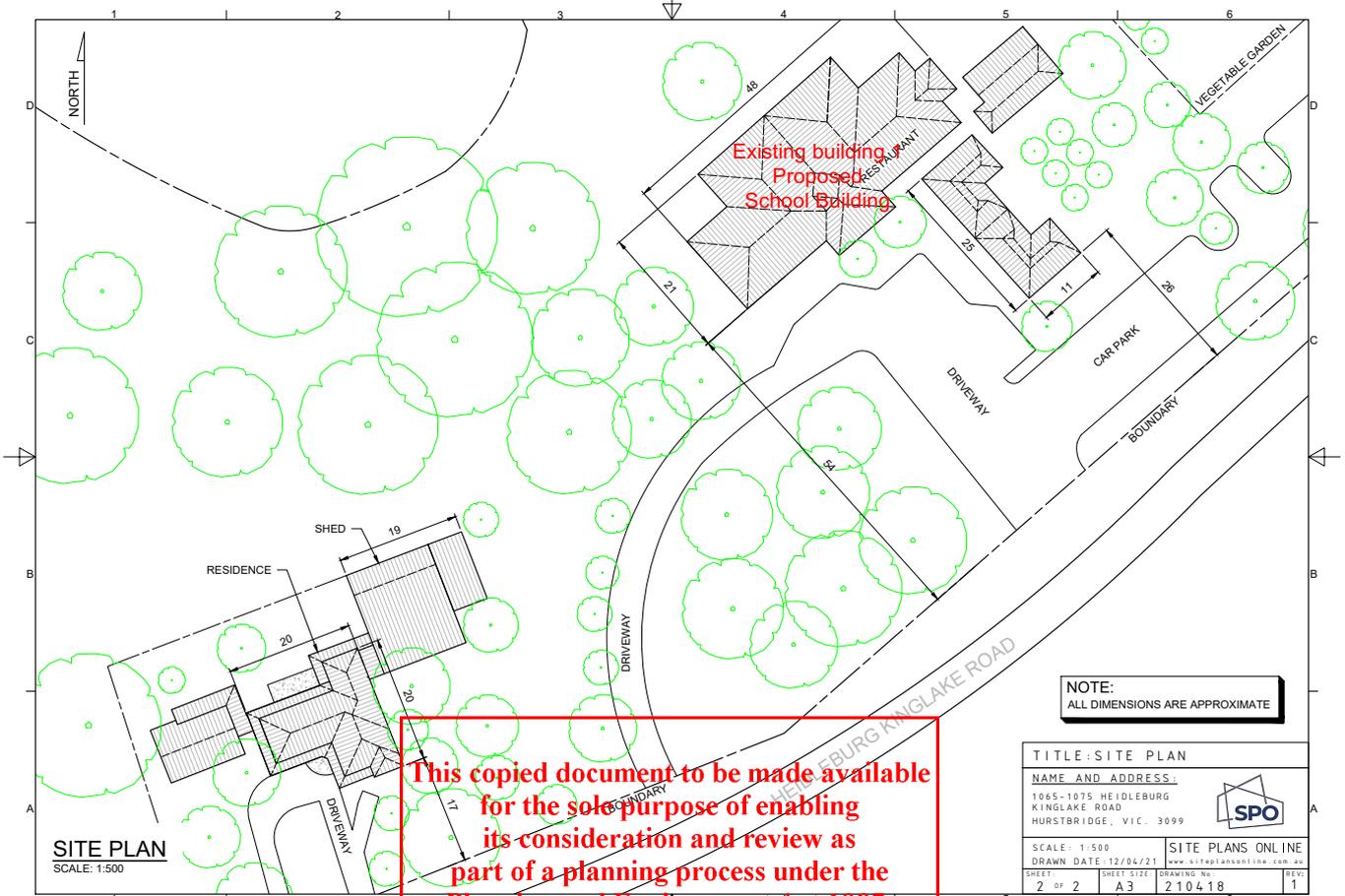


Mapshare VicPlan 30 July 2017

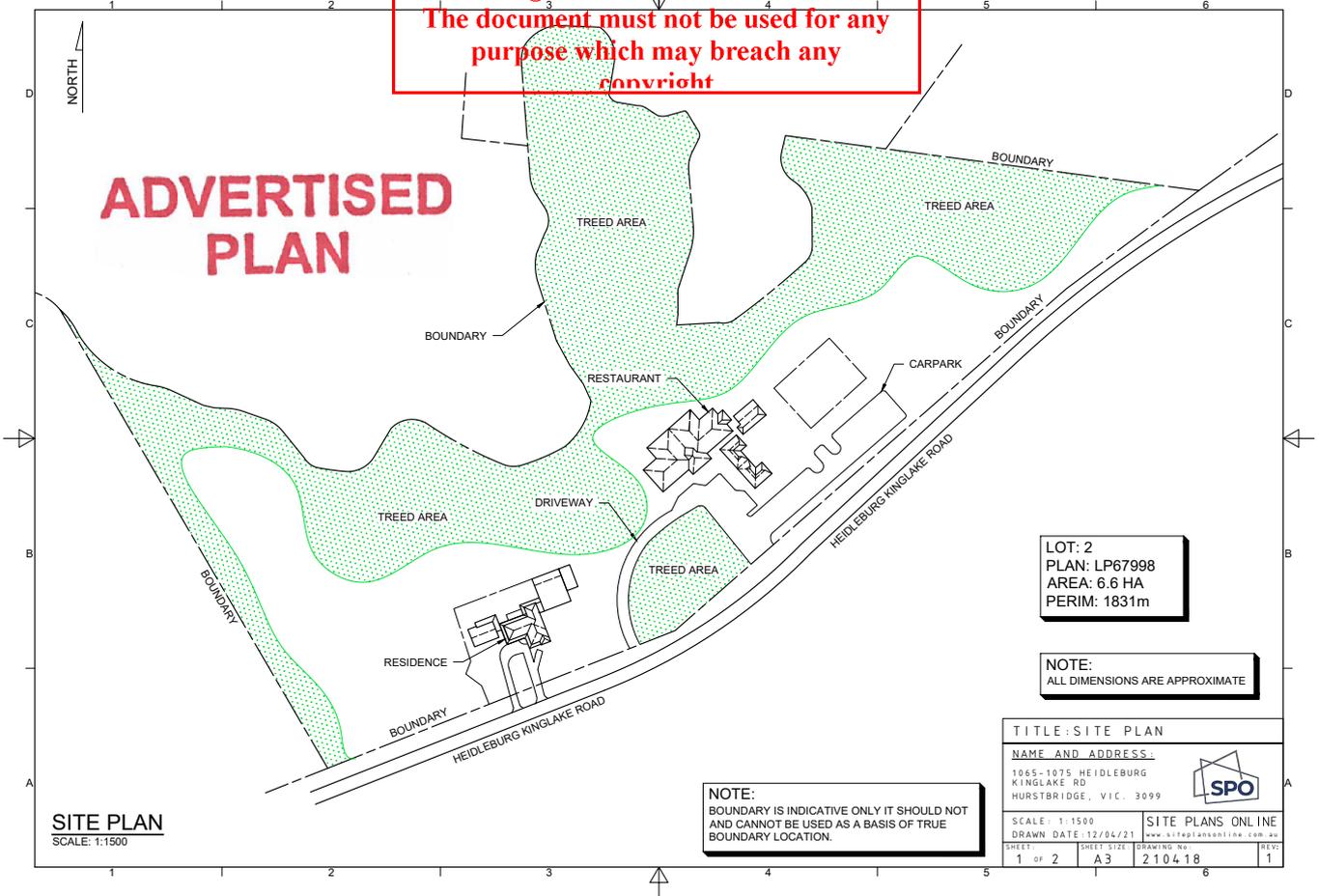
Aerial Image of Site and Immediate Surrounds



Current Site and Buildings Outline (supplied by owner)



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LOT: 2
PLAN: LP67998
AREA: 6.6 HA
PERIM: 1831m

NOTE:
ALL DIMENSIONS ARE APPROXIMATE

Aerial Images of Site and Surrounds

View Directly Above School Building and Outbuildings on Site



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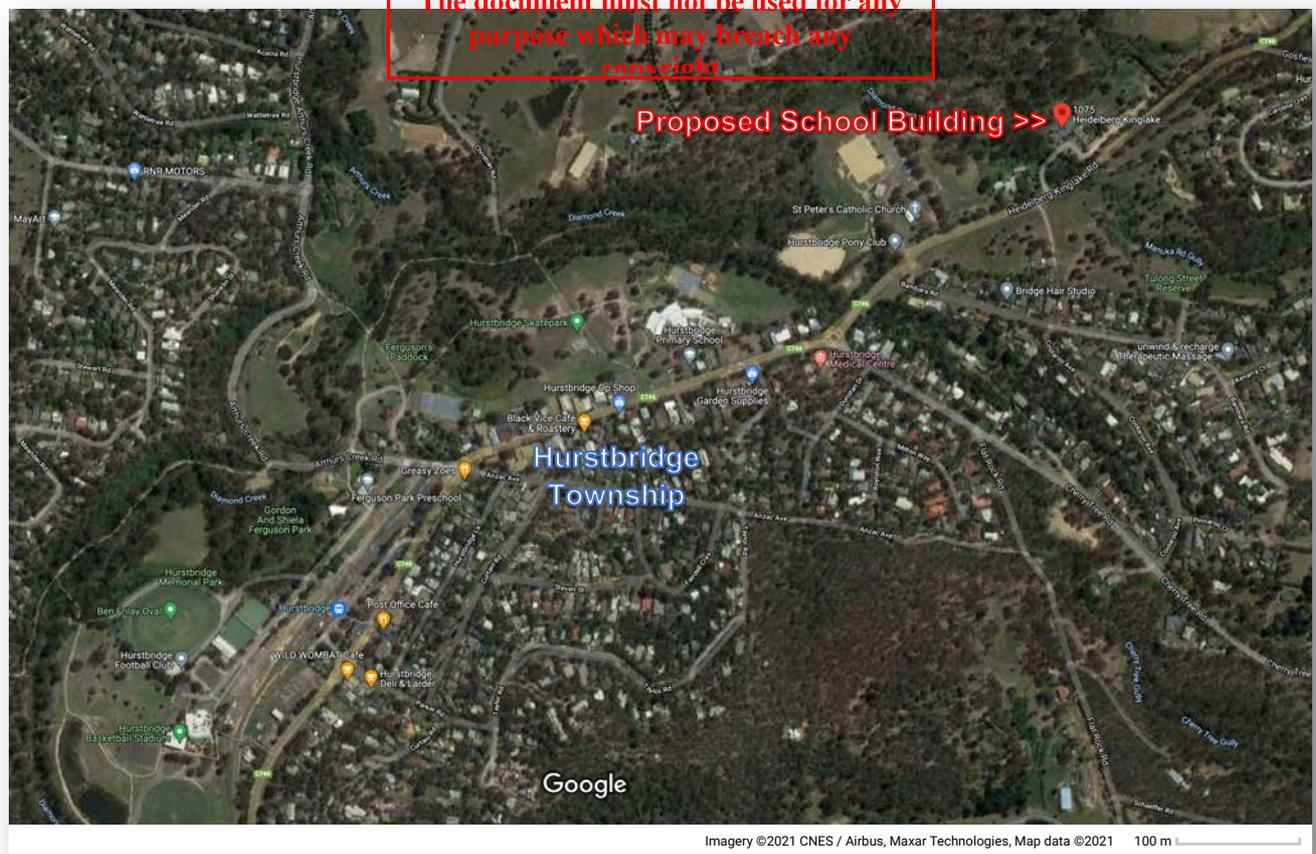
Aerial Image of Site



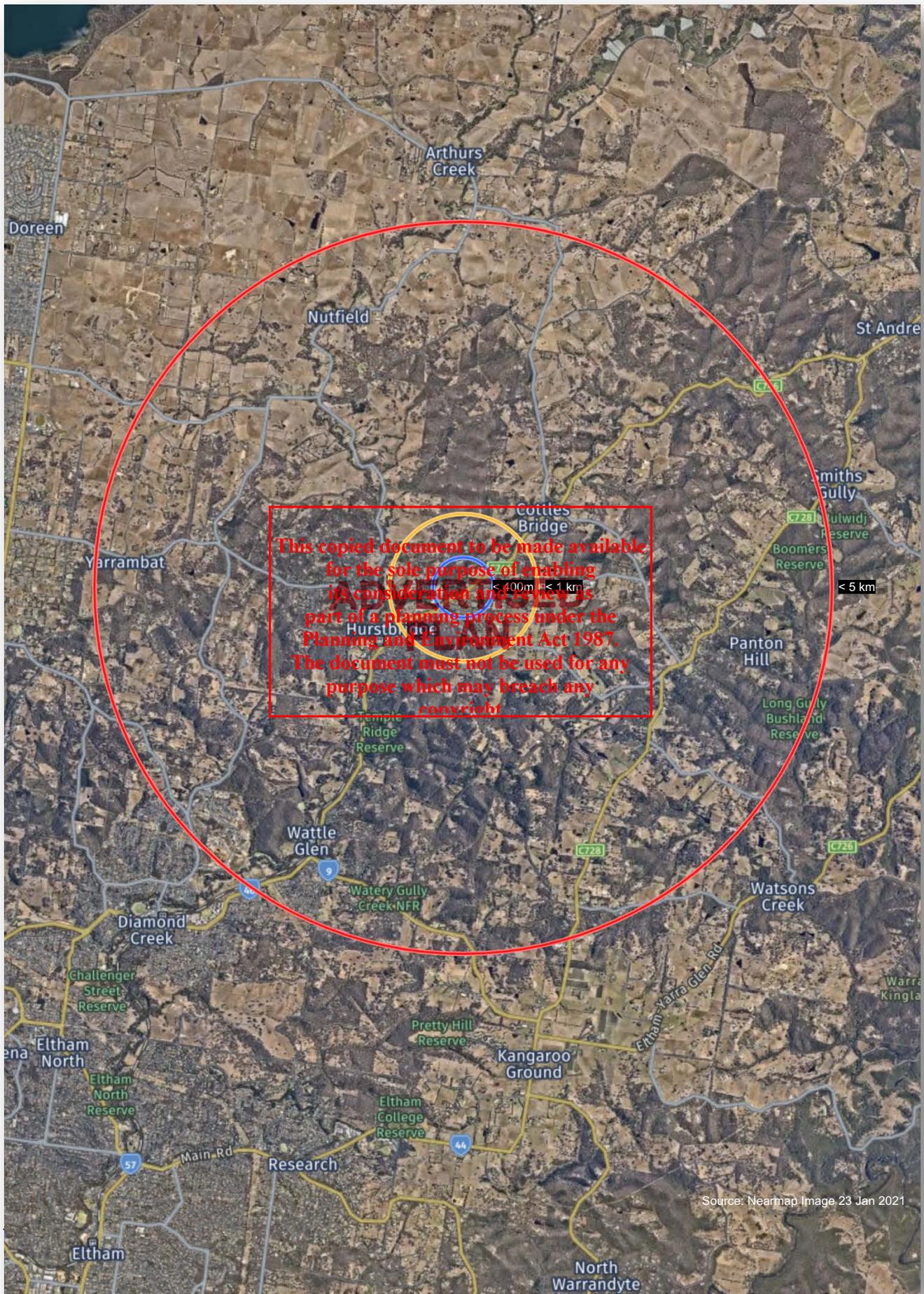
Aerial Image of Buildings on Site



Aerial Image (Google Earth Pro) of Hurstbridge and Subject Site



Aerial View of Site and Wider Surrounds – Radius 400m, 1km, 5km



bushfire related implications for the subject site.

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Planning Policy Framework

In preparing our Bushfire Development Report, we will consider aspects of Planning Scheme Clause 53.02 Bushfire Planning and Clause 44.06 Bushfire Management Overlay (BMO) and required to consider specifically Clause 71.02-3 and 13.02-1S and must apply AS3959-2018 Construction of buildings in bushfire prone areas.

Clause 71.02-3 Integrated Decision Making

The subject site is subject to specific planning and building controls that relate to bushfire, including Clause 71.02-3 Integrated Decision Making, that states that planning and responsible authorities should endeavour to integrate policies and balance conflicting objectives in favour of net community benefit and sustainable development. In bushfire affected areas the protection of human life must be priorities over all other policy considerations. Clause 13.02-1S Bushfire Planning will be considered with the objective "To strengthen the resilience of settlements and communities to bushfire through risk-based planning that prioritises the protection of human life over all other policy considerations"

Clause 13.02 Bushfire

Clause 13.02 Bushfire, through Clause 13.02-1S Bushfire Planning, has the objective "To strengthen the resilience of settlements and communities to bushfire through risk-based planning that prioritises the protection of human life over all other policy considerations" In bushfire affected areas the protection of human life must be priorities over all other policy considerations.

Clause 13.02-1S Bushfire Planning

Clause 13.02-1S has the objective "To strengthen the resilience of settlements and communities to bushfire through risk-based planning that prioritises the protection of human life" The policy must be applied to all planning and decision making under the Planning and Environment Act 1987 relating to land that is:

- Within a designated bushfire prone area
- Subject to a Bushfire Management Overlay, or
- Proposed to be used or developed in a way that may create a bushfire hazard.

Clause 13.02-1S requires priority to be given to the protection of human life by:

- 'Prioritising the protection of human life over all other policy considerations.
- Directing population growth and development to low-risk locations and ensuring the availability of, and safe access to, areas where human life can be better protected from the effects of bushfire.
- Reducing the vulnerability of communities to bushfire through consideration of bushfire risk in decision-making at all stages of the planning process' (Planning Scheme 2018)

Identify bushfire hazard and undertake appropriate risk assessment by:

- Applying the best available science to identify vegetation, topographic and climate conditions that create a bushfire hazard.
- Considering the best available information about bushfire hazard including the map of designated bushfire prone areas prepared under the Building Act 1993 or regulations made under that Act.
- Applying the Bushfire Management Overlay to areas where the extent of vegetation can create an extreme bushfire hazard.
- Considering and assessing the bushfire hazard on the basis of:

- *Landscape conditions – meaning conditions in the landscape within 20 kilometres (and potentially up to 75 kilometres) of a site.*
- *Local conditions – meaning conditions in the area within approximately 1 kilometre of a site.*
- *Neighbourhood conditions – meaning conditions in the area within 400 metres of a site; and*
- *The site for the development.*

Key strategies in Clause 13.02-1S, require that strategic planning documents, planning scheme amendments, planning permit applications and development plan approvals properly assess bushfire risk and include appropriate bushfire protection measures.

Development should not be approved where a landowner or proponent has not satisfactorily demonstrated that the relevant policies have not been addressed, performance measures satisfied, or bushfire protection measures can be adequately implemented.

Settlement planning

Plan to strengthen the resilience of settlements and communities and prioritise protection of human life by: *'Ensure settlement growth and development approvals can implement bushfire protection measures without unacceptable biodiversity impacts by discouraging settlement growth and development in bushfire affected areas that are important areas of biodiversity'*.

Use and development control in a Bushfire Prone Area

In a bushfire prone area designated in accordance with regulations made under the Building Act 1993, bushfire risk should be considered when assessing planning applications for the following uses and development:

- Subdivisions of more than 10 lots
- Accommodation
- Childcare centre
- Education Centre
- Emergency service facility
- Hospital
- Indoor recreation facility
- Major sports and recreation facility
- Place of assembly
- Any application for development that will result in people congregating in large numbers.

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When assessing a planning permit application for the above uses and development:

- Consider the risk of bushfire to people, property. And community infrastructure.
- Require the implementation of appropriate bushfire protection measures to address the identified bushfire risk.
- Ensure new development can implement bushfire protection measures without unacceptable biodiversity impacts.

A response to Clause 13.02-1S Bushfire Planning. A Response to Clause 13.02-1 is included in this report. *It is the opinion of the consultant that the structure, analysis, and the mitigation strategies applied in this bushfire development report (BDR) effectively and suitably responds to the requirements of Clause 13.02-1S relating to strengthen the resilience of settlements and communities and prioritise protection of human life.*

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Bushfire Management Overlay (BMO)

The BMO currently covers the subject site.

The BMO is a planning scheme provision used to guide the development of land in areas of high bushfire hazard. The location, design and construction of any development and the implementation of bushfire protection measures must be considered under a BMO¹.

The BMO applies to areas where there is potential for extreme bushfire behaviour, such as a crown fire and extreme ember attack and radiant heat.

The BMO deals with bushfire hazard and risk in the following ways:

1. The BMO is applied to areas based on the bushfire hazard following the methodology and criteria outlined in advisory note 46.
2. When a planning permit application is required under the BMO a site-based assessment of the bushfire hazard is undertaken and submitted as part of the application. This localised assessment considers vegetation types and slope to give an accurate picture of the bushfire hazard as it relates to a specific site.
3. A risk assessment of a proposal is undertaken as part of a planning permit application. This involves considering a proposal against the objectives, standards and decision guidelines of the BMO and Clause 53.02 and 44.06 of the Planning Scheme.

The ways that a bushfire can impact a structure informs the criteria used to define the areas where the BMO will apply.

The three main ways a bushfire can impact a structure are ember attack, radiant heat and direct flame contact. Each of these elements can impact a structure at different distances beyond vegetation itself. The BMO mapping takes this variable distance into account.

Matters to be considered in the BMO include:

- Location, layout and siting;
- Building construction and defensible space;
- Water supply and access; and
- Implementation of bushfire protection measures.

The BMO site assessment process is used to determine how far away from unmanaged vegetation a building would need to be to receive less than a certain level of radiant heat e.g. a building constructed Bushfire Attack Level (BAL) to BAL-29 has been designed to withstand a radiant heat flux of 29 kW/m². This analysis is used to determine the best combination of Defensible Space and BAL construction standard for a proposed development.

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¹ Advisory Note 46 | Bushfire Management Overlay Mapping Methodology and Criteria

Bushfire Prone Area (BPA)

The subject site is in the Bushfire Prone Area (BPA) and is covered by the Bushfire Management Overlay (BMO). BPAs are those areas subject to or likely to be subject to bushfire, as determined by the Minister for Planning. Those areas of highest bushfire risk within the BPA are designated as BMO areas.

In a BPA, the Building Act 1993, and associated Building Regulations 2006, through application of the National Construction Code (NCC), require bushfire protection standards in designated BPA areas, for class 1, 2 and 3 buildings, Specific Use Bushfire Protection Buildings, and associated class 10A buildings or decks. The applicable performance requirements in the NCC are:

'A building that is constructed in a designated bushfire prone area must, to the degree necessary, be designed and constructed to reduce the risk of ignition from a bushfire, appropriate to the –
 (a) *potential for ignition caused by burning embers, radiant heat of flame generated by a bushfire; and*
 (b) *intensity of the bushfire attack on the building'* (Australian Building Codes Board (ABCB) 2016).

Compliance with AS 3959-2018 Construction of buildings in bushfire prone areas (Standards Australia, 2018) is 'deemed to satisfy' the performance requirements.

In Victoria, applicable buildings in the BPA must be constructed to a minimum Bushfire Attack Level (BAL) 12.5, or higher, as determined by a site assessment or planning scheme requirement.

A BAL is a means of measuring the severity of a building's potential exposure to ember attack, radiant heat, and direct flame contact. There are six BALs defined in AS 3959-2018 (Standards Australia, 2018), which range from BAL-LOW, which has no bushfire construction requirements to BAL-FZ (Flame Zone) where flame contact with a building is expected.

Our (SBAFire) bushfire BAL report will use AS 3959-2018 Method 2 – A detailed procedure, set out in Appendix B, of AS 3959-2018, to determine the BAL construction standard to be applied to the proposed works on the subject site.

The site is subject to specific planning and building controls that relate to bushfire, including Clause 71.02-3 Integrated Decision Making (Planning Scheme, 2018 VC148) that states that planning and responsible authorities should endeavour to integrate policies and balance conflicting objectives in favour of net community benefit and sustainable development.

In bushfire affected areas the protection of human life must be priorities over all other policy considerations. Clause 13.02 Bushfire Clause 13.02-1S Bushfire Planning (Planning Scheme, 2018 VC148) with the objective "To strengthen the resilience of settlements and communities to bushfire through risk-based planning that prioritises the protection of human life over all other policy considerations". Policy application of Clause 13.02, Clause 13.02-1S Bushfire planning, must be applied to all planning and decision making under the Planning and Environment Act 1987 relating to land that is: within a designated bushfire prone area; subject to a bushfire management overlay; or proposed to be used or developed in a way that may create a bushfire hazard.

The whole of the subject site and adjoining properties are within a designated Bushfire Prone Area (BPA). BPA are those areas subject to or likely to be subject to bushfires, as determined by the Minister for Planning. Those areas of highest bushfire risk within the BPA are designated as Bushfire Management Overlay (BMO) areas.

In a Bushfire Prone Area, the Building Act 1993 and associated Building Regulations 2018, through application of the Building Code of Australia (BCA), apply bushfire protection standards for building works in designated BPA. A minimum construction standard applies to all new buildings in a BPA. Buildings must be constructed to a minimum BAL-12.5, or higher as determined by a site assessment or planning scheme requirement.

A BAL is a means of measuring the severity of a building's potential exposure to ember attack, radiant heat and direct flame contact. There are six BALs that form part of AS 3959 -2018 (Standards Australia). The level of risk and expected fire outcomes at each BAL are explained in the following Table.

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Bushfire Attack Levels and Corresponding Sections of AS3959-2018

The Bushfire Attack Level for the property has been assessed. The following table outlines the key elements of the BAL risk level and potential radiation exposure during a major bushfire.

**BUSHFIRE ATTACK LEVELS AND CORRESPONDING SECTIONS FOR
SPECIFIC CONSTRUCTION REQUIREMENTS**

Bushfire Attack Level (BAL)	Classified vegetation within 100 m of the site and heat flux exposure thresholds	Description of predicted bushfire attack and levels of exposure	Construction Section
BAL—LOW	See Clause 2.2.3.2	There is insufficient risk to warrant specific construction requirements	4
BAL—12.5	"12.5 kW/m ²	Ember attack	3 and 5
BAL—19	>12.5 kW/m ² "19 kW/m ²	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing heat flux	3 and 6
BAL—29	>19 kW/m ² "29 kW/m ²	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing heat flux	3 and 7
BAL—40	>29 kW/m ² "40 kW/m ²	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing heat flux with the increased likelihood of exposure to flames	3 and 8
BAL—FZ	>40 kW/m ²	Direct exposure to flames from fire front in addition to heat flux and ember attack	3 and 9

Table 1: Source Table 3.1 AS3959-2018

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Bushfire Hazard Characteristics

Australia has a long history of bushfires going back more than 150 years. There are a number of key factors that are involved in major bushfires, including the presence of fuel, oxygen and an ignition source. More specifically, fire intensity and the speed at which a bushfire spreads will depend on ambient temperature, fuel load, fuel moisture, wind speed and slope angle.

Understanding how bushfire behaves and destroys houses is important when planning, designing, siting a dwelling and selecting suitable plants for a garden. There are three major factors that influence bushfire behaviour: topography, weather conditions and vegetation.

Bushfire Attack Methods

There are a number of ways in which bushfires attack vegetation and structures, including;

- Direct flame contact
- Ember attack
- Radiant heat

During major bushfires dwellings and structures are impacted firstly by one of these attack methods, most often ember attack causes structures to ignite well ahead of the main bushfire front.

Mechanisms of bushfire attack

The mechanisms of bushfire attack on a building can be a combination of sparks and embers and or direct flame contact and or radiant heat. Strong winds may also cause structural damage to a building and increase the chances of ignition by embers, radiant heat or flame. These mechanisms and their possible implications for the subject site area are briefly discussed in this section.

Direct Flame contact and radiant heat

Radiant heat is the heat generated by burning materials. It can cause combustible surfaces to ignite without direct flame or ember contact, crack and break windows and dry out materials ahead of an advancing bushfire, making them more readily combustible.

It is flame contact or radiant heat that poses the greatest threat to human survival. These mechanisms can result in rapid involvement of the entire building and cause the building to ignite during the passage of the fire front when in most cases there is no option for people present, other than to shelter within the building. Radiant heat is the most common cause of death in bushfires.

Flame contact and radiant heat



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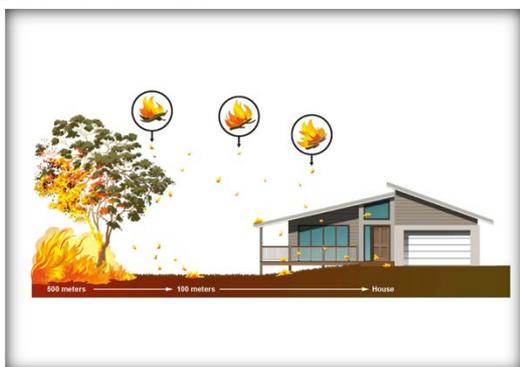
Ember attack

Ember attack is the most common cause of house loss during bushfires. Ember attack occurs when small burning twigs, leaves and bark are carried by the wind, and land on and around the building. If they land on combustible surfaces, they can cause an ignition that can spread to the whole building. Embers can enter gaps as small as 1.8mm².

Typically, ember attack can be expected to commence well before a fire front arrives, peak with the passage of the fire front and then continue for a number of hours after the fire front has passed, as nearby trees continue to smoulder and shed burning bark. Many buildings are lost to ember attack in the period after the fire front has passed.

Where there are rough and loose barked, stringybark eucalypts in the woodland and forest vegetation on and around a site, severe ember attack is possible, especially in a large, landscape scale bushfire. Eucalypt species can also generate burning materials and firebrands that can be lofted hundreds of meters and at times many km in advance of the fire. Under unpredictable and variable bushfire wind conditions, such ember attack may be possible from all directions. One of the purposes of the AS3959-2018 BAL construction standards is to provide sufficient protection from embers.

Ember attack on a structure



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Wind

Wind has the potential to increase a building's vulnerability to other mechanisms of bushfire attack. Severe winds can accompany severe bushfires and cause failure of the building structure, allowing ember entry onto combustible surfaces. It can also cause trees and branches to fall, breaking windows, and other damage to the structure.

The winds associated with Black Saturday Bushfires on 7 February 2009 at times exceeded more than 100 km per hour combined with temperatures exceeding 46 degrees C. During the Ash Wednesday Bushfires of 1983 winds exceeding 110 km per hour were recorded.

Vegetation Elements

This section outlines the vegetation within and adjacent to a site area and classifies it pursuant to AS3959-2018 *Construction of buildings in bushfire prone area*³, vegetation classification scheme. The bushfire attack level (BAL) site assessment requires the identification of classified vegetation within 150m radius of the site due to the bushfire risk of a site and surrounding vegetation. The bushfire hazard site assessment documents the bushfire hazard on or near the site.

² CFA Vegetation Classes Victorian Bushfire Management Overlay

³ Australian Standard Construction of building in bushfire prone areas AS3959-2018

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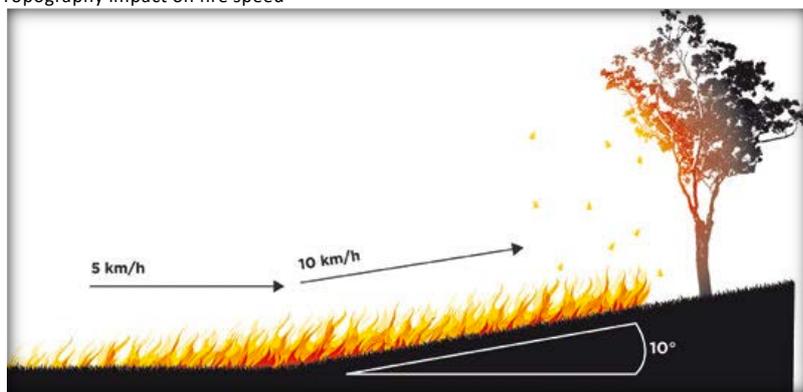
The assessment provides factual information, on the bushfire hazard (vegetation type and slope), informs defensible space, bushfire attack level and building construction requirements, which is informed by the methodology contained in AS3959:2018.

The BAL relies on a generalised description of vegetation based on the AUSLIG (Australian Natural Resources Atlas: - Native Vegetation) classification system. If more than one vegetation type is present, the 'worst case scenario' is applied - the predominant vegetation type present is not necessarily the worst-case scenario applied (AS3959:2018 2.2.3.1).

Topography

Topography can significantly influence the rate of spread and intensity of a bushfire. Fire burns faster uphill – as the slope increases so does the speed of the fire and its intensity. For every 10° slope, the fire will double its speed. Fires move more slowly down-hill because the flames reach less fuel, and less radiant heat preheats the vegetation in front of the fire. For every 10° of downhill slope, the fire will halve its speed³. When winds are light the slope will be the dominant influence on the direction of fire spread.

Topography impact on fire speed



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Fire Weather

Hot, dry and windy days provide ideal conditions for a bushfire. In summer, these are common weather conditions that increase the flammability of vegetation. Low humidity and high temperatures, which are fueled by hot winds, dry out vegetation, allowing it to readily ignite.

Fire weather is a significant part of bushfire hazard. Vegetation types, fuel loads, effective slope and a range of other factors can be assessed, fire weather can vary greatly across days and seasons, and can have a significant impact on the potential for bushfire threat and bushfire behaviour and intensity.

Fire Danger Index

The Fire Danger Index (FDI) was developed in the 1960's by Scientist A. G. McArthur to measure the degree of danger of fire in Australian forests. The index combines a record of dryness, based on rainfall and evaporation, with meteorological variables for wind speed, temperature and humidity. The FDI is a key component for calculating the Bushfire Attack Level (BAL) combined with vegetation type, distance to classified vegetation and slope.

The FDI is the primary method used to communicate the level of fire danger at a point in time and the likely ability of fire suppression agencies being able to suppress a fire.

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Bushfire Hazard Site Assessment

The Bushfire Hazard Site Assessment describes the subject site and bushfire hazard within 150m of the proposed development.

We acknowledge that, pursuant to Clause 53.02, “the description of the hazard must be prepared in accordance with Sections 2.2.3 to 2.2.5 of AS3959:2009 Construction of buildings in bushfire prone areas (Standards Australia) excluding paragraph (a) of section 2.2.3.2”.

This assessment:

- Provides factual information on the bushfire hazard (vegetation type and slope);
- Informs defensible space and building construction requirements; and
- Utilises the methodology contained in Australian Standard AS3959:2009 Construction of buildings in bushfire prone areas (AS3959) to provide contextual information on a site.

The following summarises the characteristics which are present within the site and surrounding environs:

Assessment area and analysis of the site

<p>Assessment area and analysis of the site</p>	<p>The subject site school building and associated buildings are set amongst rural properties in an established setting of 1075 Heidelberg-Kinglake Road Hurstbridge, featuring rural properties and housing at the rural/urban bushfire interface on various lot sizes and configurations. With modified vegetation near the school building and extensive woodland and forest vegetation to the north, north west, north east, east, west, south east, and south.</p> <p>The vegetation on the site is currently partly managed, but the wider grassland, woodland, and forest vegetation on and adjoining the site is largely unmanaged, and will require ongoing vegetation management of the modified vegetation, grassland, woodland and forest areas on the subject site and where possible adjoining the site.</p> <p>The vegetation on the site and near the school building will need to be managed to achieve the required defensible space. In addition, the current accessway to the site, would appear to comply with the BMO access requirements as fire authority access is required to the firefighting water supply tank. The proposed fire access track will need to comply with all of the required BMO access and egress requirements, including achieving the required accessway construction requirements.</p> <p>Heidelberg-Kinglake Road is a sealed public road. Firefighting vehicles will be able to access the school building and the firefighting water supply tank from the accessway.</p> <p>There are two (2) fire hydrants within 120 metres of the rear of the school building 1. A 20,000-litre firefighting water supply tank will be required on the site as set out in this report and specifically the bushfire management plan (BMP).</p> <p style="text-align: center;">ADVERTISED PLAN</p>
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<p>Vegetation classification</p> <p><i>This is Section 2.2.3 in AS3959</i></p>	<p>When considering vegetation within the assessable area (150 metre radius) the vegetation includes modified vegetation, grassland/scrub, some managed vegetation and scattered woodland and forest vegetation.</p> <p>Beyond the site the primary risk is the grassland, woodland and forest vegetation areas to the north, west, east and south. There are extensive very high to extreme risk forest and woodland areas to the north, northwest, northeast, west/southwest and east/southeast associated with road verge vegetation and woodland and the forest areas that are essentially, unmanaged.</p> <p>It is important to highlight that under dry fuel and extreme fire weather conditions, the current vegetation on the site and adjoining and beyond the site presents a very high to extreme bushfire risk to the site and people on the site, should the site and area be impacted by a major bushfire. Also, the extensive largely unmanaged road verge vegetation along Heidelberg-Kinglake Road, main roads and other roads and access tracks across the area present a very high bushfire risk.</p> <p>Clarification of reference to “Modified vegetation” refers to vegetation that is different from the other vegetation types shown in AS3959 and Table 1 and Table 2 of Clause 53.02-5. Modified vegetation can be difficult to classify as the likely fire behaviour may not produce a consistent front moving across a landscape but will generate radiant heat and localised flame contact that needs to be fully considered.</p> <p>Modified vegetation may arise where fuel loads are high but the vegetation is modified because of urban development, gardens, the way the vegetation is configured (for example, limited or no understory vegetation), or because the fuel loads are different from the fuel loads assumed in AS3959. Modified vegetation may also arise where the vegetation cannot be excluded as it is not low-threat or low-risk.</p> <p>Where the bushfire hazard site assessment justifies that vegetation is modified Table 1 and Table 2 set out the defendable space and construction response to this in conjunction with the applicable approved measures.</p> <p><i>“Note 2: Modified vegetation is vegetation that doesn’t fit into the vegetation classifications in AS3959-2018 Construction of buildings in bushfire prone areas (the standard) because it:</i></p> <ul style="list-style-type: none"> - <i>has been modified, altered or is managed due to urban development, or gardening,</i> - <i>has different fuel loads from those assumed in the standard,</i> - <i>has limited or no understory vegetation, or</i> - <i>is not low-threat or low-risk vegetation as defined in the standard”.</i>⁴ <p>It is clear that the vegetation that is close to the school building is essentially modified vegetation and woodland. There is little if any ground fuel and the primary treed vegetation in the defined modified vegetation area is essentially managed to some extent.</p>
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⁴ Planning Scheme Clause 53.02 Bushfire Planning page 76

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	<p>The level of ground fuel management and the separation between the modified vegetation combined with the overall treed canopy across and near the school building 1, is such that it is not fully linked and therefore does not provide an overall linkage of the canopy across and adjoining the site.</p> <p>The modified vegetation, grassland and woodland vegetation areas within 150 metres of the current buildings and the school building 1, set out in the Bushfire Hazard Site Assessment Plan and beyond 150 metres in the Bushfire Hazard Landscape Assessment and plan.</p>
<p>Exclusions – low-threat vegetation and non-vegetated areas <i>This is Section 2.2.3.2 in AS3959</i></p>	<p>The vegetation and properties adjoining the subject site are such that there are no areas that the consultant is prepared to class as excludable, due to the overall bushfire landscape risk and the extensive road verge vegetation across the area.</p> <p>On and adjoining the subject site there are no areas that are excludable and in a state of 'low threat' and therefore excludable pursuant to AS3959-2018 2.2.3.2 (f).</p> <p>Whilst some areas are managed vegetation on and adjoining the site, it is such that it is not considered excludable, as there is potential under extreme fire weather and dry fuel conditions that some of the managed areas may be capable of carrying a bushfire.</p>
<p>Distance to classifiable Vegetation <i>This is Section 2.2.4 AS3959</i></p>	<p>The subject site and the proposed conversion of building 1 as a school building/educational building, of the development is currently located within 20 metres of the very high-risk woodland vegetation, which would trigger a very high BAL for the school building 1.</p> <p>For the purpose of this report and the ongoing management of the vegetation on the subject site, the vegetation on the site has been assessed as being essentially modified vegetation, scrub/grassland, woodland and forest with much of the area around the school building being managed.</p> <p>As part of the proposed development, defensible space of 30 metres or the property boundary whichever is the lesser around the proposed school building 1 as set out in the bushfire management plan (BMP) and bushfire hazard site assessment plan.</p> <p>Based on the proposed defensible space, the distance from the proposed school building 1 educational building and the modified vegetation will be, forest 30 metres northeast, forest 35 metres north and northwest, woodland 20 metres west, modified vegetation 20 metres south, woodland 78 metres east, grassland 63 metres northeast, grassland 87 metres south.</p>
<p>Slope under the classifiable vegetation <i>This is Section 2.2.5 in AS3959</i></p>	<p>The effective slope under the classified vegetation is as follows: <i>North: Upslope.</i> <i>East: Upslope</i> <i>South: Upslope</i> <i>West: Upslope</i></p> <div style="border: 2px solid red; padding: 5px; text-align: center; color: red; font-weight: bold;"> <p>This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright</p> </div>

Reticulated Water Supply, Fire Hydrant

There are currently 2 fire hydrants on or the site near the school building. There will be a need for fire hose boxes and facilities at the fire hydrant. There will be a 20,000-litre firefighting water supply tank located on the accessway and near the fire access track. The firefighting water supply tank will be fitted with CFA couples and fittings for fire authority vehicle use.

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Classified Vegetation Table:

Classified vegetation within 150 metres of the proposed development in accordance with AS3959-2018
Construction of buildings in bushfire prone areas.

	Direction (Aspect)			
	Northern	Southern	Eastern/NE	Western
Vegetation (within 150 metres of proposed building / works)	Excludable / Low Threat <input type="checkbox"/>			
Modified	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Forest	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Woodland	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Scrub (tall)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Shrubland (short)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mallee	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rainforest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grassland	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Effective Slope (under the classifiable vegetation within 150 metres)	Upslope / Flat DOWNSLOPE <input checked="" type="checkbox"/>			
>0 to 5°	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
>5 to 10°	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
>10° to 15°	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
>15 to 20°	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
>20°	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Distance (m) to Classifiable Vegetation	35	20	30	20
Primary vegetation	Forest	Modified/Woodland	Forest	Woodland
BAL rating	29	29	29	29
Defendable Space in metres	30 metres or the property boundary whichever is the lesser	30 metres or the property boundary whichever is the lesser	30 metres or the property boundary whichever is the lesser	30 metres or the property boundary whichever is the lesser

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Bushfire Attack Level (BAL) Assessment

Property Details:

Lot and Plan Number: SPI: 2\LP67998 Nillumbik Council Property No. 193104

Address: 1075 Heidelberg-Kinglake Road Hurstbridge 3099 Victoria

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Description of building work:

This report has been prepared to provide an understanding of the Bushfire Attack Level (BAL) and the construction requirements flowing from the BAL, as set out in Australian Standard AS3959-2018 Construction of buildings in bushfire prone areas and BCA measures required as part of any construction works for the conversion of an existing building into a Primary School at the site as outlined above.

Bushfire Attack Level Analysis and modelling

The development of the site assessment has used the detailed procedure to determine the BAL for the subject site.

The fire danger index (FDI) for Victoria has been applied at FDI 100.

The Bushfire Attack Level (BAL) shall be determined by using either;

1. (a) simplified procedure described in Clause 2.2 (Method 1); or
2. (b) detailed procedure described in Appendix B (Method 2).

BALs are based on levels of exposure defined in Table 3.1. of AS3959-2018 p34.

There are two methods for determining BALs as outlined above:

Method 1 - a simplified procedure that involves five procedural steps to determine BALs, and is subject to limitations on the circumstances in which it can be used (see Appendix C) of AS3959-2018.

Method 2 - a detailed procedure using calculations to determine BALs where a more specific result is sought or where the site conditions are outside of the scope of the simplified procedure (Method 1) (see Appendix B) ASS3959-2018.

BALs are used to determine which, if any, construction requirements contained in Sections 3 to 9 of AS3959-2018 Construction of buildings in bushfire prone areas, are appropriate for a particular site.

The table of calculations on page 35 sets out the Method 2 modelling of BALs for the subject site.

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Bushfire Attack Level Assessment – Method 2 – Modelling

Bushfire Attack Level Calculations for Subject Site

Bushfire Attack level (BAL) Method 2	North	South	East/NE	West
Inputs				
Fire Danger Index	100	100	100	100
Vegetation Type	Forest	Modified	Forest	Woodland
Surface fuel Load (t/ha)	25	15	25	15
Overall fuel Load (t/ha)	35	25	35	25
Effective Slope (°)	0	0	0	0
Site Slope (°)	0	0	0	0
Distance to Vegetation	30 m	20 m	30 m	20 m
Flame width (m)	100	100	100	100
Windspeed km/h	45	45	45	45
Heat of Combustion (kj/kg)	18,600	18,600	18,600	18,600
Flame Temperature (K)	1090	1090	1090	1090
Outputs				
Rate of Spread (km/h)	3 km/h	1.79 km/h	3 km/h	1.79 km/h
Flame Length (m)	23.7 m	14.7 m	23.7 m	14.7 m
Flame Angle	67°	67°	64°	67°
Elevation of Receiver	10.9 m	6.76 m	10.65 m	6.76 m
Fire Intensity	54,250 kW/m	23,249 kW/m	54,250 kW/m	23,249 kW/m
Transmissivity	0.803	0.839	0.8169	0.839
Viewfactor	0.3149	0.3615	0.3777	0.3615
Radiant Heat Flux	19.25 kW/m ²	23. kW/m ²	23.48 kW/m ²	23. kW/m ²
Bushfire Attack Level	BAL – 29	BAL – 29	BAL – 29	BAL – 29

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References: Rate of Spread – Noble et al. 1980, Flame length – Purton 1982, Elevation of receiver – Douglas & Tan 2005, Flame angle – Douglas & Tan 2005, Radiant heat flux – Drysdale 1999, Sullivan et al. 2003, Douglas & Tan 2005

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Determination of Bushfire Attack Level (BAL)

Bushfire attack level (BAL) assessment Method 2 modelling of potential BAL's has been undertaken.

*The subject property is in a designated bushfire prone area and is required to comply with the planning scheme and AS3959-2018 Construction of buildings in bushfire prone areas, **thus the works associated with the retrofitting and conversion of the current building 1 on the site to a School Building 1 at 1075 Heidelberg-Kinglake Road Hurstbridge 3099 Victoria is subject to a minimum construction level of BAL 29.***

Statement:

I have taken all reasonable steps to ensure that the information provided in this assessment is accurate and reflects the conditions on and around the site and allotment on the date of this assessment.

I have undertaken a great deal of work on this report, well beyond the normal scope for such a report. I am sure you will find it helpful in considering your bushfire risk planning and mitigation strategies for the property.

Signed: *Geoffrey Stone*

Geoffrey Stone MBA, FAIM, CFO, MIFireE, AdvDipEmergMgt, CertIVFireSup, CertFireOps
Principal | **SBAFire – Bushfire Advisory**

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Bushfire Attack Levels (BAL)

The following table outlines the key elements of the BAL risk level and potential radiation exposure during a major bushfire.

Bushfire Attack Level (BAL)	Risk Level	Construction elements are expected to be exposed to...	Comment
BAL- Low	VERY LOW: There is insufficient risk to warrant any specific construction requirements but there is still some risk	No specification	At 4kW / m ² pain to humans after 10 to 20 seconds exposure. Critical conditions at 10kW / m ² and pain to humans after 3 seconds. Considered to be to be life threatening within 1 minute of exposure in protective equipment.
BAL-12.5	LOW: There is risk of ember attack.	A radiant heat flux not greater than 12.5 kW/m ²	At 12.5kW/m ² standard float glass could fail and some timbers can ignite with prolonged exposure and piloted ignition.
BAL-19	MODERATE: There is a risk of ember attack and burning debris ignited by windborne embers and a likelihood of exposure to radiant heat.	A radiant heat flux greater than 19 kW/m ²	At 19kW / m ² screened float glass could fail.
BAL-29	HIGH: There is an increased risk of ember attack and burning debris ignited by windborne embers and a likelihood of exposure to an increased level of radiant heat.	A radiant heat flux of greater than 29kW/m ²	At 29kW / m ² ignition of most timbers without piloted ignition after 3 minutes exposure. Toughened glass could fail.
BAL-40	VERY HIGH: There is a much increased risk of ember attack and burning debris ignited by windborne embers, a likelihood of exposure to a high level of radiant heat and some likelihood of direct exposure to flames from the fire front.	A radiant heat flux not greater than 40kW/m ²	At 42kW / m ² ignition of cotton fabric after 5 seconds exposure (without piloted ignition)
BAL-FZ (Flame Zone)	EXTREME: There is an extremely high risk of ember attack and a likelihood of exposure to an extreme level of radiant heat and direct flames from the fire front.	A radiant heat flux greater than 40kW/m ²	At 45kW / m ² ignition of timber in 20 seconds (without piloted ignition)

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Defendable space is provided for a distance of 30 metres or the property boundary whichever is the lesser, where vegetation (and other flammable materials) will be modified and managed in accordance with the following requirements:

Grass must be short cropped and maintained during the declared fire danger period.

All leaves and vegetation debris must be removed at regular intervals during the declared fire danger period.

Within 10 metres of a building, flammable objects must not be located close to the vulnerable parts of the building.

Plants greater than 10 centimetres in height must not be placed within 3m of a window or glass feature of the building.

Shrubs must not be located under the canopy of trees.

Individual and clumps of shrubs must not exceed 5 sq. metres in area and must be separated by at least 5 metres.

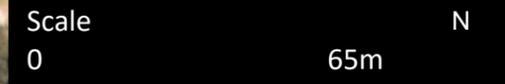
Trees must not overhang or touch any elements of the building. The canopy of trees must be separated by at least 5 metres.

There must be a clearance of at least 2 metres between the lowest tree branches and ground level.

Bushfire Hazard Site Assessment Plan

1075 Heidelberg-Kinglake Road Hurstbridge

- Legend**
- School Building 1
 - Other Buildings 2 & 3
 - Shed 4
- Vegetation Type**
- Excludable
 - Forest
 - Woodland
 - Grassland
 - Modified Vegetation
 - Scrub/Grass Mixed
 - Contours 10m
 - 150m Radius
 - Roadways
 - Creek
 - Proposed Vegetation Buffer NA
 - Managed Vegetation
 - Defendable Space
 - Rainwater Tank
 - Firefighting Water Tank
 - FH Fire Hydrant
 - Site Boundary
 - Pickup & Drop Off
 - Driveway to Fire Water Tank
 - Building Compound Zone
 - Main Egress/Access
 - Fire Access Track
 - FHB Fire Hose Box
- Note: All measurements are approximate*



Date Prepared: 21 March 2022 Update
 Version number: 1.5 (V24-2)
 Nearmap Image 8 Nov 2020

Note: All measurements and distances are approximate only

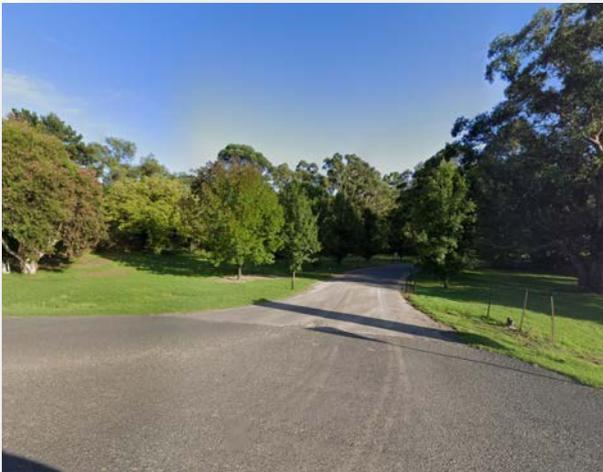
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Site and Surrounds Images

The following photographs illustrate the subject site and surrounding vegetation characteristics:

Source Images: Google and Client

1 View north to the entry to 1075 Heidelberg-Kinglake Road.



2 View west on Heidelberg-Kinglake Rd 1075 site entry on right



3 View south at site entry to grassland and woodland



4 View east on Heidelberg-Kinglake Rd 1075 site entry on left



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5 View northeast on accessway to proposed school building



6 View east on accessway to site buildings



7 View east to buildings on the site



8 View east to buildings on site



9 View north to proposed school building



10 View north to proposed school building and vegetation



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11 View southeast to car parking near buildings



12 View southeast from car parking to Heidelberg-Kinglake Rd



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13 View west from car park area to vegetation and accessway to site



14 View northeast on accessway to car parking east of buildings



15 View northeast to car parking east of buildings site



16 View east from car park to emergency exit gate to Heidelberg Rd



17 View northwest from Heidelberg-Kinglake Rd to emergency exit gate



18 View northwest from car park to fire access track gate



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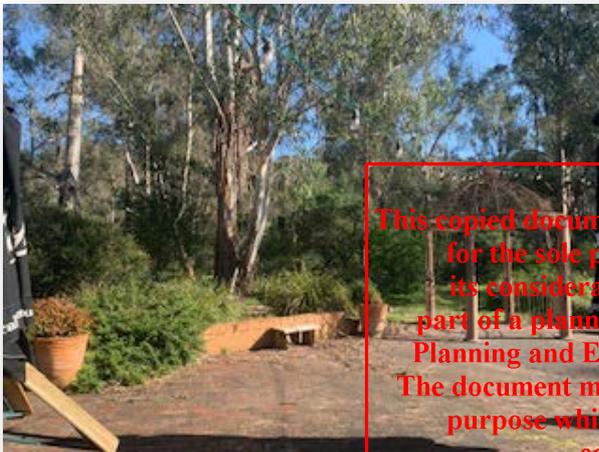
19 View northeast from rear of school building to vegetation



20 View northwest from rear of school building to vegetation



21 View northeast from rear of school to vegetation



22 View north from rear of school to vegetation



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23 View east from near Diamond Creek to school building



24 View southeast from near Diamond Creek to school building



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Bushfire Hazard Landscape Assessment

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The bushfire hazard landscape assessment (the 'landscape assessment') provides information on the bushfire hazard more than 150 metres away from a development site. Considering bushfire from this broader landscape perspective is important as it affects the level of bushfire risk a development and its future occupants may be exposed to. This landscape assessment:

- Provides factual information on the bushfire hazard (vegetation extent and slope)
- Provides information on key features of the general locality that are relevant to better understanding the protection provided by the location
- Provides contextual information on a site.

The landscape assessment does not assess a specific development proposal and is only required where Clause 53.02-4 requires consideration of the bushfire risk from the landscape beyond the site. Clause 13.02 of the Planning Policy Framework prioritises the protection of human life over all other policy considerations. Clause 13.02-1S stipulates those developments must identify bushfire hazard and undertake appropriate risk assessment, including considering and assessing the bushfire hazard on the basis of landscape conditions within 20 km and up to 75 km of the site, local conditions within 1 km of site and neighbourhood conditions within 400 metres of the site. There are four 'broader landscape types', representing different landscape risk levels, as described in the DELWP technical guide Planning Permit Applications Bushfire Management Overlay (DELWP, Sept 2017) and Planning Practice Note 65 Preparing and Assessing a Planning Application under the Bushfire Provisions in Planning Schemes.

Bushfire landscape risk: The subject site, surrounding landscape accords with Broader Landscape Type 3, due to the surrounding vegetation and distance from the site at to the main egress road (Heidelberg-Kinglake Road) and the fact that the site is surrounded by modified vegetation, grassland, woodland and forest across the landscape. It is important to recognise that moving west/southwest to Hurstbridge Township during a bushfire impacting the area could be very high risk, also, moving north/northeast on Heidelberg-Kinglake Road is potentially very high risk, as bushfires are likely to approach from the north, northeast and northwest.

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Landscape Risk Typologies Table

Broader Landscape Type 1	Broader Landscape Type 2	Broader Landscape Type 3	Broader Landscape Type 4
<p><i>There is little vegetation beyond 150 metres of the site (except grasslands and low-threat vegetation).</i></p> <p><i>Extreme bushfire behaviour is not possible.</i></p> <p><i>The type and extent of vegetation is unlikely to result in neighbourhood- scale destruction of property.</i></p> <p><i>Immediate access is available to a place that provides shelter from bushfire.</i></p>	<p><i>The type and extent of vegetation located more than 150 metres from the site may result in neighbourhood-scale destruction as it interacts with the bushfire hazard on and close to a site.</i></p> <p><i>Bushfires can only approach from one aspect and the site is located in a suburban, township or urban area managed in a minimum fuel condition.</i></p> <p><i>Access is readily available to a place that provides shelter from bushfire. This will often be the surrounding developed area.</i></p>	<p><i>The type and extent of vegetation located more than 150 metres from the site may result in neighbourhood-scale destruction as it interacts with the bushfire hazard on and close to a site.</i></p> <p><i>Bushfire can approach from more than one aspect.</i></p> <p><i>The site is located in an area that is not managed in a minimum fuel condition.</i></p> <p><i>Access to an appropriate place that provides shelter from bushfire is not certain.</i></p>	<p><i>The broader landscape presents an extreme risk.</i></p> <p><i>Fires have hours or days to grow and develop before impacting.</i></p> <p><i>Evacuation options are limited or not available.</i></p>



Overview

Overview

Victoria Bushfire history outline Victoria is one of the most fire-prone areas in the world, with a history of catastrophic bushfires. The history of major bushfires goes back more than 150 years. Some of the past major bushfires include: Black Thursday 6 February 1851 12 lives lost, 1926 Warburton 31 lives lost, Black Friday 13 January 1939 71 lives lost, 1942 1 life lost, 1943 10 lives lost, 1944 14 January 32 lives lost, 1952 several lives lost, 1962 The Basin, Dandenong Ranges, Christmas Hills, Hurstbridge, Warrandyte 8 lives lost, 1965 Gippsland, 1968 Dandenong Ranges, The Basin, Upwey and Upper Ferntree Gully 64 houses lost, 1969 Lara, Daylesford and Darraweit 22 lives and 230 houses lost, 1972 Mount Buffalo, 1977 Western District 4 lives and 108 houses lost, 1978 Gippsland 2 lives lost, 1983 1 February Mount Macedon 50 houses lost, Ash Wednesday 16 February 1983 47 lives and more than 2,000 buildings lost, 1985 various areas of Victoria 3 lives and 182 houses lost, 1991 1 life and 17 houses lost, 1997 Dandenong Ranges, Arthurs Seat, Gippsland and Creswick 3 lives and 41 houses lost, 1998 5 lives lost, 2003 Alpine Fires 1 life and 41 house and 213 structures lost, 2005-6 Grampians, Kinglake, Murrindindi and western district 2 lives and 41 houses and 359 buildings lost, 2006-7 Great Divide Complex 33 houses 255 buildings and 1.2 million ha lost, 2009 January Delburn 44 houses lost, 2009 7 February Black Saturday Bushfires 173 lives, 2,056 houses and 1,600 buildings lost. There have been many other major bushfires in the past. There have been many other major bushfires in the past. Recent major bushfires have included Wye River bushfires 2015, Warrandyte 2014, Bunyip State Forest 2019 and the Black Summer Bushfires of 2019/20 East Gippsland and northeast Victoria along with many of other bushfires.

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There are a variety of bushfire causes, that can ignite a bushfire. Some examples include lightning strikes are natural and cannot be prevented while others result from human activity. The high bushfire risk in Victoria is the consequence of a combination of factors including:

- Large areas of highly flammable dry eucalypt forest, woodland, and expanses of highly flammable grassland
- A climate pattern of mild, moist winters followed by hot dry summers and protracted droughts
- Agricultural practices that include the use of fire
- Increasing population density in bushfire-prone areas, such as in the rural/urban interface (fringe)

The subject site and vegetation extent in the broader area landscape, including all of the surrounding properties adjoining the subject site are located in the Hurstbridge rural conservation zone, set amongst rural residential and farming type properties in an established setting, featuring properties and housing on various large lot sizes and configurations. The vegetation within the immediate and wider area includes primarily modified vegetation, grassland, woodland and forest.

Beyond the site, there are extensive very high to extreme threat grassland, woodland and forest vegetation areas. The vegetation across the area is largely unmanaged to the north, south, east and west. The majority of the vegetation beyond 150 metres of the subject site to the north, northwest, northeast, west, east/southeast and south/southwest is very high-risk to extreme threat grassland, woodland and forest vegetation, which is associated with private land and public land including reserves, national parks and forests to the north, northwest,

northeast, east, west and south/southwest. These areas are essentially very high to extreme threat unmanaged vegetation.

The primary threat to the subject site is from the north, northwest, northeast and west/southwest, and under some weather conditions south/southeast, with extensive very high to extreme threat grassland, woodland and forest vegetation beyond the site. In addition, the area well beyond the site has extensive very high to extreme threat forest and woodland vegetation, that can potentially carry a bushfire from a few km's away to more than 20 to more than 40 km away, deep into Heidelberg-Kinglake Road and the wider Hurstbridge area. The area surrounding the subject site and the wider area and region has a long history of major bushfires.

Road networks. The primary road serving the site is Heidelberg-Kinglake Road a sealed public road that provides access to the south, west, southwest, north/northeast and east of the site. Heidelberg-Kinglake Road provides access to Hurstbridge to the west/southwest and to the east/northeast provides access to Cottles Bridge and St Andrews. The main roads and tracks in the area have extensive road verge vegetation, including scrub, grassland, woodland, and forest. Other roads and tracks in the subject site area are generally narrow unsealed roads with extensive road verge vegetation, with a mix of scrub, grassland and scattered woodland and forest vegetation. There are areas of road verge and other strips and areas of vegetation, that directly link to the very high-risk woodland and forest areas, and therefore can act like candle wicks driving bushfires deep into the Heidelberg-Kinglake Road area and the wider Hurstbridge areas.

Bushfire history. The Hurstbridge and the wider surrounding areas to the north, west, east and south of the site, has a history of major bushfires. There have been many major bushfires impact the wider area and region, including, Black Friday Bushfires of 1939, Ash Wednesday Bushfires 1983, the Black Saturday Bushfires of 2009, with the Kilmore East bushfire of 2009 which had a fire run of more than 73 km stopping just north of Healesville.

Bushfire direction of travel. Bushfires will primarily approach the subject site and Hurstbridge from the north, northwest, northeast and west/southwest. There is also the potential for bushfires to approach from the east, and south/southeast due to the vegetation types, including grassland, scrub, woodland, and forest areas surrounding the wider area beyond the site.

Fire runs into site. The most likely bushfire runs into the subject site, include short fire runs of less than 1 to 5 km from the north, south, east, south/southeast and southwest. There is potential for long fire runs of more than 40 km from north and northwest, more than 50 km from the northeast, more than 5 km from the west and more than 10 km from the south, southwest and east/southeast.

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The nearest Township/Urban area is Hurstbridge to the west/southwest. **Hurstbridge Township/Urban Area:** The subject site 1075 Hurstbridge-Kinglake Road, has access to the Hurstbridge urban area and shopping precinct, which is approximately 1.7 km to the west/southwest of the subject site via Heidelberg-Kinglake Road, with a travel time in a motor vehicle of approximately 4 minutes under normal road traffic conditions. Moving west/southwest to Hurstbridge during a bushfire impacting the area, could be very high risk, due to the extensive road verge vegetation across the road network.

Hurstbridge as an urban/rural area, near the subject site to the west/southwest, is such that the fringe and much of the inner areas of Hurstbridge could be impacted by a bushfire penetrating deep into the urban area of Hurstbridge under extreme to catastrophic fire weather conditions. Thus, the urban/rural township area immediately to the west/southwest of the subject site in Hurstbridge, may not be a suitable place to safely shelter in place, subject to the fire weather conditions.

Hurstbridge shopping precinct is in the urban area and may potentially provide potential protection from the impact of extreme bushfire behaviour, where fuel is managed in a minimum fuel condition and there is sufficient distance or shielding to protect people from direct flame contact or harmful levels of radiant heat, and with potentially suitable short travel distances. *There is some significant potential for bushfire risks to arise on the travel journey from the subject site to a place of greater protection, the risk issues related to high risk roadside vegetation or road traffic congestion, that may make it impossible to reach the township or urban area.*

Cottles Bridge, St Andrews to the north/northeast and Panton Hill to the east/southeast are most likely to be impacted by a bushfire at the same time as Hurstbridge and may not be suitable locations to shelter in place or a place of last resort. These locations are small settlements with little in the way of urban areas suitable to provide the ability to shelter in place and a place of last resort.

Diamond Creek, as an urban area, near the subject site to the south/southwest, is such that the fringe areas and township area of Diamond Creek could be impacted by a bushfire penetrating deep into the township area of Diamond Creek, under extreme to catastrophic fire weather conditions. The inner township and shopping precinct of Diamond Creek immediately to the south/southwest of the subject site in Diamond Creek, may be a suitable place to safely shelter in place, subject to the fire weather conditions.

Diamond Creek shopping precinct is in the urban area and may potentially provide potential protection from the impact of extreme bushfire behaviour, where fuel is managed in a minimum fuel condition and there is sufficient distance or shielding to protect people from direct flame contact or harmful levels of radiant heat, and with potentially suitable short travel distances. With a travel distance from 1075 Heidelberg-Kinglake Road Hurstbridge to Diamond Creek shopping precinct (Coles car park at 62 Heidelberg-Kinglake Road) is approximately 7 km via Heidelberg-Kinglake Road and a travel time of approx. 8 minutes under normal road traffic conditions.

There is some significant potential for bushfire risks to arise on the travel journey from the subject site to a place of greater protection, the risk issues related to high-risk roadside vegetation or road traffic congestion, that may make it impossible to reach a nearby Township or urban area.

Neighbourhood Safer Place (NSP) – Bushfire Place of Last Resort, there is a NSP in Hurstbridge to the west of 1075 Heidelberg-Kinglake Road Hurstbridge, located at: **NSP Located at Hurstbridge at Hurstbridge Community Hub Hurstbridge Hurricanes Basketball Stadium 44 Graysharps Road (at the roads end) Hurstbridge 3099.** With a travel distance from 1075 Heidelberg-Kinglake Road Hurstbridge of approximately 1.7 km via Heidelberg-Kinglake Road and a travel time of approx. 4 minutes under normal road traffic conditions.

Likely bushfire scenarios. The most likely bushfire scenarios that could impact the subject site, will be from the north, northwest, northeast, west/southwest and under some situations from the east/south/southeast, whereby there is extensive very high threat grassland, woodland, and forest vegetation both adjoining and beyond 150 metres radius of the site. Also, within and beyond 1 to 5 km of the subject site there is extensive very high to extreme risk grassland, woodland, and forest vegetation. In addition, the area well beyond the site has extensive very high to extreme threat, woodland, and forest vegetation, associated with state forests, national parks and reserves and private forest and woodland areas. The grassland, woodland and forest areas surrounding the subject site and the Hurstbridge area, can potentially carry a bushfire from more than 40 km away, deep into Heidelberg-Kinglake Road and the wider surrounding area and the Hurstbridge area.

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Bushfire management and prevention within the wider area.

There has been limited bushfire mitigation planning and action, in the very high to extreme bushfire risk areas to the northwest, northeast, north, east, south, and west beyond, adjoining and surrounding the site. There are essentially no current planned burning or significant bushfire mitigation works within Hurstbridge and wider area, and the area surrounding and adjoining 1075 Heidelberg-Kinglake Road.

Essentially it is fair to suggest the overall bushfire risk faced by Hurstbridge, the subject site and the outer areas of Hurstbridge and Cottles Bridge, St Andrews and other nearby communities, is significantly elevated by the lack of any evidence of any planned bushfire mitigation activities.

It will be critical that the vegetation and ground fuel near and across the subject site is managed in a similar way to that of the defendable space area. *The area surrounding and beyond the subject site is a very high to extreme risk bushfire landscape environment, capable of producing Catastrophic bushfires, that can cause heavy life and property losses.*

Subject site and bushfire protection measures. The subject site dwelling and proposed school building on the site at 1075 Heidelberg-Kinglake Road, is generally located in the most suitable location on the subject site. The proposed school building (Current building) will need to be retrofitted to BAL 29 and provided with defendable space of 30 metres or the property boundary whichever is the lesser around the school buildings.

	A 20,000 firefighting water supply tank located on the site, and the BAL retrofitted school building will provide the ability to shelter in place and a place of last resort on the site. As set out in the bushfire management plan (BMP) and the bushfire hazard site assessment plan.
Landscape typology and conclusions	It is deemed the subject site and broader landscape type can be described as type 3 as referred to within Practice Note 65: <ul style="list-style-type: none">• <i>The type and extent of vegetation located more than 150 metres from the site may result in neighbourhood-scale destruction as it interacts with the bushfire hazard on and close to a site.</i>• <i>Bushfire can approach from more than one aspect.</i>• <i>The site is located in an area that is not managed in a minimum fuel condition.</i>• <i>Access to an appropriate place that provides shelter from bushfire is not certain.</i>

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Possible Bushfire Run Scenarios

The potential impact of a bushfire on the proposed development has been assessed in relation to likely bushfire run scenarios. These scenarios define credible directions of approach of a bushfire, given the nature of the site, the surrounding vegetation and topography. The following descriptions refers to the image on page 50 showing bushfire run direction scenarios.

It is important to highlight that the grassland, woodland, and forest vegetation surrounding the site in all directions, potentially has inter linking woodland/forest canopy over short and long distances surrounding the site. The nature of the woodland and forest areas beyond the subject site are such that there is extensive ground fuel and middle level fuel loads, with heavy upper tree canopy across the bushfire landscape that are at or above the levels in AS3959-2018.

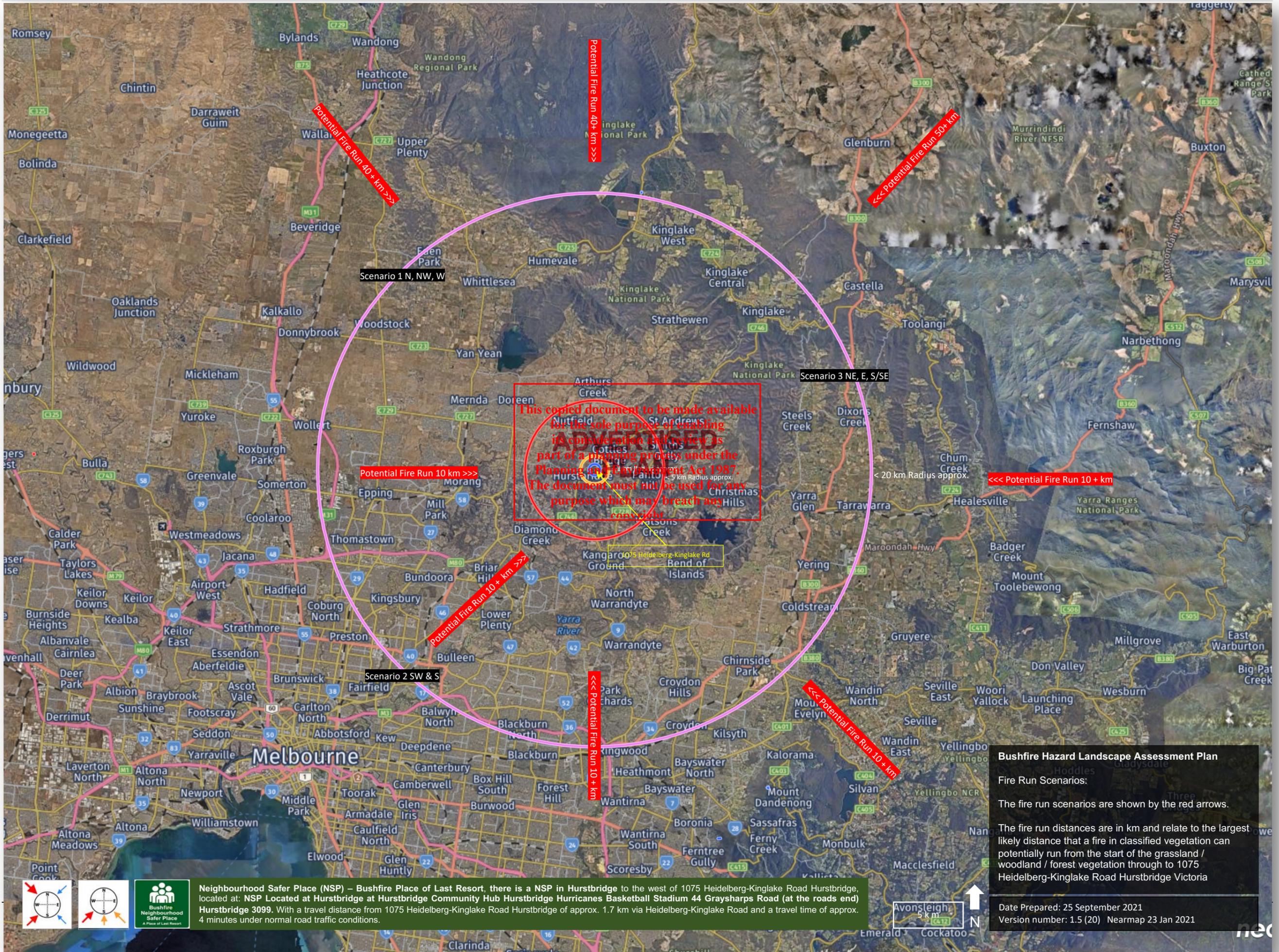
The overall fuel loads across the area are capable of carrying a major bushfire, as the vegetation surrounding and beyond the subject site is such that the ground cover and middle level fuels combined with the current level of canopy development, are potentially at or above the normal fuel loads for forest under AS3959-2018.

Possible Bushfire Run Scenarios for 1075 Heidelberg-Kinglake Road (as set out on page 50)

Fire Approach Scenario	Description
1 Approach from North, northwest and west	A bushfire is most likely to be a long run approach from the north, northwest or west due to the prevailing winds primarily from these directions on days of extreme fire weather conditions. Bushfires from these directions are likely to be long run fires from more than 40 km from the north, more than 40 km from the northwest, and more than 10 km from the west. Also, there is potential from short run fires from within 400 metres to 5 km from the north, northwest and west. Ember attack is likely, with elevated firebrands likely to travel long distances and potentially cause spot fires well ahead of the main fire front. In the case of the subject site spot fires are likely to cause fires to start across all aspect of the subject site to the north, northwest and west, also close to the site from the north, northwest and west of the site. There is a high level of likelihood, and it is important to recognise that sport fires could cause a situation where the subject site could be under direct bushfire attack from all directions and well ahead of the main bushfire reaching the site.
2 Approach from southwest and south	A long or short run bushfire approaching from the southwest or south would generally be associated with a significant wind change. Also, due to the topography of the area and complex terrain beyond the site, the site could face a complex mix of wind directions, caused by both the southwest/west change and the nature of the fire behaviour including fire storms and fire generated wind which will be unpredictable and highly variable wind direction. Bushfires from the south and southwest are likely to approach from the southwest, with potential fire runs of approximately 10 km to more than 10 km from the southwest/south through road verge woodland, scrub and forest, and moving through heavy forest and woodland areas.
3 Approach from northeast, east and southeast	A short or long run bushfire approaching from the northeast, east and southeast could potentially be associated with the main prevailing fire weather conditions on a day of extreme fire weather. In addition, there is the potential for a wind change in the afternoon on a day of extreme fire weather conditions. Bushfires from the northeast, east and southeast are likely to have potential fire runs of more than 50 km away from the northeast to more than 10 km from the east, short run fires of 1 km to more than 5 km from the northeast, east and southeast are likely, under the right mix of fuel dryness and fire weather conditions. A bushfire approaching from the northeast, east and southeast will run primarily run through grassland and heavy forest and woodland areas.

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Bushfire Hazard Landscape Assessment Plan
 Fire Run Scenarios:
 The fire run scenarios are shown by the red arrows.
 The fire run distances are in km and relate to the largest likely distance that a fire in classified vegetation can potentially run from the start of the grassland / woodland / forest vegetation through to 1075 Heidelberg-Kinglake Road Hurstbridge Victoria
 Date Prepared: 25 September 2021
 Version number: 1.5 (20) Nearmap 23 Jan 2021

Neighbourhood Safer Place (NSP) – Bushfire Place of Last Resort, there is a NSP in Hurstbridge to the west of 1075 Heidelberg-Kinglake Road Hurstbridge, located at: NSP Located at Hurstbridge at Hurstbridge Community Hub Hurstbridge Hurricanes Basketball Stadium 44 Graysharps Road (at the road end) Hurstbridge 3099. With a travel distance from 1075 Heidelberg-Kinglake Road Hurstbridge of approx. 1.7 km via Heidelberg-Kinglake Road and a travel time of approx. 4 minutes under normal road traffic conditions.



Defendable Space and Bushfire Attack Level (BAL)

This section outlines appropriate design and development responses pursuant to the development controls in relation to bushfire prone area and bushfire management overlay areas.

Defendable space setbacks

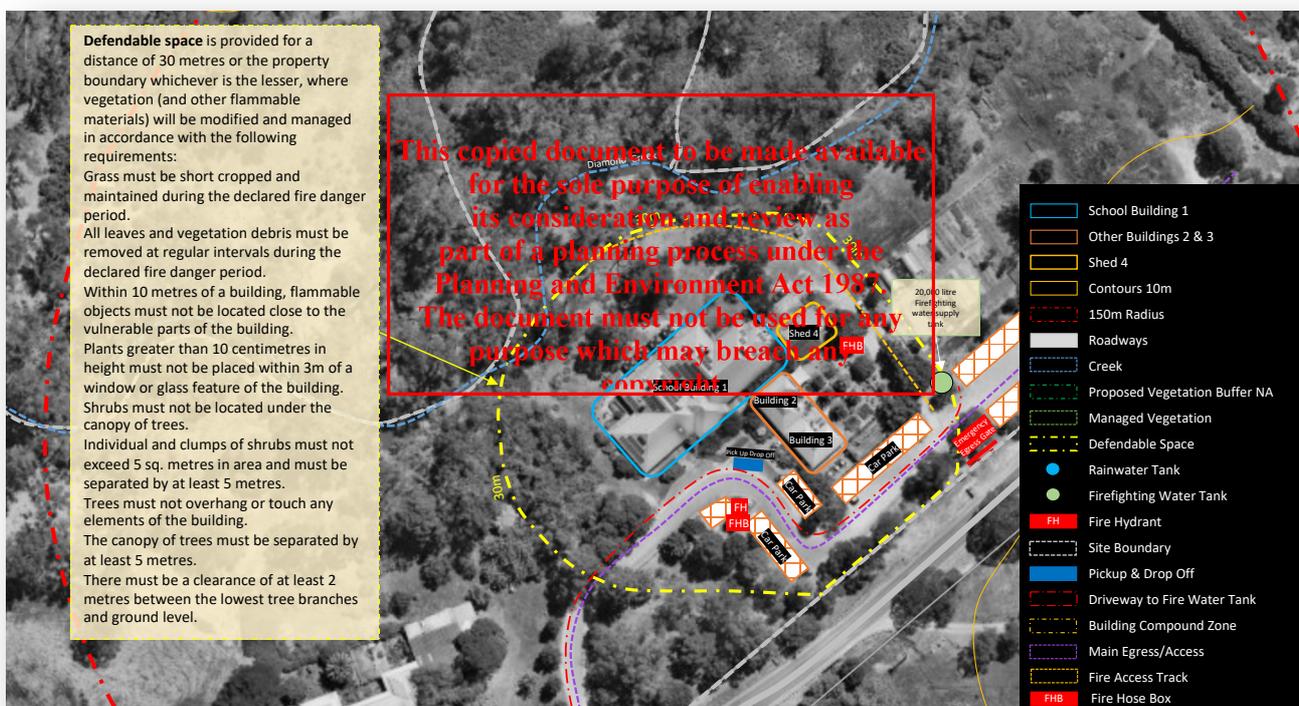
Defendable space is an area of land around a building where vegetation (fuel) is modified and managed to reduce the effects of flame contact and radiant heat associated with a bushfire. Defendable space is one of the most effective ways of reducing the impact of bushfire on a building. Table 2 of Clause 53.02.5

Defendable space provides a break between the building and the fuel available to the bushfire (e.g., vegetation, brush fencing, flammable material). Providing an area of defendable space can prevent direct flame contact on a building, reduce the effects of radiant heat on the building and to mitigate the effects of ember attack.

Bushfire Attack Level (BAL)

Bushfire Attack Level (BAL) Construction standards are set out in AS3959-2018. Clause 53.02-5 sets out tables for defendable space and construction standards. Defendable space required is determined by assessing and determining the classified vegetation type, slope, and the distance to the classified vegetation and the building façade, then the BAL construction standard is determined.

Defendable Space Plan for Primary School at 1075 Heidelberg-Kinglake Road Hurstbridge



Defendable space is provided for a distance of 30 metres or the property boundary whichever is the lesser, where vegetation (and other flammable materials) will be modified and managed in accordance with the following requirements:

- Grass must be short cropped and maintained during the declared fire danger period.
- All leaves and vegetation debris must be removed at regular intervals during the declared fire danger period.
- Within 10 metres of a building, flammable objects must not be located close to the vulnerable parts of the building.
- Plants greater than 10 centimetres in height must not be placed within 3m of a window or glass feature of the building.
- Shrubs must not be located under the canopy of trees.
- Individual and clumps of shrubs must not exceed 5 sq. metres in area and must be separated by at least 5 metres.
- Trees must not overhang or touch any elements of the building.
- The canopy of trees must be separated by at least 5 metres.
- There must be a clearance of at least 2 metres between the lowest tree branches and ground level.

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Statement Response to Clause 13.02 Bushfire – 13.02-1S

The subject site is subject to specific planning and building controls that relate to bushfire, including Clause 71.02-3 Integrated Decision Making, that states that planning and responsible authorities should endeavour to integrate policies and balance conflicting objectives in favour of net community benefit and sustainable development. In bushfire affected areas the protection of human life must be priorities over all other policy considerations. Clause 13.02-1S Bushfire Planning will be considered with the objective “To strengthen the resilience of settlements and communities to bushfire through risk-based planning that prioritises the protection of human life over all other policy considerations”

This statement that provides a response to Clause 13.02 (Bushfire), 13.02-1S Bushfire Planning of the Council Planning Scheme given the site is located within the Bushfire Prone Area and is also covered by the bushfire management overlay.

SBAFire has been engaged by the property owners of the subject site to prepare a response relating to the Proposed primary school at 1075 Heidelberg-Kinglake Road Hurstbridge 3099 Victoria (subject site). Due to the nature of the subject site location in a bushfire prone area; subject to a bushfire management overlay, a response to the Planning Policy Framework at Clause 13.02 Bushfire has been prepared, which includes the need to consider the bushfire risk associated with the protection of human life in areas designated as ‘bushfire prone’ under the Building Act 1993. The site is in a designated bushfire prone area and is covered by the bushfire management overlay.

The objective of Clause 13.02 is to strengthen the resilience of settlements and communities to bushfire risk through risk-based planning that prioritises the protection of human life. Clause 13.02 requires the planning permit application to:

- Reduce the vulnerability of communities to bushfire through the consideration of bushfire risk in decision making at all stages of the planning process.
- Consider the risk of bushfire to people, property and the community infrastructure.
- Require implementation of appropriate bushfire protection measures to address the identified bushfire risk.
- Ensure that new development can implement bushfire protection measures without unacceptable biodiversity impacts.

This report demonstrates that bushfire protection and mitigation objectives for water supply, access, building design, siting and separation, landscape design, vegetation management relevant matters relating to bushfire hazard and the protection of human life have been considered and incorporated in the proposal.

The site is located in a designated bushfire prone area and the bushfire management overlay, which are identified as an area where people and property are particularly vulnerable to bushfire. Bushfire Development Report has considered the risk of bushfire to people, property, and community infrastructure, and provided detail on the implementation of appropriate bushfire protection measures to address the identified bushfire risk consistent with the proposed use in accordance with Clause 13.02 Bushfire, of the Planning Scheme.

This report clearly responds to the proposed development of primary school at 1075 Heidelberg-Kinglake Road Hurstbridge, addresses the requirements of Clause 13.02 and specifically Clause 13.02-1S and presents highly developed Bushfire Development Report, that includes a Bushfire Management Statement (BMS) and Bushfire Attack Level (BAL) Assessment report, relating to the proposed primary school at 1075 Heidelberg-Kinglake Road Hurstbridge.

This bushfire development report does not seek to remove the bushfire risk, but provides detailed siting, building and general bushfire hazard related information to assist in the ability of the landowner to manage the risk associated with living and operating in a bushfire environment. The bushfire management statement has been prepared in accordance with AS3959-2018 Construction of buildings in bushfire prone areas, Planning Scheme Clauses 53.02, Clause 44.06 and Clause 13.02 and best practice standards as applied in Victoria and in accordance with Local and State Government bushfire planning, guidelines, and policies.

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The objective of Clause 13.02 is to strengthen the resilience of settlements and communities to bushfire risk through risk-based planning that prioritises the protection of human life. Clause 13.02 requires the planning permit application to:

- Reduce the vulnerability of communities to bushfire through the consideration of bushfire risk in decision making at all stages of the planning process.
- Consider the risk of bushfire to people, property and the community infrastructure.
- Require implementation of appropriate bushfire protection measures to address the identified bushfire risk.
- Ensure that new development can implement bushfire protection measures without unacceptable biodiversity impacts.

Statement Response to Clause 13.02

<p>Reduce the vulnerability of communities to bushfire through the consideration of bushfire risk in decision making at all stages of the planning process.</p>	<p>The proposed development of a primary school on the subject site at 1075 Heidelberg-Kinglake Road Hurstbridge Victoria, is consistent with the application of the planning policy in the subject site area.</p> <p>The proposed development of a primary school will potentially reduce the bushfire risk to the local communities through the consideration of bushfire risk and the application of appropriate measures to reduce the bushfire risk on the subject site, which in turn will reduce the bushfire risk to the surrounding communities.</p> <p>As set out in the following a range of measures have been applied to reduce the vulnerability of communities of bushfire through consideration and application of mitigation measures, that will significantly reduce the bushfire risk on the subject site.</p>
<p>Consideration of the risk of bushfire to people, property and the community infrastructure</p>	<p>This copied document to be made available</p> <p>When considering the risk of bushfire to people, property and the community infrastructure It is clear that the subject site is a very high bushfire risk site in the general context of bushfire within the immediate area and with the very high to extreme level of risk beyond 150 metres of the site and the wider area beyond the site.</p> <p>part of a plan bushfire risk site in the Planning and Environment Act 1987.</p> <p>The document must not be used for any purpose which may breach any copyright</p> <p>When considering access and egress for people on the subject site and adjoining the site, there is reasonable access for firefighting vehicles and egress from the site and area for people, through movement to places that provide the potential to shelter in place and place of last resort, and of the urban areas to the west/southwest of the site in Hurstbridge to the west/southwest and Diamond Creek to the southwest. The ability of people on the site being able to move to Hurstbridge or Diamond Creek to shelter in place and have a place of last resort, may be compromised due to the vegetation across the landscape, combined with the extensive road verge vegetation across the road network. The site ability to provide shelter in place and place of last resort is strengthened through the use of the school building 1 as a bushfire shelter and place of last resort on the site, as set out below is established on the site.</p> <p>Recommended Bushfire Shelter on Subject Site: A bushfire shelter has been recommended on the site, by retrofitting the school building to BAL 29 level and therefore providing a bushfire shelter and place of last resort for people on the site to shelter in place and have a place of last resort on the site.</p> <p style="text-align: center;">ADVERTISED PLAN</p>

The subject site and vegetation extent in the broader area, including all of the surrounding properties adjoining the subject site are located in the Hurstbridge set amongst rural residential type properties in an established setting, featuring properties and housing on various large lot sizes and configurations. The vegetation within the immediate and wider area beyond 150 metres radius of the subject site, includes primarily modified vegetation, grassland, woodland and forest vegetation.

In addition, in the wider bushfire landscape there is extensive very high-risk grassland, woodland and forest vegetation areas to the north, northwest, northeast, west, east and south, that is essentially manage near the school building on the site and largely unmanaged adjoining the site and in the wider area. There are also extensive very high-risk forest and woodland areas within 1 km to 5 km of the site and more than 40 km away to the north, northwest, northeast, and more than 10 km to the south, west and east, that are essentially unmanaged and associated with private land and state/local nature reserves, and national parks and forests.

The nearest Township/Urban area is Hurstbridge to the west/southwest.

Hurstbridge Township/Urban Area: *The subject site 1075 Hurstbridge-Kinglake Road, has access to the Hurstbridge urban*

area and shopping precinct, which is approximately 1.7 km to the west/southwest of the subject site via Hurstbridge-Kinglake Road, with a travel time in a motor vehicle of approximately 4 minutes under normal road traffic conditions. Moving west/southwest to Hurstbridge during a bushfire impacting the area, could be very high risk due to the extensive road verge vegetation across the road network.

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Hurstbridge is an urban/rural area, near the subject site to the west/southwest, is such that the fringe and much of the inner areas of Hurstbridge could be impacted by a bushfire penetrating deep into the urban area of Hurstbridge under extreme to catastrophic fire weather conditions. Thus, the urban/rural township area immediately to the west/southwest of the subject site in Hurstbridge, may not be a suitable place to safely shelter in place, subject to the fire weather conditions.

Hurstbridge shopping precinct is in the urban area and may potentially provide potential protection from the impact of extreme bushfire behaviour, where fuel is managed in a minimum fuel condition and there is sufficient distance or shielding to protect people from direct flame contact or harmful levels of radiant heat, and with potentially suitable short travel distances. *There is some significant potential for bushfire risks to arise on the travel journey from the subject site to a place of greater protection, the risk issues related to high-risk roadside vegetation or road traffic congestion, that may make it impossible to reach a nearby Township or urban area.*

Cottles Bridge, St Andrews to the north/northeast and Pantom Hill to the east/southeast, are most likely to be impacted by a bushfire at the same time as Hurstbridge and may not be suitable locations to shelter in place or a place of last resort.

	<p><i>These locations are small settlements with little in the way of urban areas suitable to provide the ability to shelter in place and a place of last resort.</i></p> <p>Diamond Creek, as an urban area, near the subject site to the south/southwest, is such that the fringe areas and township area of Diamond Creek could be impacted by a bushfire penetrating deep into the township area of Diamond Creek, under extreme to catastrophic fire weather conditions. The inner township and shopping precinct of Diamond Creek immediately to the south/southwest of the subject site in Diamond Creek, may be a suitable place to safely shelter in place, subject to the fire weather conditions.</p> <p>Diamond Creek shopping precinct is in the urban area and may potentially provide potential protection from the impact of extreme bushfire behaviour, where fuel is managed in a minimum fuel condition and there is sufficient distance or shielding to protect people from direct flame contact or harmful levels of radiant heat, and with potentially suitable short travel distances. With a travel distance from 1075 Heidelberg-Kinglake Road Hurstbridge of approx. 7 km via Heidelberg-Kinglake Road and a travel time of approx. 8 minutes under normal road traffic conditions. <i>There is some significant potential for bushfire risks to arise on the travel journey from the subject site to a place of greater protection, the risk issues related to high-risk roadside vegetation or road traffic congestion, that may make it impossible to reach a nearby township or urban area.</i></p> <p>Neighbourhood Safer Place (NSP) – Bushfire Place of Last Resort, there is a NSP in Hurstbridge to the west of 1075 Heidelberg-Kinglake Road Hurstbridge, located at: NSP Located at Hurstbridge at Hurstbridge Community Hub Hurstbridge Hurstbridge Basketball Stadium 44 Graysharps Road (at the roads end) Hurstbridge 3099. With a travel distance from 1075 Heidelberg-Kinglake Road Hurstbridge of approx. 1.7 km via Heidelberg-Kinglake Road and a travel time of approx. 4 minutes under normal road traffic conditions.</p> <p>A Bushfire Shelter has been recommended on the site as set out in the bushfire hazard site assessment and the outline BMP image, subject to the retrofitting of the school building 1 to comply with BAL 29, school building 1 would provide the ability to shelter in place and a Place of Last Resort on the site and on the site.</p>
<p><i>The implementation of appropriate bushfire protection measures to address the identified bushfire risk</i></p>	<p>Dwelling sitting, landscape and bushfire protection measures. The current buildings on the site and specifically the proposed school building 1 are generally located in suitable locations on the site at 1075 Heidelberg-Kinglake Road Hurstbridge, the subject site.</p> <p>The school building will be retrofitted to achieve the construction level BAL 29 and provided with defendable space of 30 metres or the property boundary whichever is the lesser around the school building 1 and the southern side of buildings 2 and 3. A 20,000 firefighting water supply tank located on the site.</p> <p style="text-align: right;">ADVERTISED PLAN</p>

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	<p>A Bushfire Shelter (proposed school building 1 subject to retrofitting to comply with BAL 29) has been recommended on the site as set out in the BMP, the Bushfire shelter will provide the ability to Shelter in Place and a Place of Last Resort on the site.</p> <p>The proposed bushfire protection measures above address the identified bushfire risk to an acceptable level.</p> <p>It is the opinion of the consultant that the implementation of the outlined bushfire protection measures above, are appropriate bushfire protection measures that will address the identified bushfire risk.</p>
<p><i>How the development can implement bushfire protection measures without unacceptable biodiversity impacts.</i></p>	<p>It is the opinion of the consultant that the subject site is such that the bushfire protection measures will be able to be implemented without any unacceptable biodiversity impacts.</p> <p>This is largely due to the bushfire protection measures being sensitive to the lot and the size of the lot and the distance between the subject site and the wider landscape.</p> <p>It is the opinion of the Consultant that the bushfire protection measures will not have unacceptable biodiversity impacts.</p>

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Bushfire Impact on Urban Areas at Urban/Rural Interface

The following seeks to highlight the very high bushfire risk nature of living at the urban/rural interface. Recent bushfire examples have been used to show bushfire behavior under extreme fire weather bushfire conditions at the interface, including:

Black Saturday Bushfires 2009, in particular Marysville.

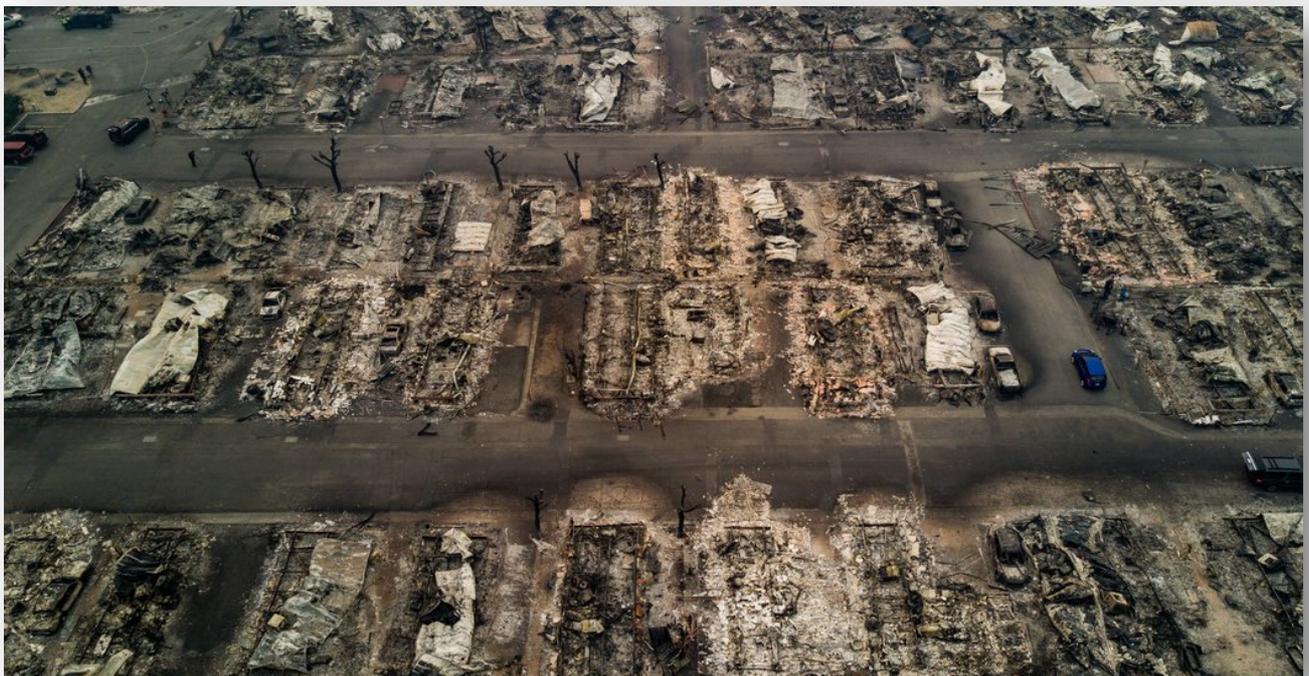
Also, a dramatic example is the recent Northern California bushfires in which more than 8,000 homes were destroyed and significant loss of life. See Image 2 Coffee Park subdivision Santa Rosa California.

The following images are aimed at emphasising the before and after impact of bushfires on essentially urban areas under extreme fire weather conditions.

Marysville Black Saturday Bushfires 2009



Coffee Park subdivision Santa Rosa California Bushfire October 2017



Black Saturday Bushfire 2009 Marysville Impact

Image 1:

Marysville Murchison St and Lyell St intersection Before and After Black Saturday Bushfire 2009

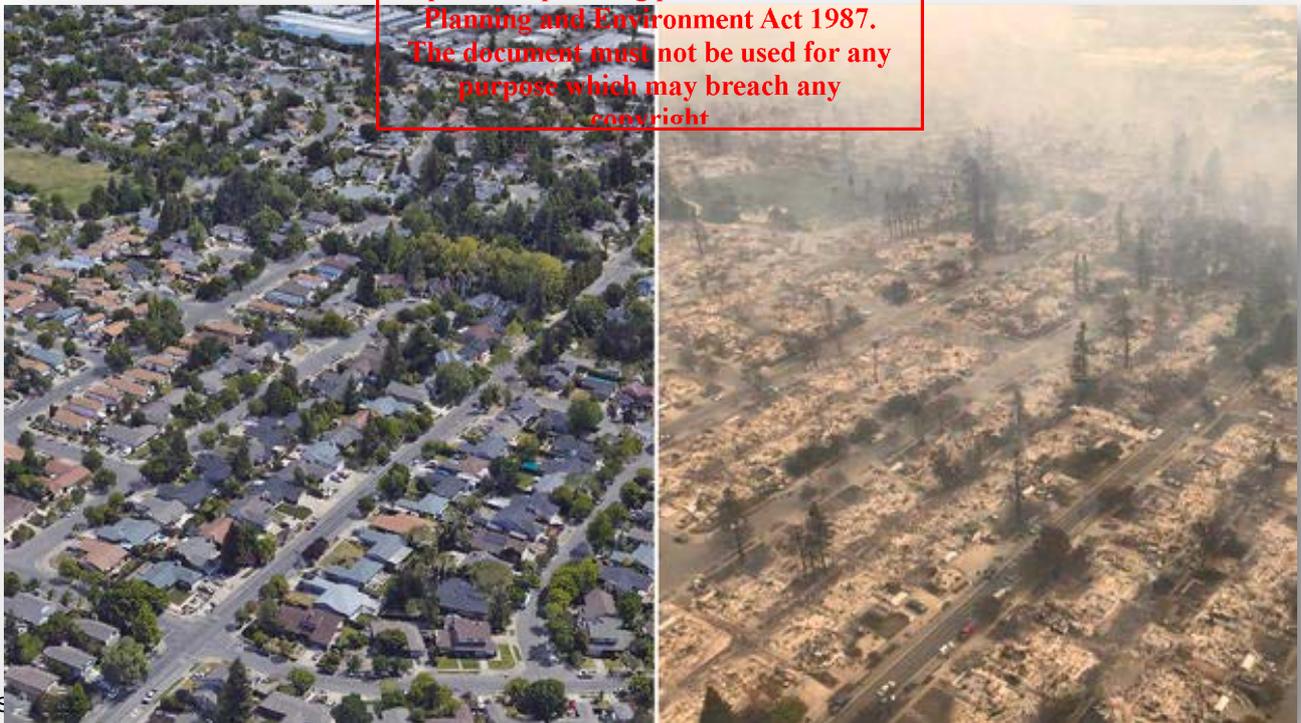


Northern California Bushfires October 2017 Coffee Park Santa Rosa Impact

Image 2:

Before and After images Coffee Park subdivision in Santa Rosa California USA

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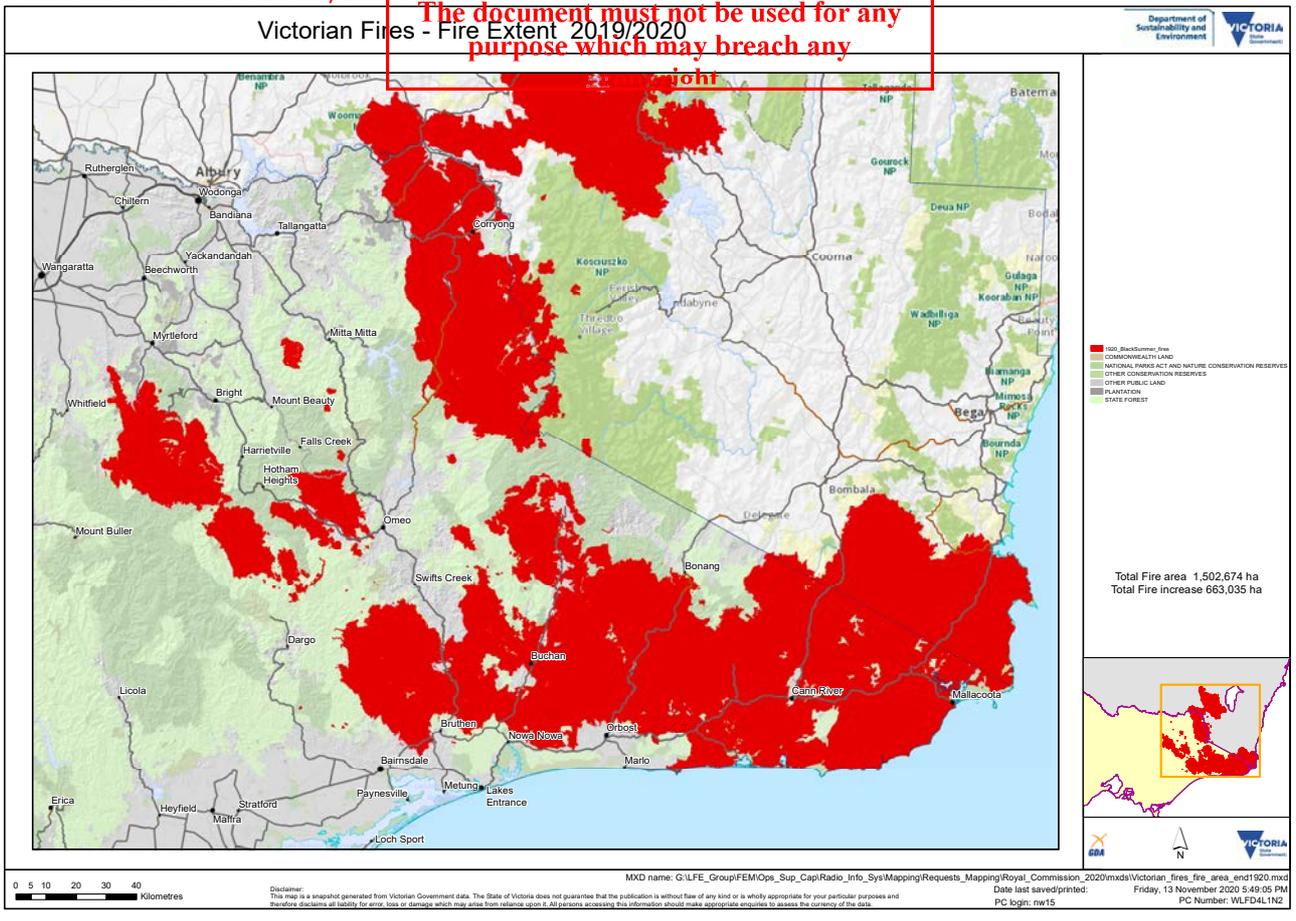
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Bushfire Fire History Summary - Major Bushfires Since 1851

Year	Location	Size (ha)	Losses
1851	Dandenong Ranges (Black Thursday)	Unknown	12 people
1898	South Gippsland	260,000	12 people, 2000 buildings
1926	Warburton, Noojee, Kinglake, Erica, Dandenong Ranges	Unknown	31 people
1939	Noojee, Warrandyte, Yarra Glen, Warburton, Erica (Black Friday)	2,000,000	71 people, 650 houses
1942	South Gippsland	Unknown	1 person, 20 houses
1944	Beaumaris	Unknown	63 houses
1944	Yallourn, Morwell, Traralgon	Unknown	9 people, 136 houses
1962	The Basin, Christmas Hills, Kinglake, St Andrews, Hurstbridge, Warrandyte, Mitcham	30,321	32 people, 450 houses
1968	The Basin, Upwey	1920	53 houses, 10 other buildings
1983	Belgrave South, Cockatoo, Beaconsfield Upper (Ash Wednesday)	93,500	47 people, 2000 houses or other buildings
1997	Dandenong Ranges, Arthurs Seat	569	3 people, 41 houses
2005-06	Yea, Moondarra, Kinglake	25,000	4 people
2006-07*	Walhalla (Great Divide bushfire)	1,048,238	1 person, 51 houses
2009	Kilmore East, Churchill, Kinglake, Marysville, Yarra Valley, Dandenong Ranges, Narre Warren, Upper Ferntree Gully, Wilsons Promontory, Bunyip State Park, Delburn (Black Saturday)	232,300	173 people, 2007 houses
2014	Warrandyte, Darraweit Guim, Hines	41,000 +	40+ houses

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Victoria Bushfires 2019/2020



Mallacoota Bushfire 2019



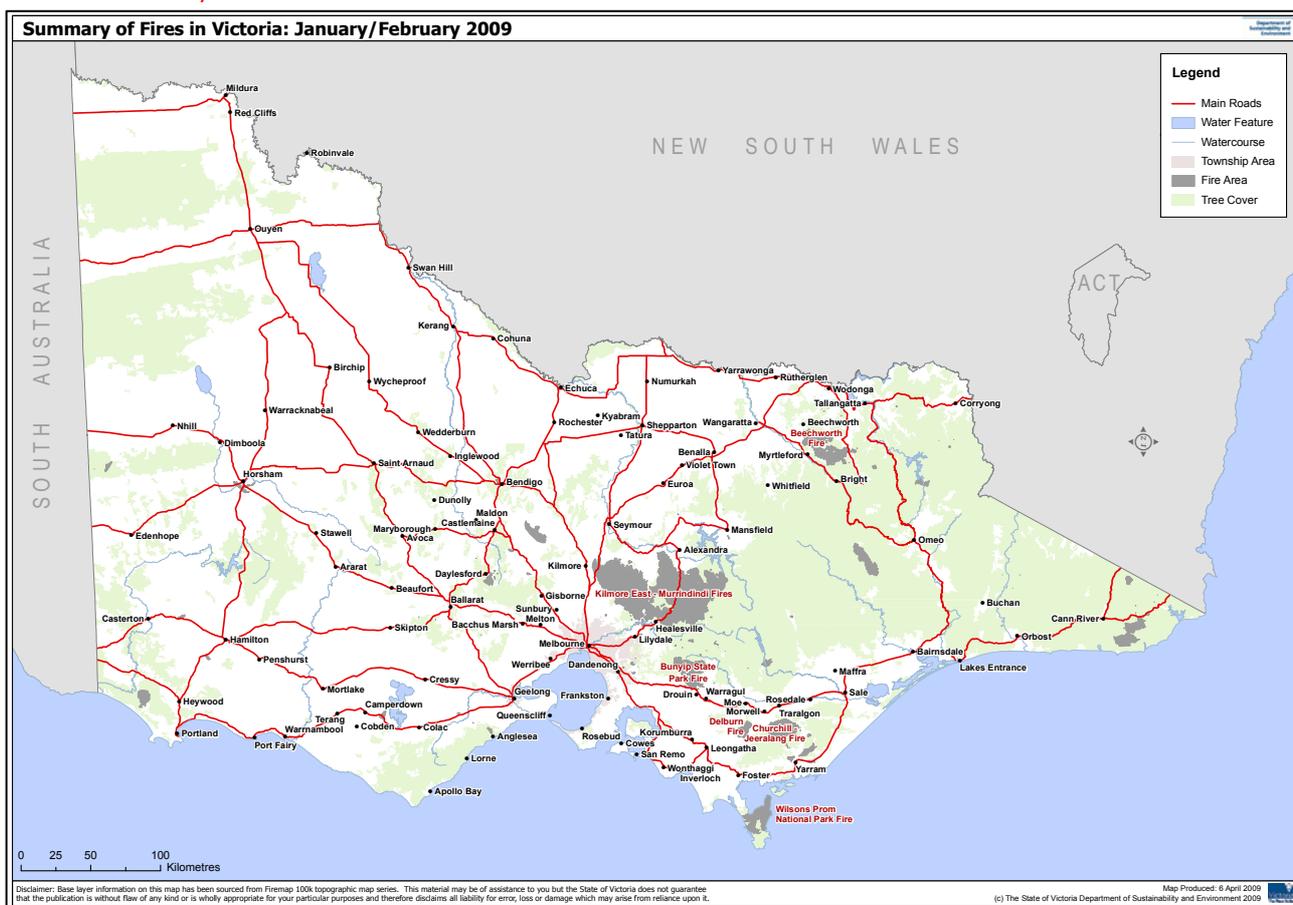
Bushfire North of Bairnsdale 2019



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ADVERTISED PLAN

Black Saturday Bushfires 2009



Black Saturday Bushfires 2009

The grassland, woodland, and forest areas near Hurstbridge present a very high to extreme bushfire risk to Hurstbridge and 1075 Heidelberg-Kinglake Road, during the fire dander period, particularly during days of extreme fire weather conditions. The local area, wider area, region and state has a history of major bushfires going back more than 100 years. Including Ash Wednesday 1983, with the most recent major bushfires in the region include the Black Saturday bushfires, that occurred on 7 February 2009. Also, the Bunyip State Forest bushfires of 2009 and 2019.

On Black Saturday the largest bushfire in the wider region and state was the Kilmore East bushfire that occurred on Saturday 7 February 2009 (Black Saturday Bushfires), the Kilmore East fire was one of 400 fires across Victoria affecting 78 communities on Black Saturday. The Kilmore East bushfire merged with the Murrindindi fires on 8 February, becoming the Kinglake Fire Complex. A forest crown fire occurred during this fire which swept through state forest and national parks with extreme flame heights, under the influence of temperatures that reached 46 degrees and wind gusts of more than 100 km per hour on 7 February. Embers from the Kilmore East fire caused spot fires up to 20 – 40 km away. The Black Saturday Bushfires caused heavy losses, 174 people lost their lives, with 119 people from the Kilmore East bushfire. More than 1,242 homes were lost in the Kilmore East fire, and 2,029 homes were destroyed state-wide on Black Saturday.

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Pine plantation fire adjacent to Hume Highway at Wandong Victoria Black Saturday 7 February 2009



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Black Saturday 7 February 2009

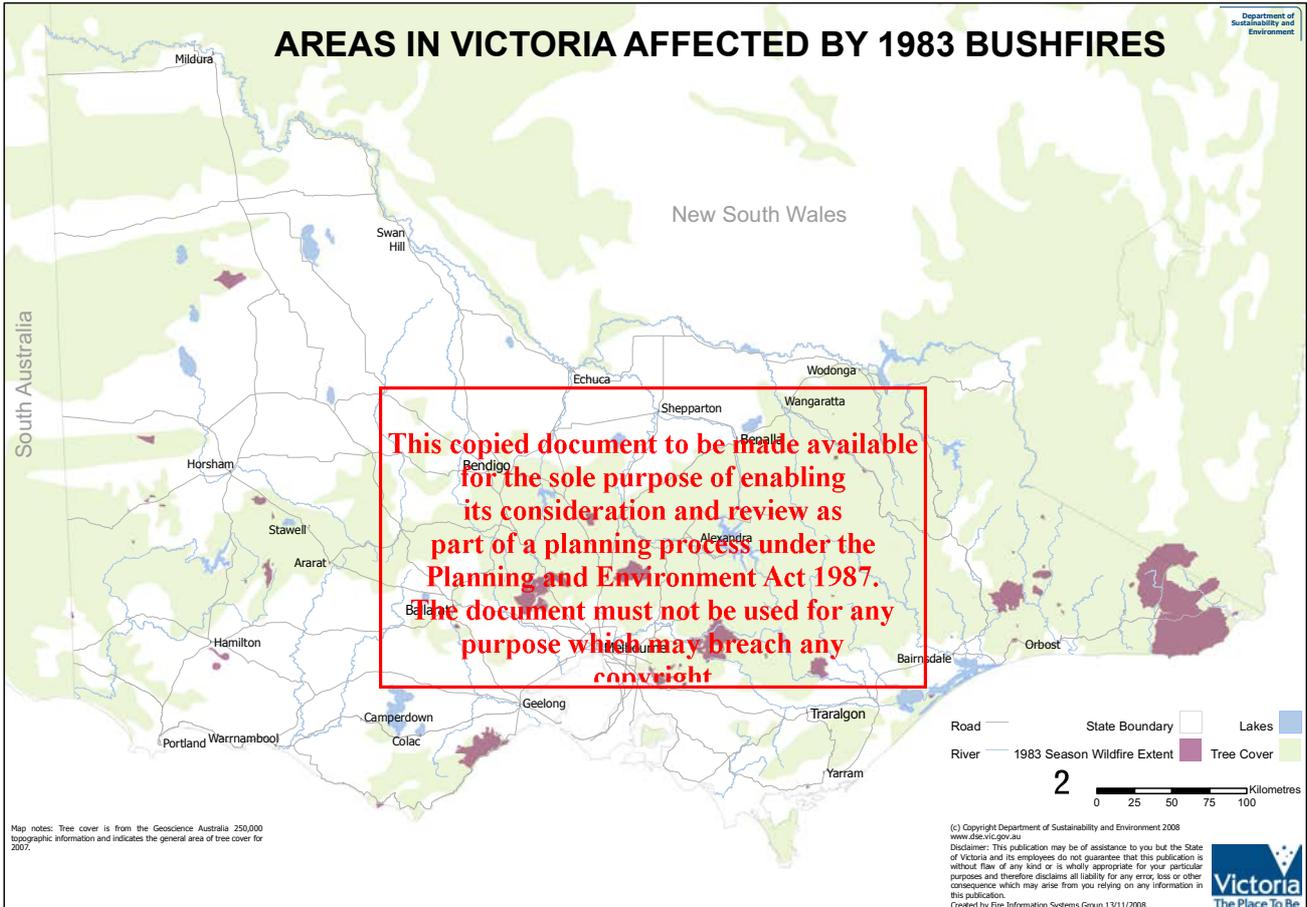


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Ash Wednesday Bushfires 1983

The Ash Wednesday bushfires occurred on 16 February 1983, one of the major bushfires was known as the Belgrave South, Upper Beaconsfield-Cockatoo bushfire, which started in Belgrave heights and moved towards Berwick and Pakenham on its main run and impacted Beaconsfield Upper and other areas including Narre Warren East, Officer and Beaconsfield. The losses from this bushfire included the death 27 people (Including 14 CFA firefighters), 100 people were injured, and 535 houses and buildings were destroyed.

On Ash Wednesday there were 180 bushfires across Victoria fanned by winds of up to 110 km/p causing wide-spread destruction. There were extensive losses on Ash Wednesday, 47 people died in Victoria including 14 CFA firefighters at the Upper Beaconsfield, and more than 2,000 homes were destroyed in Victoria.



Belgrave South, Upper Beaconsfield-Cockatoo bushfire Fire Map 16 Feb 1983, impact of wind SW change

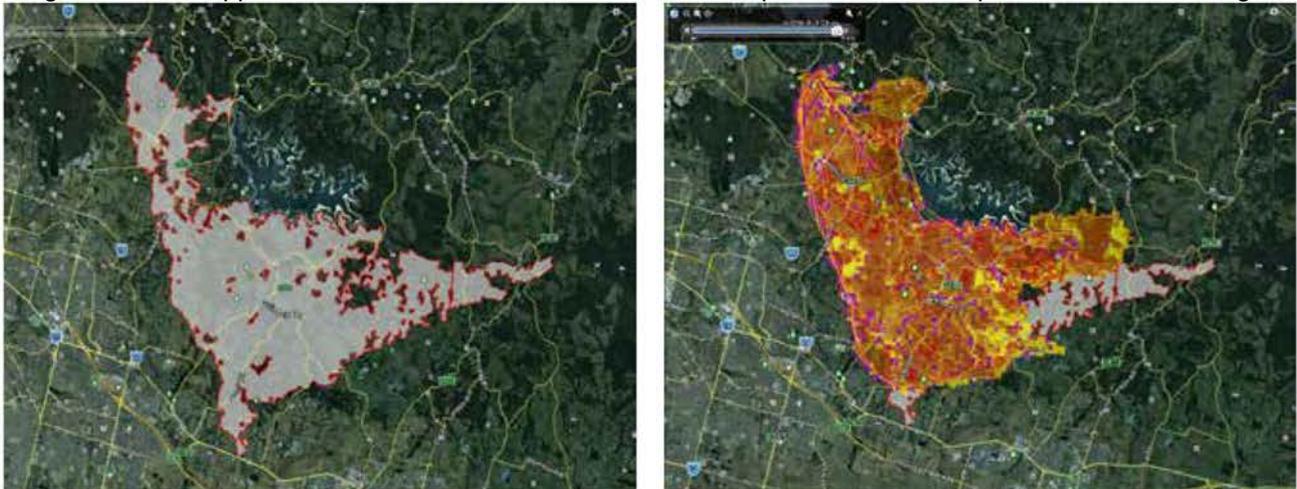


Figure 2: A simulation of the 1983 Upper Beaconsfield Ash Wednesday fire using Phoenix Rapidfire. Grey shows the actual fire area, and orange/yellow shows the simulated fire area.

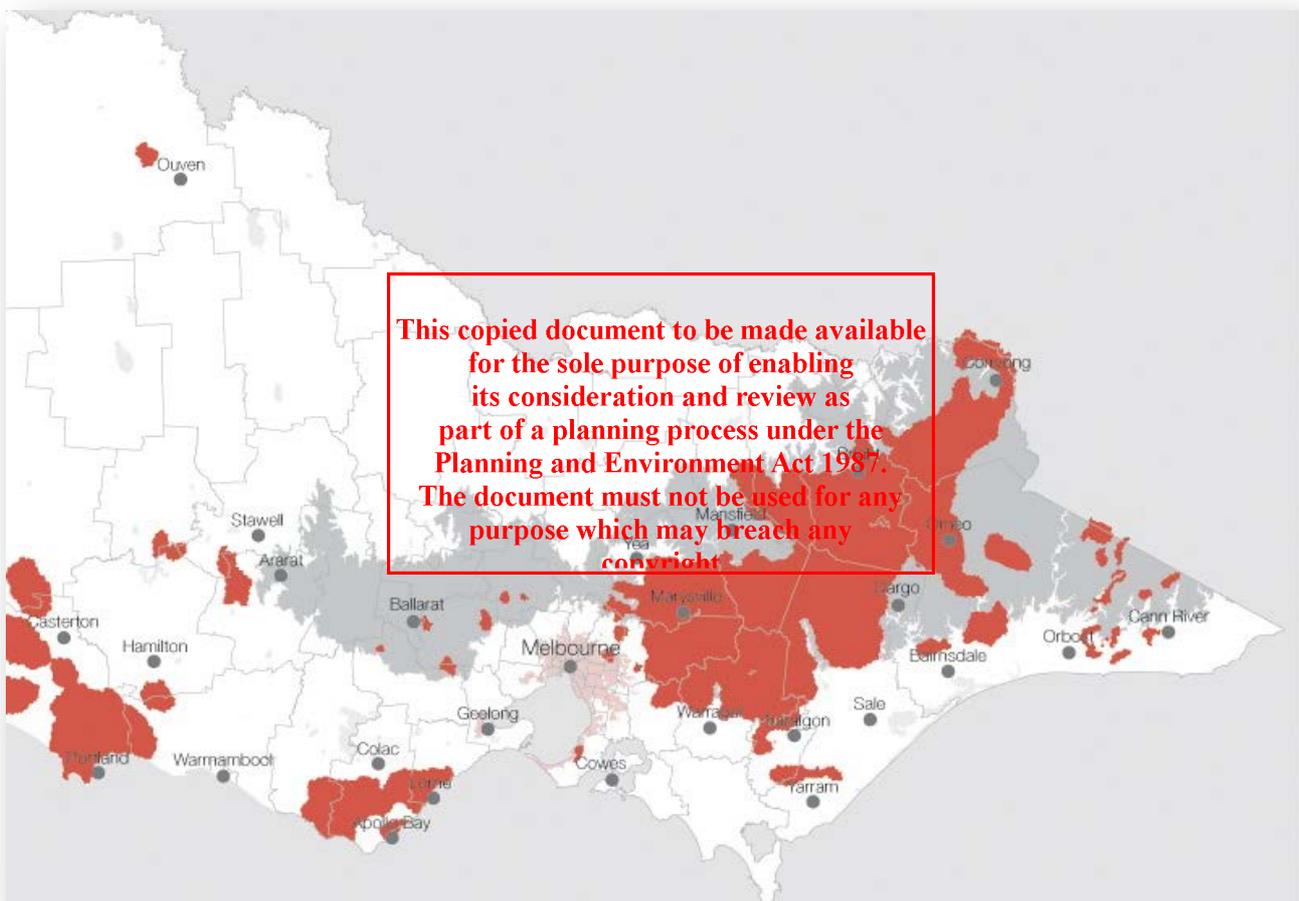
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Black Friday Bushfires – 13th January 1939

The Black Friday bushfires of January 1939 were to be etched in the memories of those involved for the rest of their lives. A total of 71 lives were lost. Over 1,000 homes were lost, and the townships of Narbethong, Noojee, Woods Point, Nayook West and Hill End were destroyed. The townships of Warrandyte, Yarra Glen, Omeo and Pomonal were badly damaged. Intense fires burned on the urban fringe of Melbourne in the Yarra Ranges east of Melbourne, affecting towns including Toolangi, Warburton and Thomson Valley. The alpine towns of Bright, Cudgewa and Corryong were also affected, as were vast areas in the west of the state, in particular Portland, the Otway Ranges, and the Grampians. The bushfires also affected the Black Range, Rubicon, Acheron, Noojee, Tanjil Bren, Hill End, Woods Point, Matlock, Erica, Omeo, Toombullup and the Black Forest.

Large areas of state forest, containing giant stands of Mountain Ash and other valuable timbers, were killed. Approximately 575,000 hectares of reserved forest, and 780,000 hectares of forested Crown land were burned.

Black Friday Bushfires 1939 Map



Context of Bushfire Risk and Wider Area

The bushfire images below, have been included with the aimed of illustrating an example of the likely real view of a bushfire in vegetation similar to that adjoining and near 1075 Heidelberg-Kinglake Road Hurstbridge 3099 Victoria. The vegetation type and fuel loads in the images are similar to the wider Hurstbridge area and the surrounding areas. *It should be noted that the images primarily depict essentially woodland type vegetation. The subject site is primarily covered by grassland, woodland and forest, and beyond the site grassland, woodland and forest vegetation.*



Bushfire Management Statement

This Bushfire Management Statement Pathway 2 has been developed in response to Clause 53.02-4 Bushfire Protection Objectives.

53.02-4.1 Landscape, Siting and design objectives

- Development is appropriate having regard to the nature of the bushfire risk arising from the surrounding landscape.
- Development is sited to minimise the risk from bushfire.
- Development is sited to provide safe access for vehicles, including emergency vehicles.
- Building design minimises vulnerability to bushfire attack.

Approved Measure AM 2.1 - Landscape

The bushfire risk to the development from the landscape beyond the site can be mitigated to an acceptable level.

The property landscape will be managed and planned to ensure suitable effective vegetation design, planning and management to support the defensible space requirements, on the property and where possible adjoining properties.

The primary threat within 150 metres radius of the school building 1 façade is from the modified vegetation, woodland and forest vegetation on and adjoining the site. To the south and east of the site is Heidelberg-Kinglake Road that provides some level of bushfire mitigation to the south and east, as Heidelberg-Kinglake Road is a wide road, its potential to provide a significant break between the subject site and a bushfire approaching from the northeast is limited. In addition, as Heidelberg-Kinglake Road has extensive road verge vegetation, it does essentially increase the potential issues that may impact the ability for vehicles to use the road during a bushfire impacting Heidelberg-Kinglake Road area near the site, it may also potentially impact the ability to egress the site via Heidelberg-Kinglake Road. The current school accessway to 1075 Heidelberg-Kinglake Road, will provide good access capability for firefighting vehicles to access the school and other buildings and firefighting water supply tanks as well as the design of the accessway and car parking areas do act like a bushfire buffer and fire break to the west, south and east and northeast. The managed vegetation, gardens, grassland and mid-level fuels on the site are essentially managed near the school building 1, there are areas of unmanaged vegetation on the site, but it is important to recognise that under conditions of dry fuel combined with extreme fire weather conditions could create a situation whereby the managed vegetation on the site could be capable of carry a bushfire that could impact the site.

The primary threat to the subject site is from the north, northwest, northeast, west and south/southwest, and also east/southeast with extensive very high to extreme threat grassland, forest and woodland vegetation near and beyond the site. In addition, the area well beyond the site has extensive very high to extreme threat forest and woodland vegetation, that can potentially carry a bushfire from a few hundred metres away to more than 40 km away, deep into Heidelberg-Kinglake Road and Hurstbridge area. The area surrounding the subject site and Hurstbridge and beyond in the wider region has a long history of major bushfires.

The subject site bushfire landscape risk can be mitigated to an acceptable level, through a combination of the ongoing management of the site vegetation ground and mid-level fuels on the site. The accessway is suitable for firefighting vehicles access providing it is designed and complies with BMO accessway design and construction requirements. The defensible space of 30 metres or the property boundary. In addition, there will also be a 20,000-litre firefighting water supply tank on the site and located near the school building on the accessway and near the car park and fire access track to the east of the school building 1. The school building 1 will be retrofitted to achieve BAL 29 in order the provide the ability to shelter in place and place of last resort on the site.

Approved Measure AM 2.1 has been met	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
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Approved Measure AM 2.2 - Siting

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A building is sited to ensure the site best achieves the following:

- *The maximum separation distance between the building and the bushfire hazard*

The subject site proposed primary school/educational building on the site generate a high BAL, the provision of in-depth defensible space and the managed vegetation buffer, significantly strengthens the bushfire resilience of the school building 1 on the site. The separation distances have been modified based on the establishment of the proposed defensible space. On this basis the forest/woodland/modified vegetation is located 35 metres from the classified forest vegetation to the north and northwest, 20 metres from the woodland to the west, 30 metres from the forest to the northeast, and 20 metres from the modified vegetation to the south, 78 metre from the woodland to the east and 87 metres from the grassland from the south.

The BAL construction level will be:

- *Proposed School Building 1 to be retrofitted to achieve a minimum Bushfire Attack Level of BAL 29*

The proposed school building/educational building is located in suitable location on the site, subject to the implementation of defensible space as set out in this report.

- *The building is in close proximity to a public road*

The rear of the school building is located approximately 260 metres off the public road, the firefighting water supply tank is located approximately 180 metres off Heidelberg-Kinglake Road, a sealed public road. Heidelberg-Kinglake Road provides access to the urban and rural areas of Hurstbridge and Diamond Creek to the west/southwest and St Andrews, Cottles Bridge to the north/northeast. In addition, Hurstbridge shopping precinct is within 1.7 km and a travel time of approximately 2 to 4 minutes for a motor vehicle from the subject site at 1075 Heidelberg-Kinglake Road.

The nearest Township/Urban area is Hurstbridge to the west/southwest.

Hurstbridge Township/Urban Area: The subject site, 1080 Hurstbridge-Kinglake Road, has access to the Hurstbridge urban area and shopping precinct, which is approximately 700 metres to the urban area and 1.5 km to the shopping precinct to the west/southwest of the subject site via Hurstbridge-Kinglake Road, with a travel time in a motor vehicle of approximately 2 to 4 minutes under normal road traffic conditions. Moving west/southwest to Hurstbridge during a bushfire impacting the area, could be very high risk, due to the extensive road verge vegetation across the road network.

Hurstbridge as an urban/rural area, near the subject site to the west/southwest, is such that the fringe and much of the inner areas of Hurstbridge could be impacted by a bushfire penetrating deep into the urban area of Hurstbridge under extreme to catastrophic fire weather conditions. Thus, the urban/rural township area immediately to the west/southwest of the subject site in Hurstbridge, may not be a suitable place to safely shelter in place, subject to the fire weather conditions.

Hurstbridge shopping precinct is in the urban area and may potentially provide potential protection from the impact of extreme bushfire behaviour, where fuel is managed in a minimum fuel condition and there is sufficient distance or shielding to protect people from direct flame contact or harmful levels of radiant heat, and with potentially suitable short travel distances. *There is some significant potential for bushfire risks to arise on the travel journey from the subject site to a place of greater protection, the risk issues related to high-risk roadside vegetation or road traffic congestion, that may make it impossible to reach a nearby Township or urban area.*

Cottles Bridge, St Andrews to the north/northeast and Panton Hill to the east/southeast, are most likely to be impacted by a bushfire at the same time as Hurstbridge, and therefore may not be suitable locations to shelter in place or a place of last resort. These locations are small settlements with little in the way of urban areas suitable to provide the ability to shelter in place and a place of last resort.

The subject site at 1075 Heidelberg-Kinglake Road, has access to the St Andrews Township area and its

small shopping precinct, which is approximately 7 km to the northeast via Hurstbridge-Kinglake Road, with a travel time in a motor vehicle of approximately 7 minutes under normal road traffic conditions. As stated, moving northeast to St Andrews during a bushfire impacting the area, could be very high risk, due to the extensive road verge vegetation along the road network.

Diamond Creek, as an urban area, near the subject site to the south/southwest, is such that the fringe areas and township area of Diamond Creek could be impacted by a bushfire penetrating deep into the township area of Diamond Creek, under extreme to catastrophic fire weather conditions. The inner township and shopping precinct of Diamond Creek immediately to the south/southwest of the subject site in Diamond Creek, may be a suitable place to safely shelter in place, subject to the fire weather conditions.

Diamond Creek shopping precinct is in the urban area and may potentially provide potential protection from the impact of extreme bushfire behaviour, where fuel is managed in a minimum fuel condition and there is sufficient distance or shielding to protect people from direct flame contact or harmful levels of radiant heat, and with potentially suitable short travel distances. With a travel distance from 1075 Heidelberg-Kinglake Road Hurstbridge of approx. 7.0 km via Heidelberg-Kinglake Road and a travel time of approx. 8 minutes under normal road traffic conditions. *There is some significant potential for bushfire risks to arise on the travel journey from the subject site to a place of greater protection, the risk issues related to high-risk roadside vegetation or road traffic congestion, that may make it impossible to reach a nearby Township or urban area.*

Neighbourhood Safer Place (NSP) – Bushfire Place of Last Resort, there is a NSP in Hurstbridge to the west of 1075 Heidelberg-Kinglake Road Hurstbridge, located at: **NSP Located at Hurstbridge at Hurstbridge Community Hub Hurstbridge Hurricanes Basketball Stadium Graysharps Road (at the roads end) Hurstbridge 3099.** With a travel distance from 1075 Heidelberg-Kinglake Road Hurstbridge of approx. 1.7 km via Heidelberg-Kinglake Road and a travel time of approx. 4 minutes under normal road traffic conditions. *Important comment: Moving northeast to St Andrews or west/southwest to Hurstbridge or Diamond Creek during a bushfire impacting the area, could be very high risk, due to the extensive road verge vegetation along Heidelberg-Kinglake Road and the road network.*

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- Access can be provided to the building for emergency service vehicles

As the proposed school building 1 is approximately 100 metres off Heidelberg-Kinglake Road to the from building, the rear of the school building 1 is accessible via the proposed fire access road (260m) and the proposed firefighting water supply tank is approximately 180 metres off Heidelberg-Kinglake Road. Heidelberg-Kinglake Road is a sealed public road, there is a requirement for firefighting vehicles to enter the site via the site accessway off Heidelberg-Kinglake Road. There will be a 20,000-litre firefighting water supply tank on the site located near (within 60 metres) the proposed school/educational building 1 site on the accessway, which will be able to be accessed by firefighting vehicles.

Fire Access Track. In addition to the above accessway requirements, a fire access track is to be provided that will provide fire authority vehicle access to the north area of the site. The fire access track will be approximately 120 metres long from the start of the fire access track at the car park and will be accessed via the site accessway at the entry to the site off Heidelberg-Kinglake Road. The fire access track is shown on the bushfire management plan and the bushfire hazard assessment plan in this report.

Approved Measure AM 2.2 has been met	Yes	✓	No	<input type="checkbox"/>
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Approved Measure 2.3 – Building Design

A building is designed to be responsive to the landscape risk and reduce the impact of bushfire on the building.

The proposed school building 1 will be retrofitted to achieve BAL 29, also the school building and other buildings will be managed and modified if required to reduce the accumulation of debris and entry of embers. The ground cover in the grassland, modified vegetation, woodland, and forest areas on and surrounding the buildings will be managed in order to reduce the protentional for ember attack from the ground cover fuel.

Approved Measure AM 2.3 has been met	Yes	✓	No	<input type="checkbox"/>
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53.02-4.2 – Defendable Space and Construction Objective

- Defendable space and building construction mitigate the effect of flame contact, radiant heat and embers on the buildings.

Approved Measure AM 3.1 – Bushfire Construction and Defendable Space

A building provides the defendable space in accordance with Column A, B, C of Table 2 and is managed in accordance with Table 6 of Clause 53.02-5 wholly within the title boundaries of the land.

The school building 1 will be provided with defendable space in accordance with Table 2 to Clause 53.02-5

Defendable space has been established using Table 2.

The proposed school building 1 will be retrofitted to achieve the construction standard to be a minimum of BAL 29 for proposed school building 1. The school building 1 will be the a designated Shelter in Place and Place of Last Resort on the subject site. Alterations and additions to current buildings on the site BAL 29 will apply.

Defendable space for dwelling is provided for a distance of distance of 30 metres or the property boundary whichever is the lesser, where vegetation (and other flammable materials) will be modified and managed in accordance with the following with Table 6 of Clause 53.02-5 below.

Table 6 of Clause 53.02-5 – Defendable space management requirements:

Defendable space is provided and is managed in accordance with the following requirements:

- Grass must be short cropped and maintained during the declared fire danger period.
- All leaves and vegetation debris must be removed at regular intervals during the declared fire danger period.
- Within 10 metres of a building, flammable objects must not be located close to the vulnerable parts of the building.
- Plants greater than 10 centimetres in height must not be placed within 3 metres of a window or glass feature of the building.
- Shrubs must not be located under the canopy of trees.
- Individual and clumps of shrubs must not exceed 5 square metres in area and must be separated by at least 5 metres.
- Trees must not overhang or touch any elements of the building.
- The canopy of trees must be separated by at least 5 metres.
- There must be a clearance of at least 2 metres between the lowest tree branches and ground level.

Unless specified in a schedule or otherwise agreed in writing to the satisfaction of the relevant fire authority.

- ✓ Acceptance confirmed of Table 6 Vegetation Management Requirements

There are no significant siting constraints that would allow Column D of Table 2 to Clause 53.02-5

Yes No Not Applicable ✓

A building is constructed to the bushfire attack level:

That corresponds to the defendable space provided in accordance with Table 2 to Clause 53.02-5

The proposed Primary School building 1 on the site will be retrofitted to achieve the construction Bushfire Attack Level of BAL 29.

The defendable space is wholly contained within the boundaries of the property

Yes ✓ No if no, see Alternative Measure 3.3

Approved Measure AM 3.1 has been met

Yes ✓ No

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Alternative Measures

Alternative Measures AltM 3.3 – Defendable Space

Adjoining land may be included as defendable space where there is reasonable assurance that the land will remain or continue to be managed in that condition as part of the defendable space.

Alternative Measure AltM 3.3 has been met	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input checked="" type="checkbox"/>
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Alternative Measure AltM 3.4 – Calculate defendable space using Method 2 of AS3959-2018

Defendable Space and the bushfire attack level is determined using Method 2 of AS3959:2009 Construction of buildings in bushfire prone areas (Standards Australia) subject to any guidance published by the relevant fire authority.

Alternative Measure AltM 3.4 been met	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input checked="" type="checkbox"/>
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Alternative Measure AltM 3.5 – Dwellings subject to direct flame contact

A building used for a dwelling (including an extension or alteration to a dwelling) may provide defendable space to the property boundary where it can be demonstrated that:

- *The lot has access to urban, township or other areas where:

 - *Protection can be provided from the impact of extreme bushfire behaviour*
 - *Fuel is managed in a minimum fuel condition*
 - *There is sufficient distance or shielding to protect people from direct flame contact or harmful levels of radiant heat**
- *Less defendable space and higher construction standard is appropriate having regard to the bushfire hazard landscape assessment*
- *The dwelling is constructed to a bushfire attack level of BAL-FZ*

This alternative measure only applies where the requirements of Approved Measure 3.1 cannot be met.

Alternative Measure AltM 3.5 been met	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input checked="" type="checkbox"/>
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53.02-4.3 – Water Supply and Access Objectives

- A static water supply is provided to assist in protecting property.
- Vehicle access is designed and constructed to enhance safety in the event of a bushfire.

Approved Measure AM 4.1 – Water Supply and Access

Water Supply Requirement

A building used for a dwelling (including an extension or alteration to a dwelling), a dependant person’s unit, industry, office or retail premises service station or warehouse is provided with:

- A static water supply for firefighting and property protection purposes as specified in Table 4 to Clause 53.02-5.

The water supply may be in the same tank as other water supplies provided that a separate outlet is reserved for firefighting water supplies.

Lot Size (m ²)	Hydrant Available	Capacity (litres)	Fire Authority Fittings & Access Required	Requirement
Less than 500	Not Applicable	2,500	No	<input type="checkbox"/>
500 – 1000	Yes	5,000	No	<input type="checkbox"/>
500 – 1000	No	10,000	Yes	<input type="checkbox"/>
1001 and above	Not Applicable	10,000	Yes	<input type="checkbox"/>
Subject Site	No	20,000	Yes	<input checked="" type="checkbox"/>

Note: A hydrant is available if it is located within 20 metres of the rear of the building

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Confirm Static Water Supply meets the following requirements	<ul style="list-style-type: none"> ✓ Is stored in an above ground water tank constructed of concrete or metal ✓ All fixed above ground water pipes and fittings for firefighting purposes must be made of corrosive resistant metal. ✓ Include a separate outlet for the occupant use ✓ Be readily identifiable from the building or appropriate identification signage to the satisfaction of CFA must be provided. ✓ Be located within 60 metres of the outer edge of the approved building ✓ The outlet/s of the water tank must be within 4 metres of the access-way and unobstructed ✓ Incorporate a ball or gate valve (British Standard Pipe (BSP 65mm) and coupling (64mm CFA 3 thread per inch male fitting) ✓ Any pipework and fittings must be a minimum of 65mm (excluding the CFA coupling)
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Additional Information:

A 20,000-litre static water supply tank is to be provided and maintained solely for firefighting purposes. The tank location is marked on the bushfire management plan and the bushfire hazard site assessment plan.

Approved Measure AM 4.1 (Water Supply) Has been met Yes No

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Access requirement

Table 5 Vehicle Access Design and Construction Requirements:

A building used for a dwelling (including an extension or alteration to a dwelling), a dependant person’s unit, industry, office or retail premises service station or warehouse is provided with is provided with vehicle access is designed and constructed as specified in Table 5 to Clause 53.02-5.

Vehicle access (or part thereof) of a length specified in Column A implements the design and construction requirements specified in Column B.

Column A	Column B
Length of access is less than 30 metres	<input type="checkbox"/> There are no design and construction requirements if fire authority access to water supply is not required under AM 4.1
Length of access is less than 30 metres	<input type="checkbox"/> Where fire authority access to the water supply is required under AM 4.1 fire authority vehicles should be able to get within 4 metres of the water supply outlet
Length of access is greater than 30 metres	<p>The following design and construction requirements apply:</p> <ul style="list-style-type: none"> ✓ All weather construction ✓ A load limit of at least 15 tonnes ✓ Provide a minimum trafficable width of 3.5 metres ✓ Be clear of encroachments for at least 0.5 metres on each side and at least 4 metres vertically ✓ Curves must have a minimum inner radius of 10 metres ✓ The average grade must be no more than 1 in 7 (14.4%) (8.1°) with a maximum grade of no more than 1 in 5 (20%) (11.3°) for no more than 50 metres ✓ Dips must have no more than 1 in 8 (12.5 per cent) (7.1 degrees) entry and exit angle
Length of access is greater than 100 metres	<p>A turning area for fire fighting vehicles must be provided close to the building by one of the following:</p> <ul style="list-style-type: none"> ✓ A turning circle with a minimum radius of eight metres ✓ A driveway encircling the dwelling ✓ The provision of other vehicle turning heads such as a T head or Y Head – which meet the specification of Austroad Design for an 8.8 metre service vehicle.
Length of access is greater than 200 metres	<ul style="list-style-type: none"> ✓ Passing bays must be provided at least every 200 metres. ✓ Passing bays must be a minimum of 20 metres long with a minimum trafficable width of 6 metres.
Note	<i>The length of access should be measured from a public road to either the building or the water supply outlet, whichever is longer.</i>

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Additional Information:

Firefighting vehicle access and design:

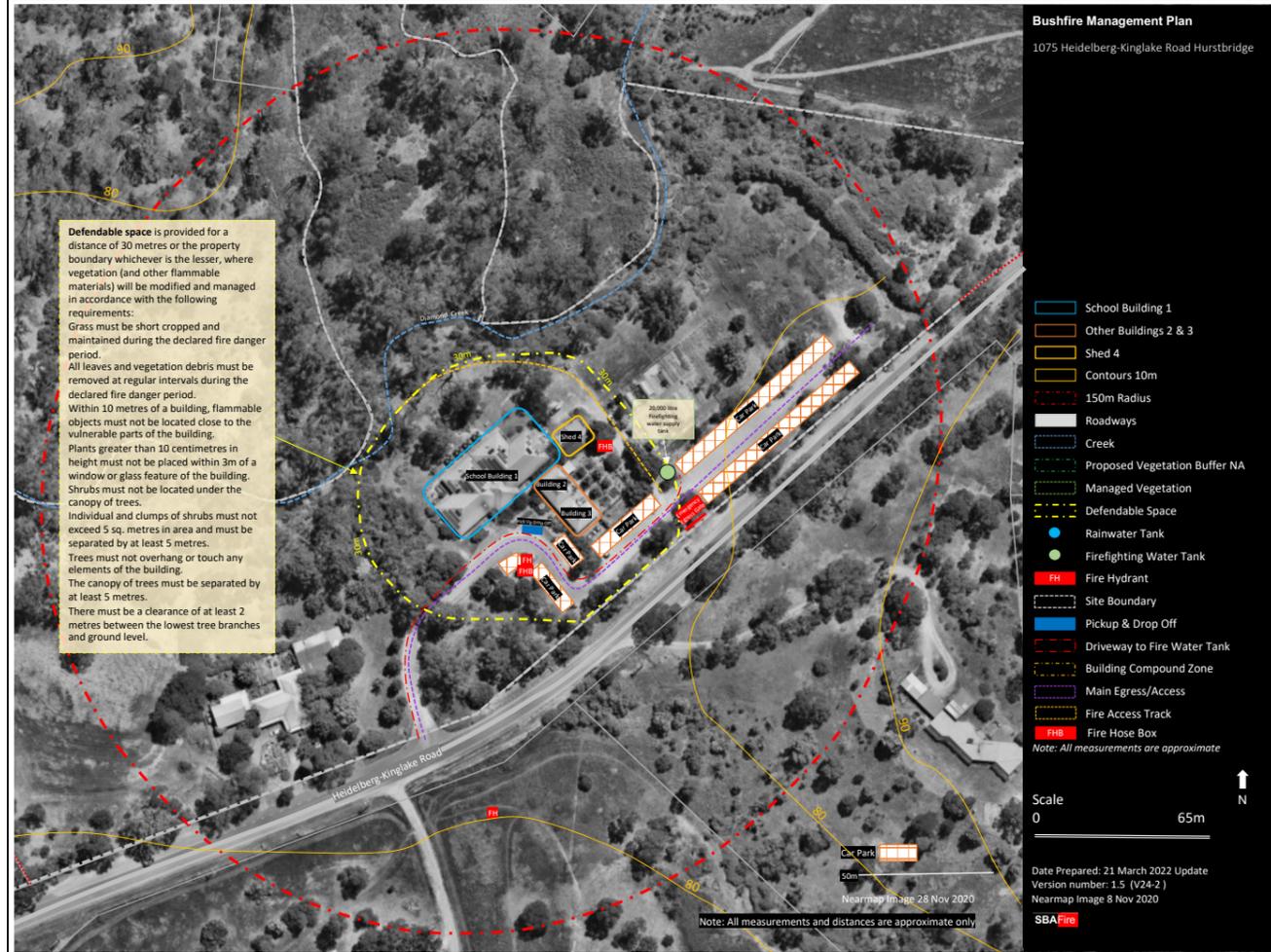
Main Accessway, the length of access is greater than 200 metres from Heidelberg-Kinglake Road to the rear of the current building 1 that is to become a School Building, therefore fire authority access to the water supply tanks is required under clause AM4.1 fire authority vehicle should be able to get within 4 metres of the water supply outlet.

The fire access track off the main accessway and car park at the eastern side of the school building is greater than 100 metres (approx. 120 metres long) from car park access track entry gate to the rear of the school building 1, therefore fire authority vehicle access design and construction requirements apply under clause AM4.1 fire authority vehicle access requirements of table 5 Vehicle Access Design and Construction Requirements.

Approved Measure AM 4.1 (Access) Has been met Yes No

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Bushfire Management Plan – 1075 Heidelberg-Kinglake Road Hurstbridge 3099 Victoria



Bushfire Protection Measures

a) Defendable Space

Defendable space is provided for a distance of 30 metres or the property boundary whichever is the lesser, where vegetation (and other flammable materials) will be modified and managed in accordance with the following requirements:

- Grass must be short cropped and maintained during the declared fire danger period.
- All leaves and vegetation debris must be removed at regular intervals during the declared fire danger period.
- Within 10 metres of a building, flammable objects must not be located close to the vulnerable parts of the building.
- Plants greater than 10 centimetres in height must not be placed within 3m of a window or glass feature of the building.
- Shrubs must not be located under the canopy of trees.
- Individual and clumps of shrubs must not exceed 5 sq. metres in area and must be separated by at least 5 metres.
- Trees must not overhang or touch any elements of the building.
- The canopy of trees must be separated by at least 5 metres.
- There must be a clearance of at least 2 metres between the lowest tree branches and ground level.

b) Construction Standard for Proposed School Building 1

- Proposed School Building 1 to be constructed to a minimum Bushfire Attack Level of BAL 29
- Proposed Alterations/Addition to current building 1 or any other building on site to be designed and constructed to BAL 29

c) Construction Standard Stage 1 Designated Shelter in Place and Place of Last Resort on the site

- Proposed School Building 1 to be designed and constructed to BAL 29 as the Designated Shelter in Place on Site

d) Water Supply

- Show a water supply tank with 20,000 litres of effective water supply for firefighting purposes which meets the following requirements:
 - Be stored in an above ground water tank constructed of concrete or metal.
 - Have all fixed above ground water pipes and fittings required for firefighting purposes made of corrosive resistant metal.
 - Include a separate outlet for occupant use.
 - Be readily identifiable from the building or appropriate identification signage to the satisfaction of the relevant fire authority.
 - Be located within 60 metres of the outer edge of the approved building.
 - The outlet/s of the water tank must be within 4 metres of the accessway and unobstructed.
 - Incorporate a separate ball valve (British Standard Pipe (BSP 65 millimetre) and coupling (64millimetre CFA 3 threads per inch male fitting).
 - Any pipework and fittings must be a minimum of 65 millimetres (excluding the CFA coupling)

e) Access for Site Accessway and Fire Access Track

- Show the access for firefighting purposes which meets the following requirements:
 - All-weather construction.
 - A load limit of at least 15 tonnes
 - Provide a minimum trafficable width of 3.5 metres
 - Be clear of encroachments for at least 0.5 metres on each side and at least 4 metres vertically
 - Curves must have a minimum inner radius of 10 metres
 - The average grade must be no more than 1 in 7 (14.4 Per cent) (8.1 degrees) with a maximum grade of no more than 1 in 5 (2 per cent) (11.3 degrees) for no more than 50 metres.
 - Dips must have no more than a 1 in 8 (12. Per cent) (7.1 degrees) entry and exit angle.
 - Incorporate a turning area for firefighting vehicles close to the building

Mandatory Condition

The bushfire protection measures forming part of this permit or shown on the endorsed plans, including those relating to construction standards, defendable space, water supply, and access, must be maintained to the satisfaction of the responsible authority on a continuing basis. This condition continues to have force and effect after the development authorised by this building permit has been completed.

ADVERTISED PLAN

Prepared By: Geoffrey Stone – SBAFire
 Version: V1.21-11 Final
 Date: 21 March 2022 Update



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Defendable space is provided for a distance of 30 metres or the property boundary whichever is the lesser, where vegetation (and other flammable materials) will be modified and managed in accordance with the following requirements:

Grass must be short cropped and maintained during the declared fire danger period.

All leaves and vegetation debris must be removed at regular intervals during the declared fire danger period.

Within 10 metres of a building, flammable objects must not be located close to the vulnerable parts of the building.

Plants greater than 10 centimetres in height must not be placed within 3m of a window or glass feature of the building.

Shrubs must not be located under the canopy of trees.

Individual and clumps of shrubs must not exceed 5 sq. metres in area and must be separated by at least 5 metres.

Trees must not overhang or touch any elements of the building.

The canopy of trees must be separated by at least 5 metres.

There must be a clearance of at least 2 metres between the lowest tree branches and ground level.

Bushfire Management Plan

1075 Heidelberg-Kinglake Road Hurstbridge

- School Building 1
- Other Buildings 2 & 3
- Shed 4
- Contours 10m
- 150m Radius
- Roadways
- Creek
- Proposed Vegetation Buffer NA
- Managed Vegetation
- Defendable Space
- Rainwater Tank
- Firefighting Water Tank
- FH Fire Hydrant
- FHB Fire Hose Box
- Site Boundary
- Pickup & Drop Off
- Driveway to Fire Water Tank
- Building Compound Zone
- Main Egress/Access
- Fire Access Track
- FHB Fire Hose Box

Note: All measurements are approximate

Scale

0 65m

Date Prepared: 21 March 2022 Update

Version number: 1.5 (V24-2)

Nearmap Image 8 Nov 2020



Car Park

50m

Nearmap Image 28 Nov 2020

Note: All measurements and distances are approximate only

Bushfire Management Requirements - Owner Obligations

The following is a summary of the planning requirements that form part of the proposed conversion of the large building 1 on the site to a school building 1 on subject site of this report, based on the BAL rating and BMO requirements for the property.

Bushfire Management Plan Endorsed

Before the development starts, the Bushfire Management Plan forming part of the Bushfire Management Statement, must be submitted to and endorsed by the Responsible Authority. The plan must not be altered unless otherwise agreed in writing by CFA and the Responsible Authority.

Bushfire Management Plan

Before the development starts, the bushfire management plan which is generally in accordance with the bushfire management plan submitted to and endorsed by the Responsible Authority. The plan must show the following bushfire mitigation measures, unless otherwise agreed in writing by the CFA and the Responsible Authority:

Building Permit Conditions Relevant to the Bushfire Planning Requirements

A permit to construct a building or construct or carry out works must include the following condition:

“The bushfire protection measures forming part of this permit or shown on the endorsed plans, including those relating to construction standards, defensible space, water supply, and access, must be maintained to the satisfaction of the responsible authority on a continuing basis. This condition continues to have force and effect after the development authorised by this building permit has been completed.”

Bushfire protection measures and defensible space

The following is a summary of the building permit requirements for the property, covering all of the key parts of the building permit that relate to the Bushfire Management and Planning, firefighting water supply, access, fire protection and defensible space requirements.

Construction Standards

The Proposed Primary School and building 1 on the site will be constructed to AS3959-2018 Construction of buildings in bushfire prone areas, Bushfire Attack Level (BAL) as set out below:

Bushfire Attack Level (BAL) Required Under AS3959-2018:

- *Proposed Primary School building 1 will need to comply with a minimum of BAL 29*
- *The proposed Primary School building 1 will also be the shelter in Place and Place of Last Resort on the site*
- *Future buildings on the subject site are to have a minimum BAL of BAL 29*

Retro Fitting of School Building 1 to Comply with the Construction Requirements:

The proposed school building was constructed approximately 18 years ago, in order to comply with the current required bushfire attack level (BAL) BAL 29, the building would need to be retrofitted for bushfire to achieve the for the school building to comply with AS3959-2018 Construction of buildings in bushfire prone areas, and the specific BAL for the building.

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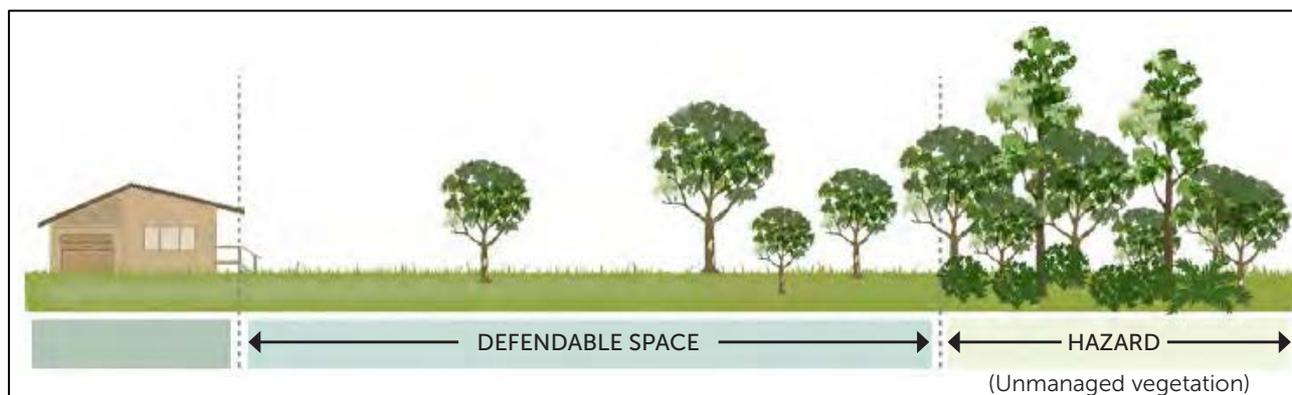
Defendable space and BMO vegetation management standard for site Buildings

Defendable space is provided for a distance of 30 metres or the property boundary whichever is the lesser around the proposed school building 1 where vegetation (and other flammable materials) will be modified and managed in accordance with the following requirements:

Clause 53.02-5 Table 6 Vegetation management requirements

- Grass must be short cropped and maintained during the declared fire danger period.
- All leaves and vegetation debris must be removed at regular intervals during the declared fire danger period.
- Within 10 metres of a building, flammable objects must not be located close to the vulnerable parts of the building.
- Plants greater than 10 centimetres in height must not be placed within 3m of a window or glass feature of the building.
- Shrubs must not be located under the canopy of trees.
- Individual and clumps of shrubs must not exceed 5 sq. metres in area and must be separated by at least 5 metres.
- Trees must not overhang or touch any elements of the building.
- The canopy of trees must be separated by at least 5 metres.
- There must be a clearance of at least 2 metres between the lowest tree branches and ground level.

Defendable Space Outline



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Access requirements required and recommended

Before the occupation of the development starts, emergency vehicle access to the static water supply dedicated for firefighting purposes must be provided. The minimum design requirements (including gates, bridges and culverts) that must be complied with are:

The length of access is greater than 200 metres (280m approx.) off Heidelberg-Kinglake Road and fire authority access to the water supply is required under clause AM4.1 fire authority vehicle should be able to get within 4 metres of the water supply outlet.

Clause 53.02-5 Table 5 Vehicle access design and construction

Vehicle access (or part thereof) of a length specified in Column A implements the design and construction requirements specified in Column B.

Column A	Column B	Applies
Length of access is less than 30 metres	There are no design and construction requirements if fire authority access to the water supply is not required under AM4.1	<input type="checkbox"/>
Length of access is less than 30 metres	Where fire authority access to the water supply is required under AM4.1 fire authority vehicles should be able to get within 4 metres of the water supply outlet.	<input type="checkbox"/>
Length of access is greater than 30 metres	The following design and construction requirements apply: <ul style="list-style-type: none"> • All weather construction • A load limit of at least 15 tonnes • Provide a minimum trafficable width of 3.5m • Be clear of encroachments for at least 0.5 metres on each side and at least 4 metres vertically • Curves must have a minimum inner radius of 10m. • The average grade must be no more than 1 in 7 (14.4 per cent) (8.1 degrees) with a maximum of no more than 1 in 5 (20 per cent) (11.3 degrees) for no more than 50m. • Dips must have no more than a 1 in 8 (12.5%) (7.1° degrees) entry and exit angle. 	✓
Length of access is greater than 100 metres	A turning area for fire fighting vehicles must be provided close to the building by one of the following: <ul style="list-style-type: none"> • A turning circle with a minimum radius of eight metres. • A driveway encircling the dwelling. • The provision of other vehicle turning heads – such as a T or Y head – which meet the specification of Austroad Design for an 8.8 metres Service Vehicle. 	✓
Length of access is greater than 200 metres	<ul style="list-style-type: none"> • Passing bays must be provided at least every 200 metres. • Passing bays must be a minimum of 20 metres long with a minimum trafficable width of 6 metres. 	✓

Note: The length of access should be measured from a public road to either the building or the water supply outlet, whichever is the longer.

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Static water supply requirements Stage 1 Development

Clause 53.02-5 Table 4 Water supply requirements

Capacity, fittings and access

Lot sizes (sq. m)	Hydrant available	Capacity (litres)	Fire authority fittings and access required	Applies
Less than 500	Not applicable	2,500	No	<input type="checkbox"/>
500-1,000	Yes	5,000	No	<input type="checkbox"/>
500-1,000	No	10,000	Yes	<input type="checkbox"/>
1,001 and above	Not applicable	10,000	Yes	<input type="checkbox"/>
Subject site	Not applicable	20,000	Yes	<input checked="" type="checkbox"/>

Note 1: A hydrant is available if it is located within 120 metres of the rear of the building

Before the occupation of the development site starts. Show a 20,000-litre tank with 20,000 litres of effective water supply for firefighting purposes which meets the following requirements:

Fire Authority requirements

Unless otherwise agreed in writing by the relevant fire authority, the water supply must:

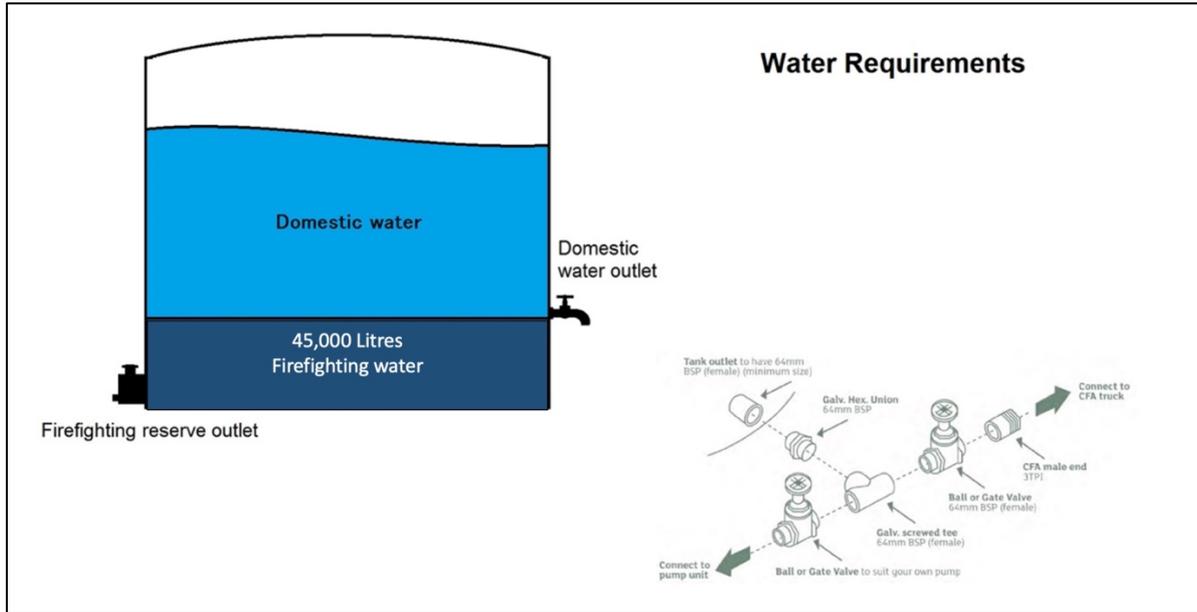
- Be stored in an above ground water tank constructed of concrete or metal
- Have all fixed above-ground water pipes and fittings required for firefighting purposes must be made of corrosive resistant metal.
- Include a separate outlet for occupant use.
- Be readily identifiable from the building or appropriate identification signage to the satisfaction of the relevant fire authority
- Be located within 60 metres of the outer edge of the approved building.
- The outlet/s of the water tank must be within 4 metres of the accessway and unobstructed.
- Incorporate a separate ball valve (British Standard Pipe (BSP 65 millimetre) and coupling (64 millimetre CFA 3 threads per inch male fitting).
- Any pipework and fittings must be a minimum of 65 millimetres (excluding the CFA coupling)

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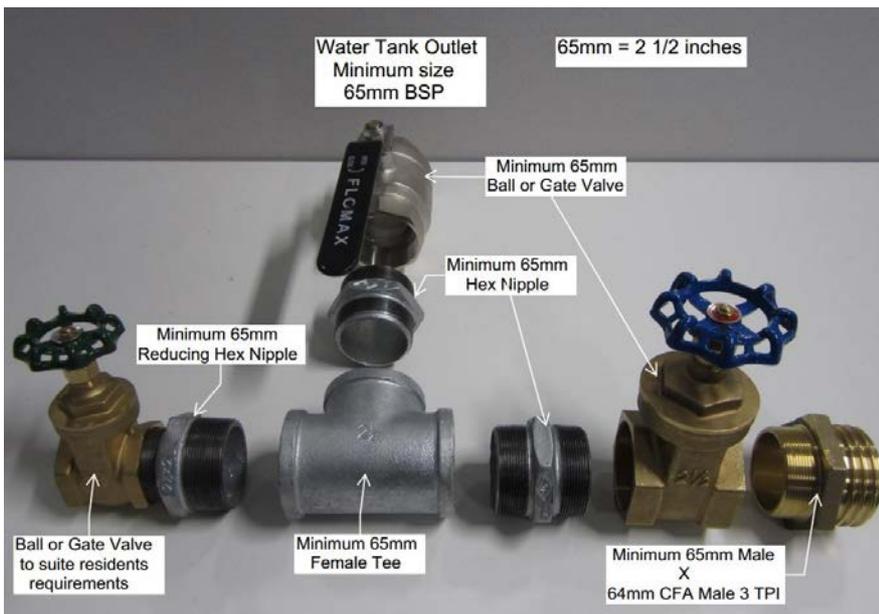
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Static Water Supply Fittings/Requirements & Access Requirements

CFA Water Supply Requirements:

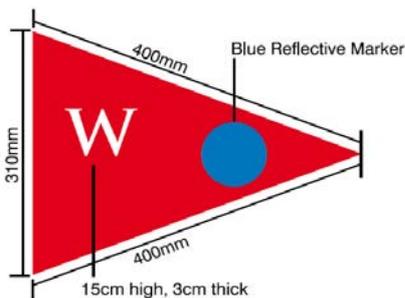


CFA 65mm to 64mm male 3 TPI outlet



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CFA Water supply signage is required as set out below



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Recommended at Fire Hydrant, Fire Hose Reels & Fire Hose Box

Recommended that at the current fire hydrant near the school building 1, have a fire hose box and equipment be installed at the education building and a Fire Hose Box be installed adjacent to the fire hydrant as marked on the bushfire hazard site assessment plan and the bushfire management plan.

Note: The fire hydrant is to be connected to the mains water supply. The equipment to be connected to the fire hydrant includes the follow:

At the Fire Hydrant and Fire Hose Box: to include:

- A Fire Hydrant with CFA (64mm 3 threads per inch male fitting) outlet, and a 25mm outlet for occupant use, and;
- Incorporate a ball or gate valve (British Standard Pipe (BSP 65mm) and coupling (64mm CFA 3 thread per inch male fitting)
- Be readily identifiable from the building or appropriate identification signage to the satisfaction of CFA must be provided.
- Any pipework and fittings must be a minimum of 65mm (excluding the CFA coupling)
- Fire Hoses: 5 x 30m x 25mm duraline hoses in the fire hose box
- Include a CFA 64mm 3 threads per inch coupling adaptor for 25mm hose coupling
- At least 2 fire hose Nozzles: 25mm BSP Plexone Spray / Fog nozzle see below. Or Pistol Grip
- Fire Hose Type: Angus Duraline fire hose x three (5) x 30m lengths x 25mm
- Fire Hose Reels x two (2) to be installed one at each of the new education building.

CFA Fire Hydrant gate valve (British Standard Pipe (BSP 65mm) and coupling (64mm CFA 3 thread per inch male fitting)



65mm CFA Female x 25mm BSP Male Adaptor



Nozzle 25mm BSP PVC J/S/F Jet/Spray/Fog (Polycarbonate)

Duraline Hose Example only



Fire Hose Reel Example

36m x 19mm Red Colour Hose



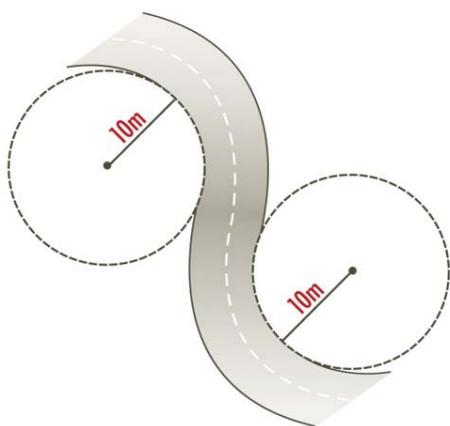
Nozzle Pistol Grip 25mm Select Flow 50-125-200-230 LPM

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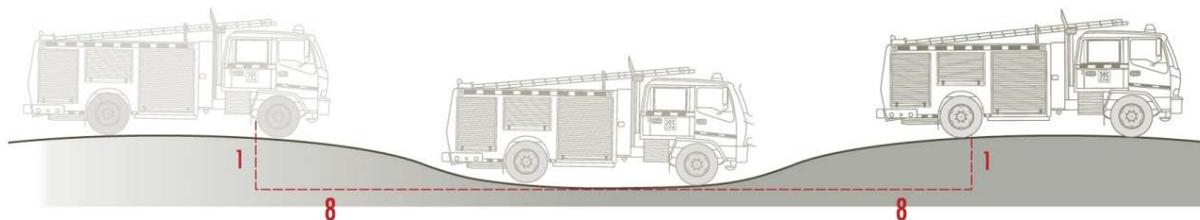
Access Requirements Diagrams for BMO

Curves in the accessway - a minimum inner radius of 10m.



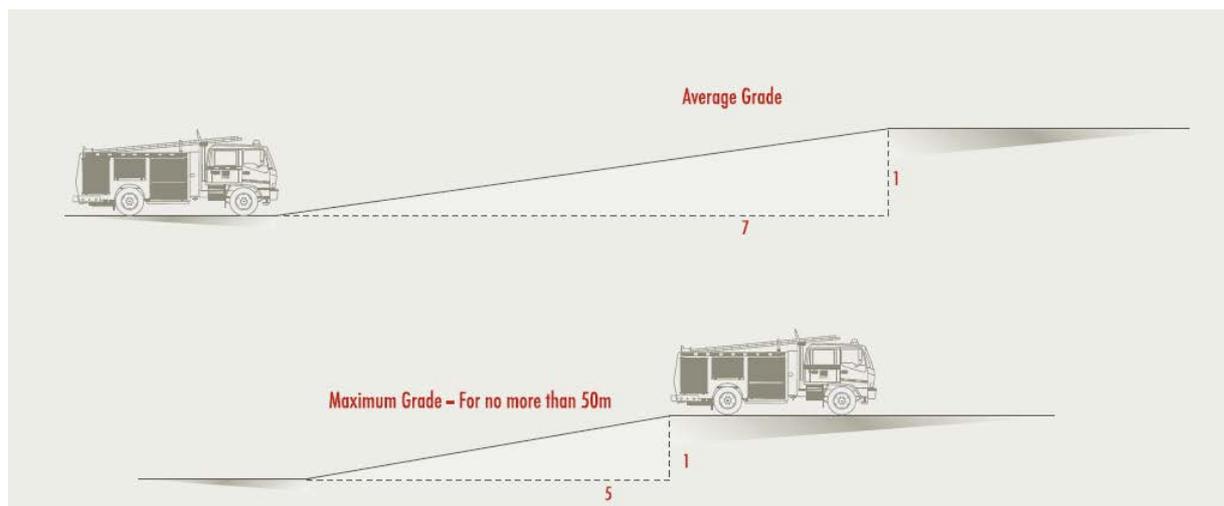
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Dips in the accessway - no more than a 1 in 8 (12.5 per cent) (7.1 degrees) entry and exit angle.

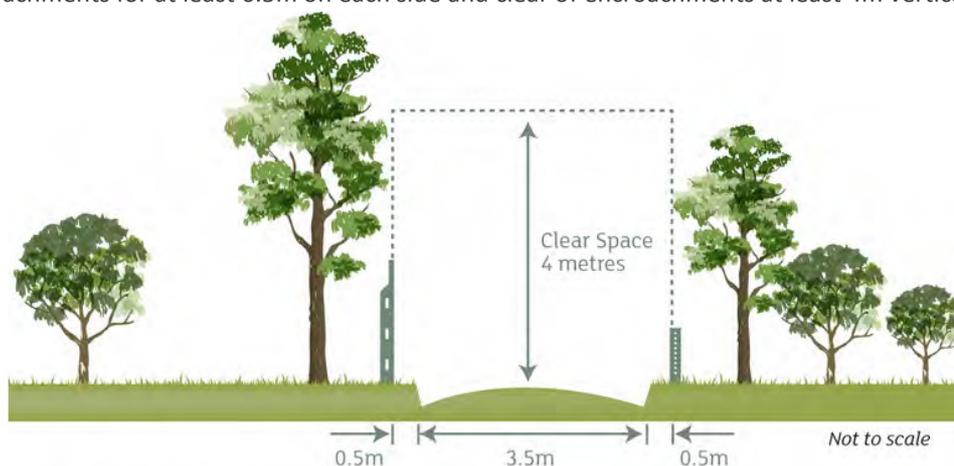


Average grade - no more than 1 in 7 (14.4 per cent) (8.1 degrees)

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Widths and clearances around the accessway - minimum trafficable width of 3.5m and be substantially clear of encroachments for at least 0.5m on each side and clear of encroachments at least 4m vertically.



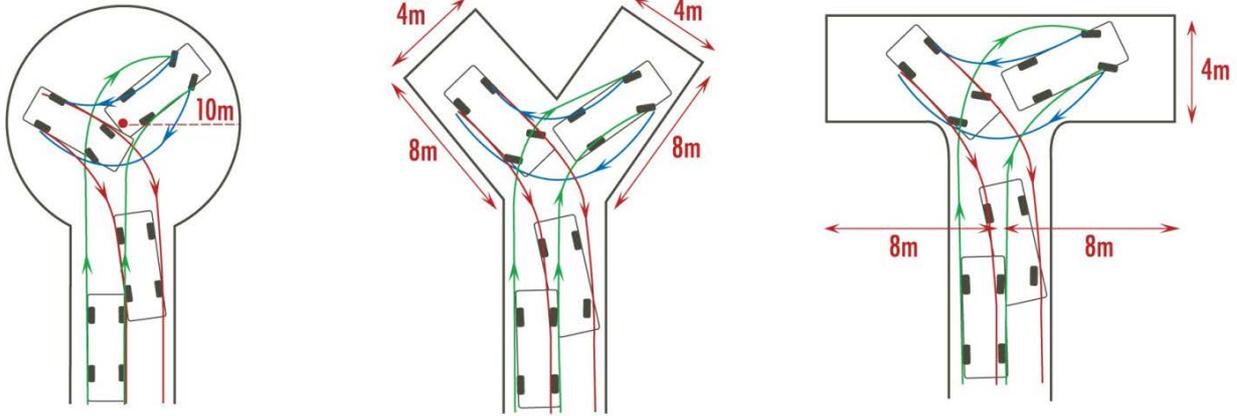
Construction of an all-weather surface

Accessway should be constructed of an all-weather surface (e.g. 150mm depth concrete).

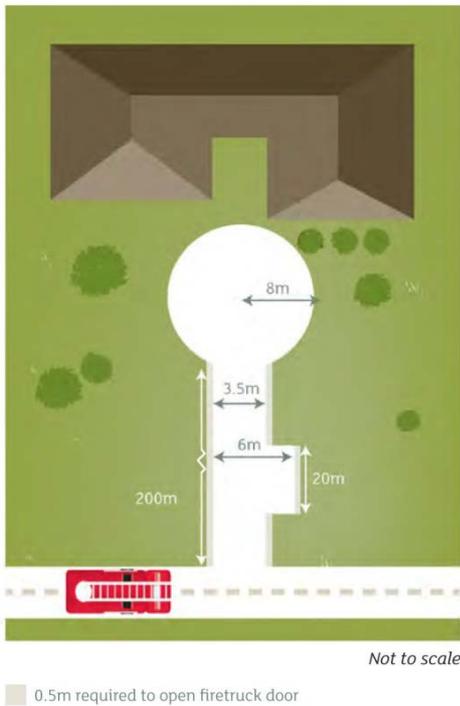
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Turning circles – required where accessway is in excess of 100m



Passing bays – required where an access way is in excess of 200m



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Bushfire Emergency Management Plan

Draft

Bushfire Emergency Management Plan

Proposed Primary School
at 1075 Heidelberg-Kinglake Road Hurstbridge 3099 Victoria

Version 1 – 27 September 2021

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Authorisation

This Bushfire Emergency Management Plan (BEMP) has been prepared for the Proposed Primary School at 1075 Heidelberg-Kinglake Road Hurstbridge 3099 Victoria and will be endorsed by the School Board/Council, Principal, and the Emergency Management Planning Committee on 27 September 2021. This Bushfire Emergency Management Plan is here signed by the Chair of the Emergency Management Planning Committee, the Chair of the School Board/Council and the Principal of the School.

Chair School Emergency Management Planning Committee

_____ Date signed _____

Chair School Management Board/Council Committee

_____ Date signed _____

School Principal

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_____ Date signed _____

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Review for Bushfire Emergency Management Plan & Version Control

This bushfire Emergency Management Plan must be reviewed and updated annually prior to the commencement of the declared Fire Danger Period.

Prepared For Proposed Primary School		Authorised
Principal	Name of Principal	
Address	1075 Heidelberg-Kinglake Road Hurstbridge 3099 Victoria	
Version	Details & Date	
V1	Original BEMP Developed 25 September 2021	
Year 1 Annual Reviewed		
Year 2 Annual Reviewed		
Year 3 Annual Reviewed		
Year 4 Annual Reviewed		
Year 5 Annual Reviewed		
Year 6 Annual Reviewed		

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Site Plan



1. PREMISES DETAILS

This BEMP plan is for the proposed Primary School at 1075 Heidelberg-Kinglake Road Hurstbridge 3099 Victoria and has been designed to assist the school management to protect life and property in the event of a bushfire. The site is located in a bushfire environment with very high bushfire risk vegetation on and adjoining the site to the north, east and south of the site. The nature of the bushfire risk on, adjoining and beyond the site is such that on days very high to extreme fire weather conditions, the site and people on the site may be exposed to very high to extreme bushfire danger, that may require people staying at the site or relocate to another location in order to shelter in place from a bushfire impacting or potentially impacting the site. bushfire danger.

It is important to recognise that on days with a Fire Danger Rating of Code Red, the site and operations of the Primary School will be Closed.

- **Primary School Site Closed** on days with a Fire Danger rating of Code Red
- **Evacuation from the site** to a designated safer off-site location as set out in “5. Evacuation Procedures”
- **Shelter in place** at a designated building on the site or nearby township area

This BEMP outlines procedures for both evacuation and shelter-in-place (remaining on site) to enhance the protection of occupants from the threat of a bushfire.

The primary action to follow under normal bushfire conditions is to evacuate.

Address: 1075 Heidelberg-Kinglake Road Hurstbridge 3099 Victoria
 Contact Person: Principal
 Position: Principal
 Contact numbers: To Be advised

Facility Type: Primary School, Education Centre/Place of Assembly
 Number of Primary Educational Building on the site: 1
 Number of Students/Staff on the site:
 At start up: 6 staff and 43 students
 On reaching full operation: 20 staff and 130 students

Number of Employees: 6 to 20

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2. ROLES AND RESPONSIBILITIES

The following outlines who has responsibility of implementing the Emergency Procedures in the event of a bushfire.

Role	Person Responsible	Area of Responsibility Contact
Chief Warden	Principal or as Nominated	All of site TBA
Deputy Fire Warden	as Nominated	Specific Area of School TBA
1 Fire Warden	as Nominated	Specific Room/Building of School TBA
2 Fire Warden	as Nominated	Specific Room/Building of School TBA
3 Fire Warden	as Nominated	Specific Room/Building of School TBA
4 Fire Warden	as Nominated	Specific Room/Building of School TBA
5 Fire Warden	as Nominated	Specific Room/Building of School TBA

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3. COMMUNICATIONS PLAN / PHONE CONTACTS

3.1 Communications Plan

The communication plan will include the ability to monitor web sites, fire ready app, a local emergency broadcaster or contact the Victorian Bushfire Information Line (VBIL).

3.2 For all emergencies phone 000

Organisation	Phone Number
Country Fire Authority (CFA)	(03) 9262 8444
CFA District 14 Melton	(03) 8746 1400
Diamond Creek Police Station	(03) 9438 8300
Victorian Police Headquarters	1300 881 596 (8am to 4pm) Monday to Friday
Victorian Ambulance Service	(03) 9840 3500
Nillumbik Shire Council	(03) 9433 3111. Emergencies after hours (03) 9433 3334
State Emergency Service	132 500
Austin Hospital	03 9496 5000
Victorian Bushfire Information Line	1800 226 226

Organisation	Position	Name	Contact Number
Victorian Bushfire Information Line (VBIL)			1800 226 226
Emergency Broadcaster		774 ABC Radio	

Mobile Phone Coverage Area

Network	Mobile Phone Coverage	Mobile Data
Telstra	Yes	3G / 4GX / 5G
Optus	Yes	3G / 4G / 5G
Vodafone	Yes	3G / 4G / 5G

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Emergency Services Websites

Organisation	Website Address	Type of Info provided
Vic Emergency Management (Warnings, incidents, and planned burns)	https://www.emv.vic.gov.au	Warnings, incidents and planned burns are all displayed on the Vic Emergency website - the single location for all emergency information in Victoria.
Country Fire Authority	http://www.cfa.vic.gov.au/	Fire related information warnings and fire restrictions, planning and preparing for fire,
Country Fire Authority	http://www.cfa.vic.gov.au/warnings-restrictions/information-services/	CFA link page to other Emergency related Web sites
Department of Environment, Land, Water and Planning (Old DEPI)	www.delwp.vic.gov.au	Latest information on current fires on public land, including threat alerts, warnings and community meetings
Parks Victoria	www.parkweb.vic.gov.au	This site includes information about closures to roads, tracks, visitor sites and picnic areas
Emergency Alert (telephone warnings)	www.emergencyalert.gov.au	Emergency Alert is the national telephone warning system used by emergency services.
Bureau of Meteorology	www.bom.gov.au/vic/	Victorian Weather and Warnings
State Emergency Service (SES)	www.ses.vic.gov.au	Floods, severe storms, earthquakes, road accident rescue, search and rescue and other emergency support.
Ambulance Victoria	www.ambulance.vic.gov.au	
Australian Red Cross	www.redcross.org.au	Includes information about relief centres, registering and comforting evacuees and first aid care.
Energy Safe Victoria	www.esv.vic.gov.au	Includes information on electricity and gas safety advice during fires and incidents

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4. Bushfire Emergency Management Response & Actions

Primary School 1075 Heidelberg-Kinglake Road Hurstbridge 3099 VIC
Bushfire Management Response & Actions
Fire Danger District Central
Link below to Central Fire District Warnings & Restrictions
Link <https://www.cfd.vic.gov.au/warnings-and-restrictions>

Fire Danger Rating Central Fire District	Potential Impact	Discussion	Actions
Code Red	These are the worst conditions for a bush or grass fire. Avoid forested areas, thick bush or long, dry grass	Management to advise staff and students of requirement for temporary relocation from the site. Management monitoring Websites/Bushfire Info line for fire risk 4 days out/ 2 days out.	Close site/premises - All personnel on site are advised that relocation to an alternate 'safer' location is advised until the bush fire risk lessens to "Severe and below" . - Appropriate signage in place - Management monitoring Websites/Bushfire Info line
Extreme	Expect extremely hot, dry and windy conditions. If a fire starts and takes hold, it will be uncontrollable, unpredictable and fast moving. Spot fires will start, move quickly and come from many directions.	Management to advise staff and students of requirement for temporary relocation from the site. Management monitoring Websites/Bushfire Info line for fire risk 4 days out/ 2 days out.	All personnel on site are advised that relocation to an alternate 'safer' location is advised until the bush fire risk lessens to "Severe and below" . - Appropriate signage in place - Management monitoring Websites/Bushfire Info line
Severe	Expect hot, dry and possibly windy conditions. If a fire starts and takes hold it may be uncontrollable.	Management monitoring Websites/Bushfire Info line for fire risk 4 days out/ 2 days out and advise guests accordingly.	- Fuel reduction works maintained around the property to required prescriptions. - Appropriate signage in place - Management monitoring Websites/Bushfire Info line

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Very High	If a fire starts, it can most likely be controlled in these conditions and homes can provide safety.	Management monitoring Websites/Bushfire Info line for fire risk 4 days out/ 2 days out and advise guests accordingly.	<ul style="list-style-type: none"> - Fuel reduction works maintained around the property to required prescriptions. - Appropriate signage in place - Management monitoring Websites/Bushfire Info line
High	If a fire starts, it can most likely be controlled in these conditions and homes can provide safety.	Management monitoring Websites/Bushfire Info line for fire risk 4 days out/ 2 days out and advise guests accordingly.	<ul style="list-style-type: none"> - Fuel reduction works maintained around the property to required prescriptions. - Appropriate signage in place - Management monitoring Websites/Bushfire Info line
Low/Moderate	If a fire starts, it can most likely be controlled in these conditions and homes can provide safety.	Management monitoring Websites/Bushfire Info line for fire risk 4 days out/ 2 days out and advise guests accordingly.	<ul style="list-style-type: none"> - Fuel reduction works maintained around the property to required prescriptions. - Appropriate signage in place - Management monitoring Websites/Bushfire Info line

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4.1 Warnings & Advice

In some cases, a voice message may be received on our landline or a text message on a mobile phone via the national "Emergency Alert System". The messaging comprises three levels of alerting.

Warning Level	Risk Level	Actions
Advice	There is a fire in your local area. Access information and monitor conditions.	Management to contact staff and students immediately and advise on appropriate response. Management to activate response plan as required.
Watch & Act	Fire is heading towards you. Conditions are changing, and you may need to start taking action now to protect yourself.	Management to contact staff and students immediately and advise on appropriate response. Management to activate response plan as required. Consider evacuation to an alternate location IF TIME PERMITS or implement shelter in place option.
Emergency Warning	You are in imminent danger and need to take action immediately. You will be impacted by fire.	Management to contact staff and students immediately and advise on appropriate response. Management to activate response plan as required. It is likely TOO LATE to evacuate to an alternate location. Consider implementation of Shelter in Place option.

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5. EVACUATION PROCEDURES

Evaluation of the safety of staff, students, employees and occupants has determined that it would be safer for all persons to EVACUATE to a planned evacuation site.

Time required to evacuate premises: 15 Minutes

5.1 Designated Assembly Point: Main Car Park Area near Pick Up and Drop Off

Assembly Point subject to conditions on site, subject to the situation and conditions.

Transportation Arrangements:

Number of vehicles required:

At start up: 10 cars required (with average of 5 students/staff per vehicle) 6 staff & 43 students on site

At full operation: 30 cars required (with average of 5 students/staff per vehicle) 20 staff & 130 students on site

Transportation provided by: The above assumes staff using their cars.

5.2 Neighbourhood Safer Place

Neighbourhood Safer Place (NSP) – *Bushfire Place of Last Resort, the nearest NSP is located at Hurstbridge at Hurstbridge Community Hub Hurstbridge Hurricanes Basketball Stadium at Graysharps Road (at the roads end) Hurstbridge 3099. With a travel distance from the entry gate of the Primary School at 1075 Heidelberg-Kinglake Road Hurstbridge to the NSP Hurricanes Basketball Stadium 50 Graysharps Road Hurstbridge of 1.7 km and 5 minutes travel by motor vehicle under normal road traffic conditions.*

5.3 Shelter in Place & Place of Last Resort on School Site

The Educational Building Primary School main building it to be constructed to BAL 29 in order to provide a shelter in place and place of last resort on the school site.

5.4 Planned Evacuation Site Suggested Location

Name of primary: *NSP Hurricanes Basketball Stadium*

Address of venue: *50 Graysharps Road Hurstbridge*

Drive time to site: *5 minutes and 1.7 km south*

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5.5 Alternative Evacuation Sites

The nearest Township/Urban area is Hurstbridge. The subject site at 1075 Heidelberg-Kinglake Road Hurstbridge, has access to the Hurstbridge urban and: Alternative:

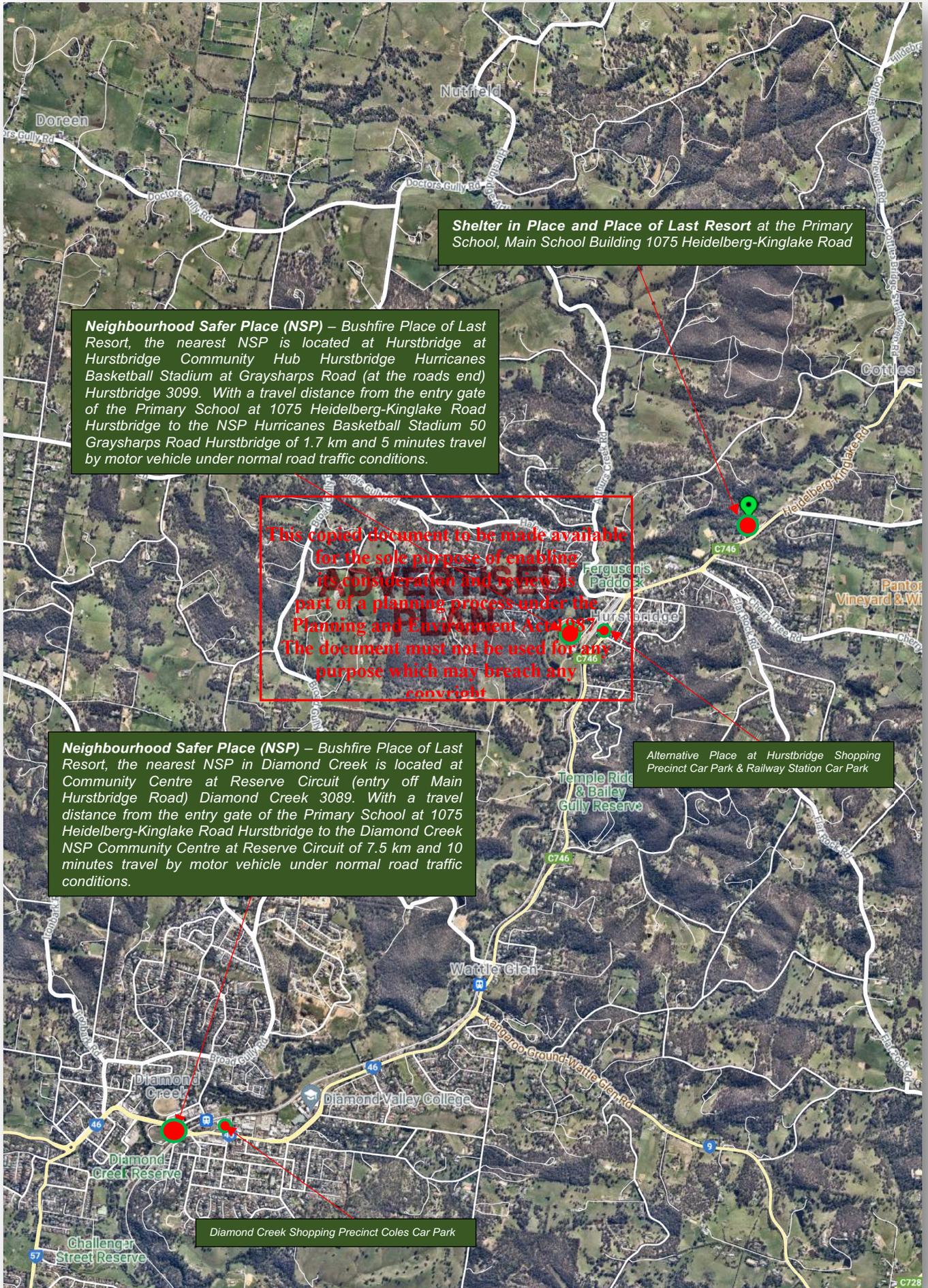
Diamond Creek shopping precinct, Coles carpark at 67 Main Hurstbridge Road Hurstbridge 3089 which is approximately 7 km to the southwest of the Primary School via Main Hurstbridge Road, with a travel time in a motor vehicle of approximately 10 minutes under normal road traffic conditions.

Moving north from the subject site during a bushfire impacting the subject site and the surrounding area is potentially not possible as most bushfires will be approaching from the north.

Also, moving north during a bushfire impacting the area, could be very high risk, due to the extensive road verge vegetation and most bushfires will be approaching the site from the north, northwest or northeast. Also, both Hurstbridge and Diamond Creek as urban areas, near the subject site to the southwest, are such that they could be impacted by a bushfire penetrating deep into the urban area, under extreme to catastrophic fire weather conditions. Thus, the urban area immediately to the southwest of the subject site, may not be a suitable place to safely shelter in place, subject to the fire weather conditions.

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Bushfire Emergence Shelter in Place, Safer Place and Evacuation Locations Map



6 EVACUATION ACTION STATEMENT

6.1 At the Commencement of the Bushfire Danger Period:

1. Ensure that Principal designated manager and owner's representative are prepared in accordance with the Bushfire Emergency Management Plan (BEMP).
2. Ensure that all persons are informed of the evacuation and fall-back shelter-in-place procedures.
3. Ensure that all signage within the school and onsite is up to date and is in place.
4. Ensure that all staff and students are provided with copies of the procedures on arrival, and that the principal or designated manager explains these procedures to them.
5. Ensure that the buildings on the site are protected and maintained, and the surrounding defendable spaces area is maintained – being 50 metres or the property boundary whichever is the lesser around the school building. And the Buildings on the site are maintain and Vegetation Management Buffer is managed across the whole site and maintained in accordance with Clause 53.02-5 Table 6 Vegetation management requirements.
6. Update contact details of Principal, Managers, Staff, Students and Parents, and site owner's representatives.
7. Contact and update emergency services of the premises contact details. And Details relating to the site use and number of people on the site during various times and days of operation.
8. Contact and check off-site evacuation locations for potential use during a bushfire emergency.
9. Advise staff, students and parents that they will be taken offsite on days declared a code red fire danger day.

6.2 During a Bushfire – Evacuation Procedures

In the event of a bushfire in the surrounding area, staff, students and occupants of the School premises shall follow the procedure outlined below.

When aware that a bushfire is in the local area the manager shall:

- Using the appropriate media i.e. Bushfire info Line, Website, Phone App etc. determine the current/predicted bushfire situation.
- Inform the staff and students of the fire situation.
- Ensure that the person in charge (Principal/Manager) and Fire Wardens have a mobile phone and is contactable.
- Make arrangements for transportation in the unlikely event that the staff and students did not arrive in their own vehicles.

In the event of a bushfire threatening where it has been decided an evacuation will take place, the Principal or designated manager of the school shall follow the procedure outlined below.

Nominate the most suitable and practical location to evacuate to.

- Remain calm and explain to staff and students what is happening, whether over the phone or in person.
- Inform emergency services of evacuation call 000. If there was a fire running in the area
- Staff and students to proceed to the Designated Assembly Area Car Park (Pick Up/Drop Off area).
- Ensure that all persons are accounted for (using list of staff, student and occupants check off list).
- Evacuate to the designated evacuation location.

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- After all the staff, students and occupants have been evacuated, the Principal or designated manager will commence contacting relevant families affected. And also check that there are no staff or students still on the school site.

6.3 After the Bushfire Emergency

When the bushfire threat has passed, and the area is deemed safe by emergency services:

- No person should re-enter any evacuated building until advised by the Officer in Charge of the emergency service.
- The principal or designated manager to arrange the movement of staff, students and occupants back to the school site, using the same procedures for their initial relocation. Again, Check all names on the check list.
- All staff, students and occupants are to be accounted for on their return.

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7 SHELTER-IN-PLACE PROCEDURES

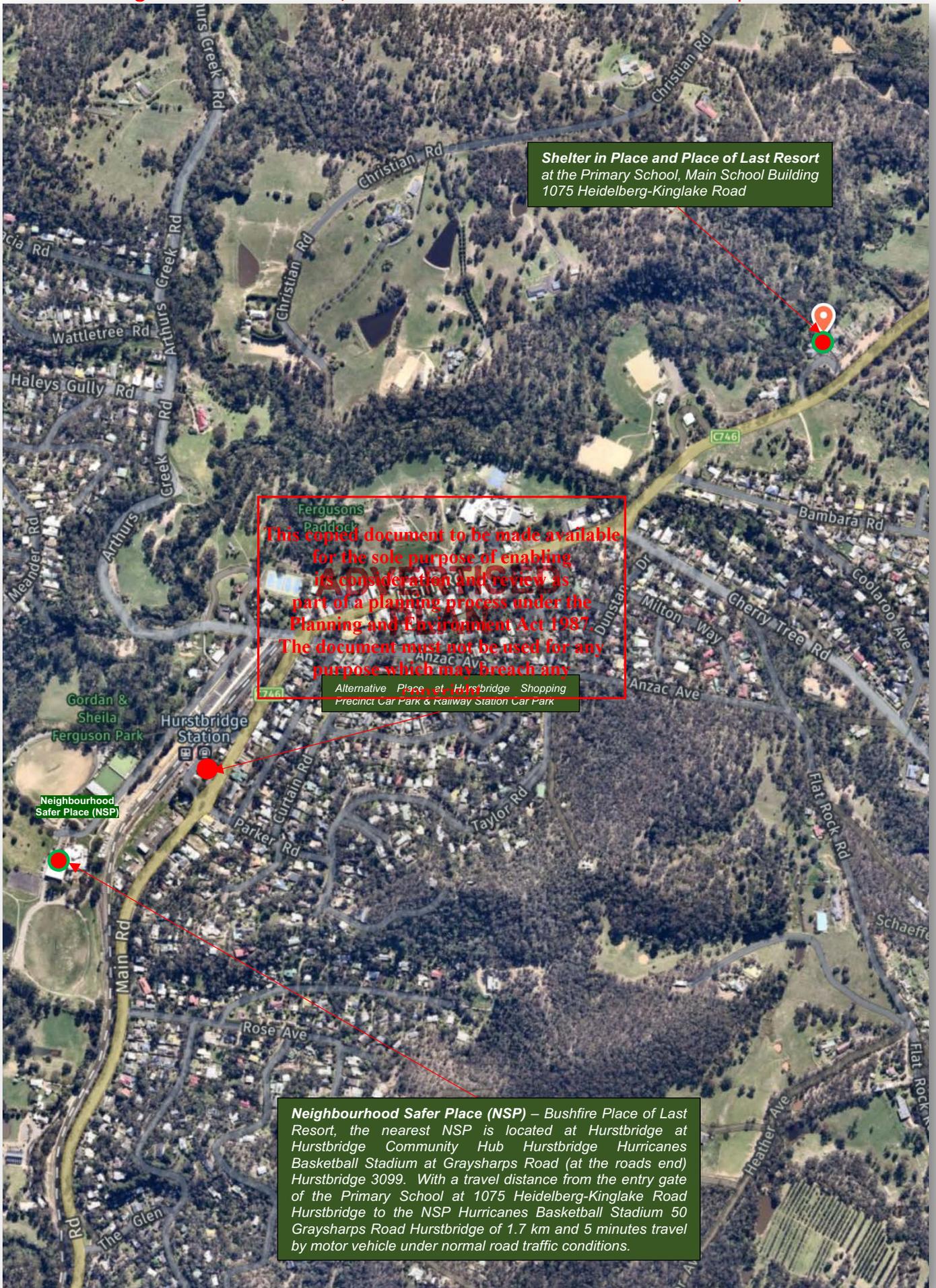
In the event of a bushfire in the nearby surrounding area where there is insufficient time to arrange an evacuation, staff, students and occupants of the School shall follow the procedure outlined below:

- Move to the designated Shelter in Place and Place of Last Resort on the school site, being the Main School Building
- Close all doors and windows, stay inside.
- Ensure all combustible items around the building e.g. outdoor furniture, door mats etc. are brought inside/moved to a location well away from the building. Close valves on LPG cylinders, ensure cylinders are secured and relief valves are pointing away from any structures.
- Remain calm and explain to staff, students and occupants what is happening either via phone or in person.
- Fill water points inside the building e.g. trough, kitchen sink.
- Ensure adequate drinking water for staff, students and occupants in the building
- Ensure all staff, students and occupants are wearing appropriate clothing i.e. all limbs covered, non-synthetic materials
- Ensure all staff, students and occupants are provided with appropriate protective equipment i.e. face mask (P2).
- Place dampened woollen blankets/towels in an easily accessible location.
- Ensure all staff, students and occupants remain inside the building during the passage of the fire.
- Ensure that the staff, students and occupants always have a point of exit from the building in whatever room they are sheltering in.
- If the building does catch fire close the door to the room that is on fire. Move to the other end of the building closing the doors behind you.
- As soon as it is safe to do so move outside away from the building onto **Burnt Ground**.
- If it is safe to do so extinguish any burning embers, materials up to and around the building.
- Ensure all persons are accounted for (using list of staff, students and occupants check list)
- Do not return into the school buildings until the fire has been extinguished and the CFA has deemed it safe to enter.

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Bushfire Emergence Shelter in Place, Safer Place and Evacuation Locations Map



Shelter in Place and Place of Last Resort
at the Primary School, Main School Building
1075 Heidelberg-Kinglake Road

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Alternative Place at Hurstbridge Shopping Precinct Car Park & Railway Station Car Park

Neighbourhood Safer Place (NSP)

Neighbourhood Safer Place (NSP) – Bushfire Place of Last Resort, the nearest NSP is located at Hurstbridge at Hurstbridge Community Hub Hurstbridge Hurricanes Basketball Stadium at Graysharps Road (at the roads end) Hurstbridge 3099. With a travel distance from the entry gate of the Primary School at 1075 Heidelberg-Kinglake Road Hurstbridge to the NSP Hurricanes Basketball Stadium 50 Graysharps Road Hurstbridge of 1.7 km and 5 minutes travel by motor vehicle under normal road traffic conditions.

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W: www.sbafire.com E: info@sbafire.com

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